Effect of bait type and size on catch efficiency of narrow-barred Spanish mackerel (Scomberomorus commerson) in the Persian Gulf handline fisheries

In the Persian Gulf handline fishery, fishers mostly use Cutlassfish (Trichiurus lepturus) bait for targeting narrow-barred Spanish mackerel (Scomberomorus commerson). However, Cutlassfish are expensive compared to other baits and also a commercially important species that is typically exported to Asian countries. In order to conserve Cutlassfish resources and reduce costs of fishing, the effect of changing bait type and size on the catch efficiency and size structure of narrow-barred Spanish mackerel caught in the Persian Gulf handline fishery was investigated. The alternative baits investigated, Indian mackerel (Rastrelliger kanagurta) and artificial bait (lead lure), resulted in a lower overall catch efficiency and a shift in catch pattern towards smaller individuals. The two alternative baits had very similar overall catch efficiencies. The results obtained demonstrate that bait type and size affects both overall catch efficiency and size structure of narrow-barred Spanish mackerel caught in the Persian Gulf handline fishery. This implies that managing bait type and size might complement standard harvest regulations and facilitate changing exploitation pattern in the Persian Gulf handline fishery.
Occurrence of cyclic imines in European commercial seafood and consumers risk assessment

Cyclic imines constitute a quite recently discovered group of marine biotoxins that act on neural receptors and that bioaccumulate in seafood. They are grouped together due to the imino group functioning as their common pharmacore, responsible for acute neurotoxicity in mice. Cyclic imines (CIs) have not been linked yet to human poisoning and are not regulated in the European Union (EU), although the European Food Safety Authority (EFSA) requires more data to perform conclusive risk assessment for consumers. Several commercial samples of bivalves including raw and processed samples from eight countries (Italy, Portugal, Slovenia, Spain, Ireland, Norway, The Netherlands and Denmark) were obtained over 2 years. Emerging cyclic imine concentrations in all the samples were analysed on a LC-3200QTRAP and LC-HRMS QExactive mass spectrometer. In shellfish, two CIs, pinnatoxin G (PnTX-G) and 13-desmethylspirolide C (SPX-1) were found at low concentrations (0.1–12 µg/kg PnTX-G and 26–66 µg/kg SPX-1), while gymnodimines and pteriatoxins were not detected in commercial (raw and processed) samples. In summary, SPX-1 (n: 47) and PnTX-G (n: 96) were detected in 9.4% and 4.2% of the samples, respectively, at concentrations higher than the limit of quantification (LOQ), and in 7.3% and 31.2% of the samples at concentrations lower than the LOQ (25 µg/kg for SPX-1 and 3 µg/kg for PnTX-G), respectively. For the detected cyclic imines, the average exposure and the 95th percentile were calculated. The results obtained indicate that it is unlikely that a potential health risk exists through the seafood diet for CIs in the EU. However, further information about CIs is necessary in order to perform a conclusive risk assessment.
Latency and bit-error-rate evaluation for radio-over-ethernet in optical fiber front-haul networks

Nowadays several research projects are under progress to manage a soft migration toward the 5th generation networks. Radio over Ethernet (RoE) is one of recent topics that try to have a cost efficient and independent front-haul network. In this paper, we discuss the requirements of the 5G networks and analyze the conditions for the implementation of a RoE protocol. For this purpose we digitalize radio frames that are taken from BBU or RRH and create RoE basic frames considering all the requirements of protocol. We then encapsulate RoE basic frames into an Ethernet packet and finally experimentally evaluate this Ethernet packet as a case of study for RoE applications. The packet is transmitted through different fiber spans, measuring the BER and latency on each case. The system achieves BER values below the FEC limit and a manageable latency. These results serve as a guideline and proof of concept for applications on RoE, showing the viability of its implementation as part of the next generation of front-haul networks.

A Capture-SELEX Strategy for Multiplexed Selection of RNA Aptamers Against Small Molecules

In vitro selection of aptamers that recognize small organic molecules has proven difficult, in part due to the challenge of immobilizing small molecules on solid supports for SELEX (Systematic Evolution of Ligands by Exponential Enrichment). This study describes the implementation of RNA Capture-SELEX, a selection strategy that uses an RNA library to yield ligand-responsive RNA aptamers targeting small organic molecules in solution. To demonstrate the power of this method we selected several aptamers with specificity towards either the natural sweetener rebaudioside A or the food-coloring agent carminic acid. In addition, Bio-layer interferometry is used to screen clonal libraries of aptamer candidates and is used to interrogate aptamer affinity. The RNA-based Capture-SELEX strategy described here simplifies selection of RNA aptamers against small molecules by avoiding ligand immobilization, while also allowing selection against multiple
candidate targets in a single experiment. This makes RNA Capture-SELEX particularly attractive for accelerated development of RNA aptamers targeting small metabolites for incorporation into synthetic riboswitches and for analytical biosensors.

**General information**

State: Published  
Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization, Bacterial Cell Factories, Research Groups  
Authors: Lauridsen, L. H. (Intern), Doessing, H. B. (Intern), Long, K. S. (Intern), Nielsen, A. T. (Intern)  
Pages: 291-306  
Publication date: 2018

**Host publication information**

Title of host publication: Synthetic Metabolic Pathways  
Volume: 1671  
ISBN (Print): 978-1-4939-7294-4  
ISBN (Electronic): 978-1-4939-7295-1

Series: Methods in Molecular Biology  
ISSN: 1064-3745  
Main Research Area: Technical/natural sciences

Bio-layer interferometry, Next-generation sequencing, RNA aptamer, SELEX, Small molecules

**DOIs:**

10.1007/978-1-4939-7295-1_18  
Source: FindIt  
Source-ID: 2393668053  
Publication: Research - peer-review › Book chapter – Annual report year: 2018

**Acclimation to extremely high ammonia levels in continuous biomethanation process and the associated microbial community dynamics**

Acclimated anaerobic communities to high ammonia levels can offer a solution to the ammonia toxicity problem in biogas reactors. In the current study, a stepwise acclimation strategy up to 10 g NH4+-N L\(^{-1}\), was performed in mesophilic (37 ± 1 °C) continuously stirred tank reactors. The reactors were co-digesting (20/80 based on volatile solid) cattle slurry and microalgae, a protein-rich, 3rd generation biomass. Throughout the acclimation period, methane production was stable with more than 95% of the uninhibited yield. Next generation 16S rRNA gene sequencing revealed a dramatic microbiome change throughout the ammonia acclimation process. Clostridium ultunense, a syntrophic acetate oxidizing bacteria, increased significantly alongside with hydrogenotrophic methanogen Methanoculleus spp., indicating strong hydrogenotrophic methanogenic activity at extreme ammonia levels (>7 g NH4+-N L\(^{-1}\)). Overall, this study demonstrated for the first time that acclimation of methanogenic communities to extreme ammonia levels in continuous AD process is possible, by developing a specialised acclimation AD microbiome.

**General information**

State: Published  
Organisations: Department of Environmental Engineering, Residual Resource Engineering, Zagazig University, IMDEA Energy  
Pages: 616-623  
Publication date: 2018  
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Bioresource Technology  
Volume: 247  
ISSN (Print): 0960-8524  
Ratings:  
BFI (2017): BFI-level 2  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 2  
Scopus rating (2016): CiteScore 5.94 SJR 2.191 SNIP 1.91  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 2  
Scopus rating (2015): SJR 2.255 SNIP 1.908 CiteScore 5.47
A lab-in-a-foil microfluidic reactor based on phaseguiding

We demonstrate a microfluidic reaction chamber that mimics a microcentrifuge tube where reagents can be mixed sequentially at a known stoichiometry. The device has no moving parts or valves and is made by hot embossing in a polymer foil. Sample and reagents are filled in the reaction chamber by controlled guiding of the air/liquid interface in a rectangular array of pillars. The operation of the device is demonstrated by performing isothermal DNA amplification in nL volumes. In our device, 28 pg of DNA from λ-phage, a virus with a 48 kilo base genome, is amplified 500 times thus the amplification product is suitable for library preparation for second generation sequencing. We show that fabrication by hot embossing does not introduce significant contamination and that our device is performing comparably well to test tube amplification and current PDMS-based chip technology.
A multi-radio, multi-hop ad-hoc radio communication network for Communications-Based Train Control (CBTC): Introducing frequency separation for train-to-trackside communication

Communications-Based Train Control (CBTC) is a modern signalling system that uses radio communication to transfer train control information between train and wayside. The trackside networks in these systems are mostly based on conventional infrastructure Wi-Fi (IEEE 802.11). It means a train has to continuously associate (i.e., perform handshake) with the trackside Wi-Fi Access Points (AP) as it moves, which incurs communication delays. Additionally, these APs are connected to the wayside infrastructure via optical fiber cables that incur considerable installation costs. Our earlier work presented a novel design in which trackside nodes function in ad-hoc WiFi mode, which means no handshake has to be performed with them prior to transmitting. A node upon receiving packets from a train forwards these packets to the next node, forming a chain of nodes. Following this chain, packets reach the destination. To make the design resilient against interference between the nodes, transmissions are separated on multiple frequencies, ensuring a certain separation between the transmissions. Our previous results exposed a limitation of the design. Since a train node is required to transmit on all frequencies to be able to communicate to the chain with a high probability, the frequency separation guaranteed inside the chain is not achievable in the train-to-chain communication. As a result, the train node’s transmissions cause a significant amount of interference on the chain nodes. This paper proposes an extension to the design in which an additional, dedicated frequency is employed for the train-to-chain communication and presents the results from an extensive simulation study.

An Adaptive Laboratory Evolution Method to Accelerate Autotrophic Metabolism

Adaptive laboratory evolution (ALE) is an approach enabling the development of novel characteristics in microbial strains via the application of a constant selection pressure. This method is also an efficient tool to acquire insights on molecular mechanisms responsible for specific phenotypes. ALE experiments have mainly been conducted with heterotrophic microbes to study, for instance, cell metabolism with different multicarbon substrates, tolerance to solvents, pH variation, and high temperature. Here, we describe employing an ALE method to generate Sporomusa ovata strains growing faster autotrophically and reducing CO2 into acetate more efficiently. Strains developed via this ALE method were also used to gain knowledge on the autotrophic metabolism of S. ovata as well as other acetogenic bacteria.
Analysis and validation of a quasi-dynamic model for a solar collector field with flat plate collectors and parabolic trough collectors in series for district heating

A quasi-dynamic TRNSYS simulation model for a solar collector field with flat plate collectors and parabolic trough collectors in series was described and validated. A simplified method was implemented in TRNSYS in order to carry out long-term energy production analyses of the whole solar heating plant. The advantages of the model include faster computation with fewer resources, flexibility of different collector types in solar heating plant configuration and satisfactory accuracy in both dynamic and long-term analyses. In situ measurements were taken from a pilot solar heating plant with 5960 m² flat plate collectors and 4039 m² parabolic trough collectors in series in Taars, Denmark from Sep.2015 to Aug.2016. The simulated thermal performances of both the parabolic trough collector field and the flat plate collector field have a good agreement with the measured performances. The thermal performance of the hybrid solar district heating plants is also presented. The measured and simulated results show that the integration of parabolic trough collectors in solar district heating plants can guarantee that the system produces hot water with relatively constant outlet temperature. The daily energy output of the parabolic trough collector field can be more than 5 kWh/m², while the daily energy output of the flat plate collector field is less than 5 kWh/m² under Danish climate conditions. The simplified and validated TRNSYS model can be a useful tool to simulate and optimize thermal performance of solar heating plants with both flat plate and parabolic trough collectors.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Building Energy
Authors: Tian, Z. (Intern), Perers, B. (Intern), Furbo, S. (Intern), Fan, J. (Intern)
Pages: 130-138
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Energy
Volume: 142
ISSN (Print): 0360-5442
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.17 SJR 1.999 SNIP 1.798
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.276 SNIP 2.046 CiteScore 5.03
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.647 SNIP 2.63 CiteScore 5.7
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Analytical Assessment of Voltage Support via Reactive Power from new Electric Vehicles Supply Equipment in Radial Distribution Grids with Voltage-Dependent Loads

Grid operators have to cope with secure electric vehicles integration in the power system, which may lead to violations of the allowed voltage band. This work intends to provide an analytical assessment and guidelines for distribution system operators when evaluating new electric vehicle supply equipment installations with fast charging capability in existing low voltage distribution feeders. The aim is to prevent the voltage to exceed the permitted values when charging at high power, by exploiting the effect of reactive power. The contribution of each power component in distribution grids is analyzed, including the loads’ voltage-dependency, which influences the effectiveness of reactive power control. The proposed guidelines indicate the amount of capacitive reactive power that an individual electric vehicle supply equipment is expected to provide, in order to effectively manage the voltage rise. The proposed method is validated on the Cigrè benchmark low voltage distribution network as well as on a real Danish low voltage grid.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Distributed energy resources
Authors: Zecchino, A. (Intern), Marinelli, M. (Intern)
Pages: 17-27
An experimental evaluation on air purification performance of Clean-Air Heat Pump (CAHP) air cleaner

The escalation of energy consumption in buildings and heightened concerns about acceptable indoor air quality stimulate interest in the usage of air cleaner as an adjunct for indoor environmental conditioning. A regenerative desiccant wheel integrated into a ventilation system termed Clean-Air Heat Pump (CAHP) can improve the air quality during the process of dehumidification without using additional energy. An experimental study in a field lab was performed to investigate the air cleaning performance of CAHP. Photoacoustic gas analyzer-INNOVA was used to characterize chemical removal of indoor air pollutants by the CAHP. The results revealed that all the detected VOCs were removed effectively by the CAHP with an average single pass efficiency of 82.7% when the regeneration temperature for desiccant wheel was 60 °C. The mass balance between adsorption and desorption of the desiccant wheel was 96.8%, which indicated that the most of gaseous pollutants were not accumulated in the CAHP. The regeneration temperature for the wheel could affect the air purification performance of CAHP. At 70 °C of regeneration temperature, the air-cleaning efficiency reached 96.7%. Up to 70% of the outdoor air ventilation can be saved with the operation of CAHP. The clean air deliver rate (CADR) was over threefold of the outdoor air supply rate when CAHP was in operation.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Tianjin University
Authors: Sheng, Y. (Ekstern), Fang, L. (Intern), Sun, Y. (Ekstern)
Number of pages: 8
Pages: 69-76
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Building and Environment
Volume: 127
ISSN (Print): 0360-1323
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.51 SJR 2.015 SNIP 2.198
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.093 SNIP 2.49 CiteScore 4.37
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.938 SNIP 2.797 CiteScore 4.14
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.581 SNIP 2.602 CiteScore 3.57
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.331 SNIP 2.875 CiteScore 3.06
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.144 SNIP 2.255 CiteScore 2.76
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.235 SNIP 2.001
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.028 SNIP 1.865
A "poor man's approach" to topology optimization of cooling channels based on a Darcy flow model

A topology optimization methodology for optimizing cooling channels using an approximate but low-cost flow and heat transfer model is presented. The fluid flow is modeled using the Darcy model, which is a linear problem that can be solved very efficiently compared to the Navier–Stokes equations. The obtained fluid velocity is subsequently used in a stabilized convection–diffusion heat transfer model to calculate the temperature distribution. The governing equations are cast in a monolithic form such that both the solid and fluid can be modeled using a single equation set. The material properties: permeability, conductivity, density and specific heat capacity are interpolated using the Solid Isotropic Material with Penalization (SIMP) scheme. Manufacturable cooling-channel designs with clear topologies are obtained with the help of a pressure drop constraint and a geometric length-scale constraint. Several numerical examples demonstrate the applicability of this approach. Verification studies with a full turbulence model show that, although the equivalent model has limitations in yielding a perfect realistic velocity field, it generally provides well-performing cooling channel designs.

**General information**

State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, Dalian University of Technology, Shanghai Jiao Tong University
Authors: Zhao, X. (Ekstern), Zhou, M. (Ekstern), Sigmund, O. (Intern), Andreasen, C. S. (Intern)
Pages: 1108-1123
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Volume: 116
ISSN (Print): 0017-9310
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.75 SJR 1.623 SNIP 2.005
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.797 SNIP 1.941 CiteScore 3.09
BFI (2014): BFI-level 1
A review on sustainable yeast biotechnological processes and applications

Yeast is very well known eukaryotic organism for its remarkable biodiversity and extensive industrial applications. Saccharomyces cerevisiae is one of the most widely used microorganisms in biotechnology with successful applications in the biochemical production. Biological conversion with the focus on the different utilization of renewable feedstocks into fuels and chemicals has been intensively investigated due to increasing concerns on sustainability issues worldwide. Compared with its counterparts, Saccharomyces cerevisiae, the baker’s yeast, is more industrially relevant due to known genetic and physiological background, the availability of a large collection of genetic tools, the compatibility of high-density and large-scale fermentation, and optimize the pathway for variety of products. Therefore, S. cerevisiae is one of the most popular cell factories and has been successfully used in the modern biotech industry to produce a wide variety of products such as ethanol, organic acids, amino acids, enzymes, and therapeutic proteins. This study explores how different sustainable solutions used to overcome various environmental effects on yeast. This work targets a broad matrix of current advances and future prospect in yeast biotechnology and discusses their application and potential in general.

General information
State: Published
Organisations: Department of Systems Biology, Fermentation Platform, Gandhi Institute of Technology and Management
Authors: Nandy, S. K. (Intern), Srivastava, R. K. (Ekstern)
Assembly and Multiplex Genome Integration of Metabolic Pathways In Yeast Using CasEMBLR

Genome integration is a vital step for implementing large biochemical pathways to build a stable microbial cell factory. Although traditional strain construction strategies are well established for the model organism Saccharomyces cerevisiae, recent advances in CRISPR/Cas9-mediated genome engineering allow much higher throughput and robustness in terms of strain construction. In this chapter, we describe CasEMBLR, a highly efficient and marker-free genome engineering method for one-step integration of in vivo assembled expression cassettes in multiple genomic sites simultaneously.

CasEMBLR capitalizes on the CRISPR/Cas9 technology to generate double-strand breaks in genomic loci, thus prompting native homologous recombination (HR) machinery to integrate exogenously derived homology templates. As proof-of-principle for microbial cell factory development, CasEMBLR was used for one-step assembly and marker-free integration of the carotenoid pathway from 15 exogenously supplied DNA parts into three targeted genomic loci. As a second proof-of-principle, a total of ten DNA parts were assembled and integrated in two genomic loci to construct a tyrosine production strain, and at the same time knocking out two genes. This new method complements and improves the field of genome
engineering in S. cerevisiae by providing a more flexible platform for rapid and precise strain building.

**Assessing PCB pollution in the Baltic Sea - An equilibrium partitioning based study**

Sediment cores and bottom water samples from across the Baltic Sea region were analyzed for freely dissolved concentrations (C_free), total sediment concentrations (C_T) and the dissolved aqueous fraction in water of seven indicator PCBs. Ex-situ equilibrium sampling of sediment samples was conducted with polydimethylsiloxane (PDMS) coated glass fibers that were analyzed by automated thermal desorption GC-MS, which yielded PCB concentrations in the fiber coating (CPDMS). Measurements of CPDMS and C_T were then applied to determine (i) spatially resolved freely dissolved PCB concentrations; (ii) baseline toxicity potential based on chemical activities (a); (iii) site specific mixture compositions; (iv) diffusion gradients at the sediment water interface and within the sediment cores; and (vi) site specific distribution ratios (KD). The contamination levels were low in the Gulf of Finland and moderate to elevated in the Baltic Proper, with the highest levels observed in the western Baltic Sea. The SPME method has been demonstrated to be an appropriate and sensitive tool for area surveys presenting new opportunities to study the in-situ distribution and thermodynamics of hydrophobic organic chemicals at trace levels in marine environments.
Participatory management is widely recognised as a working method of paramount importance, based on the principles of knowledge sharing, accountability and legitimacy. Hence, it is broadly considered suitable for addressing issues related to the sustainable development of the seafood industry, and specifically, of the aquaculture system. A survey focused on the current EU regulatory framework was carried out to elicit stakeholders' preferences, knowledge and experience on key issues for the development of organic aquaculture, supported by science-based regulations. The survey was completed by 65 stakeholders belonging to several categories, and it was supported...
by the implementation of the Analytic Hierarchy Process method. Stakeholders’ preferences were elicited on organic production methods and control systems, the quality of the environment and organic products, fish health and welfare. The views expressed by the participants revealed both competence and awareness, despite the complexity of the subject. Several ideas and useful suggestions emerged regarding unresolved technical issues. In addition, the need for a targeted communication strategy on the quality of organic aquaculture products and the necessity of fostering European/national programs to support the production and marketing of organic aquaculture products were highlighted.
ASTA - A method for multi-criteria evaluation of water supply technologies to Assess the most SusTainable Alternative for
Copenhagen
Utilities in larger cities have to make complex decisions planning future investments in urban water infrastructure. Changes are driven by physical water stress or political targets for environmental water flows e.g. through the implementation of the European water framework directive. To include these environmental, economic and social sustainability dimensions we introduce a novel multi-criteria assessment method for evaluation of water supply technologies. The method is presented and demonstrated for four alternatives for water supply based on groundwater, rain- & stormwater or seawater developed for augmenting Copenhagen's current groundwater based water supply. To identify the most sustainable technology, we applied rank order distribution weights to a multi-criteria decision analysis to combine the impact assessments of environment, economy and society. The three dimensions were assessed using 1) life-cycle assessment, 2) cost calculations taking operation and maintenance into account and 3) the multi-criteria decision analysis method Analytical hierarchy process. Specialists conducted the life-cycle assessment and cost calculations and the multi-criteria decision analyses were based on a stakeholder workshop gathering stakeholders relevant for the specific case. The workshop reached consensus on three sets of ranked criteria. Each set represented stakeholder perspectives with first priority given to one of the three sustainability dimensions or categories. The workshop reached consensus and when the highest weight was assigned to the environmental dimension of sustainability then the alternative of 'Rain- & stormwater harvesting' was the most sustainable water supply technology; when the highest weight was assigned to the economy or society dimensions then an alternative with 'Groundwater abstraction extended with compensating actions' was considered the most sustainable water supply technology. Across all three sets of ranked weights, the establishment of new well fields is considered the least sustainable alternative.

General information
State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems, Department of Management Engineering, Quantitative Sustainability Assessment
Authors: Godskesen, B. (Intern), Hauschild, M. Z. (Intern), Albrechtsen, H. (Intern), Rygaard, M. (Intern)
Number of pages: 10
Pages: 399-408
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Science of the Total Environment
Volume: 618
ISSN (Print): 0048-9697
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.09 SJR 1.621 SNIP 1.849
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.674 SNIP 1.642 CiteScore 4.33
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.635 SNIP 1.847 CiteScore 4.2
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.527 SNIP 1.759 CiteScore 3.73
A three-dimensional coupled thermo-hygro-mechanical model for deformable fractured geothermal systems

A fully coupled thermal-hydraulic-mechanical (THM) finite element model is presented for fractured geothermal reservoirs. Fractures are modelled as surface discontinuities within a three-dimensional matrix. Non-isothermal flow through the rock matrix and fractures are defined and coupled to a mechanical deformation model. A robust contact model is utilised to resolve the contact tractions between opposing fracture surfaces under THM loadings. A numerical model has been developed using the standard Galerkin method. Quadratic tetrahedral and triangular elements are used for spatial discretisation. The model has been validated against several analytical solutions, and applied to study the effects of the deformable fractures on the injection of cold water in fractured geothermal systems.

Results show that the creation of flow channelling due to the thermal volumetric contraction of the rock matrix is very likely. The fluid exchanges heat with the rock matrix, which results in cooling down of the matrix, and subsequent volumetric deformation. The cooling down of the rock matrix around a fracture reduces the contact stress on the fracture surfaces, and increases the fracture aperture. Stress redistribution reduces the aperture, as the area with lower contact stress on the fracture expands. Stress redistribution reduces the likelihood of fracture.
propagation under pure opening mode, while the expansion of the area with lower contact stress may increase the likelihood of shear fracturing.

**General information**

State: Published

Organisations: Centre for oil and gas – DTU, Imperial College London

Authors: Salimzadeh, S. (Intern), Paluszny, A. (Ekstern), Nick, H. M. (Intern), Zimmerman, R. W. (Ekstern)

Pages: 212-224

Publication date: 2018

Main Research Area: Technical/natural sciences

**Publication information**

Journal: Geothermics

Volume: 71

ISSN (Print): 0375-6505

Ratings:

BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes

BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.67 SJR 0.943 SNIP 1.417
Web of Science (2016): Indexed yes

BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.344 SNIP 1.987 CiteScore 2.99
Web of Science (2015): Indexed yes

BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.924 SNIP 3.002 CiteScore 3.61
Web of Science (2014): Indexed yes

BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.851 SNIP 2.423 CiteScore 3.08
ISI indexed (2013): ISI indexed yes

BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.177 SNIP 1.81 CiteScore 1.89
ISI indexed (2012): ISI indexed yes

BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.955 SNIP 1.973 CiteScore 1.9
ISI indexed (2011): ISI indexed yes

BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.795 SNIP 1.757
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.009 SNIP 2.693
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.839 SNIP 1.377
Scopus rating (2007): SJR 0.736 SNIP 1.428
Scopus rating (2006): SJR 0.472 SNIP 1.301
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.674 SNIP 0.852
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.284 SNIP 0.806
Scopus rating (2003): SJR 0.546 SNIP 1.078
Scopus rating (2002): SJR 0.592 SNIP 0.721
Scopus rating (2001): SJR 0.345 SNIP 0.731
Scopus rating (2000): SJR 0.311 SNIP 0.809
Scopus rating (1999): SJR 0.416 SNIP 0.773

Original language: English

Coupled THM processes, Fractured geothermal reservoir, Contact model, Flow channelling, Enhanced geothermal systems

DOIs:
**Bacterial Genome Editing Strategy for Control of Transcription and Protein Stability**

In molecular biology and cell factory engineering, tools that enable control of protein production and stability are highly important. Here, we describe protocols for tagging genes in Escherichia coli allowing for inducible degradation and transcriptional control of any soluble protein of interest. The underlying molecular biology is based on the two cross-kingdom tools CRISPRi and the N-end rule for protein degradation. Genome editing is performed with the CRMAGE technology and randomization of the translational initiation region minimizes the polar effects of tag insertion. The approach has previously been applied for targeting proteins originating from essential operon-located genes and has potential to serve as a universal synthetic biology tool.

**General information**

State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Microbial Evolution and Synthetic Biology, Membrane Synthetic Biology Group, Department of Systems Biology, National Institute of Aquatic Resources, Bacterial Cell Factory Optimization
Authors: Lauritsen, I. (Intern), Martinez, V. (Intern), Ronda, C. (Intern), Nielsen, A. T. (Intern), Nørholm, M. H. H. (Intern)
Pages: 27-37
Publication date: 2018

**Host publication information**

Title of host publication: Synthetic Metabolic Pathways
Volume: 1671
ISBN (Print): 978-1-4939-7294-4
ISBN (Electronic): 978-1-4939-7295-1
Series: Methods in Molecular Biology
ISSN: 1064-3745
Main Research Area: Technical/natural sciences
CRISPR interference, CRISPR-Cas9, CRMAGE, CRiPi, Essential genes, Genome editing, N-Degron, N-End rule pathway, PROTi, Protein stability
DOIs:
10.1007/978-1-4939-7295-1_3
Source: FindIt
Source-ID: 2393668039
Publication: Research - peer-review › Book chapter – Annual report year: 2018

**Benchmarking and monitoring framework for interconnected file synchronization and sharing services**

On-premise file synchronization and sharing services are increasingly used in research collaborations and academia. The main motivation for the on-premise deployment is connected with the requirements on the physical location of the data, data protection policies and integration with existing computing and storage infrastructure in the research labs. In this work we present a benchmarking and monitoring framework for file synchronization and sharing services. It allows service providers to monitor the operational status of their services, understand the service behavior under different load types and with different network locations of the synchronization clients. The framework is designed as a monitoring and benchmarking tool to provide performance and robustness metrics for interconnected file synchronization and sharing services such as Open Cloud Mesh.

**General information**

State: Published
Organisations: Department of Applied Mathematics and Computer Science, IT Service, CERN
Authors: Mrówczyński, P. (Intern), Mościcki, J. T. (Ekstern), Lamanna, M. (Ekstern), Orellana, F. (Intern)
Pages: 1083-1090
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Future Generation Computer Systems
Volume: 78
ISSN (Print): 0167-739X
Ratings:
BFI (2017): BFI-level 1
Biodiversity of soil bacteria exposed to sub-lethal concentrations of phosphonium-based ionic liquids: Effects of toxicity and biodegradation

Little is known about the effect of ionic liquids (ILs) on the structure of soil microbial communities and resulting biodiversity. Therefore, we studied the influence of six trihexyl(tetradecyl)phosphonium ILs (with either bromide or various organic anions) at sublethal concentrations on the structure of microbial community present in an urban park soil in 100-day microcosm experiments. The biodiversity decreased in all samples (Shannon's index decreased from 1.75 down to 0.74 and OTU's number decreased from 1399 down to 965) with the largest decrease observed in the microcosms spiked with ILs where biodegradation extent was higher than 80%. (i.e. [P66614][Br] and [P66614][2,4,4]). Despite this general decrease in biodiversity, which can be explained by ecotoxic effect of the ILs, the microbial community in the microcosms was enriched with Gram-negative hydrocarbon-degrading genera e.g. Sphingomonas. It is hypothesized that, in addition to toxicity, the observed decrease in biodiversity and change in the microbial community structure may be explained by the primary biodegradation of the ILs or their metabolites by the mentioned genera, which outcompeted other microorganisms unable to degrade ILs or their metabolites. Thus, the introduction of phosphonium-based ILs into soils at sub-lethal concentrations may result not only in a decrease in biodiversity due to toxic effects, but also in enrichment with ILs-degrading bacteria.
Calibration of HPGe–HPGe coincidence spectrometer through performing standardisation of $^{125}\text{I}$ activity by X-ray-gamma coincidence spectrometry using two HPGe detectors

An X-ray-gamma coincidence measurement method for efficiency calibration of a HPGe–HPGe system, using the methodology for activity standardisation of $^{125}\text{I}$, has been developed. By taking one list-mode time-stamped measurement of the $^{125}\text{I}$ source, six spectra were generated in post-processing: total spectra, coincidence spectra and energy gated coincidence spectra for each of the two detectors. The method provides enough observables for source activity to be determined without a prior knowledge of the detector efficiencies. In addition, once the source is calibrated in this way the same spectra can also be used to perform efficiency calibration of the individual detectors in the low energy range. This new methodology for source activity determination is an alternative to the already established X-ray-(X-ray, gamma) coincidence counting method; with two NaI(Tl) detectors and the sum-peak method using a single HPGe detector. When compared to the coincidence counting method using two NaI(Tl) detectors, the newly developed method displays improved energy resolution of HPGe detectors combined with measurement of only full peak areas, without the need for total efficiency determination. This enables activity determination even in presence of other gamma emitters in the sample. Standard coincidence counting with NaI(Tl) detectors provides lower uncertainties. The method has been used for calibration of a coincidence HPGe spectrometer in the low energy range of $^{125}\text{I}$ and fine adjustments of a Monte Carlo model of the coincidence system.

General information
State: Published
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, European Commission Joint Research Centre Institute
Authors: Marković, N. (Intern), Roos, P. (Intern), Hou, X. (Intern), Lutter, G. (Ekstern), Nielsen, S. P. (Intern)
Number of pages: 7
Pages: 194-200
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Volume: 880
ISSN (Print): 0168-9002
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.44 SJR 0.916 SNIP 1.352
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.915 SNIP 1.334 CiteScore 1.21
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.852 SNIP 1.303 CiteScore 1.24
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.944 SNIP 1.398 CiteScore 1.48
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.806 SNIP 1.071 CiteScore 1.19
Can farmers mitigate environmental impacts through combined production of food, fuel and feed? A consequential life cycle assessment of integrated mixed crop-livestock system with a green biorefinery

This study evaluates environmental impacts of an integrated mixed crop-livestock system with a green biorefinery (GBR). System integration included production of feed crops and green biomasses (Sys-I) to meet the demand of a livestock system (Sys-III) and to process green biomasses in a GBR system (Sys-II). Processing of grass-clover to produce feed protein was considered in Sys-II, particularly to substitute the imported soybean meal. Waste generated from the livestock and GBR systems were considered for the conversion to biomethane (Sys-IV). Digestate produced therefrom was assumed to be recirculated back to the farmers' field (Sys-I). A consequential approach of Life Cycle Assessment (LCA) method was used to evaluate the environmental impacts of a combined production of suckler cow calves (SCC) and Pigs, calculated in terms of their live weight (LW). The functional unit (FU) was a basket of two products “1kgLW-SCC+1kgLW-Pigs”, produced at the farm gate. Results obtained per FU were: 19.6kg CO2 eq for carbon footprint; 0.11kg PO4 eq for eutrophication potential, -129MJ eq for non-renewable energy use and -3.9 comparative toxicity units (CTUe) for potential freshwater ecotoxicity. Environmental impact, e.g. greenhouse gas (GHG) emission was primarily due to (i) N2O emission and diesel consumption within Sys-I, (ii) energy input to Sys-II, III and IV, and (iii) methane emission from Sys-III and Sys-IV. Specifically, integrating GBR with the mixed crop-livestock system contributed 4% of the GHG emissions, whilst its products credited 7% of the total impact. Synergies among the different sub-systems showed positive environmental gains for the selected main products. The main effects of the system integration were in the reductions of GHG emissions, fossil fuel consumption, eutrophication potential and freshwater ecotoxicity, compared to a conventional mixed crop-livestock system, without the biogas conversion facility and the GBR.

General information
Carbon dioxide not suitable for extinguishment of smouldering silo fires: static electricity may cause silo explosion

Smouldering fires in wood pellet silos are not uncommon. The fires are often difficult to deal with and extinguishment is a lengthy process. Injection of inert gasses to prevent oxygen from reaching the smouldering fire zone and suppress combustion is a new firefighting strategy. This article argues that injection of inert carbon dioxide into the silo headspace is unsafe. Carbon dioxide is generally available as a liquid under high pressure. When discharged, small particles of dry ice are formed. The rapid flow of particles can generate considerable amounts of static electricity, which can act as a source of ignition if ignitable pyrolysis gasses are present. This article discusses a serious wood pellet smouldering fire and silo explosion in Norway in 2010, which took place when firefighters discharged portable CO2 fire extinguishers into the headspace. The attempt to suppress the fire may have ignited pyrolysis gasses. The article examines selected guidelines, standards, popular wood pellet handbooks and other literature and argues that the electrostatic hazard is widely under-appreciated. In the past, major explosions have been attributed to electrostatic ignition of flammable vapours during the release of CO2 for fire prevention purposes. There is evidence to suggest that those early lessons learned have at least partly passed out of sight.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems, Statistics and Data Analysis
Authors: Hedlund, F. H. (Intern)
Pages: 113–119
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Biomass & Bioenergy
Volume: 108
ISSN (Print): 0961-9534
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.188 SNIP 1.368
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.521 SNIP 1.615 CiteScore 4.03
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.888 SNIP 1.985 CiteScore 4.36
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.678 SNIP 1.823 CiteScore 4.42
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.545 SNIP 1.743 CiteScore 3.66
ISI indexed (2012): ISI indexed yes
Catalyst evaluation for oxygen reduction reaction in concentrated phosphoric acid at elevated temperatures

Phosphoric acid is the common electrolyte for high-temperature polymer electrolyte fuel cells (HT-PEMFCs) that have advantages such as enhanced CO tolerance and simplified heat and water management. The currently used rotating disk electrode technique is limited to tests in dilute solutions at low temperatures and hence is not suitable for catalyst evaluation for HT-PEMFCs. In this study, we have designed and constructed a half-cell setup to measure the intrinsic activities of catalysts towards the oxygen reduction reaction (ORR) in conditions close to HT-PEMFC cathodes. By optimization of the hydrophobic characteristics of electrodes and the catalyst layer thickness, ORR activities of typical Pt/C catalysts are successfully measured in concentrated phosphoric acid at temperatures above 100 °C. In terms of mass-specific activities, the catalyst exhibits about two times higher activity in the half-cell electrode than that observed in fuel cells, indicating the feasibility of the technique as well as the potential for further improvement of fuel cell electrode performance.

General information

State: Published
Organisations: Department of Energy Conversion and Storage, Proton conductors, Technical University of Denmark
Authors: Hu, Y. (Intern), Jiang, Y. (Ekstern), Jensen, J. O. (Intern), Cleemann, L. N. (Intern), Li, Q. (Intern)
Pages: 77-81
Publication date: 2018
Main Research Area: Technical/natural sciences
Oxygen reduction, Catalyst, Half cell, High-temperature, Phosphoric acid

DOIs:
10.1016/j.jpowsour.2017.11.054
CFD modelling of axial mixing in the intermediate and final rinses of cleaning-in-place procedures of straight pipes

The intermediate and final rinses of straight pipes, in which water replaces a cleaning agent of similar density and viscosity, are modelled using Computational Fluid Dynamic (CFD) methods. It is anticipated that the displacement process is achieved by convective and diffusive transport. The simulated agent concentrations show good agreement with the analytical axial mixing models from literature. The displacement time, minimum water consumption, minimum generation of wastewater and minimum requirement of intermediate rinsing water are evaluated using CFD. Practical empirical equations are derived from CFD results and applied to examine if the process is operated in an efficient and economic manner. It has been found that the displacement time can be predicted from the inner pipe diameter and the mean flow velocity using a power law relationship. Changing flow velocities does not significantly influence the minimum water consumption and the minimum wastewater generation for rinsing a pipe. Controlling the rinsing step based on a downstream measurement still consumes more water than the minimum requirement to reduce contamination risks. This article presents an innovative algorithm for optimizing the rinse steps with lower water consumption based on the above observations. A case of rinsing a 24 m long straight pipe describes the promising application of the CFD study. The recovery of cleaning agent can be up to 89.3% of the volume and the saving of intermediate rinsing water can be at least 55% compared to the conventional rinse method. The work in this article presents an example showing how to deal with more complex systems in the future.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre, Alfa Laval, Alfa Laval, Carlsberg
Authors: Yang, J. (Intern), Jensen, B. B. B. (Ekstern), Nordkvist, M. (Ekstern), Rasmussen, P. (Ekstern), Gernaey, K. V. (Intern), Krühne, U. (Intern)
Pages: 95-105
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Food Engineering
Volume: 221
ISSN (Print): 0260-8774
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.71 SJR 1.479 SNIP 1.842
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.467 SNIP 1.873 CiteScore 3.58
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.524 SNIP 1.975 CiteScore 3.44
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.348 SNIP 1.908 CiteScore 3.1
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.394 SNIP 1.993 CiteScore 2.84
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.329 SNIP 1.922 CiteScore 2.84
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Charging of carbon thin films in scanning and phase-plate transmission electron microscopy
A systematic study on charging of carbon thin films under intense electron-beam irradiation was performed in a transmission electron microscope to identify the underlying physics for the functionality of hole-free phase plates. Thin amorphous carbon films fabricated by different deposition techniques and single-layer graphene were studied. Clean thin films at moderate temperatures show small negative charging while thin films kept at an elevated temperature are stable and not prone to beam-generated charging. The charging is attributed to electron-stimulated desorption (ESD) of chemisorbed water molecules from the thin-film surfaces and an accompanying change of work function. The ESD interpretation is supported by experimental results obtained by electron-energy loss spectroscopy, hole-free phase plate imaging, secondary electron detection and x-ray photoelectron spectroscopy as well as simulations of the electrostatic potential distribution. The described ESD-based model explains previous experimental findings and is of general interest to any phase-related technique in a transmission electron microscope.

General information
State: Published
Organisations: Center for Electron Nanoscopy, Technical University of Denmark, Karlsruhe Institute of Technology KIT, University of Alberta
Authors: Hettler, S. (Ekstern), Kano, E. (Ekstern), Dries, M. (Ekstern), Gerthsen, D. (Ekstern), Pfaffmann, L. (Ekstern), Bruns, M. (Ekstern), Beleggia, M. (Intern), Malac, M. (Ekstern)
Number of pages: 15
Pages: 252-266
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Ultramicroscopy
Volume: 184
ISSN (Print): 0304-3991
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.82 SJR 1.915 SNIP 1.233
Web of Science (2016): Indexed yes
CO2 Mass transfer model for carbonic anhydrase-enhanced aqueous MDEA solutions

In this study a CO2 mass transfer model was developed for carbonic anhydrase-enhanced MDEA solutions based on a mechanistic kinetic enzyme model. Four different enzyme models were compared in their ability to predict the liquid side mass transfer coefficient at temperatures in the range of 298 to 328 K, solvent concentrations in the range 15 to 50 wt%, CO2 partial pressures up to 50 kPa, solvent loading between 0 and 0.5 mole CO2 per mole MDEA and enzyme concentrations up to 8.5 g/L. The reversible Michaelis Menten model (MR) and the simplified model with product inhibition
by the bicarbonate ion (SP) were able to predict the mass transfer with an absolute average relative deviation of less than 15%. The MR model could account for every influence (solvent concentration, temperature, solvent loading, \(\text{CO}_2\) partial pressure) of the different process conditions on the mass transfer, whereas the SP model is limited to applications with low \(\text{CO}_2\) partial pressure such as CCS from coal burning power plants. Two other models that were also investigated are not suitable for implementation into an absorber column simulation, as they cannot describe the influence of changing solvent loading on the mass transfer.

**General information**

State: Published
Organisations: Department of Chemical and Biochemical Engineering, CERE – Center for Energy Resources Engineering, PROSYS - Process and Systems Engineering Centre, KT Consortium
Pages: 197-208
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Chemical Engineering Journal
Volume: 335
ISSN (Print): 1385-8947

**Ratings:**
- BFI (2017): BFI-level 2
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 6.34
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): CiteScore 5.68
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): CiteScore 4.92
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 1
- Scopus rating (2013): CiteScore 4.59
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): CiteScore 3.92
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): CiteScore 3.96
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 1
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 1
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 2
- Web of Science (2008): Indexed yes
- Web of Science (2007): Indexed yes
- Web of Science (2005): Indexed yes
- Web of Science (2003): Indexed yes
- Web of Science (2001): Indexed yes

Original language: English

Wetted wall column, Carbonic anhydrase, Carbon capture, Enzyme kinetics, MDEA, Carbon dioxide

DOIs:
Compared leaf anatomy and water relations of commercial and traditional Prunus dulcis (Mill.) cultivars under rain-fed conditions

Leaf anatomy and water relations of seven almond (Prunus dulcis Mill.) cultivars, traditional (Bonita, Casanova, Parada, Pegarinhos and Verdeal) and commercial (Ferragnès and Glorieta), grown under rain-fed conditions, were studied. The performed measurements included thickness of leaf tissues, leaf area, leaf mass per unit area, density of leaf tissue, relative water content, succulence, water saturation deficit, water content at saturation and cuticular transpiration rate. Significant differences were observed in most of the studied parameters between cultivars. Overall results indicate that traditional cultivars Bonita, Casanova and Pegarinhos have developed more morphological and structural leaf adaptations to protect against water loss than the other cultivars. If Bonita cultivar relies on reduced leaf area and stomatal density, thicker cell wall and leaf density, Casanova has increased cuticle thickness, while Pegarinhos adds a thicker epidermis and palisade parenchyma to increase protection to water loss. These data is one of the first comparative approaches to the leaf characterization of these cultivars, and should now be combined with physiological and biochemical studies, to further elucidate the adaptation processes of almond cultivars to harmful environments.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, Universidade de Tras-os-Montes e Alto Douro
Authors: Oliveira, I. (Ekstern), Meyer, A. (Intern), Afonso, S. (Ekstern), Gonçalves, B. (Ekstern)
Pages: 226-232
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Scientia Horticulturae
Volume: 229
Issue number: Supplement C
ISSN (Print): 0304-4238
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.03 SJR 0.77 SNIP 1.246
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.725 SNIP 1.365 CiteScore 1.84
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.774 SNIP 1.445 CiteScore 1.82
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.773 SNIP 1.445 CiteScore 2
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.913 SNIP 1.586 CiteScore 1.95
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.844 SNIP 1.608 CiteScore 1.93
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.725 SNIP 1.457
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.789 SNIP 1.773
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.699 SNIP 1.31
Scopus rating (2007): SJR 0.599 SNIP 1.218
Scopus rating (2006): SJR 0.521 SNIP 1.318
Comparison of linear and non-linear monotonicity-based shape reconstruction using exact matrix characterizations

Detecting inhomogeneities in the electrical conductivity is a special case of the inverse problem in electrical impedance tomography, that leads to fast direct reconstruction methods. One such method can, under reasonable assumptions, exactly characterize the inhomogeneities based on monotonicity properties of either the Neumann-to-Dirichlet map (non-linear) or its Fréchet derivative (linear). We give a comparison of the non-linear and linear approach in the presence of measurement noise, and show numerically that the two methods give essentially the same reconstruction in the unit disk domain. For a fair comparison, exact matrix characterizations are used when probing the monotonicity relations to avoid errors from numerical solution to PDEs and numerical integration. Using a special factorization of the Neumann-to-Dirichlet map also makes the non-linear method as fast as the linear method in the unit disk geometry.

General information
State: Published
Organisations: Scientific Computing, Department of Applied Mathematics and Computer Science
Authors: Garde, H. (Intern)
Pages: 33-50
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Inverse Problems in Science and Engineering
Volume: 26
Issue number: 1
ISSN (Print): 1741-5977
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.01 SJR 0.459 SNIP 0.889
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.474 SNIP 0.865 CiteScore 0.83
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.557 SNIP 0.944 CiteScore 0.95
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.479 SNIP 1.065 CiteScore 0.98
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.433 SNIP 0.836 CiteScore 0.77
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.362 SNIP 0.746 CiteScore 0.81
ISI indexed (2011): ISI indexed yes
Comparison of the acidification activities of commercial starter cultures in camel and bovine milk

Camel milk has been reported to be difficult to ferment due to anti-microbial properties. The present study tested eight commercial starter cultures for their ability to grow in camel milk. All investigated cultures were able to acidify camel milk and reached a final pH at a level similar to what was achieved in bovine milk, but the speed of acidification was generally lower in camel milk. This could be due to inhibitory substances in camel milk or due to reduced availability of nutrients. Experiments using mixtures of camel and bovine milk or supplementation with casein hydrolysates allowed us to distinguish between these possibilities. High acidification rates were obtained in camel milk mixed with bovine milk or supplemented with casein hydrolysate. This demonstrates that the cultures are not inhibited by camel milk and we conclude that the growth rates of these cultures in pure camel milk are limited by the rate of proteolysis.

General information
State: Published
Organisations: National Food Institute, Research Group for Gut Microbiology and Immunology, University of Copenhagen, University of Botswana, Haramaya University
Authors: Berhe, T. (Ekstern), Ipsen, R. (Ekstern), Seifu, E. (Ekstern), Kurtu, M. Y. (Ekstern), Eshetu, M. (Ekstern), Hansen, E. B. (Intern)
Pages: 123-127
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: L W T- Food Science and Technology
Volume: 89
ISSN (Print): 0023-6438
Ratings:
Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 3.31
Web of Science (2016): Indexed yes
Scopus rating (2015): CiteScore 3.11
Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 3.12
Web of Science (2014): Indexed yes
Scopus rating (2013): CiteScore 3.11
ISI indexed (2013): ISI indexed yes
Photocatalytic removal of Dairy effluent (DE) was studied by using TiO2-GeO2 and TiO2-CdO nanofibers (NFs), produced by electrospinning method. These NFs were characterized by SEM, TEM and XRD studies. The TiO2-GeO2 and TiO2-CdO NFs were smooth and continuous, with an average diameter of about 273 nm and 256 nm respectively, and held their nanofibrous morphology even after more than 9 h of photocatalytic removal of DE under visible light irradiation. TiO2-GeO2 and TiO2-CdO NFs were effective materials for removal of DE, even after many runs and cycles. TiO2-GeO2 and TiO2-CdO NFs showed a maximum removal of 65% and 75%, respectively, after 3 h. The TiO2-GeO2 and TiO2-CdO NFs also showed excellent results in hydrogen release.

General information
State: Published
Organisations: Research Group for Nano-Bio Science, National Food Institute, Hong Kong Polytechnic University
Authors: Kanjwal, M. A. (Ekstern), Leung, W. W. (Ekstern), Chronakis, I. S. (Intern)
Number of pages: 6
Pages: 160-165
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Separation and Purification Technology
Volume: 192
ISSN (Print): 1383-5866
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.78 SJR 1.023 SNIP 1.394
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.078 SNIP 1.504 CiteScore 3.75
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.257 SNIP 1.54 CiteScore 3.5
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.325 SNIP 1.678 CiteScore 3.62
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Seasonal variations are considered one of the key factors affecting the generation and composition of residual waste. Despite this importance, attempts have not been made to characterize residual household waste consistently by accounting for seasonal variations in waste disposal patterns. To assess differences between seasons and within individual households, we collected residual household waste from the same 101 households in summer, autumn and winter. The waste bags were sorted individually, and residual household waste data (mass and composition) were generated for each household. In total, 3 t of waste were collected, weighed and manually sorted into nine (9) waste fractions. The result of mixed linear model indicated that for this study area, seasonal variations may introduce no significant difference to the mass and composition of residual household waste. However, residual waste generation within a household may change significantly between the seasons. The result also showed that while household size may significantly influence the generation of residual household, the difference in residual household waste composition was not significantly different between household sizes.
Compressed collagen constructs with optimized mechanical properties and cell interactions for tissue engineering applications

In this study, we are introducing a simple, fast and reliable add-in to the technique of plastic compression (PC) to obtain collagen sheets with decreased fibrillar densities, representing improved cell-interactions and mechanical properties. Collagen hydrogels with different initial concentrations (1.64mg/mL-0.41mg/mL) were compressed around an electrospun sheet of PLGA. The scaffolds were then studied as non-seeded, or seeded with 3T3 fibroblast cells and cultured for 7 days. Confocal microscopy and TEM imaging of non-seeded scaffolds showed that by decreasing the share of collagen in the hydrogel formula, collagen sheets with similar thickness but lower fibrous densities were achieved. Nanomechanical characterization of compressed collagen sheets by AFM showed that Young's modulus was inversely proportional to the final concentration of collagen. Similarly, according to SEM, MTS, and cell nuclei counting, all the scaffolds supported cell adhesion and proliferation, whilst the highest metabolic activities and proliferation were seen in the scaffolds with lowest collagen content in hydrogel formula. We conclude that by decreasing the collagen content in the formula of collagen hydrogel for plastic compression, not only a better cell environment and optimum mechanical properties are achieved, but also the application costs of this biopolymer is reduced.

General information
State: Published
Organisations: National Food Institute, Research Group for Nano-Bio Science, Department of Mechanical Engineering, Materials and Surface Engineering, Isfahan University of Technology, Karolinska Institutet
Authors: Ajalloueian, F. (Intern), Nikogeorgos, N. (Intern), Ajalloueian, A. (Ekstern), Fossum, M. (Ekstern), Lee, S. (Intern), Chronakis, I. S. (Intern)
Pages: 158-166
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Biological Macromolecules
Volume: 108
ISSN (Print): 0141-8130
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.84 SJR 0.872 SNIP 1.288
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.815 SNIP 1.316 CiteScore 3.38
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.861 SNIP 1.325 CiteScore 3.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.849 SNIP 1.452 CiteScore 3.48
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.796 SNIP 1.313 CiteScore 2.77
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.689 SNIP 1.21 CiteScore 2.73
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.865 SNIP 1.211
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.799 SNIP 1.189
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.749 SNIP 0.98
Computational Methods to Assess the Production Potential of Bio-Based Chemicals

Elevated costs and long implementation times of bio-based processes for producing chemicals represent a bottleneck for moving to a bio-based economy. A prospective analysis able to elucidate economically and technically feasible product targets at early research phases is mandatory. Computational tools can be implemented to explore the biological and technical spectrum of feasibility, while constraining the operational space for desired chemicals. In this chapter, two different computational tools for assessing potential for bio-based production of chemicals from different perspectives are described in detail. The first tool is GEM-Path: an algorithm to compute all structurally possible pathways from one target molecule to the host metabolome. The second tool is a framework for Modeling Sustainable Industrial Chemicals production (MuSIC), which integrates modeling approaches for cellular metabolism, bioreactor design, upstream/downstream processes, and economic impact assessment. Integrating GEM-Path and MuSIC will play a vital role in supporting early phases of research efforts and guide the policy makers with decisions, as we progress toward planning a sustainable chemical industry.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Global Econometric Modeling, Network Reconstruction in Silico Biology, ALE Technology & Software Development, Research Groups, iLoop
Authors: Campodonico, M. A. (Intern), Sukumara, S. (Intern), Feist, A. M. (Intern), Herrgård, M. J. (Intern)
Pages: 97-116
Publication date: 2018

Host publication information
Title of host publication: Synthetic Metabolic Pathways
Volume: 1671
ISBN (Print): 978-1-4939-7294-4
ISBN (Electronic): 978-1-4939-7295-1
Series: Methods in Molecular Biology
ISSN: 1064-3745
Main Research Area: Technical/natural sciences
Biosustainability, Retrosynthetic pathway design, Techno-economic analysis
DOIs:
10.1007/978-1-4939-7295-1_7
Source: FindIt
Source-ID: 2393668042
Publication: Research - peer-review › Book chapter – Annual report year: 2018

Concentrating molasses distillery wastewater using biomimetic forward osmosis (FO) membranes
Treatment of sugarcane molasses distillery wastewater is challenging due to the presence of complex phenolic compounds (melanoids and polyphenols) having antioxidant properties. Due to zero liquid discharge regulations, Indian
distilleries continue to explore effective treatment options. This work examines the concentration of distillery wastewater by forward osmosis (FO) using aquaporin biomimetic membranes and magnesium chloride hexahydrate (MgCl$_2$.6H$_2$O) as draw solution. The operational parameters viz. feed solution and draw solution flow rate and draw solution concentration were optimized using 10% v/v melanoidins model feed solution. This was followed by trials with distillery wastewater. Under the conditions of this work, feed and draw flow rates of 1 L/min and draw solution concentration of 2M MgCl$_2$.6H$_2$O for melanoidins model solution and 3M MgCl$_2$.6H$_2$O for distillery wastewater were optimal for maximum rejection. Rejection of 90% melanoidins, 96% antioxidant activity and 84% COD was obtained with melanoidins model feed, with a corresponding water flux of 6.3 L/m$^2$h. With as-received distillery wastewater, the rejection was similar (85–90%) to the melanoidins solution, but the water flux was lower (2.8 L/m$^2$h). Water recovery from distillery wastewater over 24 h study period was higher with FO (70%) than reported for RO (35–45%). Repeated use of the FO membrane over five consecutive 24 h cycles with fresh feed and draw solutions and periodic cleaning showed consistent average water flux and rejection of the feed constituents.

**General information**

State: Published
Organisations: Department of Environmental Engineering, Water Technologies, TERI University, University of Maribor
Authors: Singh, N. (Ekstern), Petrinic, I. (Ekstern), Hélix-Nielsen, C. (Intern), Basu, S. (Ekstern), Balakrishnan, M. (Ekstern)
Pages: 271-280
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication Information**

Journal: Water Research
Volume: 130
ISSN (Print): 0043-1354
Ratings:
- BFI (2017): BFI-level 2
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 7.49 SJR 2.629 SNIP 2.558
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 2.689 SNIP 2.507 CiteScore 6.63
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 2.957 SNIP 2.727 CiteScore 6.13
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 2
- Scopus rating (2013): SJR 2.956 SNIP 2.693 CiteScore 6.02
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 2.966 SNIP 2.456 CiteScore 5.15
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 2.867 SNIP 2.374 CiteScore 5.43
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 2.582 SNIP 2.196
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 2.319 SNIP 2.225
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 2
- Scopus rating (2008): SJR 2.065 SNIP 2.19
Considering built environment and spatial correlation in modelling pedestrian injury severity

This study looks at mitigating and aggravating factors that are associated with the injury severity of pedestrians when they have crashes with another road user and overcomes existing limitations in the literature by posing attention on the built environment and considering spatial correlation across crashes. Reports for 6539 pedestrian crashes occurred in Denmark between 2006 and 2015 were merged with geographic information system resources containing detailed information about built environment and exposure at the crash locations. A linearised spatial logit model estimated the probability of pedestrians to sustain a severe or fatal injury conditional on the occurrence of a crash with another road user. This study confirms previous findings about older pedestrians and intoxicated pedestrians being the most vulnerable road users, and crashes with heavy vehicles and in roads with higher speed limits being related to the most severe outcomes. This study provides also novel perspectives by showing positive spatial correlation of crashes with the same severity outcome and emphasising the role of the built environment in the proximity of the crash. This study emphasises the need for thinking about traffic calming measures, illumination solutions, road maintenance programs and speed limit reductions. Moreover, this study emphasises the role of the built environment, as shopping areas, residential areas, and walking traffic density are positively related to a reduction in pedestrian injury severity. Often, these areas have in common a larger pedestrian mass that is more likely to make other road users more aware and attentive, while the same does not seem to apply to areas with lower pedestrian density.

General information
State: Published
Organisations: Department of Management Engineering, Transport DTU, Transport Modelling, University of Queensland, Technical University of Denmark
Authors: Prato, C. G. (Ekstern), Kaplan, S. (Intern), Patrier, A. (Ekstern), Rasmussen, T. K. (Intern)
Pages: 88-93
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Traffic Injury Prevention
Volume: 19
Issue number: 1
ISSN (Print): 1538-9588
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Variability in the dynamic response of assembled structures can arise due to variations in the contact conditions between the parts that conform them. Contact conditions are difficult to model accurately due to randomness in physical properties such as contact surface, load distribution or geometric details. Those properties can vary for a given structure due to the assembly and disassembly process, and also across nominally equal items that are produced in series. This work focuses on modeling the contact between small light-weight plastic pieces such as those used in the hearing aid industry, where the vibrational behavior of the structures within the hearing frequency range is critical for the performance of the devices. A procedure to localize the most probable contact areas and determine the most sensitive contact points with respect to variations in the modes of vibration of the assembled plastic parts is presented. The procedure uses a gradient-based optimization strategy that updates the stiffness constants of a number of contact spring elements to match experimental data. By identifying the contact parameters for several sets of experimental data measured under varying contact conditions, the variability of the contact parameters can be characterized.
Converting mesophilic upflow sludge blanket (UASB) reactors to thermophilic by applying axenic methanogenic culture bioaugmentation

The application of thermophilic conditions in anaerobic digesters leads to higher methane production rates and better sanitation of the effluents compared to mesophilic operation. However, an increase in operational temperature is challenging due to the tremendous selective pressure imposed on the microbial consortium. The adaptation of microbial community to a new environment or condition can be accelerated by a process known as “bioaugmentation” or “microbial community manipulation”, during which exogenous microorganisms harbouring specific metabolic activities are introduced to the reactor. The aim of the current study was to rapidly convert the operational temperature of up-flow anaerobic sludge blanket (UASB) reactors from mesophilic to thermophilic conditions by applying microbial community manipulation techniques. Three different bioaugmentation strategies were compared and it was proven that the injection of axenic methanogenic culture was the most efficient approach leading to improved biomethanation process with 40% higher methane production rate compared to the control reactor. Microbial community analyses revealed that during bioaugmentation, the exogenous hydrogenotrophic methanogen could be encapsulated in granular structures and concomitantly promote the growth of syntrophic fatty acid oxidizing bacteria. The results derived from the current study indicated that microbial community manipulation is an efficient alternative method to speed up transition of UASB reactors from mesophilic to thermophilic conditions.

General information
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering, University of Padova
Authors: Zhu, X. (Intern), Treu, L. (Intern), Kougias, P. G. (Intern), Campanaro, S. (Ekstern), Angelidaki, I. (Intern)
Pages: 508-516
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Chemical Engineering Journal
Volume: 332
ISSN (Print): 1385-8947
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.34
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 5.68
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 4.59
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.92
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 3.96
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Web of Science (2009): Indexed yes
CRISPR-Cas9 Toolkit for Actinomycete Genome Editing

Bacteria of the order Actinomycetales are one of the most important sources of bioactive natural products, which are the source of many drugs. However, many of them still lack efficient genome editing methods, some strains even cannot be manipulated at all. This restricts systematic metabolic engineering approaches for boosting known and discovering novel natural products. In order to facilitate the genome editing for actinomycetes, we developed a CRISPR-Cas9 toolkit with high efficiency for actinomyces genome editing. This basic toolkit includes a software for spacer (sgRNA) identification, a system for in-frame gene/gene cluster knockout, a system for gene loss-of-function study, a system for generating a random size deletion library, and a system for gene knockdown. For the latter, a uracil-specific excision reagent (USER) cloning technology was adapted to simplify the CRISPR vector construction process. The application of this toolkit was successfully demonstrated by perturbation of genomes of Streptomyces coelicolor A3(2) and Streptomyces collinus Tü 365. The CRISPR-Cas9 toolkit and related protocol described here can be widely used for metabolic engineering of actinomycetes.

Crosslinking of milk proteins by microbial transglutaminase: Utilization in functional yogurt products

Key modifying roles of microbial transglutaminase (MTGase) in the development of innovative probiotic and non-probiotic yogurts with improved functional and quality characteristics have been comprehensively reviewed. MTGase crosslinking reactions with milk proteins stabilize the three-dimensional structure of yogurt. Yogurts treated with MTGase showed decreased syneresis, increased water-holding capacity and viscosity, homogeneous structure, desired texture, and physicochemical high stability during storage time. The utilization of MTGase does not affect negatively the sensory attributes of yogurt. Inclusion of MTGase into acidified yogurt drinks reduces the serum separation with an improved viscoelasticity. This multi-functional enzyme also protects the viable starter and probiotic cells in yogurts. Further studies are required to assess the viability of probiotics in yogurts protected using MTGase-mediated microcapsules.
Decarbonising the Finnish Transport Sector by 2050: Electricity or Biofuels?

Finland has set ambitious long-term targets, which aim to reduce greenhouse gas emissions from the transport sector and the whole energy system by 2050. By utilising the energy system model STREAM, which includes the power, heat and transport sectors, this paper develops two alternative scenarios for the transport sector by 2050—one with a high percentage of electric vehicles (EV) and another with a high percentage of biofuels (BIO), and compares the scenario results with a known Carbon-Neutral Scenario (CNS) which is adopted from the Nordic Energy Technology Perspective (IEA in Nordic energy technology perspective—pathways to a carbon-neutral energy future, 2013a). The socio-economic value of the total system cost is computed and the system integration of the transport sector with the electricity and heating sectors is simulated with an hourly time resolution. This study finds that a Finnish transport sector with a high share of EV by 2050 leads to the lowest total annual system cost of the scenarios and yields a reduction by 2.3% compared to CNS. While the transport configuration in the BIO scenario achieves the highest total annual system cost which is 0.4% higher than CNS. The robustness of the results is tested through a sensitivity analysis which shows that the costs (investment and maintenance) of biodiesel cars and EV are the most sensitive parameters in the comparative analysis of the scenarios.

Design, Engineering, and Characterization of Prokaryotic Ligand-Binding Transcriptional Activators as Biosensors in Yeast

In cell factory development, screening procedures, often relying on low-throughput analytical methods, are lagging far behind diversity generation methods. This renders the identification and selection of the best cell factory designs tiresome and costly, conclusively hindering the manufacturing process. In the yeast Saccharomyces cerevisiae, implementation of allosterically regulated transcription factors from prokaryotes as metabolite biosensors has proven a valuable strategy to alleviate this screening bottleneck. Here, we present a protocol to select and incorporate prokaryotic transcriptional activators as metabolite biosensors in S. cerevisiae. As an example, we outline the engineering and characterization of the LysR-type transcriptional regulator (LTTR) family member BenM from Acinetobacter sp. ADP1 for monitoring accumulation of cis,cis-muconic acid, a bioplast precursor, in yeast by means of flow cytometry.
Direct observation of oxygen configuration on individual graphene oxide sheets

Graphene oxide (GO) is an interesting material that has the potential for a wide range of applications. Critical for these applications are the type of oxygen bond and its spatial distribution on the individual GO sheets. This distribution is not yet well understood. Few techniques offer a resolution high enough to unambiguously identify oxygen configuration. We used a new, label free spectroscopic technique to map oxygen bonding on GO, with spatial resolution of nanometres and high chemical specificity. AFM-IR, atomic force microscopy coupled with infrared spectroscopy, overcomes conventional IR diffraction limits, producing IR spectra from specific points as well as chemical maps that are coupled to topography. We have directly observed oxygen bonding preferentially on areas where graphene is folded, in discrete domains and on edges of GO. From these observations, we propose an updated structural model for GO, with C=O on its edge and plane, which confirms parts of earlier proposed models. The results have interesting implications. Determining atomic position and configuration from precise imaging offers the possibility to link nanoscale structure and composition with material function, paving the way for targeted tethering of ions, polymers and biomaterials.
Dissimilar pigment regulation in *Serpula lacrymans* and *Paxillus involutus* during inter-kingdom interactions.

Production of basidiomycete atromentin-derived pigments like variegatic acid (pulvinic acid-type) and involutin (diarylcyclopentenone) from the brown-rotter *Serpula lacrymans* and the ectomycorrhiza-forming *Paxillus involutus*, respectively, is induced by complex nutrition, and in the case of *S. lacrymans*, bacteria. Pigmentation in *S. lacrymans* was stimulated by 13 different bacteria and cell-wall-damaging enzymes (lytic enzymes and proteases), but not by lysozyme or mechanical damage. The use of protease inhibitors with *Bacillus subtilis* or heat-killed bacteria during co-culturing with *S. lacrymans* significantly reduced pigmentation indicating that enzymatic hyphal damage and/or released peptides, rather than mechanical injury, was the major cause of systemic pigment induction. Conversely, no significant pigmentation by bacteria was observed from *P. involutus*. We found additional putative transcriptional composite elements of atromentin synthetase genes in *P. involutus* and other ectomycorrhiza-forming species that were absent from *S. lacrymans* and other brown-rotters. Variegatic and its precursor xerocomic acid, but not involutin, inhibited swarming and colony biofilm spreading of *Bacillus subtilis*, but did not kill *B. subtilis*. We suggest that dissimilar pigment regulation by fungal lifestyle was a consequence of pigment bioactivity and additional promoter motifs. The focus on basidiomycete natural product gene induction and regulation will assist in future studies to determine global regulators, signalling pathways and associated transcription factors of basidiomycetes.

**General information**

State: Accepted/In press
Organisations: Department of Biotechnology and Biomedicine, Hans Knöll Institute, Friedrich-Schiller-Universität Jena, Leibniz Institute for Natural Product Research and Infection Biology - Hans Knoll Institute (HKI), Jena

BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.292 SNIP 2.137 CiteScore 6.54
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.525 SNIP 2.135 CiteScore 5.95
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.174 SNIP 2.073 CiteScore 5.23
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.404 SNIP 2.055
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.132 SNIP 2.119
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 2.128 SNIP 1.96
Scopus rating (2007): SJR 1.845 SNIP 1.828
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.786 SNIP 1.862
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.426 SNIP 1.699
Scopus rating (2004): SJR 1.514 SNIP 1.906
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.595 SNIP 1.749
Scopus rating (2002): SJR 1.775 SNIP 1.813
Scopus rating (2001): SJR 1.304 SNIP 1.433
Scopus rating (2000): SJR 1.032 SNIP 1.342
Scopus rating (1999): SJR 1.099 SNIP 1.35

Original language: English
DOIs: 10.1016/j.carbon.2017.10.100
Source: Findit
Source-ID: 2392913982
Publication: Research - peer-review › Journal article – Annual report year: 2018
Distribution and timing of spawning Faroe Plateau cod in relation to warming spring temperatures

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Marine Ecology and Oceanography, Section for Oceans and Arctic, University of the Faroe Islands, Faroe Marine Research Institute
Authors: Maj Ottosen, K. (Intern), Steingrund, P. (Ekstern), Magnussen, E. (Ekstern), Payne, M. (Intern)
Pages: 14-23
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Fisheries Research
Volume: 198
ISSN (Print): 0165-7836
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.21 SJR 1.12 SNIP 1.136
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.067 SNIP 1.133 CiteScore 2.01
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.105 SNIP 1.312 CiteScore 2.17
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.037 SNIP 1.173 CiteScore 1.85
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.93 SNIP 1.177 CiteScore 1.78
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.154 SNIP 1.135 CiteScore 1.7
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.041 SNIP 1.1
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.985 SNIP 1.065
Web of Science (2009): Indexed yes
Double-Loop Health Technology: Enabling Socio-technical Design of Personal Health Technology in Clinical Practice

Personal health technology is rapidly emerging as a response to the challenges associated with significant increase in chronic noncommunicable diseases. The overall design paradigm behind most of these applications is to manually and automatically sample data from sensors and smartphones and use this to provide patients with an awareness of their illness and give recommendation for treatment, care, and healthy living. Few of these systems are, however, designed to be part of a complex socio-technical care and treatment processes in existing healthcare systems and clinical pathways. In this chapter, we present a case of designing personal health technology for mental health, which is integrated into hospital-based treatment. This system helps patients to manage their disease by tracking and correlation behavior and disease progression and provide feedback to them, while also deployed as part of a clinical outpatient treatment. Hence, clinicians are “in the loop” and can monitor and provide feedback to patients. The chapter outlines the case and discusses lessons learned from it with respect to the socio-technical design of personal health technologies to be embedded as part of clinical treatment.

Ecodesign Implementation and LCA

Ecodesign is a proactive product development approach that integrates environmental considerations into the early stages of the product development process so to improve the environmental performance of products. In this chapter, the ecodesign concept will be discussed, in terms of its implementation into manufacturing companies. Existing methods and
tools for ecodesign implementation will be described, focusing on a multifaceted approach to environmental improvement through product development. Additionally, the use of LCA in an ecodesign implementation context will be further described in terms of the challenges and opportunities, together with the discussion of a selection of simplified LCA tools. Finally, a seven-step approach for ecodesign implementation which has been applied by several companies will be described.

General information
State: Published
Organisations: Department of Mechanical Engineering, Engineering Design and Product Development
Authors: McAloone, T. C. (Intern), Pigosso, D. C. A. (Intern)
Pages: 545-576
Publication date: 2018

Host publication information
Title of host publication: Life Cycle Assessment : Theory and Practice
Publisher: Springer
Editors: Z. Hauschild, M., K. Rosenbaum, R., Irving Olsen , S.
ISBN (Print): 978-3-319-56474-6
ISBN (Electronic): 978-3-319-56475-3
Main Research Area: Technical/natural sciences
DOIs: 10.1007/978-3-319-56475-3_23
Source: FindIt
Source-ID: 2373522907
Publication: Research - peer-review › Book chapter – Annual report year: 2018

Editorial: Operational Research – Making an Impact
The origins of Operational Research are well known. OR developed – in particular in the UK - in the early 1940s as an area in which science was applied and new research inspired by real-world challenges, primarily in military analysis and in industrial production. As OR developed, a community of academic OR scholars became established alongside OR practitioners and this has led quite naturally to the situation that, over time, much of the OR academic literature is inspired by theoretical development rather than by immediate application.

General information
State: Published
Organisations: Department of Management Engineering, Management Science, Operations Research, University of Strathclyde
Authors: Belton, V. (Ekstern), Bedford, T. (Ekstern), Pisinger, D. (Intern)
Pages: 797-798
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: European Journal of Operational Research
Volume: 264
Issue number: 3
ISSN (Print): 0377-2217
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.83 SJR 2.505 SNIP 2.339
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.334 SNIP 2.412 CiteScore 3.59
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.186 SNIP 2.485 CiteScore 3.21
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.346 SNIP 2.735 CiteScore 3.25
ISI indexed (2013): ISI indexed yes
Effect of different ammonia sources on aceticlastic and hydrogenotrophic methanogens

Ammonium chloride ($\text{NH}_4\text{Cl}$) was usually used as a model ammonia source to simulate ammonia inhibition during anaerobic digestion (AD) of nitrogen-rich feedstocks. However, ammonia in AD originates mainly from degradation of proteins, urea and nucleic acids, which is distinct from $\text{NH}_4\text{Cl}$. Thus, in this study, the inhibitory effect of a “natural” ammonia source (urea) and $\text{NH}_4\text{Cl}$, on four pure methanogenic strains (aceticlastic: Methanosarcina thermophila, Methanosarcina barkeri; hydrogenotrophic: Methanoculleus bourgensis, Methanoculleus thermophilus), was assessed under mesophilic ($37^\circ\text{C}$) and thermophilic ($55^\circ\text{C}$) conditions. The results showed that urea hydrolysis increased pH significantly to unsuitable levels for methanogenic growth, while $\text{NH}_4\text{Cl}$ had a negligible effect on pH. After adjusting initial pH to 7 and 8, urea was significantly stronger inhibitor with longer lag phases to methanogenesis compared to $\text{NH}_4\text{Cl}$. Overall, urea seems to be more toxic on both aceticlastic and hydrogenotrophic methanogens compared to $\text{NH}_4\text{Cl}$ under the same total and free ammonia levels.

General information
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering, Technical University of Denmark
Authors: Tian, H. (Intern), Fotidis, I. (Intern), Kissas, K. (Ekstern), Angelidaki, I. (Intern)
Pages: 390-397
Publication date: 2018
Effect of porosity on the ferroelectric and piezoelectric properties of \((\text{Ba}_{0.85}\text{Ca}_{0.15})(\text{Zr}_{0.1}\text{Ti}_{0.9})\text{O}_3\) piezoelectric ceramics

The ferroelectric and piezoelectric properties of \((\text{Ba}_{0.85}\text{Ca}_{0.15})(\text{Zr}_{0.1}\text{Ti}_{0.9})\text{O}_3\) (BCZT) ceramics were measured as a function of porosity. Porous BCZT ceramics were fabricated using the sacrificial fugitive technique. Two different pore morphologies were induced by adding polymeric microspheres and fibres as the pore-forming agents. Increasing porosity led to decreasing ferroelectric and piezoelectric properties due to a reduction of polarisable BCZT ceramic available. With the benefit of being a lead-free piezoelectric material, porous BCZT ceramics may be considered for acoustic impedance matching in actuator and sensor applications, and also as a functional component in biomedical applications.
Effect of spherical porosity on co-fired dense/porous zirconia bi-layers cambering

Geometrical instability leading to cambering is recorded during co-sintering of zirconia dense/porous bi-layered planar structures. Sintering strain in the bi-layers rises mainly from mismatch between the different porosity volume fractions at the layers and their interface. In this paper, we analyze the model case of dense taped of 8 mol% Y₂O₃-stabilized ZrO₂ laminated on ca. 400 μ thick 3 mol% Y₂O₃-doped zirconia porous tapes, with homogenous spherical porosity of 13 vol%, 46 vol%, and 54 vol%. Sintering stress during densification is evaluated from the shrinkage rates and viscoelastic behavior during sintering by thermo-mechanical analysis, using cyclic loading dilatometry. The camber development of the bi-layers is measured by in-situ optical dilatometry. In accordance with the model prediction, cambering can be controlled tuning the porosity while achieving a synergetic effect between densification and formation of open porosity at the bilayers.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Ceramic Engineering & Science, Mixed Conductors, Universidade Federal do ABC
Authors: Teocoli, F. (Intern), Marani, D. (Ekstern), Kiebach, W. (Intern), Esposito, V. (Intern)
Pages: 173-179
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: European Ceramic Society. Journal
Volume: 38
Issue number: 1
ISSN (Print): 0955-2219
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.25 SJR 1.135 SNIP 1.776
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.15 SNIP 1.841 CiteScore 3.03
Effect of ultrasound treatments on functional properties and structure of millet protein concentrate

In this study, the effect of high power ultrasound (US) probe in varying intensities and times (18.4, 29.58, and 73.95W/cm² for 5, 12.5 and 20min respectively) on functional properties of millet protein concentrate (MPC) was investigated, and also the structural properties of best modified treatment were evaluated by FTIR, DSC, Zeta potential and SDS-PAGE techniques. The results showed the solubility in all US treated MPC was significantly (p<.05) higher than those of the native MPC. Foaming capacity of native MPC (271.03±4.51ml) was reduced after US treatments at low intensities (82.37±5.51ml), but increased upon US treatments at high intensities (749.7±2ml). In addition, EAI and ES increased after US treatments. One of the best US treatments that can improve the functional properties of MPC was 73.95W/cm² for 12.5min that resulted in reduction of molecular weight and increase nearly 36% in the negative surface charge that was confirmed by SDS-page and Zeta potential results, respectively.
Effects of menopause and high-intensity training on insulin sensitivity and muscle metabolism

To investigate peripheral insulin sensitivity and skeletal muscle glucose metabolism in premenopausal and postmenopausal women, and evaluate whether exercise training benefits are maintained after menopause. Sedentary, healthy, normal-weight, late premenopausal (n=21), and early postmenopausal (n=20) women were included in a 3-month high-intensity exercise training intervention. Body composition was assessed by magnetic resonance imaging and dual-energy x-ray absorptiometry, whole body glucose disposal rate (GDR) by hyperinsulinemic euglycemic clamp (40 mU/m/min), and femoral muscle glucose uptake by positron emission tomography/computed tomography, using the glucose analog fluorodeoxyglucose, expressed as estimated metabolic rate (eMR). Insulin signaling was investigated in muscle biopsies. Age difference between groups was 4.5 years, and no difference was observed in body composition. Training increased lean body mass (estimate [95% confidence interval] 0.5 [0.2-0.9]kg, P
Effects of new bus and rail rapid transit systems – an international review

Cities worldwide are implementing modern transit systems to improve mobility in the increasingly congested metropolitan areas. Despite much research on the effects of such systems, a comparison of effects across transit modes and countries has not been studied comprehensively. This paper fills this gap in the literature by reviewing and comparing the effects obtained by 86 transit systems around the world, including Bus Rapid Transit (BRT), Light Rail Transit (LRT), metro and heavy rail transit systems. The analysis is twofold by analysing (i) the direct operational effects related to travel time, ridership and modal shifts, and (ii) the indirect strategic effects in terms of effects on property values and urban development. The review confirms the existing literature suggesting that BRT can attract many passengers if travel time reductions are significantly high. This leads to attractive areas surrounding the transit line with increasing property values. Such effects are traditionally associated with attractive rail-based public transport systems. However, a statistical comparison of 41 systems did not show significant deviations between effects on property values resulting from BRT, LRT...
and metro systems, respectively. Hence, this paper indicates that large strategic effects can be obtained by implementing BRT systems at a much lower cost.

**General information**

State: Published
Organisations: Department of Management Engineering, Transport DTU, Transport Modelling
Authors: Ingvardson, J. B. (Intern), Nielsen, O. A. (Intern)
Pages: 96-116
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Transport Reviews
Volume: 38
Issue number: 1
ISSN (Print): 0144-1647
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.79 SJR 2.09 SNIP 2.371
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.75 SNIP 2.068 CiteScore 3.02
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.942 SNIP 2.447 CiteScore 3.18
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.63 SNIP 1.83 CiteScore 2.58
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.509 SNIP 1.787 CiteScore 2.29
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.421 SNIP 1.921 CiteScore 2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.998 SNIP 1.874
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.867 SNIP 1.558
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.781 SNIP 1.142
Scopus rating (2006): SJR 0.604 SNIP 1.22
Scopus rating (2005): SJR 0.715 SNIP 1.216
Scopus rating (2004): SJR 0.43 SNIP 1.05
Scopus rating (2003): SJR 0.614 SNIP 0.541
Scopus rating (2002): SJR 0.315 SNIP 1.068
Scopus rating (2001): SJR 0.377 SNIP 0.972
Scopus rating (2000): SJR 0.903 SNIP 2.023
Scopus rating (1999): SJR 0.438 SNIP 1.529
Original language: English
DOIs:
Efficacy and safety of simultaneous vaccination with two modified live virus vaccines against porcine reproductive and respiratory syndrome virus types 1 and 2 in pigs

The objective of the study was to compare responses of pigs vaccinated with a PRRS MLV vaccine against PRRSV-1 or PRRSV-2 with the responses of pigs vaccinated simultaneously with both vaccines. Furthermore, the efficacy of the two PRRSV MLV vaccination strategies was assessed following challenge. The experimental design included four groups of 4-weeks old SPF-pigs. On day 0 (DPV0), groups 1–3 (N = 18 per group) were vaccinated with modified live virus vaccines (MLV) containing PRRSV-1 virus (VAC-T1), PRRSV-2 virus (VAC-T2) or both (VAC-T1T2). One group was left unvaccinated (N = 12). On DPV 62, the pigs from groups 1–4 were mingled in new groups and challenged (DPC 0) with PRRSV-1, subtype 1, PRRSV-1, subtype 2 or PRRSV-2. On DPC 13/14 all pigs were necropsied. Samples were collected after vaccination and challenge. PRRSV was detected in all vaccinated pigs and the majority of the pigs were positive until DPV 28, but few of the pigs were still viremic 62 days after vaccination. Virus was detected in nasal swabs until DPV 7–14. No overt clinical signs were observed after challenge. PRRSV-2 vaccination resulted in a clear reduction in viral load in serum after PRRSV-2 challenge, whereas there was limited effect on the viral load in serum following challenge with the PRRSV-1 strains. Vaccination against PRRSV-1 had less impact on viremia following challenge. The protective effects of simultaneous vaccination with PRRSV Type 1 and 2 MLV vaccines and single PRRS MLV vaccination were comparable. None of the vaccines decreased the viral load in the lungs at necropsy. In conclusion, simultaneous vaccination with MLV vaccines containing PRRSV-1 and PRRSV-2 elicited responses comparable to single vaccination and the commercial PRRSV vaccines protected only partially against challenge with heterologous strains. Thus, simultaneous administration of the two vaccines is an option in herds with both PRRSV types.

General information

State: Published
Organisations: National Veterinary Institute, Virology, Innate Immunology, Danish Agriculture and Food Council, Warsaw University of Life Sciences, Technical University of Denmark
Authors: Kristensen, C. S. (Ekstern), Kvisgaard, L. K. (Intern), Pawlowski, M. (Intern), Holmegaard Carlsen, S. (Ekstern), Hjulsager, C. K. (Intern), Heegaard, P. M. H. (Intern), Batner, A. (Intern), Stadejek, T. (Ekstern), Haugegaard, S. (Ekstern), Larsen, L. (Intern)
Pages: 227-236
Publication date: 2018
Main Research Area: Technical/natural sciences
Efficiency enhancement of InGaN amber MQWs using nanopillar structures

We have investigated the use of nanopillar structures on high indium content InGaN amber multiple quantum well (MQW) samples to enhance the emission efficiency. A significant emission enhancement was observed which can be attributed to the enhancement of internal quantum efficiency and light extraction efficiency. The size-dependent strain relaxation effect was characterized by photoluminescence, Raman spectroscopy and time-resolved photoluminescence measurements. In addition, the light extraction efficiency of different MQW samples was studied by finite-different time-domain simulations. Compared to the as-grown sample, the nanopillar amber MQW sample with a diameter of 300 nm has demonstrated an emission enhancement by a factor of 23.8.

General information
State: Published
Organisations: Department of Photonics Engineering, Diode Lasers and LED Systems, Department of Micro- and Nanotechnology, Nanoprobes, King Abdullah University of Science and Technology, Sun Yat-Sen University
Authors: Ou, Y. (Intern), Iida, D. (Ekstern), Liu, J. (Ekstern), Wu, K. (Intern), Ohkawa, K. (Ekstern), Boisen, A. (Intern), Petersen, P. M. (Intern), Ou, H. (Intern)
Pages: 317-322
Electric bus fleet size and mix problem with optimization of charging infrastructure

Battery electric buses are seen as a well-suited technology for the electrification of road-based public transport. However, the transition process from conventional diesel to electric buses faces major hurdles caused by range limitations and required charging times of battery buses. This work addresses these constraints and provides a methodology for the cost-optimized planning of depot charging battery bus fleets and their corresponding charging infrastructure. The defined problem covers the scheduling of battery buses, the fleet composition, and the optimization of charging infrastructure in a joint process. Vehicle schedule adjustments are monetized and evaluated together with the investment and operational costs of the bus system. The resulting total cost of ownership enables a comparison of technical alternatives on a system level, which makes this approach especially promising for feasibility studies comprising a wide range of technical concepts. Two scenarios of European cities are analyzed and discussed in a case study, revealing that the cost structure is influenced significantly by the considered bus type and its technical specifications. For example, the total energy consumption of the considered lightweight bus is up to 32% lower than the total consumption of the high range bus, although the deadheading mileage increases. However, the total costs of ownership for operating both bus types are relatively close, due to the increased fleet size and driver expenses required for the lightweight bus system. The case study furthermore reveals that a mixed fleet of different bus types could be advantageous depending on the operational characteristics of the bus route.

General information

State: Published
Organisations: Department of Management Engineering, Management Science, Operations Research, Transport DTU, Operations Management, RWTH Aachen University
Authors: Rogge, M. (Ekstern), van der Hurk, E. (Intern), Larsen, A. (Intern), Sauer, D. U. (Ekstern)
Pages: 282-295
Publication date: 2018
Main Research Area: Technical/natural sciences

Electric bus fleet size and mix problem with optimization of charging infrastructure

Battery electric buses are seen as a well-suited technology for the electrification of road-based public transport. However, the transition process from conventional diesel to electric buses faces major hurdles caused by range limitations and required charging times of battery buses. This work addresses these constraints and provides a methodology for the cost-optimized planning of depot charging battery bus fleets and their corresponding charging infrastructure. The defined problem covers the scheduling of battery buses, the fleet composition, and the optimization of charging infrastructure in a joint process. Vehicle schedule adjustments are monetized and evaluated together with the investment and operational costs of the bus system. The resulting total cost of ownership enables a comparison of technical alternatives on a system level, which makes this approach especially promising for feasibility studies comprising a wide range of technical concepts. Two scenarios of European cities are analyzed and discussed in a case study, revealing that the cost structure is influenced significantly by the considered bus type and its technical specifications. For example, the total energy consumption of the considered lightweight bus is up to 32% lower than the total consumption of the high range bus, although the deadheading mileage increases. However, the total costs of ownership for operating both bus types are relatively close, due to the increased fleet size and driver expenses required for the lightweight bus system. The case study furthermore reveals that a mixed fleet of different bus types could be advantageous depending on the operational characteristics of the bus route.

General information

State: Published
Organisations: Department of Management Engineering, Management Science, Operations Research, Transport DTU, Operations Management, RWTH Aachen University
Authors: Rogge, M. (Ekstern), van der Hurk, E. (Intern), Larsen, A. (Intern), Sauer, D. U. (Ekstern)
Pages: 282-295
Publication date: 2018
Main Research Area: Technical/natural sciences

Electric bus fleet size and mix problem with optimization of charging infrastructure

Battery electric buses are seen as a well-suited technology for the electrification of road-based public transport. However, the transition process from conventional diesel to electric buses faces major hurdles caused by range limitations and required charging times of battery buses. This work addresses these constraints and provides a methodology for the cost-optimized planning of depot charging battery bus fleets and their corresponding charging infrastructure. The defined problem covers the scheduling of battery buses, the fleet composition, and the optimization of charging infrastructure in a joint process. Vehicle schedule adjustments are monetized and evaluated together with the investment and operational costs of the bus system. The resulting total cost of ownership enables a comparison of technical alternatives on a system level, which makes this approach especially promising for feasibility studies comprising a wide range of technical concepts. Two scenarios of European cities are analyzed and discussed in a case study, revealing that the cost structure is influenced significantly by the considered bus type and its technical specifications. For example, the total energy consumption of the considered lightweight bus is up to 32% lower than the total consumption of the high range bus, although the deadheading mileage increases. However, the total costs of ownership for operating both bus types are relatively close, due to the increased fleet size and driver expenses required for the lightweight bus system. The case study furthermore reveals that a mixed fleet of different bus types could be advantageous depending on the operational characteristics of the bus route.

General information

State: Published
Organisations: Department of Management Engineering, Management Science, Operations Research, Transport DTU, Operations Management, RWTH Aachen University
Authors: Rogge, M. (Ekstern), van der Hurk, E. (Intern), Larsen, A. (Intern), Sauer, D. U. (Ekstern)
Pages: 282-295
Publication date: 2018
Main Research Area: Technical/natural sciences

Electric bus fleet size and mix problem with optimization of charging infrastructure

Battery electric buses are seen as a well-suited technology for the electrification of road-based public transport. However, the transition process from conventional diesel to electric buses faces major hurdles caused by range limitations and required charging times of battery buses. This work addresses these constraints and provides a methodology for the cost-optimized planning of depot charging battery bus fleets and their corresponding charging infrastructure. The defined problem covers the scheduling of battery buses, the fleet composition, and the optimization of charging infrastructure in a joint process. Vehicle schedule adjustments are monetized and evaluated together with the investment and operational costs of the bus system. The resulting total cost of ownership enables a comparison of technical alternatives on a system level, which makes this approach especially promising for feasibility studies comprising a wide range of technical concepts. Two scenarios of European cities are analyzed and discussed in a case study, revealing that the cost structure is influenced significantly by the considered bus type and its technical specifications. For example, the total energy consumption of the considered lightweight bus is up to 32% lower than the total consumption of the high range bus, although the deadheading mileage increases. However, the total costs of ownership for operating both bus types are relatively close, due to the increased fleet size and driver expenses required for the lightweight bus system. The case study furthermore reveals that a mixed fleet of different bus types could be advantageous depending on the operational characteristics of the bus route.
Electron–phonon interaction and transport properties of metallic bulk and monolayer transition metal dichalcogenide TaS$_2$

Transition metal dichalcogenides have recently emerged as promising two-dimensional materials with intriguing electronic properties. Existing calculations of intrinsic phonon-limited electronic transport so far have concentrated on the semiconducting members of this family. In this paper we extend these studies by investigating the influence of electron–phonon coupling on the electronic transport properties and band renormalization of prototype inherent metallic bulk and monolayer TaS$_2$. Based on density functional perturbation theory and semi-classical Boltzmann transport calculations, promising room temperature mobilities and sheet conductances are found, which can compete with other established 2D materials, leaving TaS$_2$ as promising material candidate for transparent conductors or as atomically thin interconnects. Throughout the paper, the electronic and transport properties of TaS$_2$ are compared to those of its
isoelectronic counterpart TaSe$_2$ and additional informations to the latter are given. We furthermore comment on the conventional superconductivity in TaS$_2$, where no phonon-mediated enhancement of $T_c$ in the monolayer compared to the bulk state was found.

**General information**

**State:** Published

**Organisations:** Department of Physics, Theoretical Atomic-scale Physics

**Authors:** Hinsche, N. F. (Intern), Thygesen, K. S. (Intern)

**Number of pages:** 7

**Publication date:** 2018

**Main Research Area:** Technical/natural sciences

**Publication information**

**Journal:** 2D materials

**Volume:** 5

**Issue number:** 1

**Article number:** 015009

**ISSN (Print):** 2053-1583

**DOIs:** 10.1088/2053-1583/aa8e6c

**Source:** FindIt

**Source-ID:** 2392127810

**Publication:** Research - peer-review › Journal article – Annual report year: 2018

---

Emerging and potential technologies for facilitating shrimp peeling: A review

Ready-to-eat shrimp processing is challenging due to the complex biological design with the shell tightly connected to the meat. Several techniques have been developed to weaken or loosen this connection, thus facilitating the subsequent peeling. The loosening process is typically undertaken by maturing the shrimps on ice or in brine, which requires several days, consequently risking loss in food quality and safety. To overcome those issues, developing novel technologies that not only assist the shell loosening but also retain the meat quality, safety and yield, is of paramount importance. This article reviews some essential characteristics of shrimp, the current methods of maturation, the use of the emerging technologies (high pressure, microwave, ultrasound, and enzyme) to facilitate the peeling of foods and clarify the potential of using them in shrimp shell removal. Industrial relevance During the production of peeled products, the shrimp processing industry has suffered from drawbacks of the traditional ice/brine maturations - a step facilitating the peeling. The drawbacks include yield loss, reduction of organoleptic quality, risk of microorganisms, time consuming issue and discontinuous process due to a long time soaking in maturing tanks. Therefore the need for seeking alternative methods to replace the traditional long maturations has grown, that address the future trends in sustainable processing of ready-to-eat shrimps. Emerging technologies e.g. high pressure, enzyme, ultrasound and microwave can potentially become the alternatives since they have strong peeling effects on lobsters, crabs, bivalve mollusks, eggshells, human skin, fruits and vegetables. Also these technologies offer benefits such as short process time, retained nutritional and sensorial characteristics, energy and water efficiency which all promise higher profits for the shrimp industry.

**General information**

**State:** Published

**Organisations:** National Food Institute, Research Group for Food Production Engineering, University of Copenhagen, Royal Greenland A/S

**Authors:** Dang, T. T. (Ekstern), Gringer, N. (Intern), Jessen, F. (Intern), Olsen, K. B. (Ekstern), Bøknæs, N. (Ekstern), Nielsen, P. L. (Ekstern), Orlien, V. (Ekstern)

**Number of pages:** 13

**Pages:** 228-240
Enantiomeric profiling of chiral illicit drugs in a pan-European study

The aim of this paper is to present the first study on spatial and temporal variation in the enantiomeric profile of chiral drugs in eight European cities. Wastewater-based epidemiology (WBE) and enantioselective analysis were combined to evaluate trends in illicit drug use in the context of their consumption vs direct disposal as well as their synthetic production routes. Spatial variations in amphetamine loads were observed with higher use in Northern European cities. Enantioselective analysis showed a general enrichment of amphetamine with the R-(−)-enantiomer in wastewater indicating its abuse. High loads of racemic methamphetamine were detected in Oslo (EF = 0.49 ± 0.02). This is in contrast to other European cities where S-(+)-methamphetamine was the predominant enantiomer. This indicates different methods of methamphetamine synthesis and/or trafficking routes in Oslo, compared with the other cities tested. An enrichment of MDMA with the R-(−)-enantiomer was observed in European wastewaters indicating MDMA consumption rather than disposal of unused drug. MDA’s chiral signature indicated its enrichment with the S-(+)-enantiomer, which confirms its origin from MDMA metabolism in humans. HMMA was also detected at quantifiable concentrations in wastewater and was found to be a suitable biomarker for MDMA consumption. Mephedrone was only detected in wastewater from the United Kingdom with population-normalised loads up to 47.7 mg 1000 people−1 day−1. The enrichment of mephedrone in the R-(+)enantiomer in wastewater suggests stereoselective metabolism in humans, hence consumption, rather than direct disposal of the drug. The investigation of drug precursors, such as ephedrine, showed that their presence was reasonably ascribed to their medical use.
In this paper, we present group-contribution (GC) based property models for estimation of physical properties of amino acids using their molecular structural information. The physical properties modelled in this work are normal melting point ($T_{m}$), aqueous solubility ($W_{s}$), and octanol/water partition coefficient ($K_{ow}$) of amino acids. The developed GC-models are based on the published GC-method by Marrero and Gani (J. Marrero, R. Gani, Fluid Phase Equilib. 2001, 183-184, 183-208) with inclusion of new structural parameters (groups and molecular weight of compounds). The main objective of
introducing these new structural parameters in the GC-model is to provide additional structural information for amino acids having large and complex structures and thereby improve predictions of physical properties of amino acids. The group-contribution values were calculated by regression analysis using a data-set of 239 values for $T_m$, 211 values for $W_s$, and 335 values for $K_{ow}$. Compared to other currently used GC-models, the developed models make significant improvements in accuracy with average absolute error of 10.8 K for $T_m$ and logarithm-unit average absolute errors of 0.16 for $K_{ow}$ and 0.19 for $W_s$.

**General information**

State: Published
Organisations: Department of Chemical and Biochemical Engineering, KT Consortium, CERE – Center for Energy Resources Engineering, Alfa Laval
Authors: Jhamb, S. V. (Intern), Liang, X. (Intern), Gani, R. (Intern), Hukkerikar, A. S. (Ekstern)
Pages: 148-161
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Chemical Engineering Science
Volume: 175
ISSN (Print): 0009-2509
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.05 SJR 1.037 SNIP 1.442
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.038 SNIP 1.606 CiteScore 2.96
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.115 SNIP 1.642 CiteScore 2.81
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.157 SNIP 1.866 CiteScore 2.95
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.189 SNIP 1.847 CiteScore 2.77
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.205 SNIP 1.685 CiteScore 2.8
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.319 SNIP 1.708
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.293 SNIP 1.759
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.299 SNIP 1.6
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.347 SNIP 1.523
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.308 SNIP 1.553
Web of Science (2006): Indexed yes
This paper reports the implementation and evaluation of a Lagrangian soot tracking (LST) method for the modeling of soot in diesel engines. The LST model employed here has the tracking capability of a Lagrangian method and the ability to predict primary soot particle sizing. The Moss-Brookes soot model is used here as the Eulerian method to simulate soot formation and oxidation processes. The inception, surface growth and oxidation models are adopted and modified such that the associated reaction rates can be computed using the Lagrangian approach. The soot nuclei are treated as Lagrangian particles when the mass of incipient soot exceeds a designated threshold value. Their trajectories are then computed using the particle momentum equation. The change of primary soot particle size is dependent on the modified Lagrangian surface growth and soot oxidation models. Performance of the LST model in predicting temporal soot cloud development, mean soot diameter and primary soot size distribution is evaluated using measurements of n-heptane and n-dodecane spray combustion obtained under diesel engine-like conditions. In addition, sensitivity studies are carried out to investigate the influence of soot surface ageing and oxidation rates on the primary soot particle size distribution. With the use of surface ageing, the predicted maximum primary soot particle sizes are closer to the experimentally measured maximum primary soot sizes. Also, the associated particle size distribution shows a lognormal shape. A higher rate of soot oxidation due to OH causes the soot particles to be fully oxidized downstream of the flame. In general, the LST model performs better than the Eulerian method in terms of predicting soot sizing and accessing information of individual soot particles, both of which are shortcomings of the Eulerian method.
Evaluation of damping estimates by automated Operational Modal Analysis for offshore wind turbine tower vibrations

Reliable predictions of the lifetime of offshore wind turbine structures are influenced by the limited knowledge concerning the inherent level of damping during downtime. Error measures and an automated procedure for covariance driven Operational Modal Analysis (OMA) techniques has been proposed with a particular focus on damping estimation of wind turbine towers. In the design of offshore structures the estimates of damping are crucial for tuning of the numerical model. The errors of damping estimates are evaluated from simulated tower response of an aeroelastic model of an 8 MW offshore wind turbine. In order to obtain algorithmic independent answers, three identification techniques are compared: Eigensystem Realization Algorithm (ERA), covariance driven Stochastic Subspace Identification (COV-SSI) and the Enhanced Frequency Domain Decomposition (EFDD). Discrepancies between automated identification techniques are discussed and illustrated with respect to signal noise, measurement time, vibration amplitudes and stationarity of the ambient response. The best bias-variance error trade-off of damping estimates is obtained by the COV-SSI. The proposed automated procedure is validated by real vibration measurements of an offshore wind turbine in non-operating conditions from a 24-h monitoring period.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, DONG Energy A/S
Authors: Bajrić, A. (Intern), Høgsberg, J. B. (Intern), Rüdinger, F. (Ekstern)
Pages: 153-163
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Renewable Energy
Offshore wind turbine, Ambient tower vibrations, Correlation function estimators, Automated Operational Modal Analysis, Damping estimation

DOIs:
Evaluation of multi-mode CryoSat-2 altimetry data over the Po River against in situ data and a hydrodynamic model

Coverage of in situ observations to monitor surface waters is insufficient on the global scale, and decreasing across the globe. Satellite altimetry has become an increasingly important monitoring technology for continental surface waters. The ESA CryoSat-2 altimetry mission, launched in 2010, has two novel features. (i) The radar altimeter instrument on board of CryoSat-2 is operated in three modes; two of them reduce the altimeter footprint by using Delay-Doppler processing. (ii) CryoSat-2 is placed on a distinct orbit with a repeat cycle of 369 days, leading to a drifting ground track pattern. The drifting ground track pattern challenges many common methods of processing satellite altimetry data over rivers. This study evaluates the observation error of CryoSat-2 water level observations over the Po River, Italy, against in situ observations. The average RMSE between CryoSat-2 and in situ observations was found to be 0.38 meters. CryoSat-2 was also shown to be useful for channel roughness calibration in a hydrodynamic model of the Po River. The small across-track distance of CryoSat-2 means that observations are distributed almost continuously along the river. This allowed resolving channel roughness with higher spatial resolution than possible with in situ or virtual station altimetry data. Despite the Po River being extensively monitored, CryoSat-2 still provides added value thanks to its unique spatio-temporal sampling pattern.
Evidence of co-metabolic bentazone transformation by methanotrophic enrichment from a groundwater-fed rapid sand filter

The herbicide bentazone is recalcitrant in aquifers and is therefore frequently detected in wells used for drinking water production. However, bentazone degradation has been observed in filter sand from a rapid sand filter at a waterworks with methane-rich groundwater. Here, the association between methane oxidation and removal of bentazone was investigated with a methanotrophic enrichment culture derived from methane-fed column reactors inoculated with that filter sand. Several independent lines of evidence obtained from microcosm experiments with the methanotrophic enrichment culture, tap water and bentazone at concentrations below 2 mg/L showed methanotrophic co-metabolic bentazone transformation: The culture removed 53% of the bentazone in 21 days in presence of 5 mg/L of methane, while only 31% was removed in absence of methane. Addition of acetylene inhibited methane oxidation and stopped bentazone removal. The presence of bentazone partly inhibited methane oxidation since the methane consumption rate was significantly lower at high (1 mg/L) than at low (1 μg/L) bentazone concentrations. The transformation yield of methane relative to bentazone normalized by their concentration ratio ranged from 58 to 158, well within the range for methanotrophic co-metabolic degradation of trace contaminants calculated from the literature, with normalized substrate preferences varying from 3 to 400. High-resolution mass spectrometry revealed formation of the transformation products (TPs) 6-OH, 8-OH, isopropyl-OH and di-OH-bentazone, with higher abundances of all TPs in the presence of methane. Overall, we found a suite of evidence all showing that bentazone was co-metabolically transformed to hydroxy-bentazone by a methanotrophic culture enriched from a rapid sand filter at a waterworks.

General information
State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems, Water Technologies, John Hopkins University, Technical University of Denmark
Number of pages: 10
Pages: 105-114
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Water Research
Bentazone, Co-metabolism, Degradation, Methane oxidation, Pesticides
Exfoliated MoS$_2$ nanosheets loaded on bipolar exchange membranes interfaces as advanced catalysts for water dissociation

Over the last few decades, ion exchange membranes have evolved from a laboratory tool to industrial products with significant technical and commercial impacts. Electrodialysis with bipolar membranes (EDBM) is a technology that can produce acids and bases from the corresponding salt solutions. Bipolar membranes are key factors for splitting water at the interface of a cation and anion exchange layer in an electric field. The ideal bipolar membrane should have a low energy consumption, a high current efficiency and long-term stability. In order to investigate the catalytic effect of a monolayer of MoS$_2$, the bipolar membranes were prepared by introducing monolayer MoS2 to the interface of bipolar membranes. The resulting bipolar membrane was found to have lower potential drop, which clearly demonstrates the applicability of the MoS$_2$ layer to act as catalyst. Enhanced acid production confirmed this prediction. Furthermore, a bipolar membrane prepared at 90°C had a low swelling ratio of about 7.5% while maintaining a high water uptake of 71.6%. From the calculation of current efficiency and energy consumption, the bipolar membrane with a monolayer of MoS$_2$ has a higher current efficiency (45%) and a lower energy consumption (3.6 kW/h·kg) compared to a current efficiency of 24% and an energy consumption of 6.3 kW/h·kg for a bipolar membrane without MoS$_2$. This study proves the catalytic function of MoS$_2$, which lays a foundation for further research on catalytic bipolar exchange membranes.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, KU Leuven, Fuzhou University, Zhejiang University of Technology
Authors: Li, J. (Ekstern), Morthensen, S. T. (Intern), Zhu, J. (Ekstern), Yuan, S. (Ekstern), Wang, J. (Ekstern), Volodine, A. (Ekstern), Lin, J. (Ekstern), Shen, J. (Ekstern), Van der Bruggen, B. (Ekstern)
Pages: 416-424
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Separation and Purification Technology
Volume: 194
ISSN (Print): 1383-5866
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.78 SJR 1.023 SNIP 1.394
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.078 SNIP 1.504 CiteScore 3.75
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.257 SNIP 1.54 CiteScore 3.5
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.325 SNIP 1.678 CiteScore 3.62
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.409 SNIP 1.732 CiteScore 3.2
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.35 SNIP 1.64 CiteScore 3.48
ISI indexed (2011): ISI indexed yes
Experimental comparison of the nonlinear dynamic behavior of a rigid rotor interacting with two types of different radial backup bearings: Ball & pinned

Rotors on magnetic bearings rely on external controls to guarantee stability and are designed in case of partial or total failures, when impacts happen and potentially lead to a breakdown. Therefore backup bearings are indispensable. In such rotor-stator interactions the main undesired phenomenon is the backward whirl. The current work investigates the experimental behavior of a horizontal rigid rotor interacting laterally with two types of backup bearings during run up testing. The experimental data is analyzed by orbit analysis, spectrum analyzers, and force magnitudes collected by sensors installed. It is shown experimentally the nonlinear behavior of the rotor-bearing system and the elimination of backward whirl. The advantages and drawbacks of each type of backup bearing are given.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, Technical University of Denmark, Pontifícia Universidade Católica
Authors: Fonseca, C. A. (Ekstern), Santos, I. F. (Intern), Weber, H. I. (Ekstern)
Pages: 250-261
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Tribology International
Volume: 119
ISSN (Print): 0301-679X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.16 SJR 1.382 SNIP 2.094
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Experimental study of the performance of intumescent coatings exposed to standard and non-standard fire conditions

Three different experimental setups corresponding to three different fire scenarios were used to investigate how different heating conditions and heating rates affect the behaviour of two different thin intumescent coatings (a solvent-based and a water-based paint). Coated steel samples were exposed to different standard and non-standard fire conditions in an electric oven, in a gas furnace and in a cone heater. A common trend was observed in the thermal resistance development of the tested coatings and three phases (inert phase, transient phase and steady phase) were identified according to four critical points: activation, end of reaction, binder exhaustion and steel austenitization point. The results also showed that the water-based paint performed better at low heating rates, while the tested solvent-based paint performed better at high heating rates and did not activate or provide proper insulation at very low heating rates. In summary, the study confirms that the current procedure for the design of intumescent coatings has shortcomings, as different paints have different performances according to the heating conditions and, in particular, according to the fire heating rate.
Experimental study on an innovative enthalpy recovery technology based on indirect flash evaporative cooling

An indirect flash evaporative cooling enthalpy recovery technology used for building ventilation was proposed based on counter flow plate heat exchanger combing with ultrasonic atomizer. The technology is aimed at enhancing enthalpy recover efficiency and preventing contaminant transfer of heat recovery unit. The principle of the technology is to oversaturate indoor exhaust air by ultrasonic atomizing humidification. The evaporation of ultrafine mists cools down indoor exhaust air to its wet-bulb temperature and makes not only sensible heat transfer but also moisture condensed in outdoor supply air to realize total heat recovery. Compared with conventional indirect evaporative cooling, the application of ultrasonic atomizing enhances cooling effect through increasing water mists evaporation area and decreasing heat transfer resistance between exhaust air and supply air. No mass permeation, carrying-over or sorption occurs in this heat exchange process which guarantees no contaminant transfer from exhaust air to supply air. A prototype unit of the proposed technology was developed and tested in climate chambers. Temperatures and humidity ratios at inlets and outlets of the heat recovery unit were measured to investigate and analyze its energy recover efficiencies. The results showed that in hot and humid climate, up to 71% of total heat recover efficiency could be achieved by the prototype unit, and more than 50% of the enthalpy recovered was contributed by moisture condensation in the outdoor supply air.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, China Academy of Building Research, Beijing University of Civil Engineering and Architecture
Authors: Nie, J. (Intern), Yuan, S. (Ekstern), Fang, L. (Intern), Zhang, Q. (Ekstern), Li, D. (Ekstern)
Number of pages: 9
Pages: 22-30
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Applied Thermal Engineering
Volume: 129
ISSN (Print): 1359-4311
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.78 SJR 1.462 SNIP 1.828
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.734 SNIP 1.898 CiteScore 3.32
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.576 SNIP 2.206 CiteScore 3.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.516 SNIP 2.5 CiteScore 3.31
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.54 SNIP 2.432 CiteScore 2.7
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.389 SNIP 2.186 CiteScore 2.83
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.425 SNIP 2.045
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.435 SNIP 2.126
Exploring the effects of ZVI addition on resource recovery in the anaerobic digestion process

The influence of Zero Valent Iron (ZVI) addition on the potential resource recovery during the anaerobic digestion (AD) of domestic waste sludge is assessed. Potentially recoverable resources analyzed were nutrients such as struvite to recover P, and energy as biogas to recover C. Short term (biochemical methane potential tests, BMP) and long term (AD1, AD2) experiments are conducted using two types of set-up (batch, continuous). Process data (influent, effluent and biogas) is continuously collected and the dry digested sludge is analyzed by XPS. A mathematical model is developed based on a modified version of the Anaerobic Digestion Model No 1 upgraded with an improved physicochemical description, ZVI corrosion, propionate uptake enhancement and multiple mineral precipitation. The results of all experiments show that ZVI addition increases methane production and promotes the formation of siderite (FeCO3) and vivianite (Fe3(PO4)2), which causes changes in the biogas composition (%CH4 versus %CO2) and reduces P release. The model can satisfactorily reproduce the dynamics of AD processes, nutrient release, pH and methanogenesis in AD1. The proposed approach also describes the changes in the overall performance of the process because of ZVI addition in AD2. A model-based scenario analysis is included balancing chemical-ZVI addition and increased methane production/struvite precipitation. This scenario analysis allows concluding that: (a) the improvement of methane production does not compensate the costs of ZVI purchase, and (b) ZVI dramatically decreases the P recovery potential in the digestate of the AD systems. This is the first study to experimentally and mathematically describe the effect of ZVI on biogas production/composition and on the fate of phosphorus compounds, and its potential implications for potential energy and phosphorus recovery in AD systems.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre, Instituto de Catálisis y Petroleoquímica, Rey Juan Carlos University, Universidad Rey Juan Carlos
Authors: Puyol, D. (Ekstern), Flores Alsina, X. (Intern), Segura, Y. (Ekstern), Molina, R. (Ekstern), Padrino, B. (Ekstern), Fierro, J. L. G. (Ekstern), Gernaey, K. V. (Intern), Melero, J. A. (Ekstern), Martinez, F. (Ekstern)
Pages: 703-711
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Chemical Engineering Journal
Volume: 335
ISSN (Print): 1385-8947
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.34
Web of Science (2016): Indexed yes
Exposure of tropoelastin to peroxynitrous acid gives high yields of nitrated tyrosine residues, di-tyrosine cross-links and altered protein structure and function

Elastin is an abundant extracellular matrix protein in elastic tissues, including the lungs, skin and arteries, and comprises 30–57% of the aorta by dry mass. The monomeric precursor, tropoelastin (TE), undergoes complex processing during elastogenesis to form mature elastic fibres. Peroxynitrous acid (ONOOH), a potent oxidising and nitrating agent, is formed in vivo from superoxide and nitric oxide radicals. Considerable evidence supports ONOOH formation in the inflamed artery wall, and a role for this species in the development of human atherosclerotic lesions, with ONOOH-damaged extracellular matrix implicated in lesion rupture. We demonstrate that TE is highly sensitive to ONOOH, with this resulting in extensive dimerization, fragmentation and nitration of Tyr residues to give 3-nitrotyrosine (3-nitroTyr). This occurs with equimolar or greater levels of oxidant and increases in a dose-dependent manner. Quantification of Tyr loss and 3-nitroTyr formation indicates extensive Tyr modification with up to two modified Tyr per protein molecule, and up to 8% conversion of initial ONOOH to 3-nitroTyr. These effects were modulated by bicarbonate, an alternative target for ONOOH. Inter- and intra-protein di-tyrosine cross-links have been characterized by mass spectrometry. Examination of human atherosclerotic lesions shows colocalization of 3-nitroTyr with elastin epitopes, consistent with TE or elastin modification in vivo, and also an association of 3-nitroTyr containing proteins and elastin with lipid deposits. These data suggest that exposure of TE to ONOOH gives marked chemical and structural changes to TE and altered matrix assembly, and that such damage accumulates in human arterial tissue during the development of atherosclerosis.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Enzyme and Protein Chemistry, Center for Biological Sequence Analysis, Proteomics Platform, DTU Proteomics Core, The Heart Research Institute, University of Copenhagen, Medical University of Graz
Authors: Degendorfer, G. (Ekstern), Chuang, C. Y. (Forskerdatabase), Mariotti, M. (Intern), Hammer, A. (Ekstern), Hoefler, G. (Ekstern), Hägglund, P. (Intern), Malle, E. (Ekstern), Wise, S. G. (Ekstern), Davies, M. J. (Ekstern)
Fault Tolerant Position-mooring Control for Offshore Vessels

Fault-tolerance is crucial to maintain safety in offshore operations. The objective of this paper is to show how systematic analysis and design of fault-tolerance is conducted for a complex automation system, exemplified by thruster assisted Position-mooring. Using redundancy as required by classification societies' class notations for offshore position controlled vessels, the paper shows how violations of normal behaviour of main components can be detected and isolated. Using a functional service philosophy, diagnosis procedures are auto-generated based on provable correct graph analysis methods. Functional faults that are only detectable, are rendered isolable through an active isolation approach. Once functional faults are isolated, they are handled by fault accommodation techniques to meet overall control objectives specified by class requirements. The paper illustrates the generic methodology by a system to handle faults in mooring lines, sensors or thrusters. Simulations and model basin experiments are carried out to validate the concept for scenarios with single or multiple faults. The results demonstrate that enhanced availability and safety are obtainable with this design approach. While methods are introduced at a tutorial level, the paper is original by providing a total Position-mooring system design that ensures resilience to any single fault and to selected multiple faults.

General information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control, Norwegian University of Science and Technology
Authors: Blanke, M. (Intern), Nguyen, T. D. (Ekstern)
Pages: 426–441
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Ocean Engineering
Volume: 148
ISSN (Print): 0029-8018
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.46 SJR 1.315 SNIP 2.014
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.172 SNIP 1.989 CiteScore 2.19
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.252 SNIP 2.323 CiteScore 2.11
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.178 SNIP 2.773 CiteScore 2.2
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.206 SNIP 2.445 CiteScore 1.71
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.055 SNIP 2.528 CiteScore 1.85
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.153 SNIP 2.207
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.063 SNIP 1.975
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.935 SNIP 1.673
Scopus rating (2007): SJR 0.941 SNIP 1.912
Web of Science (2007): Indexed yes
Flavins mediate extracellular electron transfer in Gram-positive Bacillus megaterium strain LLD-1

The extracellular electron transfer (EET) mechanism of an isolated Gram-positive *Bacillus megaterium* strain (LLD-1), identified by 16S rRNA gene sequencing and physiological analysis, was investigated in the present study. The electrochemical activity of strain LLD-1 was confirmed by electrochemical $E-t$ and amperometric $I-t$ tests. Flavins in culture suspension from strain LLD-1 were further proved to be able to act as electron shuttles, strengthening the electron transfer from LLD-1 to the electrode. The output voltage and current output were increased 2.8 times and 3.7 times, respectively, by adding 100 nM exogenetic flavins into microbial fuel cells inoculated with LLD-1. Electricity generation by LLD-1 from different carbon sources can be enhanced by adding 100 nM exogenetic flavins. This study indicated that flavins were essential to the EET process of the Gram-positive strain LLD-1. Furthermore, a putative EET model for *B. megaterium* strain LLD-1 and even for Gram-positive bacteria was proposed.
Flow characteristics in occupied zone – An experimental study with symmetrically located thermal plumes and low-momentum diffuse ceiling air distribution

Airflow interaction between thermal plumes and vertical air distribution may cause significant effects on airflow characteristics such as velocity and temperature fields, turbulence intensity and fluctuation frequency. The flow interaction creates a random flow motion, vortical structures and turbulent mixing that can further yield a draught discomfort in an occupied zone. The main objective was to investigate large-scale airflow patterns and fluctuations as a result of interaction of buoyancy flows and diffuse ceiling flow. Experiments were performed in a test room of 5.5 m (length) x 3.8 m (width) x 3.2 m (height) with symmetrical set-up of cylindrical heat sources that gave a thermal load of 40–80 W/floor-m². The ventilation air was supplied through a diffuse ceiling with 0.5% degree of perforation. The observations indicate that the mean air speed and the airflow fluctuation increase with thermal load. Furthermore, the results show that a range of length scales increases with thermal load and with mean air speed. The results indicate that it can be difficult to fulfill the standard air velocity criteria for highly occupied spaces, where the maximum allowable mean air velocity is relatively low, i.e. 0.15–0.20 m/s. This is because the buoyancy flows from heat sources accelerate locally the flow field.

General information

State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Aalto University, Turku University of Applied Sciences
Authors: Lestinen, S. (Ekstern), Kilpeläinen, S. (Ekstern), Kosonen, R. (Ekstern), Jokisalo, J. (Ekstern), Koskela, H. (Ekstern), Melikov, A. K. (Intern)
Number of pages: 12
Pages: 77-88
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Generic dynamic wind turbine models for power system stability analysis: A comprehensive review

In recent years, international working groups, mainly from the International Electrotechnical Commission (IEC) and the Western Electricity Coordinating Council (WECC), have made a major effort to develop generic —also known as simplified or standard— dynamic wind turbine models to be used for power system stability analysis. These models are required by power system operators to conduct the planning and operation activities of their networks since the use of detailed manufacturer models is not practical. This paper presents a comprehensive review of the work done in this field, based on the results obtained by IEC and WECC working groups in the course of their research, which have motivated the publication of the IEC 61400-27 in February 2015. The final published versions of the generic models developed according to the existing four wind turbine technology types are detailed, highlighting the subsequent changes made during the development phase. The main differences between IEC and WECC generic models are also analyzed. Not only is the final model structure presented but we also provide a complete description of the physical behavior of wind turbines facing power system stability problems. Results are thus of great interest to grid operators, software developers, wind farm owners and researchers focused on the integration of wind energy into power systems.
Hardening and strengthening behavior in rate-independent strain gradient crystal plasticity

Two rate-independent strain gradient crystal plasticity models, one new and one previously published, are compared and a numerical framework that encompasses both is developed. The model previously published is briefly outlined, while an in-depth description is given for the new, yet somewhat related, model. The difference between the two models is found in the definitions of the plastic work expended in the material and their relation to spatial gradients of plastic strains. The model predictions are highly relevant to the ongoing discussion in the literature, concerning 1) what governs the increase in the apparent yield stress due to strain gradients (also referred to as strengthening)? And 2), what is the implication of such strengthening in relation to crystalline material behavior at the micron scale? The present work characterizes material behavior, and the corresponding plastic slip evolution, by use of the finite element method. The pure shear problem of an infinite material slab is investigated, with the previously published model displaying strengthening, while the new model does not. In addition to the numerical approach an exact closed form solution, to the pure shear problem, is obtained for the new model, and it is demonstrated that the model predicts proportional straining in the entire plastic regime. Somewhat surprising it is found that the predictions for strain gradient hardening coincide for the two models.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics
Authors: Nellemann, C. (Intern), Niordson, C. F. (Intern), Nielsen, K. (Intern)
Pages: 157-168
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Volume: 67
ISSN (Print): 0997-7538
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.7 SJR 1.462 SNIP 1.466
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.442 SNIP 1.492 CiteScore 2.56
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.317 SNIP 1.627 CiteScore 2.14
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.647 SNIP 2.129 CiteScore 2.6
ISI indexed (2013): ISI indexed yes
Headwater streams in the EU Water Framework Directive: Evidence-based decision support to select streams for river basin management plans

Headwater streams are important contributors to aquatic biodiversity and may counteract negative impacts of anthropogenic stress on downstream reaches. In Denmark, the first river basin management plan (RBMP) included streams of all size categories, most being <2.5 m wide (headwater streams). Currently, however, it is intensely debated whether the small size and low slopes, typical of Danish streams, in combination with degraded habitat conditions obstruct their ability to fulfill the ecological quality objectives required by the EU Water Framework Directive (WFD). The purpose of this study was to provide an analytically based framework for guiding the selection of headwater streams for RBMP. Specifically, the following hypotheses were addressed: i) stream slope, width, planform, and general physical habitat quality can act as criteria for selecting streams for the next generation of RBMPs, and ii) probability-based thresholds for reaching good ecological status can be established for some or all of these criteria, thus creating a sound, scientifically based, and clear selection process. The hypotheses were tested using monitoring data on Danish streams from the period 2004–2015. Significant linear relationships were obtained between the ecological quality ratio assessed by applying the Danish Stream Fauna Index (DSFIEQR) and stream slope, width, sinuosity, and DHI. The obtained models were used to produce pressure-response curves describing the probability of achieving good ecological status along gradients in these parameters. Next, threshold values for slope, width, sinuosity, and DHI were identified for selected probabilities of achieving minimum good ecological status. The obtained results can support managers and policy makers in prioritizing headwater streams for the 3rd RBMP. The approach applied is broadly applicable and can, for instance, help prioritize restoration and conservation efforts in different types of ecosystems where the biota can be significantly linked to separate and quantifiable environmental characteristics.
High-Order Approximation of Chromatographic Models using a Nodal Discontinuous Galerkin Approach

A nodal high-order discontinuous Galerkin finite element (DG-FE) method is presented to solve the equilibrium-dispersive model of chromatography with arbitrary high-order accuracy in space. The method can be considered a high-order extension to the total variation diminishing (TVD) framework used by Javeed et al. (2011a,b, 2013) with an efficient quadrature-free implementation. The framework is used to simulate linear and non-linear multicomponent chromatographic systems. The results confirm arbitrary high-order accuracy and demonstrate the potential for accuracy and speed-up gains obtainable by switching from low-order methods to high-order methods. The results reproduce an analytical solution and are in excellent agreement with numerical reference solutions already published in the literature.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre
Authors: Meyer, K. (Intern), Huusom, J. K. (Intern), Abildskov, J. (Intern)
Pages: 68-76
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Computers & Chemical Engineering
Volume: 109
ISSN (Print): 0098-1354
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.39 SJR 1.006 SNIP 1.607
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.122 SNIP 1.724 CiteScore 3.04
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.184 SNIP 1.738 CiteScore 3.22
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.223 SNIP 1.776 CiteScore 3.06
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.161 SNIP 1.92 CiteScore 3.05
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.185 SNIP 1.736 CiteScore 2.8
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
High stability of benzotriazole and benzothiophene containing medium band-gap polymer solar cell

The improvement of polymer solar cell stability is a challenge for the scientists and has significant implications commercially. In this study, we investigated the stability of a novel P-SBTBDT active material applied in an inverted type solar cell. Detailed stability experiments comprising shelf life, laboratory weathering and outdoor testing were carried out according to ISOS testing guidelines. Shelf life showed that P-SBTBDT solar cells were very stable after 840 h with encapsulation. Although accelerated weathering aging tests are a very harsh, the devices remained stable after the burn-in phase with T50 from 700 to 840 h, with some P-SBTBDT solar cells did not reach T50 in the time span of the test. Degradation tests on the P-SBTBDT solar cells which were carried out under natural solar light indicated that T40 was reached after 840 h. The results of dark, light, damp and dry stability tests showed that most of the degradation was provoked by failure of the encapsulation. The experiments indicated that P-SBTBDT solar cells are sensitive to light and oxygen but are strikingly stable under humid conditions. Further developments for minimizing the degradation effects using UV-filters and better encapsulation are some of the necessary improvements in further research.
High temperature solution-nitriding and low-temperature nitriding of AISI 316: Effect on pitting potential and crevice corrosion performance

Stainless steels grade AISI 316 was subjected to high temperature solution nitriding and low-temperature nitriding in order to dissolve various amounts of nitrogen in the bulk (up to approx. 0.45wt%) and in a surface layer (up to approx. 13wt%), respectively. Potentiodynamic polarization tests in a 0.1M NaCl solution and crevice corrosion immersion tests in 3wt% FeCl₃ solution were studied before and after the bulk and surface treatments. Nitrogen addition in the bulk proved to have a beneficial effect on the pitting resistance of the alloy. The formation of a zone of expanded austenite at the material surface through low-temperature nitriding resulted in a considerable improvement of the pitting potential and the crevice corrosion performance of the steels.
Corrosion, Crevice corrosion, Expanded austenite, High nitrogen steel, High-temperature solution nitriding, Low-temperature nitriding, Pitting

The swapping of methane with carbon dioxide in hydrate has been proposed as a potential strategy for geologic sequestration of carbon dioxide and production of methane from natural hydrate deposits. However, this strategy requires a better understanding of the thermodynamic characteristics of CH₄ and CO₂ hydrate as well as (CH₄ + CO₂) or (CH₄ + CO₂ + N₂) mixed hydrates (since (CO₂ + N₂) gas mixture is often used as the swapping gas), along with the thermal physics property changes during gas exchange. In this study, a high pressure micro-differential scanning calorimetry (μ-DSC) was performed on synthesized gas hydrates to investigate the dissociation behavior of various hydrates. The hydrate dissociation enthalpies were determined by both μ-DSC measurement and Clapeyron equation. For the single guest molecule hydrate system, the average dissociation enthalpies of CH₄ hydrate and CO₂ hydrate measured by integrating the endothermic peak area are 55.01 kJ·mol⁻¹ and 58.96 kJ·mol⁻¹, respectively, which are very close to the values calculated by Clapeyron equation. However, in the multicomponent guest hydrates system, the μ-DSC measured dissociation enthalpies of the (CH₄ + CO₂) binary hydrates and (CH₄ + CO₂ + N₂) ternary hydrates are a little higher than that of Clapeyron equation, it was found that their dissociation enthalpies are located between the limiting values of pure CH₄ hydrate and CO₂ hydrate, increasing with the mole fraction of CO₂ in hydrate phase. By monitoring the heat flow changes with the μ-DSC apparatus, it was observed that there was no noticeable dissociation or reformation process of hydrate occurring in the CH₄ − CO₂/(CO₂ + N₂) swapping, which indicates that most CH₄ hydrate forms (CH₄ + CO₂) or (CH₄ + CO₂ + N₂) mixed hydrates directly instead of dissociating into liquid water or ice first. The dissociation equilibrium data obtained from the endothermic thermograms of the mixed hydrates after CO₂ and (CO₂ + N₂) swapping demonstrates that about 66% and 85% of CH₄ in hydrate phase are replaced, respectively.

**General information**

State: Published
Organisations: Department of Chemical and Biochemical Engineering, CERE – Center for Energy Resources Engineering
Authors: Mu, L. (Intern), von Solms, N. (Intern)
Pages: 33-42
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Journal of Chemical Thermodynamics
Volume: 117
ISSN (Print): 0021-9614
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.64 SJR 1 SNIP 1.163
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Identifying choke species challenges for an individual demersal trawler in the North Sea, lessons from conversations and data analysis

A likely side-effect of introducing the landing obligation of the 2013 Common Fisheries Policy into mixed fisheries is the occurrence of the “choke species” problem. When discarding no longer is an option, leasing quota or changing fishing practices remain important tools to avoid choke species. Here, the scale and tactics linked to using avoidance behaviour to reduce choke species is investigated by analysing the fishing behaviour of a single demersal trawler in the North Sea. Analysis combined qualitative information collected from through interviews with the vessel owner and skipper, along with quantitative analysis on fisheries data. From the interviews, saithe and cod were identified as potential choke species and subsequent analysis focused on these two species. The analysis of catch and quota composition showed that cod would choke the fishery early if no catch-quota balancing options were available, resulting in a 87% reduction in revenue, while saithe could choke the fishery later, resulting in a 43% reduction in revenue. Avoidance behaviour was difficult to detect from fisheries data, which was explained by
avoidance taking primarily place through very fine-scale tactical choices rather than large displacements. Catch composition showed that saithe is distributed more patchily than cod, with most hauls containing small amounts of saithe and a few hauls containing large amounts. In conclusion this paper supplies an view on the choke species problem seen from the perspective of an individual fisher and highlights the amount of real-time tactical decisions and trade-offs that need to be made when operating in mixed-fisheries

**General information**
State: Published
Authors: Mortensen, L. O. (Intern), Ulrich, C. (Intern), Hansen, J. (Ekstern), Hald, R. (Ekstern)
Pages: 1-11
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Marine Policy
Volume: 87
ISSN (Print): 0308-597X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.7 SJR 1.335 SNIP 1.182
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.591 SNIP 1.397 CiteScore 3.07
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.438 SNIP 1.56 CiteScore 3.09
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.472 SNIP 1.635 CiteScore 2.71
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.339 SNIP 1.495 CiteScore 2.54
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.406 SNIP 1.263 CiteScore 2.07
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.289 SNIP 1.483
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.947 SNIP 1.142
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.838 SNIP 1.417
Scopus rating (2007): SJR 0.927 SNIP 1.377
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.961 SNIP 2.043
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.84 SNIP 1.229
Scopus rating (2004): SJR 0.793 SNIP 1.116
Scopus rating (2003): SJR 0.506 SNIP 1.11
Scopus rating (2002): SJR 0.444 SNIP 0.8
Scopus rating (2001): SJR 0.532 SNIP 0.639
Improved meet-in-the-middle attacks on reduced-round Piccolo

Piccolo is a lightweight block cipher that adopts a generalized Feistel network structure with 4 branches, each of which is 16 bit long. The key length is 80 or 128 bit, denoted by Piccolo-80 and Piccolo-128, respectively. In this paper, we mounted meet-in-the-middle attacks on 14-round Piccolo-80 without preand post-whitening keys and 18-round Piccolo-128 with post-whitening keys by exploiting the properties of the key schedule and Maximum Distance Separable (MDS) matrix. For Piccolo-80, we first constructed a 5-round distinguisher. Then 4 rounds and 5 rounds were appended at the beginning and at the end, respectively. Based on this structure, we mounted an attack on 14-round Piccolo-80 from the 5th round to the 18th round. The data, time, and memory complexities were 252 chosen plaintexts, 267.44 encryptions, and 264.91 blocks, respectively. For Piccolo-128, we built a 7-round distinguisher to attack 18-round Piccolo-128 from the 4th round to the 21st round. The data, time, and memory complexities were 252 chosen plaintexts, 2126.63 encryptions, and 2125.29 blocks, respectively. If not considering results on biclique cryptanalysis, these are currently the best public results on this reduced version of the Piccolo block cipher.

Incorporating diffuse radiation into a light use efficiency and evapotranspiration model: An 11-year study in a high latitude deciduous forest

The fraction of diffuse photosynthetic active radiation (PAR) reaching the land surface is one of the biophysical factors regulating carbon and water exchange between terrestrial ecosystems and the atmosphere. This is especially relevant for high latitude ecosystems, where cloudy days are prevalent. Without considering impacts of diffuse PAR, traditional ‘top-down’ models of ecosystem gross primary productivity (GPP) and evapotranspiration (ET), which use satellite remote sensing observations, are biased towards clear sky conditions. This study incorporated a cloudiness index (CI), an index for the fraction of diffuse PAR, into a joint ‘top-down’ model that uses the same set of biophysical constraints to simulate GPP and ET for a high latitude temperate deciduous forest. To quantify the diffuse PAR effects, CI along with other environmental variables derived from an eleven-year eddy covariance data set were used to statistically explore the independent and joint effects of diffuse PAR on GPP, ET, incident light use efficiency (LUE), evaporative fraction (EF) and ecosystem water use efficiency (WUE). The independent and joint effects of CI were compared from global sensitivity analysis of the ‘top-down’ models. Results indicate that for independent effects, CI increased GPP, LUE, ET, EF and WUE. Moreover, Ta and vapor pressure saturation deficit played a major role for the joint influence of CI on LUE and EF. In the growing season from May to October, variation in CI accounts for 11.9%, 3.0% and 7.8% of the total variation of GPP, ET and transpiration, respectively. As the influence of CI on GPP is larger than that on ET, this leads to an increase in WUE with CI. Joint GPP and ET model results showed that when including CI, the root mean square errors (RMSE) of daily GPP decreased from 1.64 to 1.45 g C m−2 d−1 (11.7% reduction) and ET from 15.79 to 14.50 W m−2 (8.2% reduction). Due to the interaction of diffuse PAR with plant canopies,
the largest model improvements using CI for GPP and ET occurred during the growing season and for the transpiration component, as suggested by comparisons to sap flow measurements. Furthermore, our study suggests a potential biophysical mechanism, not considered in other studies: under high diffuse PAR conditions, due to the increased longwave emission from clouds, canopy temperature gets higher and enhances GPP and transpiration in this temperature-limited high latitude ecosystem.
Individual transferable quotas, does one size fit all?: Sustainability analysis of an alternative model for quota allocation in a small-scale coastal fishery

The introduction of vessel-based Individual Transferable Quotas (ITQs) in Danish demersal fisheries in 2007 caused significant structural changes in the fleet, towards fewer and larger vessels deploying otter trawls. Mainly smaller coastal vessels deploying Danish seines and gillnets reduced in numbers. The ecosystem effects of this structural change were investigated by comparing the sustainability of a local, small-scale, coastal fishery (Thorupstrand) using Danish seines and gillnets with that of demersal trawling by larger vessels using the same fishing grounds. The fisheries were compared using six ecological and socio-economic indicators: 1) discards (food web), 2), by-catch incidences (food web/biodiversity), 3), seabed impacts, 4), fuel use efficiency, 5), quality of fish landed (food provision), and 6), social and cultural gains and drawbacks (social and cultural features).

Except for by-catch of vulnerable species, the fisheries using Danish seines and gillnets scored better in all indicators when compared to otter trawls. Additional commercial and cultural benefits of establishing a local fishery guild with share-owned quotas and land-based facilities were investigated. The results and lessons learned are discussed in the context of an ecosystem approach to fisheries management and the current reform of the common fisheries policy of the European Union.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Aarhus University
Authors: Dinesen, G. E. (Intern), Rathje, I. W. (Intern), Højrup, M. (Ekstern), Bastardie, F. (Intern), Larsen, F. (Intern), Sørensen, T. K. (Intern), Hoffmann, E. (Intern), Eigaard, O. R. (Intern)
Pages: 23-31
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Policy
Volume: 88
ISSN (Print): 0308-597X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.7 SJR 1.335 SNIP 1.182
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.591 SNIP 1.397 CiteScore 3.07
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.438 SNIP 1.56 CiteScore 3.09
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.472 SNIP 1.635 CiteScore 2.71
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.339 SNIP 1.495 CiteScore 2.54
ISI indexed (2012): ISI indexed yes
Exterior walls in historic multi-storey buildings compared to walls in modern buildings have low thermal resistance, resulting in high energy loss and cold surfaces/floors in cold climates. When restrictions regarding alteration of the exterior appearance exist, interior insulation might be the only possibility to increase occupant comfort. This paper describes an investigation of the hygrothermal influence when applying 100 mm of diffusion open interior insulation to a historic multi-storey solid masonry spandrel. The dormitory room with the insulated spandrel had a normal indoor climate with a maximum observed monthly average humidity by volume excess of 3.2 g/m³ during the experiment. Relative humidity and temperature were monitored manually using wooden dowels over 2 years and 8 months in two solid masonry spandrels: one insulated wall and one untreated wall. The investigation showed that installing insulation on a solid masonry spandrel induced hygrothermal changes: Uniformly distributed higher relative humidity and lower temperature throughout the masonry, compared to an un-insulated wall. The relative humidity of the un-insulated masonry wall was in the range 50% on the inside to 60% on the outside, while the insulated wall showed uniformly distributed values around 80%. The risk of moisture-induced damage was evaluated based on mathematical models for mould and decay of wood, visual inspection for frost and mould, and on-site measurements for presence of mould spores. The damage evaluation showed no risk of damage from the changed hygrothermal conditions when applying interior insulation to a solid masonry spandrel.
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.51 SJR 2.015 SNIP 2.198
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.093 SNIP 2.49 CiteScore 4.37
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.938 SNIP 2.797 CiteScore 4.14
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.581 SNIP 2.602 CiteScore 3.57
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.331 SNIP 2.875 CiteScore 3.06
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.144 SNIP 2.255 CiteScore 2.76
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.235 SNIP 2.001
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.028 SNIP 1.865
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.924 SNIP 1.38
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.788 SNIP 1.778
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.03 SNIP 1.63
Scopus rating (2005): SJR 0.955 SNIP 1.225
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.548 SNIP 1.266
Scopus rating (2003): SJR 0.948 SNIP 0.921
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.998 SNIP 1.39
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.777 SNIP 1.098
Scopus rating (2000): SJR 0.526 SNIP 1.14
Scopus rating (1999): SJR 0.564 SNIP 1.175
Original language: English
Damage, Experimental, Historical, Insulation, Masonry, Moisture
DOIs:
10.1016/j.buildenv.2017.11.015
Source: FindIt
Source-ID: 2393887564
Publication: Research - peer-review › Journal article – Annual report year: 2018
Interplay between daily rhythmic serum-mediated bacterial killing activity and immune defence factors in rainbow trout (Oncorhynchus mykiss)

Circadian rhythm is emerging as an important regulator of immune functions. However, there is a paucity of information on the influence of this biological phenomenon in the antimicrobial factors in teleost fish. This study investigated the dynamics and interplay of serum-mediated bacterial killing activity and immune defence factors throughout the light:dark (LD) cycle in rainbow trout (Oncorhynchus mykiss). The juvenile fish came from two different emergence time fractions (i.e., late and early) that were believed to exhibit behavioural and physiological differences. Serum collected during the day from fish (mean ± SD: 39.8 ± 6.3 g) reared under 14L:10D photoperiod demonstrated bactericidal activity against Flavobacterium psychrophilum, Yersinia ruckeri and Aeromonas salmonicida subsp. salmonicida of varying magnitude, but no significant differences between the emergence fractions were observed. A day-night comparison in the same batch of fish revealed time-of-day dependence in the bactericidal activity against F. psychrophilum and Y. ruckeri amongst emergence fractions. A group of fish (63.3 ± 4.7 g) from each fraction was entrained to 12L:12D photoperiod for 21 days to investigate whether serum bactericidal activity exhibit daily rhythm. Serum-mediated bacterial killing activity against F. psychrophilum and Y. ruckeri displayed significant daily rhythm in both emergence fractions, where the peak of activity was identified during the light phase. Moreover, several serum defence factors manifested variations during the LD cycle, where anti-protease (ANTI) and myeloperoxidase (MPO) activities exhibited significant daily oscillation. However, there were no remarkable differences in the daily changes of serum factors amongst emergence fractions. Acrophase analysis revealed that the peaks of activity of alkaline phosphatase (only in late fraction), ANTI, lysozyme (only in early fraction) and MPO were identified during the light phase and corresponded with the period when serum-mediated bacterial killing activity was also at its highest. The daily dynamics of bactericidal activity and immune defence factors displayed positive correlation, particularly between MPO and, the two pathogens (i.e., F. psychrophilum and Y. ruckeri). Taken together, the study revealed that serum-mediated bacterial killing activity and immune defence factors remarkably varied during the LD cycle in rainbow trout. In addition, the two emergence fractions displayed nearly comparable immunological profiles.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Aquaculture, National Veterinary Institute, Fish Diseases
Authors: Lazado, C. C. (Intern), Gesto, M. (Intern), Madsen, L. (Intern), Jokumsen, A. (Intern)
Pages: 418-425
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Fish and Shellfish Immunology
Volume: 72
ISSN (Print): 1050-4648
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.36 SJR 1.114 SNIP 1.16
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.268 SNIP 1.171 CiteScore 3.19
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.138 SNIP 1.089 CiteScore 2.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.001 SNIP 1.149 CiteScore 3.11
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.151 SNIP 1.174 CiteScore 3.02
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.196 SNIP 1.265 CiteScore 3.52
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
Introduction to Part III: Application of LCA in Practice

While Part II of this book presents the theoretical foundation and methodology of LCA, Part III is dedicated to a comprehensive discussion of how this methodology has been adapted and applied in practice. The chapters of Part III provide an easily readable and accessible introduction to different fields of LCA application with their specific decision situations, user competences and stakeholder needs, and associated methodological challenges and adaptations.

General information
State: Published
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment
Pages: 425-427
Publication date: 2018

Host publication information
Title of host publication: Life Cycle Assessment: Theory and Practice
Publisher: Springer
Edition: 1
ISBN (Print): 978-3-319-56474-6
ISBN (Electronic): 978-3-319-56475-3
Chapter: 17
Main Research Area: Technical/natural sciences
DOIs:
10.1007/978-3-319-56475-3_17
Publication: Research - peer-review › Book chapter – Annual report year: 2018
Investigation on acceptable reverberation time at various frequency bands in halls that present amplified music
Subjective ratings from 25 professional musicians and sound engineers were obtained to assess two Danish rock venues of similar size and similar low frequency reverberation times, but different high frequency reverberation times. The musicians judged one hall significantly better than the other, confirming a hypothesis that rock venues can have a longer reverberation time at mid to high frequencies at least in the empty condition. A fairly long reverberation time in the 63 Hz octave band is found to be acceptable, so the 125 Hz octave band is probably the single most important band to control for amplified music.

General information
State: Published
Organisations: Department of Electrical Engineering, Acoustic Technology, Flex Acoustics, COWI AS
Authors: Adelman-Larsen, N. W. (Ekstern), Jeong, C. (Intern), Støfringsdal, B. (Ekstern)
Pages: 104–107
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Applied Acoustics
Volume: 129
ISSN (Print): 0003-682X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.33 SJR 0.89 SNIP 1.651
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.699 SNIP 1.757 CiteScore 1.85
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.686 SNIP 1.918 CiteScore 1.67
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.828 SNIP 2.356 CiteScore 1.64
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.8 SNIP 2.183 CiteScore 1.66
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.835 SNIP 1.807 CiteScore 1.38
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.702 SNIP 1.494
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.821 SNIP 1.498
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.725 SNIP 1.801
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.685 SNIP 1.296
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.646 SNIP 1.383
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.635 SNIP 1.252
Scopus rating (2004): SJR 0.594 SNIP 1.061
**Laboratory Approaches to Studying Occupants**

Laboratories offer the possibility to study occupant behavior in a very detailed manner. A wide range of indoor environmental scenarios can be simulated under precisely controlled conditions, and human subjects can be selected based on pre-defined criteria. The degree of control over experiments is high and a large number of physical, physiological, and psychological quantities can be monitored. This chapter gives an overview of various types of test facilities in the world and their main features in terms of experimental opportunities. It then presents typical technical equipment and sensor technologies used in laboratory environments. Finally, questions on appropriate laboratory design and experimental set-ups are discussed. One conclusion is that, in spite of many advantages, there are limits to investigating occupant behavior in a laboratory’s “artificial” environment, in part due to the fact that subjects always feel observed to some extent. However, valuable results can be achieved if the specific opportunities of laboratories are utilized both by appropriate design and precise experiments during operation.

**General information**

State: Published

Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Karlsruhe Institute of Technology KIT, University of California at Berkeley, University of Sydney, Berkeley Education Alliance for Research in Singapore Limited, Maastricht University, RWTH Aachen University, Norwegian University of Science and Technology, Fraunhofer Institute for Building Physics

Authors: Wagner, A. (Ekstern), Andersen, R. (Intern), Zhang, H. (Ekstern), de Dear, R. (Ekstern), Schweiker, M. (Ekstern) , Goh, E. (Ekstern), van Marken Lichtenbelt, W. (Ekstern), Streblow, R. (Ekstern), Goia, F. (Ekstern), Park, S. (Ekstern)

Number of pages: 44

Pages: 169-212

Publication date: 2018

**Host publication information**

Title of host publication: Exploring Occupant Behavior in Buildings: Methods and Challenges

Publisher: Springer

ISBN (Print): 978-3-319-61463-2

ISBN (Electronic): 978-3-319-61464-9

Chapter: 7

Main Research Area: Technical/natural sciences

DOIs: 10.1007/978-3-319-61464-9_7

Publication: Research - peer-review › Book chapter – Annual report year: 2018

**LCA of Electromobility**

Private transportation is increasingly responsible for a significant share of GHG emissions. In this context, electric vehicles (EVs) are considered to be a key technology to reduce the environmental impact caused by the mobility sector. While EVs do offer an opportunity to decrease the production of greenhouse gases radically by avoiding the generation of tailpipe emissions, different technological challenges must be overcome. On the one side, the production of the battery system is of significant importance as it is reckoned to be responsible for around 40–50% of the total CO2-eq. emissions of the vehicle’s manufacturing stage. Moreover, the additional requirements for metals like copper and aluminium for the battery system as well as rare earth metals for the production of electric motors might lead to shifting the problem to other life cycle stages or areas of impact. On the other side, the source of the energy used to power an EV has an ultimate influence on the environmental impact caused during the vehicle’s use stage. The life cycle assessment methodology is normally used to measure the environmental impact of electric vehicles and to identify potential problem shifting. In this chapter, we present an overview of the application of the methodology within the electric mobility sector.
LCA of Wastewater Treatment
The main purpose of wastewater treatment is to protect humans against waterborne diseases and to safeguard aquatic bio-resources like fish. The dominating environmental concerns within this domain are indeed still potential aquatic eutrophication/oxygen depletion due to nutrient/organic matter emissions and potential health impacts due to spreading of pathogens. Anyway, the use of treatment for micro-pollutants is increasing and a paradigm shift is ongoing — wastewater is more and more considered as a resource of, e.g. energy, nutrients and even polymers, in the innovations going on. The focus of LCA studies addressing wastewater treatment have from the very first published cases, been on energy and resource consumption. In recent time, the use of characterisation has increased and besides global warming potential, especially eutrophication is in focus. Even the toxicity-related impact categories are nowadays included more often. Application of LCA for comparing avoided against induced impacts, and hereby identifying trade-offs when introducing new technology, is increasingly used. A typical functional unit is the treatment of one cubic metre of wastewater which should be well defined regarding composition. Depending on the goal and scope of the study, all life cycle stages have the potential of being significant, though disposal of infrastructure seems to be the least important for the impact profile in many cases. No inventory data and none of the conventional impact categories (except stratospheric ozone depletion if emission of N2O is excluded) should be ruled out; but eutrophication and ecotoxicity are in many cases among the dominating ones.

Life cycle assessment of sewage sludge management options including long-term impacts after land application
A life cycle assessment (LCA) was performed on five commonly applied sewage sludge treatment practices: dewatering of mixed sludge (DMS), lime stabilisation of dewatered sludge (LIMS), anaerobic digestion of mixed sludge (ADS), dewatering of anaerobically-digested sludge (DADS) and incineration of dewatered anaerobically-digested sludge (INC). In the first four scenarios, the sludge residues were applied on agricultural land, while in the fifth scenario ash from sludge incineration was landfilled. It was found that the sludge treatment technology influenced in which processes C and N emissions happened. In general, the INC scenario performed better than or comparably to the scenarios with land application of the sludge. Human toxicity (non-carcinogenic) and eco-toxicity showed the highest normalised impact.
potentials for all the scenarios with land application. In both categories, impacts were dominated by the application of zinc and copper to agricultural soil. For the eutrophication potentials, different scenarios appeared beneficial depending on the receiving compartment in focus. The fate of P dominated freshwater eutrophication, while the fate of N had a profound effect on all non-toxic impact categories other than freshwater eutrophication. The sensitivity analysis showed that the results were sensitive to soil and precipitation conditions. The ranking of scenarios was affected by local conditions for marine eutrophication. Overall, the present study highlighted the importance of including all sludge treatment stages and conducting a detailed N flow analysis, since the emission of reactive N into the environment is the major driver for almost all non-toxic impact categories.

**General information**
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering, Atmospheric Environment, Water Technologies, University of Copenhagen, Technical University of Denmark
Authors: Yoshida, H. (Intern), ten Hoeve, M. (Ekstern), Christensen, T. H. (Intern), Bruun, S. (Ekstern), Jensen, L. S. (Ekstern), Scheutz, C. (Intern)
Pages: 538-547
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Journal of Cleaner Production
Volume: 174
ISSN (Print): 0959-6526
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.83 SJR 1.615 SNIP 2.382
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.609 SNIP 2.383 CiteScore 5.57
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.661 SNIP 2.477 CiteScore 4.6
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.644 SNIP 2.581 CiteScore 4.47
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.706 SNIP 2.328 CiteScore 4.07
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.461 SNIP 1.825 CiteScore 3.19
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.419 SNIP 1.742
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.942 SNIP 1.544
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.813 SNIP 1.354
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.942 SNIP 1.489
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.842 SNIP 1.543
Life Cycle Costing: An Introduction

The chapter gives an introduction to life cycle costing (LCC) and how it can be used to support decision-making. It can form the economic pillar in a full life cycle sustainability assessment, but often system delimitations differ depending on the goal and scope of the study. To provide a profound understanding this chapter describes several approaches and terms, fundamental principles and different types of costs. A brief introduction is given to conventional LCC and societal LCC but the main focus is on environmental Life Cycle Costing (eLCC) as the LCC approach that is compatible with environmental Life Cycle Assessment (LCA) in terms of system delimitation. Differences are explained and addressed, and an overview is given of the main cost categories to consider from different user perspectives. As inventory data is often sensitive in financial analyses, a list of relevant databases is provided as well as guidance on how to collect data to overcome this hurdle. In an illustrative case study on window frames, the eLCC theory is applied and demonstrated with each step along the eLCC procedure described in detail. A final section about advanced LCC introduces how to monetarise externalities and how to do discounting.

General information
State: Published
Organisations: Department of Management Engineering, Department of Mechanical Engineering, Engineering Design and Product Development
Authors: Rödger, J. (Intern), Kjær, L. L. (Intern), Pagoropoulos, A. (Intern)
Pages: 373-399
Publication date: 2018

Host publication information
Title of host publication: Life Cycle Assessment : Theory and Practice
Publisher: Springer
Editors: Z. Hauschild, M., K. Rosenbaum, R., Irving Olsen , S.
ISBN (Print): 978-3-319-56474-6
ISBN (Electronic): 978-3-319-56475-3
Main Research Area: Technical/natural sciences
DOI: 10.1007/978-3-319-56475-3_15
Publication: Research - peer-review › Book chapter – Annual report year: 2018

Life Cycle Thinking and the Use of LCA in Policies Around the World

The chapter explains what Sustainable Consumption and Production (SCP) is about, why it is about taking a life cycle approach and shows that SCP-related policies have been developed at the intergovernmental level and in different regions of the world. A key element at the international level is the 10-Year Framework of Programmes on SCP adopted in 2012 and the global agreements on the Sustainable Development Goals (SDGs) adopted in 2015. Life cycle thinking has become mature, moving from its academic origins and limited uses, primarily in-house in large companies, to more powerful approaches that can support the provision of more sustainable goods and services through efficient use in product development, external communications, in support of customer choice, and in public debates. Now governments can use LCA for SCP policies. For this purpose LCA databases are needed. LCA is in particular relevant for policies focusing on design for sustainability, sustainable consumer information, sustainable procurement and waste management, minimization and prevention as well as sector-specific policies like sustainable energy and food supply. Examples of life cycle thinking and the use of LCA in policies are provided for numerous countries around the world but with a certain focus on the European Union. It can be expected that the use of LCA in policies for the sustainability assessment of products will
further increase, also slowly covering more means of implementation such as incentives and legislative obligations.

Mechanical stability of roll-to-roll printed solar cells under cyclic bending and torsion

The ability of printed organic solar cells (OSCs) to survive repeated mechanical deformation is critical to large-scale implementation. This paper reports an investigation into the mechanical stability of OSCs through bending and torsion testing of whole printed modules. Two types of modules are used that differ slightly in thickness as well as on the basis of the electrode materials: silver nanowires or carbon-based inks. Each type of module is subjected to two different mechanical modes of deformation, bending and torsion, of several thousand cycles per module using a purpose-built robotic device. Analysis of the distribution of stress in the devices performed by finite-element modeling predicts the locations of failure. Failure upon bending originates at the laser-cut edges of the modules from shear at the clamp/module interface leading to crazing of the plastic barrier encapsulant foils. This crazing leads to eventual delamination due first to decohesion of the active layer at the edge of the modules and later to deadhesion between the PEDOT:PSS (electrode) and P3HT:PCBM (semiconductor) layers. The torsion mode imposes greater stresses than the bending mode and thus leads to failure at fewer strain cycles. Failure during torsion occurs through crack propagation initiated at stress concentrations on the edges of the module that were imposed by their rectangular geometry and ultimately leads to bifurcation of the entire module. Rather than the differences in electrode materials, the differences in survivability between the two types of modules are attributed mostly to the thickness of the substrate materials used, with the thinner substrate used in the carbon-based modules (~160 Åm) failing at fewer strain cycles than the substrate used in the silver-nanowire-based modules (~190 Åm). Taken together, the results suggest ways in which the lifetimes of devices can be extended by the layouts of modules and choices of materials.
Membrane separation of enzyme-converted biomass compounds: Recovery of xylose and production of gluconic acid as a value-added product

The purpose of the present study was to assess the efficiency of enzyme-assisted nanofiltration for separation of xylose from glucose present in genuine biorefinery liquors obtained from hydrothermal pretreatment of wheat straw, corn stover and Miscanthus stalks. Glucose oxidase and catalase were used to convert the glucose contained in the liquors into gluconic acid, so xylose could be more easily recovered in the subsequent nanofiltration. Subjecting the biomass liquors to dilute acid treatment and centrifugation before the enzymatic reaction and filtration led to maximum biocatalytic performance of the membrane bioreactor (neglectable fouling and no enzyme activity loss) during five consecutive reaction-filtration cycles. The best separation factor of gluconic acid over xylose in the subsequent nanofiltration was 2.7.
2.5 and 2.2 for wheat straw, corn stover and Miscanthus stalks, respectively. All represented a significant improvement compared to the benchmark separation of xylose and glucose, in which case the separation factor was only 1.4. However, the higher ionic strength of the biomass liquors compared to the pure model solution probably led to a less negative zeta potential of the nanofiltration membrane, which significantly reduced the xylose purification performance as compared to the model system, for which the separation factor was 34.

**General information**

State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering
Pages: 73-80
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Separation and Purification Technology
Volume: 194
ISSN (Print): 1383-5866
Ratings:
  - BFI (2017): BFI-level 2
  - Web of Science (2017): Indexed yes
  - BFI (2016): BFI-level 2
  - Scopus rating (2016): CiteScore 3.78 SJR 1.023 SNIP 1.394
  - Web of Science (2016): Indexed yes
  - BFI (2015): BFI-level 2
  - Scopus rating (2015): SJR 1.078 SNIP 1.504 CiteScore 3.75
  - Web of Science (2015): Indexed yes
  - BFI (2014): BFI-level 2
  - Scopus rating (2014): SJR 1.257 SNIP 1.54 CiteScore 3.5
  - Web of Science (2014): Indexed yes
  - BFI (2013): BFI-level 2
  - Scopus rating (2013): SJR 1.325 SNIP 1.678 CiteScore 3.62
  - ISI indexed (2013): ISI indexed yes
  - Web of Science (2013): Indexed yes
  - BFI (2012): BFI-level 2
  - Scopus rating (2012): SJR 1.409 SNIP 1.732 CiteScore 3.2
  - ISI indexed (2012): ISI indexed yes
  - Web of Science (2012): Indexed yes
  - BFI (2011): BFI-level 2
  - Scopus rating (2011): SJR 1.35 SNIP 1.64 CiteScore 3.48
  - ISI indexed (2011): ISI indexed yes
  - Web of Science (2011): Indexed yes
  - BFI (2010): BFI-level 2
  - Scopus rating (2010): SJR 1.376 SNIP 1.586
  - BFI (2009): BFI-level 2
  - Scopus rating (2009): SJR 1.388 SNIP 1.542
  - Web of Science (2009): Indexed yes
  - BFI (2008): BFI-level 2
  - Scopus rating (2008): SJR 1.109 SNIP 1.433
  - Web of Science (2008): Indexed yes
  - Scopus rating (2007): SJR 1.015 SNIP 1.457
  - Web of Science (2007): Indexed yes
  - Scopus rating (2006): SJR 1.222 SNIP 1.628
  - Web of Science (2006): Indexed yes
  - Scopus rating (2005): SJR 1.012 SNIP 1.424
  - Scopus rating (2004): SJR 1.042 SNIP 1.314
  - Scopus rating (2003): SJR 0.843 SNIP 1.069
Metabolite ratios as potential biomarkers for type 2 diabetes: a DIRECT study

Aims/hypothesis: Circulating metabolites have been shown to reflect metabolic changes during the development of type 2 diabetes. In this study we examined the association of metabolite levels and pairwise metabolite ratios with insulin responses after glucose, glucagon-like peptide-1 (GLP-1) and arginine stimulation. We then investigated if the identified metabolite ratios were associated with measures of OGTT-derived beta cell function and with prevalent and incident type 2 diabetes. Methods: We measured the levels of 186 metabolites in plasma samples from 130 healthy members of twin families (from the Netherlands Twin Register) at five time points during a modified 3 h hyperglycaemic clamp with glucose, GLP-1 and arginine stimulation. We validated our results in cohorts with OGTT data (n = 340) and epidemiological case-control studies of prevalent (n = 4925) and incident (n = 4277) diabetes. The data were analysed using regression models with adjustment for potential confounders. Results: There were dynamic changes in metabolite levels in response to the different secretagogues. Furthermore, several fasting pairwise metabolite ratios were associated with one or multiple clamp-derived measures of insulin secretion (all p < 9.2 × 10^{-7}). These associations were significantly stronger compared with the individual metabolite components. One of the ratios, valine to phosphatidylcholine acyl-alkyl C32:2 (PC ae C32:2), in addition showed a directionally consistent positive association with OGTT-derived measures of insulin secretion and resistance (p = 4.5 × 10^{-3}) and prevalent type 2 diabetes (ORVal_PC ae C32:2 2.64 [95% CI 1.97 to 3.52], p = 1.0 × 10^{-27}). Furthermore, Val_PC ae C32:2 predicted incident diabetes independent of established risk factors in two epidemiological cohort studies (HRVal_PC ae C32:2 1.57 [95% CI 1.27 to 1.94], p = 1.3 × 10^{-15}), leading to modest improvements in the receiver operating characteristics when added to a model containing a set of established risk factors in both cohorts (increases from 0.780 to 0.801 and from 0.862 to 0.865 respectively, when added to the model containing traditional risk factors + glucose). Conclusions/interpretation: In this study we have shown that the Val_PC ae C32:2 metabolite ratio is associated with an increased risk of type 2 diabetes and measures of insulin secretion and resistance. The observed effects were stronger than that of the individual metabolites and independent of known risk factors.

General information
State: Published
Organisations: Department of Bio and Health Informatics, Integrative Systems Biology, Disease Intelligence and Molecular Evolution, Helmholtz Zentrum München, VU University Medical Centre, Vrije Universiteit, German Institute of Human Nutrition, Leiden University Medical Center, German Center for Diabetes Research, Vrije Universiteit Amsterdam, Max Delbrück Center for Molecular Medicine, University of Oxford, University of Dundee, Kebenhavns Universitet
Pages: 117-129
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Diabetologia
Volume: 61
ISSN (Print): 0012-186X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Metal Oxide-Based Thin Film Structures

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Electrofunctional materials, Ceramic Engineering & Science
Authors: Pryds, N. (ed.) (Intern), Esposito, V. (ed.) (Intern)
Number of pages: 560
Publication date: 2018

Publication information
Publisher: Elsevier Science
Microbial electrochemical separation of CO₂ for biogas upgrading

Biogas upgrading to natural gas quality has been under focus the recent years for increasing the utilization potential of biogas. Conventional methods for CO₂ removal are expensive and have environmental challenges, such as increased emissions of methane in the atmosphere with serious greenhouse impact. In this study, an innovative microbial electrochemical separation cell (MESC) was developed to in-situ separate and regenerate CO₂ via alkali and acid regeneration. The MESC was tested under different applied voltages, inlet biogas rates and electrolyte concentrations. Pure biomethane was obtained at 1.2 V, inlet biogas rate of 0.088 mL/h/mL reactor and NaCl concentration of 100 mM at a 5-day operation. Meanwhile, the organic matter of the domestic wastewater in the anode was almost completely removed at the end. The study demonstrated a new sustainable way to simultaneously upgrade biogas and treat wastewater which can be used as proof of concept for further investigation.
Microstrip linear phase low pass filter based on defected ground structures for partial response modulation

We report a high performance linear phase low pass filter (LPF) designed for partial response (PR) modulations. For the implementation, we adopted microstrip technology and a variant of the standard stepped-impedance technique. Defected ground structures (DGS) are used for increasing the characteristic impedance of transmission lines. Experimental results prove that the proposed filter can successfully modulate a non-return-to-zero (NRZ) signal into a five levels PR one.

General information
State: Published
Organisations: Metro-Access and Short Range Systems, Department of Electrical Engineering, Electromagnetic Systems, Mellanox Technologies
Authors: Cimoli, B. (Intern), Johansen, T. K. (Intern), Olmos, J. J. V. (Ekstern)
Number of pages: 8
Pages: 18-25
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Microwave and Optical Technology Letters
Volume: 60
Issue number: 1
ISSN (Print): 0895-2477
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.87 SJR 0.299 SNIP 0.568
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.337 SNIP 0.52 CiteScore 0.72
BFI (2014): BFI-level 1
Multiplex Genome Editing in Escherichia coli

Lambda Red recombineering is an easy and efficient method for generating genetic modifications in Escherichia coli. For gene deletions, lambda Red recombineering is combined with the use of selectable markers, which are removed through the action of, e.g., flippase (Flp) recombinase. This PCR-based engineering method has also been applied to a number of other bacteria. In this chapter, we describe a recently developed one plasmid-based method as well as the use of a strain with genomically integrated recombineering genes, which significantly speeds up the engineering of strains with multiple genomic alterations.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization, Research Groups

Scopus rating (2014): SJR 0.362 SNIP 0.594 CiteScore 0.71
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.371 SNIP 0.639 CiteScore 0.75
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.365 SNIP 0.584 CiteScore 0.83
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.392 SNIP 0.61 CiteScore 0.83
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.409 SNIP 0.55
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.476 SNIP 0.614
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.424 SNIP 0.6
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.58 SNIP 0.828
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.595 SNIP 0.688
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.601 SNIP 0.798
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.634 SNIP 0.818
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.65 SNIP 0.818
Scopus rating (2002): SJR 0.624 SNIP 0.732
Scopus rating (2001): SJR 0.594 SNIP 0.606
Scopus rating (2000): SJR 0.415 SNIP 0.544
Scopus rating (1999): SJR 0.606 SNIP 0.785
Original language: English
Defected ground structures, Microwave filters, Partial response modulation
DOIs:
10.1002/mop.30913
Source: FindIt
Source-ID: 2393819616
Publication: Research - peer-review › Journal article – Annual report year: 2018
Near-wellbore modeling of a horizontal well with Computational Fluid Dynamics
The oil production by horizontal wells is a complex phenomenon that involves flow through the porous reservoir, completion interface and the well itself. Conventional reservoir simulators can hardly resolve the flow through the completion into the wellbore. On the contrary, Computational Fluid Dynamics (CFD) is capable of modeling the complex interaction between the creeping reservoir flow and turbulent well flow for single phases, while capturing both the completion geometry and formation damage. A series of single phase steady-state simulations are undertaken, using such fully coupled three dimensional numerical models, to predict the inflow to the well. The present study considers the applicability of CFD for near-wellbore modeling through benchmark cases with available analytical solutions. Moreover, single phase steady-state numerical investigations are performed on a specific perforated horizontal well producing from the Siri field, offshore Denmark. The performance of the well is investigated with an emphasis on the inflow profile and the productivity index for different formation damage scenarios. A considerable redistribution of the inflow profile were found when the filtrate invasion extended beyond the tip of the perforations.

General information
State: Published
Organisations: Department of Mechanical Engineering, Scientific Computing, Fluid Mechanics, Coastal and Maritime Engineering, Department of Chemistry, CERE – Center for Energy Ressources Engineering, Technical University of Denmark, Lloyd’s Register Consulting
Authors: Szanyi, M. L. (Ekstern), Hemmingsen, C. S. (Intern), Yan, W. (Intern), Walther, J. H. (Intern), Glimberg, S. L. (Ekstern)
Pages: 119-128
Publication date: 2018
Main Research Area: Technical/natural sciences
New association schemes for mono-ethylene glycol: Cubic-Plus-Association parameterization and uncertainty analysis

Accurate thermodynamic predictions for systems containing glycols are essential for the design and commissioning of novel subsea natural gas dehydration units. Previously it has been shown that the Cubic-Plus-Association (CPA) equation of state can be used to model VLE, SLE and LLE for mixtures of interest to this application. Recent developments for association schemes have shown that the use of a binary association site provided improved modelling of 1-alkanols. In this work, we implement the binary association site for mono-ethylene glycol (MEG) by proposing three new association schemes (3C, 4E & 4F). New parameter sets have been regressed and uncertainty analysis, using the bootstrap methodology, was performed to obtain 95% confidence intervals for each parameter. An improved parameter set for the literature 4C scheme was also determined.

The four association schemes were tested against eight data types, with single parameter sensitivity analysis showing that new parameter sets are near optimal. The 3C scheme provides the best results for pure component properties and the liquid phase of MEG-H$_2$O, while new 4C parameters provide the best results for the MEG-H$_2$O (vapour phase) and MEG-nC$_7$ LLE. For the limited ternary (MEG-H$_2$O-CH$_4$) data and MEG-nC$_6$ LLE, the best results are achieved using the 4F scheme. Ternary modelling performance was further improved by using binary interaction parameters fitted to binary vapour phase data.

While each of the new parameter sets provided an improvement over the literature parameters, it was found that no specific scheme was universally the best option. Given the uncertainty ranges and inconsistency between literature data, additional experimental data are required.

Despite the lack of sufficient data, the value of the bootstrap method has been highlighted, both for finding improved parameter sets and transferring uncertainty from experimental data through to thermodynamic and process models.
Nitrous oxide production in intermittently aerated Partial Nitritation-Anammox reactor: oxic $\text{N}_2\text{O}$ production dominates and relates with ammonia removal rate

Emissions of the greenhouse gas nitrous oxide from the Partial Nitritation-Anammox process are of concern and can determine the carbon footprint of the process. In order to reduce nitrous oxide emissions intermittent aeration regimes have been shown to be a promising mode of operation, possibly due to an effective control of accumulation of nitrogen intermediates. However, due to frequent changes of redox conditions under intermittent aeration regimes, nitrous oxide production and emissions are dynamic. In this study the production and emission dynamics of nitrous oxide in an intermittently aerated sequencing batch reactor were monitored in high temporal resolution, the contribution of different redox conditions to overall nitrous oxide production was quantified and the most relevant factors for nitrous oxide production were identified. The average fraction of nitrous oxide produced (per unit ammonium removed) was $1.1 \pm 0.5\%$. Cycle-averaged approx. 80\% of nitrous oxide was produced during aerated phases, the remaining 20\% were produced during non-aerated phases. Yet, the intra-cycle dynamics of nitrous oxide were substantial. The net-production rate of nitrous oxide during aerated phases correlated with the ammonia removal rate, whereas the concentration of nitrite determined the production during non-aerated phases. While aerated phases contributed predominantly at the beginning of reactor cycles, non-aerated phases became the dominant source of nitrous oxide at the end. Particularly low net-production rates were observed at ammonia removal rates below 5 mg NH3-N*gVSS−1*L−1, when the fraction of nitrous oxide produced was $0.011 \pm 0.004\%$ (per ammonia removed). Based on the nitrous oxide dynamics and correlations, reactor operation at relatively low nitrogen loadings (below 100 mg NH4+-N*L−1), ammonia removal rates of approx. 5 mg NH3-N*gVSS−1*L−1 and nitrite concentrations below 1 mg NO2−1-N*L−1 appears as beneficial for low emission of nitrous oxide.

**General information**

State: Published
Organisations: Department of Environmental Engineering, Water Technologies
Authors: Blum, J. (Intern), Jensen, M. M. (Intern), Smets, B. F. (Intern)
Number of pages: 9
Pages: 458-466
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Chemical Engineering Journal
Volume: 335
ISSN (Print): 1369-703X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.16
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.75
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.72
Web of Science (2014): Indexed yes
In the present study, three-dimensional (3D) computational fluid dynamics simulations are performed to examine the process of sulfuric acid (H₂SO₄) and water (H₂O) condensation in a large two-stroke marine diesel engine. A skeletal n-heptane chemical mechanism is coupled with a sulfur (S) subset to simulate the combustion process as well as the formation of sulfuric oxides (SOₓ) and H₂SO₄. The condensation process is simulated using a fluid film model which is coupled with the in-cylinder gas phase. Prior to the engine simulations, the fluid film condensation model is validated using the experimental data of sulfuric acid condensation rate in a laminar pipe flow. Next, the engine model is validated against the experimental sulfur dioxide (SO₂) to sulfur trioxide (SO₃) conversion obtained from the corresponding test engine. Both of the validation studies show a good agreement with the experimental data. The engine model is then utilized to simulate condensation for different operating conditions. The engine simulation results reveal that the fluid film has a significant effect on the total mass of sulfuric acid vapor and a marginal effect on the total mass of water vapor. A close to linear correlation is found between the fuel sulfur content and the total condensed mass of sulfuric acid. The level of humidity of the scavenging air does not affect the condensation of sulfuric acid considerably, relative to the humidity increase, but it has a high impact on water condensation. The study of the scavenging pressure level reveals a counter intuitive behavior where the condensation rates decrease with higher scavenging pressures due to the flow regime and flame size. Next, increasing the cylinder liner temperature decreases significantly the water condensation contrary to the sulfuric acid condensation which is marginally affected. The increase in lubricant film thickness results in a decrease for both the sulfuric acid and water condensation with a more pronounced reduction for water. Finally, a comparison between the high and low load operating conditions reveals a small drop in the total condensed mass of sulfuric acid and water for the low load conditions.
Occupancy and Occupants' Actions

Occupants’ presence and actions within the built environment are crucial aspects related to understanding variations in energy use. Within this chapter, first, a nomenclature for the field of research dealing with occupants in buildings is defined. This nomenclature distinguishes between occupants’ presence and behavior, states and actions, adaptive triggers, non-adaptive triggers, and contextual factors. Second, an extensive list of occupant behaviors is provided and categorizations of occupants’ actions are introduced. The list includes most of the possible phenomena that researchers may wish to study, measure, and ultimately model. The categories are physiological, individual, environmental, and spatial adjustments. Third, a list of adaptive and non-adaptive triggers together with contextual factors that could influence occupant behavior is presented. Individual elements are further grouped into physical environmental, physiological, psychological, and social aspects. Finally, a comprehensive table of studies related to occupant behavior and the corresponding significant and non-significant predictors, based on an extensive literature review, is shown. This table highlights areas of research where numerous studies have been conducted, as well as areas where hardly any research has been published. The conclusion highlights the importance of publishing future occupant monitoring campaigns with sufficient detail to inform future researchers and save redundant effort. Such detail is especially necessary in relation to the methodology, including, for example, a clear description of the type of variables monitored, and in relation to the results, where both the influencing factors that were found to be significant and insignificant should be documented.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Karlsruhe Institute of Technology KIT, Norwegian University of Science and Technology, University of Texas at San Antonio, Carleton University
Authors: Schweiker, M. (Ekstern), Carlucci, S. (Ekstern), Andersen, R. (Intern), Dong, B. (Ekstern), O’Brien, W. (Ekstern)
Number of pages: 32
Pages: 7-38
Publication date: 2018

On the interpretation of Mössbauer spectra of magnetic nanoparticles

Mössbauer spectra of magnetic nanoparticles are usually influenced by fluctuations of the direction of the magnetic hyperfine field. In samples of non-interacting particles, the superparamagnetic relaxation usually results in spectra consisting of a sum of a sextet and a doublet with a temperature dependent area ratio. This is in accordance with the exponential dependence of the superparamagnetic relaxation time on particle size and temperature in combination with the particle size distribution. An alternative interpretation of these features is a first order magnetic transition from a magnetically ordered state to a paramagnetic state. We point out that this interpretation seems not to be correct, because the doublet component has been found to transform to a magnetically split component when relatively small magnetic fields are applied, and therefore it cannot be due to a paramagnetic state. In other cases, spectra of magnetic nanoparticles consist of sextets with asymmetrically broadened lines without the presence of doublets. It has been suggested that such spectra can be explained by a multilevel model, according to which relaxation takes place between a large number of states. We point out that spectra with asymmetrically broadened lines at least in some cases rather should be explained by the influence of magnetic inter-particle interactions on the magnetic fluctuations.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Magnetic Systems, Department of Physics, Neutrons and X-rays for Materials Physics
Authors: Fock, J. (Intern), Hansen, M. F. (Intern), Frandsen, C. (Intern), Mørup, S. (Intern)
Pages: 11-21
On the use of liposome controls in studies investigating the clinical potential of extracellular vesicle-based drug delivery systems - A commentary

The field of extracellular vesicle (EV)-based drug delivery systems has evolved significantly through the recent years, and numerous studies suggest that these endogenous nanoparticles can function as efficient drug delivery vehicles in a variety of diseases. Many characteristics of these EV-based drug delivery vehicles suggest them to be superior at residing in the systemic circulation and possibly at mediating therapeutic effects compared to synthetic drug delivery vehicles, e.g. liposomes. In this Commentary, we discuss how some currently published head-to-head comparisons of EVs versus liposomes are weakened by the inadequate choice of liposomal formulation, and encourage researchers to implement better controls to show any potential superiority of EVs over other synthetic nanoparticles.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Colloids and Biological Interfaces, Aalborg University
Authors: Johnsen, K. B. (Ekstern), Gudbergsson, J. M. (Ekstern), Duroux, M. (Ekstern), Moos, T. (Ekstern), Andresen, T. L. (Intern), Simonsen, J. B. (Intern)
Pages: 10-14
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Controlled Release
Volume: 269
ISSN (Print): 0168-3659
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.56 SJR 2.393 SNIP 1.84
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.725 SNIP 2.08 CiteScore 8.11
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.416 SNIP 2.092 CiteScore 6.86
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.416 SNIP 2.044 CiteScore 6.31
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.417 SNIP 2.061 CiteScore 5.84
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.745 SNIP 2.098 CiteScore 6.33
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.194 SNIP 2.306
Web of Science (2010): Indexed yes
Optimal design of robust piezoelectric unimorph microgrippers

Topology optimization can be used to design piezoelectric actuators by simultaneous design of host structure and polarization profile. Subsequent micro-scale fabrication leads us to overcome important manufacturing limitations: difficulties in placing a piezoelectric layer on both top and bottom of the host layer. Unsymmetrical layer placement makes the actuator bend, spoiling the predicted performance of the device. The aim of this work is to maximize the in-plane displacement of a microgripper-type actuator while out-of-plane displacement at some points of interest is suppressed. This last issue is the main novelty introduced in this work, and the emphasis is placed on the modelling and its applicability rather than numerical methods. In addition, a robust formulation of the problem has been used in order to ensure minimum length scale in the optimal designs, which it is crucial from the manufacturability point of view.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, Universidad de Castilla-La Mancha
Authors: Ruiz, D. (Ekstern), Díaz-Molina, A. (Ekstern), Sigmund, O. (Intern), Donoso, A. (Ekstern), Carlos Bellido, J. (Ekstern), Sánchez-Rojas, J. L. (Ekstern)
Pages: 1-12
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Applied Mathematical Modelling
Volume: 55
ISSN (Print): 0307-904X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.03 SJR 1.145 SNIP 1.748
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.212 SNIP 1.697 CiteScore 2.67
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.179 SNIP 1.923 CiteScore 2.72
Web of Science (2014): Indexed yes
Optimization of organic Rankine cycle power systems considering multistage axial turbine design

Organic Rankine cycle power systems represent a viable and efficient solution for the exploitation of medium-to-low temperature heat sources. Despite the large number of commissioned units, there is limited literature on the design and optimization of organic Rankine cycle power systems considering multistage turbine design. This work presents a preliminary design methodology and working fluid selection for organic Rankine cycle units featuring multistage axial turbines. The method is then applied to the case of waste heat recovery from a large marine diesel engine. A multistage axial turbine model is presented and validated with the best available data from literature. The methodology allows the identification of the most suitable working fluid considering the trade-off between cycle and multistage turbine designs. The results of the optimization of cycle and turbine suggest that the fluid n-butane yields the best compromise in terms of cycle net power output, turbine cost and efficiency for the considered case study. When a conservative design approach is adopted, the turbine features a two-stage configuration with supersonic converging nozzles and post-expansion. Conversely, a single-stage turbine featuring a supersonic converging-diverging nozzle and Mach number up to 2 is the resulting ideal choice when a more advanced design approach is implemented.

General information
State: Published
Organisations: Department of Mechanical Engineering, Thermal Energy, Politecnico di Milano
Authors: Meroni, A. (Intern), Andreasen, J. G. (Intern), Persico, G. (Ekstern), Haglind, F. (Intern)
Pages: 339-354
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Applied Energy
Organisational LCA

The most applied and widespread approaches for environmental assessments at the organisation level have only recently extended their view beyond the factory gates. Even if they now consider the full value chain, they still mostly concentrate on a single environmental aspect like greenhouse gases (GHGs). While LCA was originally developed for products, its benefits and potential can be extended to the assessment of organisations. Organisational LCA is built on the principles, requirements and guidelines of ISO 14040 and ISO 14044, but requires some adaptations in the scope and inventory phases, when the unit of analysis and the system boundaries are defined. Also, the approach for data collection needs to be fixed. Organisational LCA is a compilation and evaluation of the inputs, outputs and potential environmental impacts of the activities associated with the organisation adopting a life cycle perspective. It includes not only the facilities of the organisation itself, but also the activities upstream and downstream the value chain. This methodology is capable of serving multiple goals at the same time, like identifying environmental hotspots throughout the value chain, tracking environmental performance over time, supporting strategic decisions, and informing corporate sustainability reporting. Several initiatives are on the way for the LCA of organisations: the UNEP/SETAC Life Cycle Initiative published the ‘Guidance on organisational LCA’, using ISO/TS 14072 as a backbone; moreover, the European Commission launched a guide for the organisation environmental footprint.

Overnight glucose control in people with type 1 diabetes

This paper presents an individualized model predictive control (MPC) algorithm for overnight blood glucose stabilization in people with type 1 diabetes (T1D). The MPC formulation uses an asymmetric objective function that penalizes low glucose levels more heavily. We compute the model parameters in the MPC in a systematic way based on a priori available patient information. The model used by the MPC algorithm for filtering and prediction is an autoregressive integrated moving average with exogenous input (ARIMAX) model implemented as a linear state space model in innovation form. The control algorithm uses frequent glucose measurements from a continuous glucose monitor (CGM) and its decisions are implemented by a continuous subcutaneous insulin infusion (CSII) pump. We provide guidelines for tuning the control algorithm and computing the Kalman gain in the linear state space model in innovation form. We test the controller on a cohort of 100 randomly generated virtual patients with a representative inter-subject variability. We use the same control algorithm for a feasibility overnight study using 5 real patients. In this study, we compare the performance of this control algorithm with the patient’s usual pump setting. We discuss the results of the numerical simulations and the in vivo clinical study from a control engineering perspective. The results demonstrate that the proposed control strategy increases the time spent in euglycemia.
Overview of Existing LCIA Methods—Annex to Chapter 10
The chapter gives an overview and a systematic comparison of a selection of the most used Life Cycle Impact Assessment (LCIA) methods, focusing on methods that have been implemented and made available in LCA software. Currently available midpoint and endpoint characterisation methodologies are presented and their specific properties are qualitatively compared in detailed tables.

General information
State: Published
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment
Pages: 1147-1183
Publication date: 2018

Host publication information
Title of host publication: Life Cycle Assessment: Theory and Practice
Publisher: Springer
Edition: 1
ISBN (Print): 978-3-319-56474-6
ISBN (Electronic): 978-3-319-56475-3
Chapter: 40
Main Research Area: Technical/natural sciences
DOIs:
10.1007/978-3-319-56475-3_40
Parts Characterization for Tunable Protein Expression

Flow-seq combines flexible genome engineering methods with flow cytometry-based cell sorting and deep DNA sequencing to enable comprehensive interrogation of genotype to phenotype relationships. One application is to study the effect of specific regulatory elements on protein expression. Constructing targeted genomic variation around genomically integrated fluorescent marker genes enables rapid elucidation of the contribution of specific sequence variants to protein expression. Such an approach can be used to characterize the impact of modifications to the Shine-Dalgarno sequence in Escherichia coli.

Phytase-mediated enzymatic mineralization of chitosan-enriched hydrogels

Hydrogels mineralized with calcium phosphate (CaP) are increasingly popular bone regeneration biomaterials. Mineralization can be achieved by phosphatase enzyme incorporation and incubation in calcium glycerophosphate (CaGP). Gellan gum (GG) hydrogels containing the enzyme phytase and chitosan oligomer were mineralized in CaGP solution and characterized with human osteoblast-like MG63 cells and adipose tissue-derived stem cells (ADSC). Phytase induced CaP formation. Chitosan concentration determined mineralization extent and hydrogel mechanical reinforcement. Phytase-induced mineralization promoted MG63 adhesion and proliferation, especially in the presence of chitosan, and was non-toxic to MG63 cells (with and without chitosan). ADSC adhesion and proliferation were poor without mineralization. Chitosan did not affect ADSC osteogenic differentiation.
Polyhydroxyalkanoates (PHA) production from fermented crude glycerol: Study on the conversion of 1,3-propanediol to PHA in mixed microbial consortia

Crude glycerol, a by-product from the biodiesel industry, can be converted by mixed microbial consortia into 1,3-propanediol (1,3-PDO) and volatile fatty acids. In this study, further conversion of these main products into polyhydroxyalkanoates (PHA) was investigated with the focus on 1,3-PDO. Two different approaches for the enrichment of PHA accumulating microbial consortia using an aerobic dynamic feeding strategy were applied. With the first approach, where nitrogen was present during the whole cycle, no net production of PHA from 1,3-PDO was observed in the fermented effluent, not even in a nitrogen-limited PHA accumulation assay. Nevertheless, experiments in synthetic substrates revealed that the conversion of 1,3-PDO to PHA was possible under nitrogen limiting conditions. Thus, a different enrichment strategy was formulated where nitrogen was limited during the feast phase to stimulate the storage response. Nitrogen was still supplied during the famine phase. With the latter strategy, a net production of PHA from 1,3-PDO was observed at a yield of 0.24 Cmol PHA/Cmol 1,3-PDO. The overall yield from the fermented effluent was 0.42
Cmol PHA/Cmol substrate. Overall, the PHA yield from 1,3-PDO seemed to be limited, similarly to when using glycerol as a substrate, by a decarboxylation step and accumulation of other storage polymers such as glycogen, and possibly, lipid inclusions.

**General information**

State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, The Danish Polymer Centre, PILOT PLANT, SINTEF
Authors: Burniol Figols, A. (Intern), Varrone, C. (Intern), Daugaard, A. E. (Intern), Le, S. B. (Ekstern), Skiadas, I. V. (Intern), Gavala, H. N. (Intern)
Pages: 255-266
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Water Research
Volume: 128
ISSN (Print): 0043-1354
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.49 SJR 2.629 SNIP 2.558
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.689 SNIP 2.507 CiteScore 6.63
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.957 SNIP 2.727 CiteScore 6.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.956 SNIP 2.693 CiteScore 6.02
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.966 SNIP 2.456 CiteScore 5.15
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.867 SNIP 2.374 CiteScore 5.43
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.582 SNIP 2.196
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.319 SNIP 2.225
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.065 SNIP 2.19
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.994 SNIP 2.208
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.895 SNIP 2.214
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.114 SNIP 2.337
Web of Science (2005): Indexed yes
Preparation and characterization of biocomposite film based on chitosan and kombucha tea as active food packaging

An active film composed of chitosan and kombucha tea (KT) was successfully prepared using the solvent casting technique. The effect of incorporation of KT at the levels 1%–3% w/w on the physical and functional properties of chitosan film was investigated. The antimicrobial activity of chitosan/KT film against Escherichia coli and Staphylococcus aureus was evaluated using agar diffusion test, and its antioxidant activity was determined using DPPH assay. The results revealed that incorporation of KT into chitosan films improved the water vapor permeability (from 256.7 to 132.1 g cm⁻² h⁻¹ KPa⁻¹ mm) and enhanced the antioxidant activity of the latter up to 59% DPPH scavenging activity. Moreover, the incorporation of KT into the chitosan film increased the protective effect of the film against ultra violet (UV). Fourier transform infrared spectroscopic analysis revealed the chemical interactions between chitosan and the polyphenol groups of KT. In a minced beef model, chitosan/KT film effectively served as an active packaging and extended the shelf life of the minced beef as manifested in the retardation of lipid oxidation and microbial growth from 5.36 to 2.11 log cfu gr⁻¹ in 4 days storage. The present work demonstrates that the chitosan/KT film not only maintains the quality of the minced beef but also, retards microbial growth significantly, extending the shelf life of the minced beef meat up to 3 days; thus, chitosan/KT film is a potential material for active food packaging.

General information
State: Published
Organisations: National Food Institute, Research Group for Nano-Bio Science, Islamic Azad University
Authors: Ashrafi, A. (Ekstern), Jokar, M. (Intern)
Pages: 444-454
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Biological Macromolecules
Volume: 108
ISSN (Print): 0141-8130
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.84 SJR 0.872 SNIP 1.288
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.815 SNIP 1.316 CiteScore 3.38
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.861 SNIP 1.325 CiteScore 3.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.849 SNIP 1.452 CiteScore 3.48
Process performance and modelling of anaerobic digestion using source-sorted organic household waste

Three distinctive start-up strategies of biogas reactors fed with source-sorted organic fraction of municipal solid waste were investigated to reveal the most reliable procedure for rapid process stabilization. Moreover, the experimental results were compared with mathematical modeling outputs. The initial inoculations to start-up the reactors were 10, 50 and 100% of the final working volume. While a constant feeding rate of 7.8gVS/d was considered for the control reactor, the organic loading rate for fed-batch reactors with 10 and 50% inoculation was progressively increased during a period of 60 and 13 days, respectively. The results clearly demonstrated that an exponentially feeding strategy, considering 50% inoculation relative to final volume, can significantly decrease the alternatively prolonged period to reach steady conditions, as observed by high biogas and methane production rates. The combination of both experimental and modelling/simulation succeeded in optimizing the start-up process for anaerobic digestion of biopulp under mesophilic conditions.

General information
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering, University of Tehran
Authors: Khoshnevisan, B. (Ekstern), Tsapekos, P. (Intern), Alvarado-Morales, M. (Intern), Angelidaki, I. (Intern)
Number of pages: 10
Pages: 486-495
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Bioresource Technology
Anaerobic digestion, Biogas, Mathematical modeling, Source-sorted organic household waste, Start-up period

DOIs:
10.1016/j.biortech.2017.09.122
Production and Application of Lysozyme-Gum Arabic Conjugate in Mayonnaise as a Natural Preservative and Emulsifier

Nowadays demand for food products made by natural sources is rising so fast. In this work Lysozyme (Lyz) was conjugated with gum Arabic (GA) in order to be applied in mayonnaise, at which the presence of both preservative and emulsifier is essential. Interestingly, the Lyz-GA conjugate exhibited improved functional properties and antibacterial activity. In order to approve the results of this study, the Lyz-GA conjugate was applied to mayonnaise as a natural preservative and emulsifier. Application of the Lyz-GA conjugate in mayonnaise expedited the death rate of both S. aureus and E. coli K-12. The observation proved that conjugations of Lyz with GA increased the spectrum of its application in food products with improved antibacterial activity. Surprisingly, investigation of emulsion stability and rheological properties confirmed the improved emulsification role of Lyz-GA conjugate with a higher elasticity in the mayonnaise. Mayonnaise including conjugates showed a linear rheological response and shear-thinning behavior. Sensory analysis of the mayonnaise with Lyz-GA conjugate was completely consistent with the commercial one. Taken together, our results suggest that conjugation of Lyz with GA made possible the application of a natural preservative and emulsifier in food and pharmaceutical industries, whereas Lyz alone does not have a broad-spectrum antibacterial activity or emulsifying properties.

General information
State: Accepted/In press
Organisations: National Food Institute, Research Group for Food Production Engineering, Brigham Young University, Shiraz University, University of Crete
Authors: Hashemi, M. M. (Ekstern), Aminlari, M. (Ekstern), Forouzan, M. M. (Ekstern), Moghimi, E. (Ekstern), Tavana, M. (Ekstern), Shekarforoush, S. (Ekstern), Mohammadifar, M. A. (Intern)
Number of pages: 12
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Polish Journal of Food and Nutrition Sciences
Volume: 68
Issue number: 1
ISSN (Print): 1230-0322
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.56 SJR 0.397 SNIP 0.951
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.357 SNIP 0.581 CiteScore 0.83
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.344 SNIP 0.873 CiteScore 0.83
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.271 SNIP 0.599 CiteScore 0.71
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.193 SNIP 0.314 CiteScore 0.37
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.142 SNIP 0.134 CiteScore 0.2
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.138 SNIP 0.138
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Original language: English
Lysozyme, Gum Arabic, Conjugate, Functional properties, Mayonnaise, Rheology
Electronic versions:
_Polish_Journal_of_Food_and_Nutrition_Sciences_Production_and_Application_of_Lysozyme_Gum_Arabic_Conjugate_in_Mayonnaise_as_a_Natural_Preservative_and_Emulsifier.pdf
DOIs:
10.1515/pjfns-2017-0011
Production and physicochemical properties of carboxymethyl cellulose films enriched with spent coffee grounds polysaccharides
Extracts rich in polysaccharides were obtained by alkali pretreatment (PA) or autohydrolysis (PB) of spent coffee grounds, and incorporated into a carboxymethyl cellulose (CMC)-based film aiming at the development of bio-based films with new functionalities. Different concentrations of PA or PB (up to 0.20% w/v) were added to the CMC-based film and the physicochemical properties of the final films were determined. Scanning electron microscopy, Fourier-transform infrared spectroscopy, X-ray diffraction, thermogravimetric analysis, as well as determinations of optical and mechanical properties, moisture content, solubility in water, water vapor permeability, contact angle and sorption isotherms were performed. The addition of PA or PB resulted in important changes in the properties of the CMC-based film, mainly in color and opacity. The polysaccharides incorporation significantly improved the light barrier of the film and provided an enhancement or at least a preservation in the physicochemical properties.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Biomass Conversion and Bioprocess Technology, International Iberian Nanotechnology Laboratory, University of Minho
Authors: Ballesteros, L. F. (Ekstern), Cerqueira, M. A. (Ekstern), Teixeira, J. A. (Ekstern), Mussatto, S. I. (Intern)
Pages: 647-655
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Biological Macromolecules
Volume: 106
ISSN (Print): 0141-8130
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.84 SJR 0.872 SNIP 1.288
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.815 SNIP 1.316 CiteScore 3.38
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.861 SNIP 1.325 CiteScore 3.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.849 SNIP 1.452 CiteScore 3.48
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.796 SNIP 1.313 CiteScore 2.77
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.689 SNIP 1.21 CiteScore 2.73
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.865 SNIP 1.211
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.799 SNIP 1.189
BFI (2008): BFI-level 1
Project studies: What it is, where it is going
Project organising is a growing field of scholarly inquiry and management practice. In recent years, two important developments have influenced this field: (1) the study and practice of projects have extended their level of analysis from mainly focussing on individual projects to focussing on micro- as well as macro-level concerns around projects; and (2) there has been a greater interest in different kinds of scholarly inquiry. Taken together, these two developments call for closer scrutiny of how the levels of analysis and the types of inquiry are related and benefit each other, and of the explanations of project practices they could offer. To discuss avenues for future research on projects and project practice, this paper suggests the notion of project studies to better grasp the status of our field. We combine these two sets of ideas to analyse the status and future options for advancing project research: (1) levels of analysis; and (2) type of research.

Analysing recent developments within project studies, we observe the emergence of what we refer to as type 3 research, which reconciles the need for theoretical development and engagement with practice. Type 3 research suggests pragmatic avenues to move away from accepted yet unhelpful assumptions about projects and project organising. The paper ends with an agenda for future research, which offers project scholars a variety of options to position themselves in the field of project studies, and to explore opportunities in the crossroads between levels of analysis and types of research. Executive summary: Rapid diversification of scholarly inquiry and management practice in projects may segregate the project research, but could also constitute an opportunity to strengthening it. For example, the diversity of 'organisations' or forms of 'organising' find the field of organisation studies with new ideas and intellectual challenges. To take advantage of such developments, organisational scholars had to consider different forms of organising as part of 'organisation studies', and continuously adapt their frames of reference and forms of conceptualising organisations as a 'research field' and a 'research object'. Concomitantly, they embraced alternative research interests, ontologies and epistemologies, which today enrich the field. Such dynamics build on scholarly reflexivity and could also, we believe, be fostered in project research. Thus, responding to the diversification of the field, and inspired by the notion of 'organisation studies', we present the case of 'project studies', which acts as an umbrella for the studies in, on and around projects.

'Project studies' is novel as it does not propose an alternative perspective on projects, but instead calls for an inclusive and integrative research field for all perspectives, fostering vibrant dialogue and debate that welcomes different opinions and perspectives. The aim of the present paper is to demonstrate the value of the notion of project studies and to call for reflexive scholars capable of navigating diversity by positioning their research in contrast with that of others. In particular, we focus on two recent developments that have contributed to the diversification of the field and offered new options for project scholars: (1) the study and practice of projects have extended their level of analysis from mainly focussing on individual projects to focussing on micro- as well as macro-level concerns around projects; and, (2) there has been a greater interest in different kinds of scholarly inquiry. We examined the different types of inquiries through the lenses of the three deep-seeded human interests proposed by Habermas: a) The traditional positivist tradition has its main interest on 'solving the problems' of project organising and increase its efficiency and effectiveness through better understanding of causal relationships surrounding projects. b) Interpretative research is grounded on our inherent interest to understand the world around us, but not necessarily 'solve' it. Rather, this research explores perceptions, behaviours and sees the world not so much in terms of causal-links, but complex networks with interesting cases and possibilities for learning. c) Emancipatory research is driven by emancipatory interest and the pragmatic desire for changes in the status quo through the reorganisation of inherent contradictions, giving voice to minorities while addressing major economic and social problems. We termed them type 1, type 2 and type 3, respectively. The juxtaposition of levels of analysis and types of research offers a matrix with nine areas to identify opportunities and to position research contributions in the field of project studies, extending current treatments of problems and topics to different levels of analysis and types of research.
In particular, we would also welcome the strengthening of type 3 research across the three primary levels of analysis addressed in the present paper. This paper provides a framework to encourage project scholars to reflect and become even more aware of nature and conduct of their research: the kinds of knowledge and interests they pursue, as well as the focus of their research. Our framework and analysis are exploratory and only build a tentative foundation for further exploration. We hope the present paper will trigger reflexivity on the making of project studies. In this spirit, we welcome further development as well as criticism to our main ideas.

General information
State: Published
Organisations: Technical University of Denmark, Department of Management Engineering, Engineering Systems, BI Business School
Authors: Geraldi, J. (Intern), Söderlund, J. (Ekstern)
Pages: 55-70
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Volume: 36
Issue number: 1
ISSN (Print): 0263-7863
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.58 SJR 1.396 SNIP 2.711
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.484 SNIP 2.834 CiteScore 4.16
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.443 SNIP 2.851 CiteScore 3.55
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.186 SNIP 2.651 CiteScore 3.11
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.11 SNIP 2.42 CiteScore 2.7
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.997 SNIP 2.228 CiteScore 2.57
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.17 SNIP 1.55
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.172 SNIP 1.749
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.926 SNIP 1.442
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.076 SNIP 1.63
Scopus rating (2006): SJR 0.88 SNIP 1.824
Scopus rating (2005): SJR 1.12 SNIP 1.719
Scopus rating (2004): SJR 0.732 SNIP 1.72
Scopus rating (2003): SJR 0.594 SNIP 1.09
Scopus rating (2002): SJR 0.853 SNIP 0.883
Scopus rating (2001): SJR 0.502 SNIP 1.066
Scopus rating (2000): SJR 0.52 SNIP 1.145
Qualification and testing of CT systems

This chapter focuses on system verification and conformance to specifications. System qualification is carried out to ensure that the system and its components achieve the best performance—usually corresponding to the specifications made by the manufacturer. Acceptance and reverification testing are undertaken on the overall integrated system to check whether the system performs as specified.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Physikalisch-Technische Bundesanstalt, University of Padua
Authors: Bartscher, M. (Ekstern), Neuschaefer-Rube, U. (Ekstern), Illemann, J. (Ekstern), Borges de Oliveira, F. (Ekstern), Stolfi, A. (Intern), Carmignato, S. (Ekstern)
Pages: 185-228
Publication date: 2018
Host publication information
Title of host publication: Industrial X-Ray Computed Tomography
Publisher: Springer
Editors: Carmignato, S., Dewulf, W., Leach, R.
ISBN (Print): 978-3-319-59571-9
ISBN (Electronic): 978-3-319-59573-3
Chapter: 6
Main Research Area: Technical/natural sciences
DOIs: 10.1007/978-3-319-59573-3_6
Source: PublicationPreSubmission
Source-ID: 133642401
Publication: Research - peer-review › Book chapter – Annual report year: 2018

Recent research trends in organic Rankine cycle technology: A bibliometric approach

This work describes the contribution of researchers around the world in the field of the organic Rankine cycle in the period 2000 to 2016. A bibliometric approach was applied to analyze the scientific publications in the field using the Scopus Elsevier database, together with Science Citation Index Expanded. Different aspects of the publications were analyzed, such as publication type, major research areas, journals, citations, authorship pattern, affiliations as well as the keyword occurrence frequency. The impact factor, h-index and number of citations were used to investigate the strength of active countries, institutes, authors, and journals in the organic Rankine cycle technology field. From 2000 to 2016, there were 2120 articles published by 3443 authors from 997 research institutes scattered over 71 countries. The total number of citations and impact factor are 36,739 and 4597, respectively, corresponding to 17 citations per paper and an impact factor of 2.168 per publication. The research articles originate primarily from China, the USA, and European countries. Results indicate that China, the United States, Italy, Greece, Belgium, Spain, Germany and the United Kingdom are the leading countries in organic Rankine cycle research and account for 64% of the total number of publications. The core research activities in the field are mainly focused on applications of the organic Rankine cycle technology, working fluids selection/performance, cycle architecture, and design/optimization. The most productive journal, author, institution, and country are Energy, Ibrahim Dincer, Tianjin University China and China, respectively.

General information
State: Published
Organisations: Department of Mechanical Engineering, Thermal Energy, City University of Hong Kong, University of Science and Technology of China
Authors: Imran, M. (Intern), Haglind, F. (Intern), Asim, M. (Ekstern), Zeb Alvi, J. (Ekstern)
Pages: 552-562
Publication date: 2018
Main Research Area: Technical/natural sciences
Remote-loading of liposomes with manganese-52 and in vivo evaluation of the stabilities of $^{52}$Mn-DOTA and $^{64}$Cu-DOTA using radiolabelled liposomes and PET imaging
Liposomes are nanoparticles used in drug delivery that distribute over several days in humans and larger animals. Radiolabeling with long-lived positron emission tomography (PET) radionuclides, such as manganese-52 (\(^{52}\)Mn, \(T^{1/2}=5.6\) days), allow the imaging of this biodistribution. We report optimized protocols for radiolabeling liposomes with \(^{52}\)Mn, through both remote-loading and surface labeling. For comparison, liposomes were also remote-loaded and surface labeled with copper-64 (\(^{64}\)Cu, \(T^{1/2}=12.7\) h) through conventional means. The chelator DOTA was used in all cases. The in vivo stability of radiometal chelates is widely debated but studies that mimic a realistic in vivo setting are lacking. Therefore, we employed these four radiolabeled liposome types as platforms to demonstrate a new concept for such in vivo evaluation, here of the chelates \(^{52}\)Mn-DOTA and \(^{64}\)Cu-DOTA. This was done by comparing "shielded" remote-loaded with "exposed" surface labeled variants in a CT26 tumor-bearing mouse model. Remote loading (90 min at 55°C) and surface labeling (55°C for 2 h) of \(^{52}\)Mn gave excellent radiolabeling efficiencies of 97-100% and 98-100% respectively, and the liposome biodistribution was imaged by PET for up to 8 days. Liposomes with surface-conjugated \(^{52}\)Mn-DOTA exhibited a significantly shorter plasma half-life (\(T^{1/2}=14.4\) h) when compared to the remote-loaded counterpart (\(T^{1/2}=21.3\) h), whereas surface-conjugated \(^{64}\)Cu-DOTA cleared only slightly faster and non-significantly, when compared to remote-loaded (17.2±2.9 h versus 20.3±1.2 h). From our data, we conclude the successful remote-loading of liposomes with \(^{52}\)Mn, and furthermore that \(^{52}\)Mn-DOTA may be unstable in vivo whereas \(^{64}\)Cu-DOTA appears suitable for quantitative imaging.

**General information**

State: Published
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Department of Micro- and Nanotechnology, Colloids and Biological Interfaces, Department of Chemistry, University of Copenhagen
Pages: 100-109
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Journal of Controlled Release
Volume: 269
ISSN (Print): 0168-3659
Ratings:
- BFI (2017): BFI-level 2
- Web of Science (2017): Indexed Yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 7.56 SJR 2.393 SNIP 1.84
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 2.725 SNIP 2.08 CiteScore 8.11
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 2.416 SNIP 2.092 CiteScore 6.86
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 2
- Scopus rating (2013): SJR 2.416 SNIP 2.044 CiteScore 6.31
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 2.417 SNIP 2.061 CiteScore 5.84
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 2.745 SNIP 2.098 CiteScore 6.33
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 3.194 SNIP 2.306
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 2.897 SNIP 2.033
Response predictions using the observed autocorrelation function
This article studies a procedure that facilitates short-time, deterministic predictions of the wave-induced motion of a marine vessel, where it is understood that the future motion of the vessel is calculated ahead of time. Such predictions are valuable to assist in the execution of many marine operations (crane lifts, helicopter landings, etc.), as a specific prediction can be used to inform whether it is safe, or not, to carry out the particular operation within the nearest time horizon. The examined prediction procedure relies on observations of the correlation structure of the wave-induced response in study. Thus, predicted (future) values ahead of time for a given time history recording are computed through a mathematical combination of the sample autocorrelation function and previous measurements recorded just prior to the moment of action. Importantly, the procedure does not need input about the exciting wave system, and neither does it rely on o-line training. In the article, the prediction procedure is applied to experimental data obtained through model-scale tests, and the procedure’s predictive performance is investigated for various irregular wave scenarios. The presented results show that predictions can be successfully made in a time horizon corresponding to about 8-9 wave periods ahead of current time (the moment of action).

General information
State: Published
Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, Norwegian University of Science and Technology
Authors: Nielsen, U. D. (Intern), H. Brodtkorb, A. (Ekstern), Jensen, J. J. (Intern)
Pages: 31–52
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Structures
Volume: 58
ISSN (Print): 0951-8339
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.49 SJR 1.655 SNIP 2.636
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.618 SNIP 2.602 CiteScore 2.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.431 SNIP 3.026 CiteScore 2.18
Review of FACTS technologies and applications for power quality in smart grids with renewable energy systems

In the last two decades, emerging use of renewable and distributed energy sources in electricity grid has created new challenges for the utility regarding the power quality, voltage stabilization and efficient energy utilization. Power electronic converters are extensively utilized to interface the emerging energy systems (without and with energy storage) and smart buildings with the transmission and distribution systems. Flexible ac transmission systems (FACTSs) and voltage-source converters, with smart dynamic controllers, are emerging as a stabilization and power filtering equipment to improve the power quality. Also, distributed FACTSs play an important role in improving the power factor, energy utilization, enhancing the power quality, and ensuring efficient energy utilization and energy management in smart grids with renewable energy sources. This paper presents a literature survey of FACTS technology tools and applications for power quality and efficient renewable energy system utilization.
Selection of Highly Expressed Gene Variants in Escherichia coli Using Translationally Coupled Antibiotic Selection Markers

Strategies to select highly expressed variants of a protein coding sequence are usually based on trial-and-error approaches, which are time-consuming and expensive. We address this problem using translationally coupled antibiotic resistance markers. The system requires that the target gene can be fused at the 3'-end with a translational coupling element and an antibiotic resistance gene. Highly expressed target genes can then be selected using a fast and simple whole cell survival assay in the presence of high antibiotic concentrations. Herein we show that the system can be used to select highly expressing clones from libraries sampling translation initiation sites.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Microbial Evolution and Synthetic Biology, Stockholm University
Authors: Rennig, M. (Intern), Daley, D. O. (Ekstern), Nørholm, M. H. H. (Intern)
Pages: 259-268
Publication date: 2018

Host publication information
Title of host publication: Synthetic Metabolic Pathways
Volume: 1671
ISBN (Print): 978-1-4939-7294-4
ISBN (Electronic): 978-1-4939-7295-1
Series: Methods in Molecular Biology
ISSN: 1064-3745
Main Research Area: Technical/natural sciences
Antibiotic resistance, Gene expression, Library screening, Protein production optimization, Selection, Translational coupling
DOIs:
10.1007/978-1-4939-7295-1_16
Source: FindIt
Source-ID: 2393668049
Publication: Research - peer-review › Book chapter – Annual report year: 2018

Solving 2D/3D Heat Conduction Problems by Combining Topology Optimization and Anisotropic Mesh Adaptation

Topology optimization was recently combined with anisotropic mesh adaptation to solve 3D minimum compliance problems in a fast and robust way. This paper demonstrates that the methodology is also applicable to 2D/3D heat conduction problems. Nodal design variables are used and the objective function is chosen such that the problem is self-adjoint. There is no way around the book keeping associated with mesh adaptation, so the whole 5527 line MATLAB code is published (https://github.com/kristianE86/trullekrul). The design variables as well as the sensitivities have to be interpolated between meshes, but MATLAB does not support interpolation on simplex meshes and it is thus handled as part of the local operations in the mesh adaptation. This functionality is available for nodal as well as element-wise design variables, but we have found the former to be superior. Results are shown for various discretizations demonstrating that the objective function converges, but comparison to optimizations with fixed meshes indicate that the use of mesh adaptation results in worse objective functions, particularly in 3D. Out of the 5018 statements only 100 is used for the actual optimization loop, 100 for 2D/3D geometry/mesh setup and 50 for the forward problem. It is thus feasible to use the script as a platform for solving other problems or for investigating the details of the methodology itself.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology
Authors: Jensen, K. (Intern)
Number of pages: 15
Pages: 1224-1238
Publication date: 2018

Host publication information
Title of host publication: Advances in Structural and Multidisciplinary Optimization: Proceedings of the 12th World Congress of Structural and Multidisciplinary Optimization (WCSMO12)
Structural and superconducting characteristics of YBa$_2$Cu$_3$O$_7$ films grown by fluorine-free metal-organic deposition route

Microstructure and superconducting performance of YBa$_2$Cu$_3$O$_7$ (YBCO) films deposited on LaAlO$_3$ single crystal (LAO) substrates by a fluorine-free metal-organic deposition (FF-MOD) technique, have been studied by means of X-ray reciprocal space mapping (RSM), cross-sectional transmission electron microscopy (TEM) and magneto-optical (MO) imaging. Combining the X-ray diffraction and the TEM cross-sectional analysis, it is revealed that stacking faults, i.e. YBa2Cu4Ox intergrowths, and ab-plane twins are main defects in the FF-MOD YBCO films. Due to the highly epitaxial growth mechanism related to transient liquid phase, the LAO twinned substrate structure is also inherited in the FF-YBCO films. The low-density planar defects containing dislocations parallel to c-axis result in stripy patterns observed in the MO images. For comparison, the low-fluorine (LF) MOD film show a texture mosaic spread in the ab plane and is little influenced by the LAO twinning underneath, implying the severe structural disorder most likely associated with the large amount of small-angle grain boundaries. Moreover, the higher density of stacking faults was also detected by XRD θ-2θ, scan in the LF-MOD film. It is suggested that associated partial dislocations formed at the boundary between the stacking faults and YBCO matrix act as strong linear (or dot) pinning centers. These structural characteristics are well in line with the better superconducting performance of the low fluorine-MOD film, in particular under external magnetic field at 77 K. This work offers an in-depth insight into the correlation between the microstructure and superconductivity in the MOD YBCO films.

General information
State: Accepted/In press
Organisations: Department of Energy Conversion and Storage, Electrofunctional materials, Shanghai Jiao Tong University, University of Oslo
Authors: Zhao, Y. (Ekstern), Chu, J. (Ekstern), Qureishy, T. (Ekstern), Wu, W. (Ekstern), Zhang, Z. (Ekstern), Mikheenko, P. (Ekstern), Johansen, T. H. (Ekstern), Grivel, J. (Intern)
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Acta Materialia
ISSN (Print): 1359-6454
Ratings:
 BFI (2017): BFI-level 2
 Web of Science (2017): Indexed yes
 BFI (2016): BFI-level 2
 Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
 Web of Science (2016): Indexed yes
 BFI (2015): BFI-level 2
 Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
 Web of Science (2015): Indexed yes
 BFI (2014): BFI-level 2
 Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
 Web of Science (2014): Indexed yes
 BFI (2013): BFI-level 2
 Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
 ISI indexed (2013): ISI indexed yes
 Web of Science (2013): Indexed yes
 BFI (2012): BFI-level 2
 Scopus rating (2012): SJR 3.409 SNIP 2.917 CiteScore 4.28
Structure dependent antioxidant capacity of phlorotannins from Icelandic Fucus vesiculosus by UHPLC-DAD-ECD-QTOFMS

Brown algae are rich in polyphenolic compounds, phlorotannins, which have been found to possess high in vitro antioxidant capacity, especially DPPH radical scavenging activity, due to the high number of hydroxyl groups. Whereas, the overall antioxidant capacity of brown algae extracts has been widely studied, the antioxidant capacity of individual phlorotannins has been rarely explored. The aim of this study was to determine the structure dependant antioxidant capacity of phlorotannins from Icelandic brown algae, Fucus vesiculosus. The antioxidant capacity of individual phlorotannins was determined by an on-line method using liquid chromatography and an electrochemical detector followed by quadrupole Time of Flight mass spectrometry (UHPLC-DAD-ECD-QTOFMS). Tentative structural elucidation of 13 phlorotannin isomers from EAF was obtained by LC-DAD-QTOFMS, ranging from 374 to 870 Da. On-line determination of antioxidant capacity of the individual phlorotannins generally showed that low molecular phlorotannins exhibited higher antioxidant capacity and that the capacity decreased with polymerisation.

General information
State: Published
Organisations: National Food Institute, Research Group for Bioactives – Analysis and Application, Department of Biotechnology and Biomedicine, DTU Metabolomics Core, Lund University, Matís ltd.
Abstract: Human milk oligosaccharides (HMOs) constitute a unique family of bioactive lactose-based molecules present in human breast milk. HMOs are of major importance for infant health and development but also virtually absent from bovine milk used for infant formula. Among the HMOs, the fucosylated species are the most abundant. Transfucosylation catalysed by retaining α-l-fucosidases is a new route for manufacturing biomimetic HMOs. Seven α-l-fucosidases from glycosyl hydrolase family 29 were expressed, characterized in terms of substrate specificity and thermal stability, and shown to be able to catalyse transfucosylation. The α-l-1,3/4-fucosidase CpAfc2 from Clostridium perfringens efficiently catalysed the formation of the more complex human milk oligosaccharide structure lacto-N-fucopentaose II (LNFP II) using 3-fucosyllactose as fucosyl donor and lacto-N-tetraose as acceptor with a 39% yield. α-l-Fucosidases FgFCO1 from Fusarium graminearum and Mfuc5 from a soil metagenome were able to catalyse transfucosylation of lactose using citrus xyloglucan as fucosyl donor. FgFCO1 catalysed formation of 2′-fucosyllactose, whereas Mfuc5 catalysis mainly produced an unidentified, non-HMO fucosyllactose, reaching molar yields based on the donor substrate of 14% and 18%, respectively.
Graphitic layer encapsulated iron based nanoparticles (G@FeNPs) have recently been disclosed as an interesting type of highly active electrocatalysts for the oxygen reduction reaction (ORR). However, the complex composition of the metal-containing components and their contributions in catalysis remain unclear. As a representative catalyst of the unique encapsulated structure, a series of G@FeNPs catalysts were prepared by a high-pressure pyrolytic process with uniform and essentially identical morphologies but varied compositions. The catalysts exhibited a high onset potential of 0.85 V at 0.1 mA cm\(^{-2}\) in acidic media. By \(^{57}\)Fe-Mössbauer spectroscopy the iron containing components were identified including α-Fe, γ-Fe, γ-Fe\(_2\)O\(_3\), and Fe\(_3\)C as well as a minor doublet component due to Fe\(^{3+}\) in high spin and/or Fe\(^{2+}\) in low spin state. The ORR activities are evaluated in terms of the mass specific kinetic current density found to be positively correlated with the Fe\(_3\)C content in the range of study, indicating involvement of the encapsulated nanoparticles in the ORR catalysis. The recognition of the Fe compositions and active sites provides new insights to the confined Fe-based ORR electrocatalysts and therefore options for further development of non-precious metal materials.
A strategy supporting the development towards a circular economy is industrial symbiosis (IS). It is a form of collaborative supply chain management aiming to make industry more sustainable and achieve collective benefits based on utilization of waste, by-products, and excess utilities between economically independent industries. Based on an extensive analysis of published studies on existing IS collaborations and interviews with central stakeholders of a comprehensive IS, this paper investigates IS from a supply chain collaboration perspective. A theoretical framework is built and used to discuss how industrial symbiosis pursues sustainability and to identify the main collaboration aspects and performance impacts.
This framework is then used in the analysis of selected published cases. Based on this, we derive propositions on the organizational and operational requirements for collaboration in the context of IS networks, related to the supply chain integration and coordination practices. As IS has only received little attention in the operations and supply chain management community, our propositions directly lead to future research directions. Furthermore, the analysis in this paper provides directions to increase the feasibility and resource efficacy of IS networks and can hence be used by stakeholders involved in these networks.

**General information**

State: Published
Organisations: Department of Management Engineering, Management Science, Quantitative Sustainability Assessment, Wageningen University
Authors: Herczeg, G. (Intern), Akkerman, R. (Ekstern), Hauschild, M. Z. (Intern)
Pages: 1058-1067
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Journal of Cleaner Production
Volume: 171
ISSN (Print): 0959-6526
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.83 SJR 1.615 SNIP 2.382
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.609 SNIP 2.383 CiteScore 5.57
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.661 SNIP 2.477 CiteScore 4.6
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.644 SNIP 2.581 CiteScore 4.47
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.706 SNIP 2.328 CiteScore 4.07
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.461 SNIP 1.825 CiteScore 3.19
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.419 SNIP 1.742
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.942 SNIP 1.544
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.813 SNIP 1.354
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.942 SNIP 1.489
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.842 SNIP 1.543
Scopus rating (2005): SJR 0.544 SNIP 1.357
Scopus rating (2004): SJR 0.753 SNIP 1.818
Sustainable use of marine resources through offshore wind and mussel farm co-location

Marine Spatial Planning (MSP) can offer significant benefits in terms of economic conservation strategies, optimizing spatial planning and minimizing the impact on the environment. In this paper, we focused on the application of multi-criteria evaluation (MCE) technique for co-locating offshore wind farms and open-water mussel cultivation. An index of co-location sustainability (SI) was developed based on the application of MCE technique constructed with physical and biological parameters on the basis of remote-sensing data. The relevant physical factors considered were wind velocity, depth range, concerning the site location for energy production, and sea surface temperature anomaly. The biological variables used were Chlorofill-a (as a measurement of the productivity) and Particle Organic Carbon (POC) concentration, in order to assess their influence on the probable benefits and complete the requirements of this management framework. This SI can be easily implemented to do a first order selection of the most promising areas to be more specifically studied in a second order approach based on local field data.
Synthetic Metabolic Pathways

This volume outlines key steps associated with the design, building, and testing of synthetic metabolic pathways for optimal cell factory performance and robustness, and illustrates how data-driven learning from these steps can be used for rational cost-effective engineering of cell factories with improved performance. Chapters are divided into four sections focusing on the four steps of the iterative design-build-test-learn cycle related to modern cell factory engineering. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls.

Authoritative and practical, Synthetic Metabolic Pathways: Methods and Protocols aims to ensure successful results in the further study of this vital field.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Synthetic Biology Tools for Yeast
Authors: Jensen, M. K. (ed.) (Intern), Keasling, J. (ed.) (Intern)
Number of pages: 354
Publication date: 2018

Publication information
Publisher: Springer
Volume: 1671
ISBN (Print): 978-1-4939-7294-4
ISBN (Electronic): 978-1-4939-7295-1
Original language: English
Test and lower bound modeling of keyed shear connections in RC shear walls

This paper presents an investigation into the ultimate behavior of a recently developed design for keyed shear connections. The influence of the key depth on the failure mode and ductility of the connection has been studied by push-off tests. The tests showed that connections with larger key indentations failed by complete key cut-off. In contrast, connections with smaller key indentations were more prone to suffer local crushing failure at the key corners. The local key corner crushing has an effect on the load-displacement response, which is relatively more ductile. In addition to the tests, the paper also presents lower bound modeling of the load carrying capacity of the connections. The main purpose of the lower bound model is to supplement an already published upper bound model of the same problem and thereby provide a more complete theoretical basis for practical design. The two models display the same overall tendencies although identical results are not possible to obtain, due to differences in the basic assumptions usually made for upper and lower bound analysis of connections. It is found that the test results, consistent with the extremum theorems of plasticity, are all lying within the gap between the upper and the lower bound solution. The obtained results finally lead to a discussion of how the two models can be used in practice. It is therefore argued that the upper bound model may be used in cases, where calibration with tests has been carried out. The lower bound model should be applied in situations, where the design deviates significantly from the configurations of the available tests.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Structural Engineering, Ecole Polytechnique Federale de Lausanne (EPFL)
Authors: Sørensen, J. H. (Intern), Herfelt, M. A. (Intern), Hoang, L. C. (Intern), Muttoni, A. (Ekstern)
Number of pages: 12
Pages: 115-126
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Engineering Structures
Volume: 155
ISSN (Print): 0141-0296
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.93 SJR 1.578 SNIP 2.048
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.696 SNIP 2.195 CiteScore 2.59
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.756 SNIP 2.56 CiteScore 2.4
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.049 SNIP 2.853 CiteScore 2.69
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.855 SNIP 2.627 CiteScore 2.23
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Testing lagoonal sediments with early life stages of the copepod Acartia tonsa (Dana): An approach to assess sediment toxicity in the Venice Lagoon

The early-life stages of development of the calanoid copepod Acartia tonsa from egg to copepodite I is proposed as an endpoint for assessing sediment toxicity by exposing newly released eggs directly onto the sediment-water interface. A preliminary study of 5 sediment samples collected in the lagoon of Venice highlighted that the larval development rate (LDR) and the early-life stages (ELS) mortality endpoints with A. tonsa are more sensitive than the standard amphipod mortality test; moreover LDR resulted in a more reliable endpoint than ELS mortality, due to the interference of the sediment with the recovery of unhatched eggs and dead larvae. The LDR data collected in a definitive study of 48 sediment samples from the Venice Lagoon has been analysed together with the preliminary data to evaluate the statistical performances of the bioassay (among replicate variance and minimum significant difference between samples and control) and to investigate the possible correlation with sediment chemistry and physical properties. The results showed that statistical performances of the LDR test with A. tonsa correspond with the outcomes of other tests applied to the sediment-water interface (Strongylocentrotus purpuratus embryotoxicity test), sediments (Neanthes arenaceodentata survival and growth test) and porewater (S. purpuratus); the LDR endpoint did, however, show a slightly higher variance as compared with other tests used in the Lagoon of Venice, such as 10-d amphipod lethality test and larval development with sea urchin and bivalves embryos. Sediment toxicity data highlighted the high sensitivity and the clear ability of the larval development to discriminate among sediments characterized by different levels of contamination. The data of the definitive study evidenced that inhibition of the larval development was not affected by grain-size and the organic carbon content of the sediment; in contrast, a strong correlation between inhibition of the larval development and the sediment concentrations of some metals (Cu, Hg, Pb, Zn), acid-volatile sulphides (AVS), polychlorinated biphenyls (PCBs) and polynuclear aromatic hydrocarbons (PAHs) was found. No correlation was found with DDTs, hexachlorobenzene and organotin compounds.

General information
State: Accepted/in press
Organisations: Department of Environmental Engineering, Ca' Foscari University of Venice
Authors: Picone, M. (Ekstern), Bergamin, M. (Ekstern), Delaney, E. (Ekstern), Ghirardini, A. V. (Ekstern), Kusk, K. O. (Intern)
Number of pages: 11
Pages: 217-227
Testing three common stocking methods: Differences in smolt size, migration rate and timing of two strains of stocked Atlantic salmon (Salmo salar)

The influence of three common stocking practices for two strains (Åtran and Burrishoole) of hatchery-reared Atlantic salmon, Salmo salar, on smolt size, migration probability and migration timing were investigated in situ. Using a common garden experiment, fish from these populations were released as fry, half-year olds and one-year olds. Our results indicate that fish released at the fry and half-year stage produce smaller smolts, and migrate later in the year than their counterparts released at one-year of age, for both the Åtran and the Burrishoole populations. While fry had the lowest probability of migration, half-year old releases had greater migration rates than one-year olds of the same strain. Additionally, Åtran fish tended to migrate earlier in the year than Burrishoole fish of the same age. Our findings highlight the variability that exists among individuals and populations due to inherited factors, and emphasize the importance of considering age of fish and time spent in the hatchery when stocking populations in the wild to maximize smolt output.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, Danish Center for Wild Salmon
Authors: Birnie-Gauvin, K. (Intern), Larsen, M. H. (Intern), Thomassen, S. T. (Ekstern), Aarestrup, K. (Intern)
Pages: 163-168
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Aquaculture
Volume: 483
ISSN (Print): 0044-8486
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.75 SJR 1.101 SNIP 1.524
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.103 SNIP 1.254 CiteScore 2.12
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.002 SNIP 1.34 CiteScore 2.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.136 SNIP 1.3 CiteScore 2.18
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.212 SNIP 1.487 CiteScore 2.32
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.294 SNIP 1.542 CiteScore 2.39
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.151 SNIP 1.394
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
The evolution of facility management business models in supplier-client relationships

Purpose – The study improves the current understanding of business model innovation by outlining how business models unfold over time within supplier-client relationships in facilities management (FM) services.

Design/methodology/approach – This study of FM services in Denmark consists of an explorative case study and three case studies of facilities management clients. Both phases, related and overlapping, involved collection and analysis of in-depth, semi-structured interviews and archive data.

Findings – Findings show that business model innovation entails interorganisational collaboration across different phases of the innovation process. The research demonstrates that external orientation within FM service ecosystems involves both a reaction to changes in the external environment and the proactive involvement of stakeholders throughout business model innovation.

Research limitations/implications – The selection of business model innovation processes was limited to the Danish context. The sample, although heterogeneous and representative, represented only a fraction of the total population, which may have excluded processes of business model innovation that contradict the research.

Practical implications – This paper suggests that by observing the business models of the value network over time, organisations could learn from the interdependencies between intra- and interorganisational stakeholders, thereby supporting the monitoring of risks and uncertainties as well as the anticipation of potential consequences of changes in the ecosystem.

Originality/value – This paper introduces new thinking on the subject of business model innovation to the context of FM. It presents the external orientation of FM business models as a way to combine planned and emergent business model innovation through interorganisational collaboration and value creation in FM ecosystems.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Management Science, Implementation and Performance Management, Copenhagen Business School
Authors: Nardelli, G. (Intern), Rajala, R. (Forskerdatabase)
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Facilities Management
The Hi-Ring Architecture for Data Center Networks

Optical technologies have long been used for standard telecom applications ranging from long haul to metro and access networks. With the rapid expansion of traffic in data center networks, the deployment of optical technologies for computationally intensive short reach networking has attracted a lot of attention. The main interest in photonics comes from the fact that optical technologies are known for providing high bandwidth at low-cost and low power consumption. Unlike electrical switching, optical switching offers bit rate-independent operation; thus, the required processing capacity can greatly be reduced as there is no need to perform operations like electrical demultiplexing of high-speed data streams. Moreover, simultaneous switching of wavelength channels using an optical circuit switch yields energy-efficient operation, which is crucial to data centers.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Nanophotonic Devices, Networks Technology and Service Platforms, Copenhagen Center for Health Technology
Authors: Kamchevska, V. (Intern), Ding, Y. (Intern), Berger, M. S. (Intern), Dittmann, L. (Intern), Oxenløwe, L. K. (Intern), Galili, M. (Intern)
Number of pages: 14
Pages: 93-106
Publication date: 2018

Host publication information
Title of host publication: Optical Switching in Next Generation Data Centers
Publisher: Springer
Editors: Testa, F., Pavesi, L.
ISBN (Print): 978-3-319-61052-8
Main Research Area: Technical/natural sciences
Engineering, Communications Engineering, Networks, Microwaves, RF and Optical Engineering, Signal, Image and Speech Processing, Computer Communication Networks, Information Systems Applications (incl. Internet), Power Electronics, Electrical Machines and Networks, Time division multiplexing (TDM), Wavelength division multiplexing (WDM), Space division multiplexing (SDM), Multidimensional switching, Hi-Ring architecture
DOIs: 10.1007/978-3-319-61052-8_5
Source: FindIt
Source-ID: 2373424764
Publication: Research - peer-review › Book chapter – Annual report year: 2018
The medical threat of mamba envenoming in sub-Saharan Africa revealed by genus-wide analysis of venom composition, toxicity and antivenomics profiling of available antivenoms

Mambas (genus Dendroaspis) are among the most feared of the medically important elapid snakes found in sub-Saharan Africa, but many facets of their biology, including the diversity of venom composition, remain relatively understudied. Here, we present a reconstruction of mamba phylogeny, alongside genus-wide venom gland transcriptomic and high-resolution top-down venomic analyses. Whereas the green mambas, D. viridis, D. angusticeps, D. j. jamesoni and D. j. kaimosae, express 3FTx-predominant venoms, black mamba (D. polylepis) venom is dominated by dendrotoxins I and K. The divergent terrestrial ecology of D. polylepis compared to the arboreal niche occupied by all other mambas makes it plausible that this major difference in venom composition is due to dietary variation. The pattern of intrageneric venom variability across Dendroaspis represented a valuable opportunity to investigate, in a genus-wide context, the variant toxicity of the venom, and the degree of paraspecific cross-reactivity between antivenoms and mamba venoms. To this end, the immunological profiles of the five mamba venoms were assessed against a panel of commercial antivenoms generated for the sub-Saharan Africa market. This study provides a genus-wide overview of which available antivenoms may be more efficacious in neutralising human envenomings caused by mambas, irrespective of the species responsible. The information gathered in this study lays the foundations for rationalising the notably different potency and pharmacological profiles of Dendroaspis venoms at locus resolution. This understanding will allow selection and design of toxin immunogens with a view to generating a safer and more efficacious pan-specific antivenom against any mamba envenomation.

General information
State: Published
Organisations: Network Engineering of Eukaryotic Cell factories, Department of Bio and Health Informatics, Genomic Epidemiology, Liverpool School of Tropical Medicine, University of California, San Diego, Technische Universität Berlin, Bangor University, Universidad de Costa Rica, Consejo Superior de Investigaciones Científicas
Pages: 173-189
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Proteomics
Volume: 172
ISSN (Print): 1874-3919
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.05 SJR 1.383 SNIP 1.055
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.495 SNIP 1.14 CiteScore 4.09
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.353 SNIP 1.119 CiteScore 4.02
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.306 SNIP 1.024 CiteScore 4.23
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.227 SNIP 1.168 CiteScore 4.29
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.224 SNIP 1.196 CiteScore 4.81
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
The North Sea Offshore Wind Service Industry: Status, perspectives and a joint action plan

The Offshore Wind Service sector is about to established itself as an industrial sector with an own identity, own organisation, and with large future challenges. The article introduces this new sector, including assessment of present and future market sizes. The overall aim of the research reported in this article was to increase the innovation capacity of the European offshore wind servicing (OWS) sector by establishing cross-regional cooperation and intensifying the relationship between research and the offshore wind industry. The article uses the concept of innovation system foresight (ISF). The linking of the two concepts of foresight and innovation systems has been explored by several studies, but ISF takes a further integration of the two concepts. The article presents a set of concrete actions at multiple levels to support the development of the offshore wind service sector. The findings provides an input for a concerted effort for supporting both the offshore wind development and the emerging clusters of offshore wind services around the North Sea. In addition, the article addresses the value of the ISF approach to such policy development.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Transport DTU, Department of Wind Energy, Integration & Planning
Authors: Andersen, P. D. (Intern), Clausen, N. (Intern), Cronin, T. (Intern), Piirainen, K. A. (Intern)
Pages: 2672-2683
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Renewable and Sustainable Energy Reviews
Volume: 81
Issue number: 2
ISSN (Print): 1364-0321
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 9.52 SJR 3.051 SNIP 3.454
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.999 SNIP 3.387 CiteScore 8.35
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.106 SNIP 3.761 CiteScore 7.79
Web of Science (2014): Indexed yes
Thermo-active building systems and sound absorbers: Thermal comfort under real operation conditions

Radiant systems are established today and have a high ecological potential in buildings while ensuring thermal comfort. Free-hanging sound absorbers are commonly used for room acoustic control, but can reduce the heat exchange when suspended under an active slab. The aim of this study is to evaluate the impact on thermal comfort of horizontal and vertical free-hanging porous sound absorbers placed in rooms of a building cooled by Thermo-Active Building System (TABS), under real operation conditions. A design comparing five different ceiling coverage ratios and two room types has been implemented during three measurement periods. A clear correlation between increase of ceiling coverage ratio and reduction of thermal comfort could not be derived systematically for each measurement period and room type, contrarily to what was expected from literature. In the first two monitoring periods in the larger office rooms, rooms with higher coverage ratios reported higher operative temperatures. This correlation was however not clear from the monitoring in the smaller offices and other measurement periods. In all monitored rooms, a strong influence of the user behaviour on thermal comfort has been observed. A higher temporal offset between ceiling and operative temperature was also observed in rooms equipped with absorbers.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Building Energy, Burohappold Engineering, Fraunhofer Institute for Solar Energy Systems ISE, Saint-Gobain Ecophon AB
Authors: Köhler, B. (Ekstern), Rage, N. (Ekstern), Chigot, P. (Ekstern), Hviid, C. A. (Intern)
Pages: 143-152
Publication date: 2018
Thermoporoelastic effects during heat extraction from low-permeability reservoirs

Thermoporoelastic effects during heat extraction from low permeability geothermal reservoirs are investigated numerically, based on the model of a horizontal penny-shaped fracture intersected by an injection well and a production well. A coupled formulation for thermo-hydraulic (TH) processes is presented that implicitly accounts for the mechanical deformation of the poroelastic matrix. The TH model is coupled to a separate mechanical contact model (M) that solves for the fracture contact stresses due to thermoporoelastic compression. Fractures are modelled as surface discontinuities within a three-dimensional matrix. A robust contact model is utilised to resolve the contact tractions between opposing fracture surfaces. Results show that due to the very low thermal diffusivity of the rock matrix, the thermally-induced pore pressure partially dissipates even in the very low-permeability rocks that are found in EGS projects. Therefore, using the undrained thermal expansion coefficient for the matrix may overestimate the volumetric strain of the rock in low-permeability enhanced geothermal systems, whereas using a drained thermal expansion coefficient for the matrix may underestimate the volumetric strain of the rock. An effective thermal expansion coefficient can be computed from the drained and undrained values to improve the prediction for the partially-drained matrix.

General information
State: Published
Organisations: Centre for oil and gas – DTU, Imperial College London
Authors: Salimzadeh, S. (Intern), Nick, H. M. (Intern), Zimmerman, R. W. (Ekstern)
Number of pages: 13
Pages: 546-558
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Energy
Volume: 142
ISSN (Print): 0360-5442
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.17 SJR 1.999 SNIP 1.798
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.276 SNIP 2.046 CiteScore 5.03
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.647 SNIP 2.63 CiteScore 5.7
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.54 SNIP 2.593 CiteScore 5.02
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.998 SNIP 2.25 CiteScore 4.25
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.609 SNIP 2.043 CiteScore 4
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.814 SNIP 2.725
Web of Science (2010): Indexed yes
The Use of Nanomaterials and Microfluidics in Medical Diagnostics

In the last few decades, there has been an increasing demand for more sensitive, cheaper and faster diagnostic tests in healthcare. Nanotechnology has the potential to revolutionise medical diagnostics by allowing rapid testing potentially in the doctor's office, greater sensitivity down to single cell or molecule level, as well as screening of diseases at an earlier stage through identification of disease biomarkers at extremely low concentrations. Nanotechnology is considered a broad area of science that incorporates multiple scientific disciplines, and can be defined as the creation and manipulation of materials, systems, and devices at the nanometer scale. The development of nanomaterials and nano-devices can be classified into two general approaches. The top down approach deals exclusively with developing nanostructures through machining, templating and lithographic techniques and refers to the fabrication and development of microfluidic and nanofluidic devices. The bottom-up approach focuses on the synthesis of nanomaterials from a single atom or molecule and relies on self-assembly or self-organization to produce particles with uniform size and shape. These micro/nanofluidic devices and nanomaterials display extraordinary physical and chemical properties which have been exploited for a large number of different novel nanodiagnostic applications. In this chapter, a general overview of nanotechnology for medical diagnostic applications will be given. The chapter will firstly define nanotechnology followed by a brief summary of bottom-up approaches to developing nanomaterials and their use in medical diagnostics. Then a discussion on the top-down approach will focus on nano-devices, methods for fabrication and the applications of these devices in medical diagnostics. The chapter will go on to review the current applications of these nanomaterials. In the final part of the chapter, the future prospects and outlooks for nanotechnology in the field of molecular diagnostics will be discussed.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology
Authors: Ashley, J. (Intern), Sun, Y. (Intern)
Pages: 35-58
Publication date: 2018

Host publication information
Title of host publication: Biosensors and Nanotechnology: Applications in Health Care Diagnostics
Publisher: Wiley
ISBN (Print): 9781119065012
ISBN (Electronic): 9781119065036
Chapter: 3
Main Research Area: Technical/natural sciences
DOIs: 10.1016/j.energy.2017.10.059
Source: Findit
Source-ID: 2392652789
Publication: Research - peer-review › Journal article – Annual report year: 2018
Towards airflow sensors with energy harvesting and wireless transmitting properties
The rapidly growing demand for even more detailed low-cost measurements of weather and environmental conditions, including wind flow, asks for self-sustained energy solutions that eliminate the need for external recharge or replacement of batteries. Today's wind measurement market is limited to traditional anemometers, ultrasonic measurement or expensive LiDAR (Light Imaging, Detection and Ranging) systems. This paper presents the initial design considerations for a low-cost combined air speed and wind direction sensor, which harvests energy to drive it and to power the wireless transmission of system configurations and measurements. An energy-budget for this transmission is included.

UBAT of UFFO/Lomonosov: The X-Ray Space Telescope to Observe Early Photons from Gamma-Ray Bursts
The Ultra-Fast Flash Observatory (UFFO) Burst Alert and Trigger Telescope (UBAT) has been designed and built for the localization of transient X-ray sources such as Gamma Ray Bursts (GRBs). As one of main instruments in the UFFO payload onboard the Lomonosov satellite (hereafter UFFO/Lomonosov), the UBAT's roles are to monitor the X-ray sky, to rapidly locate and track transient sources, and to trigger the slewing of a UV/optical telescope, namely Slewing Mirror Telescope (SMT). The SMT, a pioneering application of rapid slewing mirror technology has a line of sight parallel to the UBAT, allowing us to measure the early UV/optical GRB counterpart and study the extremely early moments of GRB evolution. To detect X-rays, the UBAT utilizes a 191.1 cm² scintillation detector composed of Yttrium Oxyorthosilicate (YSO) crystals, Multi-Anode Photomultiplier Tubes (MAPMTs), and associated electronics. To estimate a direction vector of a GRB source in its field of view, it employs the well-known coded aperture mask technique. All functions are written for implementation on a field programmable gate array to enable fast triggering and to run the device's imaging algorithms. The UFFO/Lomonosov satellite was launched on April 28, 2016, and is now collecting GRB observation data. In this study, we describe the UBAT's design, fabrication, integration, and performance as a GRB X-ray trigger and localization telescope, both on the ground and in space.
UFFO/Lomonosov: The Payload for the Observation of Early Photons from Gamma Ray Bursts
The payload of the UFFO (Ultra-Fast Flash Observatory)-pathfinder now onboard the Lomonosov spacecraft (hereafter UFFO/Lomonosov) is a dedicated instrument for the observation of GRBs. Its primary aim is to capture the rise phase of the optical light curve, one of the least known aspects of GRBs. Fast response measurements of the optical emission of GRB will be made by a Slewing Mirror Telescope (SMT), a key instrument of the payload, which will open a new frontier in transient studies by probing the early optical rise of GRBs with a response time in seconds for the first time. The SMT employs a rapidly slewing mirror to redirect the optical axis of the telescope to a GRB position prior determined by the UFFO Burst Alert Telescope (UBAT), the other onboard instrument, for the observation and imaging of X-rays.

UFFO/Lomonosov was launched successfully from Vostochny, Russia on April 28, 2016, and will begin GRB observations after completion of functional checks of the Lomonosov spacecraft. The concept of early GRB photon measurements with UFFO was reported in 2012. In this article, we will report in detail the first mission, UFFO/Lomonosov, for the rapid response to GRB observations.

General information
State: Published
Organisations: National Space Institute, Astrophysics and Atmospheric Physics
Number of pages: 21
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Space Science Reviews
Volume: 214
Issue number: 14
ISSN (Print): 0038-6308
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 6.45 SJR 2.982 SNIP 2.688
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.952 SNIP 3.005 CiteScore 5.97
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 3.386 SNIP 2.78 CiteScore 5.94
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.483 SNIP 2.366 CiteScore 4.88
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.102 SNIP 2.06 CiteScore 3.8
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.253 SNIP 1.85 CiteScore 4.23
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.171 SNIP 1.76
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.098 SNIP 1.762
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.715 SNIP 1.341
Uncovering the local inelastic interactions during manufacture of ductile cast iron: How the substructure of the graphite particles can induce residual stress concentrations in the matrix

Recent X-ray diffraction (XRD) measurements have revealed that plastic deformation and a residual elastic strain field can be present around the graphite particles in ductile cast iron after manufacturing, probably due to some local mismatch in thermal contraction. However, as only one component of the elastic strain tensor could be obtained from the XRD data, the shape and magnitude of the associated residual stress field have remained unknown. To compensate for this and to provide theoretical insight into this unexplored topic, a combined experimental-numerical approach is presented in this paper. First, a material equivalent to the ductile cast iron matrix is manufactured and subjected to dilatometric and high-temperature tensile tests. Subsequently, a two-scale hierarchical top-down model is devised, calibrated on the basis of the collected data and used to simulate the interaction between the graphite particles and the matrix during manufacturing of the industrial part considered in the XRD study. The model indicates that, besides the viscoplastic deformation of the matrix, the effect of the inelastic deformation of the graphite has to be considered to explain the magnitude of the XRD strain. Moreover, the model shows that the large elastic strain perturbations recorded with XRD close to the graphite–matrix interface are not artifacts due to e.g. sharp gradients in chemical composition, but correspond to residual stress concentrations induced by the conical sectors forming the internal structure of the graphite particles. In contrast to common belief, these results thus suggest that ductile cast iron parts cannot be considered, in general, as stress-free at the microstructural scale.
Underground metabolism: network-level perspective and biotechnological potential

A key challenge in molecular systems biology is understanding how new pathways arise during evolution and how to exploit them for biotechnological applications. New pathways in metabolic networks often evolve by recruiting weak promiscuous activities of pre-existing enzymes. Here we describe recent systems biology advances to map such
‘underground’ activities and to predict and analyze their contribution to new metabolic functions. Underground activities are prevalent in cellular metabolism and can form novel pathways that either enable evolutionary adaptation to new environments or provide bypass to genetic lesions. We also illustrate the potential of integrating computational models of underground metabolism and experimental approaches to study the evolution of novel metabolic phenotypes and advance the field of biotechnology.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, ALE Technology & Software Development, Network Reconstruction in Silico Biology, Wageningen University, Hungarian Academy of Sciences
Authors: Notebaart, R. A. (Ekstern), Kintses, B. (Ekstern), Feist, A. (Intern), Papp, B. (Ekstern)
Pages: 108-114
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Current Opinion in Biotechnology
Volume: 49
ISSN (Print): 0958-1669
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 8.55 SJR 3.331 SNIP 2.1
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.113 SNIP 2.143 CiteScore 7.99
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.271 SNIP 2.068 CiteScore 7.45
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.322 SNIP 2.198 CiteScore 7.93
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.508 SNIP 2.327 CiteScore 7.93
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.313 SNIP 2.089 CiteScore 7.76
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.56 SNIP 2.223
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.772 SNIP 2.085
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 3.324 SNIP 2.009
Scopus rating (2007): SJR 3.058 SNIP 1.959
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.742 SNIP 2.235
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 2.568 SNIP 2.273
Web of Science (2004): Indexed yes
Use of Input–Output Analysis in LCA

Input–output analysis can be used as a tool for complementing the traditionally process-based life cycle assessment (LCA) with macroeconomic data from the background systems. Properly used, it can result in faster and more accurate LCA. It also provides opportunities for streamlining the LCA inventory collection and focusing resources. This chapter reviews the main uses of input–output analysis (IO) to ensure consistent system boundaries, to evaluate the completeness of an LCA study and to form a basis for in-depth inventory collection. The use of IO as a data source for social and economic sustainability metrics is also discussed, as are the limitations of the approach. All aspects are demonstrated through examples and references both to recent scientific literature and publicly available datasets are provided. The aim of the chapter is to present the basic tools for applying IO in practical LCA studies.

Validation of a Robust Neural Real-Time Voltage Estimator for Active Distribution Grids on Field Data

The installation of measurements in distribution grids enables the development of data driven methods for the power system. However, these methods have to be validated in order to understand the limitations and capabilities for their use. This paper presents a systematic validation of a neural network approach for voltage estimation in active distribution grids by means of measured data from two feeders of a real low voltage distribution grid. The approach enables a real-time voltage estimation at locations in the distribution grid, where otherwise only non-real-time measurements are available. The method shows robust behavior in all analyzed aspects, which is vital for real world applications. A methodology to select the most relevant input variables and find the best achievable performance for a particular number of inputs is presented. Moreover, the paper shows that the performance is not sensitive to the number of neurons in the hidden layer of the neural network as long as the model is not underdetermined. The paper examines the quantity of historical data needed to establish an adequately functioning model. To accommodate grid evolution and seasonal effects, the impact of different retraining intervals is investigated. Furthermore, the performance of the model during periods of high PV generation is evaluated. The validation shows that accurate voltage estimation models for distribution grids with high share of dispersed generation can be established with approximately one month of historical data. The model has to be retrained every 10 to 20 days to retain estimation mean squared errors below 0.35 V². It was also found that the performance does not decline during times of high PV generation.
Wind-induced single-sided natural ventilation in buildings near a long street canyon: CFD evaluation of street configuration and envelope design

Wind-induced single-sided natural ventilation in buildings was widely investigated based on isolated buildings. However, owing to the presence of surrounding buildings, the wind flow pattern around a building in an urban area becomes very different from that around an isolated building. Considering an urban context, this study investigates the wind-induced single-sided natural ventilation in buildings near a long street canyon under a perpendicular wind direction using CFD method. Four aspect ratios (AR) of the street canyon, from 1.0, 2.0, 4.0 to 6.0, are investigated to examine the influence of street configuration, while eight envelope features are compared to explore the possibility of envelope design in improving natural ventilation performance of urban buildings. Ventilation rate of rooms in buildings is particularly analyzed. AR influences ventilation rate and its distribution among rooms along height of buildings. The percentage decrease of ventilation rate of buildings reaches 67% when AR of a street canyon is increased from 1.0 to 6.0. Envelope design provides a possibility to enhance the adaptability of buildings to dense urban environments. A good envelope design, such as a horizontal feature at the middle of an opening, can break effectively the along-facade flow and thus create a large pressure difference to drive ventilation. The findings of this study are intended to increase the understanding of natural ventilation performance in urban buildings and thus provide information for urban planning and building design.
Xylitol production by Debaryomyces hansenii and Candida guilliermondii from rapeseed straw hemicellulosic hydrolysate

This study evaluated the possibility of using rapeseed straw hemicellulosic hydrolysate as a fermentation medium for xylitol production. Two yeast strains, namely Debaryomyces hansenii and Candida guilliermondii, were used for this bioconversion process and their performance to convert xylose into xylitol was compared. Additionally, different strategies were evaluated for the hydrolysate detoxification before its use as a fermentation medium. Assays in semi-defined media were also performed to verify the influence of hexose sugars on xylose metabolism by the yeasts. C. guilliermondii exhibited higher tolerance to toxic compounds than D. hansenii. Not only the toxic compounds present in the hydrolysate affected the yeast's performance, but glucose also had a negative impact on their performance. It was not necessary to completely eliminate the toxic compounds to obtain an efficient conversion of xylose into xylitol, mainly by C. guilliermondii (YP/S = 0.55 g/g and 0.45 g/g for C. guilliermondii and D. hansenii, respectively).

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Biomass Conversion and Bioprocess Technology, Universidad de Jaen
Authors: López-Linares, J. C. (Ekstern), Romero, I. (Ekstern), Cara, C. (Ekstern), Castro, E. (Ekstern), Mussatto, S. I. (Intern)
Pages: 736-743
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Bioresource Technology
Volume: 247
ISSN (Print): 0960-8524
Yearly thermal performances of solar heating plants in Denmark – Measured and calculated

The thermal performance of solar collector fields depends mainly on the mean solar collector fluid temperature of the collector field and on the solar radiation. For Danish solar collector fields for district heating the measured yearly thermal performances per collector area varied in the period 2012–2016 between 313 kWh/m² and 577 kWh/m², with averages between 411 kWh/m² and 463 kWh/m². The percentage difference between the highest and lowest measured yearly thermal performance is about 84%. Calculated yearly thermal performances of typically designed large solar collector fields at six different locations in Denmark with measured weather data for the years 2002–2010 vary between 405 kWh/m² collector and 566 kWh/m² collector, if a mean solar collector fluid temperature of 60 °C is assumed. This corresponds to a percentage difference between the highest and lowest calculated yearly thermal performance of about 40%. This variation is caused by different weather conditions from year to year and from location to location. Approximately half of the variations of yearly thermal performances can be related to variable weather conditions.
Caffeine metabolites in wastewater were investigated as potential biomarkers for assessing caffeine intake in a population. The main human urinary metabolites of caffeine were measured in the urban wastewater of ten European cities and the metabolic profiles in wastewater were compared with the human urinary excretion profile. A good match was found for 1,7-dimethyluric acid, an exclusive caffeine metabolite, suggesting that might be a suitable biomarker in wastewater for assessing population-level caffeine consumption. A correction factor was developed considering the percentage of excretion of this metabolite in humans, according to published pharmacokinetic studies. Daily caffeine intake estimated from wastewater analysis was compared with the average daily intake calculated from the average amount of coffee consumed by country per capita. Good agreement was found in some cities but further information is needed to standardize this approach. Wastewater analysis proved useful to providing additional local information on caffeine use.

**General information**

State: Published

Organisations: Department of Environmental Engineering, Water Technologies, Department of Chemical and Biochemical Engineering, CAPEC-PROCESS, University of South Australia, University of Oslo, University of Antwerp, Swiss Federal Institute of Aquatic Science and Technology (Eawag), Universidade do Porto, University of Queensland, University of Amsterdam, Universitat Jaume I, Istituto di Ricerche Farmacologiche Mario Negri, University of Bath, Chemical Water Quality and Health, Norwegian Institute for Water Research

Authors: Gracia-Lor, E. (Ekstern), Rousis, N. I. (Ekstern), Zuccato, E. (Ekstern), Bade, R. (Ekstern), Baz-Lomba, J. A. (Ekstern), Castrignanò, E. (Ekstern), Causanilles Llanes, A. (Ekstern), Hernández, F. (Ekstern), Kasprzyk-Hordern, B. (Ekstern), Kinyua, J. (Ekstern), McCaill, A. (Ekstern), van Nuijs, A. L. N. (Ekstern), Plösz, B. G. (Intern), Ramin, P. (Intern), Ryu, Y. (Ekstern), Santos, M. M. (Ekstern), Thomas, K. V. (Ekstern), de Voogt, P. (Ekstern), Yang, Z. (Ekstern), Castiglioni, S. (Ekstern)

Number of pages: 7
Pages: 1582-1588
Publication date: 31 Dec 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Science of the Total Environment
Volume: 609
ISSN (Print): 0048-9697

Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
GCN CIRCULAR 21672, LIGO/Virgo G298048: INTEGRAL pointed follow-up observations

INTEGRAL is an observatory with multiple instruments: a gamma-ray spectrometer (20 keV - 8 MeV, SPI), an imager (15 keV - 2 MeV, IBIS), an X-ray monitor (3 - 25 keV, JEM-X), and an optical monitor (V band, OMC). Our group requested and obtained follow-up observations of the LIGO/Virgo candidate NS merger G298048 (GCN 21505, 21506).

General information
State: Published
Organisations: National Space Institute, Astrophysics and Atmospheric Physics, University of Geneva, CEA Saclay, IRAP, National Institute for Astrophysics, Institute for Space Research, European Space Agency, Max-Planck-Institut fur extraterrestrische Physik, University College Dublin, Russian Academy of Sciences
Authors: Savchenko, V. (Ekstern), Ferrigno, C. (Ekstern), Kuulkers, E. (Ekstern), Bozzo, E. (Ekstern), Mereghetti, S. (Ekstern), Courvoisier, T. J. (Ekstern), Chenevez, J. (Intern), Brandt, S. (Intern), Diehl, R. (Ekstern), Hanlon, L. (Ekstern), Laurent, P. (Ekstern), Gotz, D. (Ekstern), Roques, J. (Ekstern), Jourdain, E. (Ekstern), Ubertini, P. (Ekstern), Bazzano, A. (Ekstern), Rodi, J. (Ekstern), Sunyaev, R. (Ekstern)
Publication date: 8 Dec 2017

A comparison of the survival and migration of wild and F1-hatchery-reared brown trout (Salmo trutta) smolts traversing an artificial lake

Supplementing salmonid populations by stocking is a widely-used method to improve catch or to rehabilitate populations. Though, most studies found that survival and fitness of hatchery-reared salmonids is inferior to wild fish. We compared survival, emigration patterns, migration speed and return rates from the sea of wild and 1-year old F1-hatchery-reared brown trout smolts in a Danish lowland stream that contains an artificial lake using passive integrated transponder telemetry in the years 2011–2013 and 2016. The majority of hatchery-reared smolts descended within 72 h after their release, whereas wild fish migration was mainly triggered by increased water discharge. Increased probability of a successful lake passage was found at higher discharge. Within years, the groups differed in lake passage time, but without a significant overall difference. Overall, there was no difference in lake survival (wild: 30%, hatchery-reared: 32%) between the two groups, but survival differed between years. Only a single fish (0.9%) of the hatchery-reared smolts tagged in 2011–2013 returned from the sea compared to 11 (6.4%) wild smolts tagged in that period, which questions the value of supplementary stocking of smolts for conservation purposes.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Technical University of Denmark, Section for Freshwater Fisheries Ecology, Institute Management
Authors: Schwinn, M. (Intern), Baktoft, H. (Intern), Aarestrup, K. (Intern), Koed, A. (Intern)
Pages: 47-55
Publication date: 1 Dec 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Fisheries Research
Volume: 196
ISSN (Print): 0165-7836
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.21 SJR 1.12 SNIP 1.136
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Artificial lake, Hatchery fish, Migration, Passive integrated transponder, Survival
Food availability drives plastic self-repair response in a basal metazoan-case study on the ctenophore Mnemiopsis leidyi
A. Agassiz

Many marine invertebrates including ctenophores are capable of extensive body regeneration when injured. However, as for the invasive ctenophore Mnemiopsis leidyi, there is a constant subportion of individuals not undergoing whole body regeneration but forming functionally stable half-animals instead. Yet, the driving factors of this phenomenon have not been addressed so far. This study sheds new light on how differences in food availability affect self-repair choice and regeneration success in cydippid larvae of M. leidyi. As expected, high food availability favored whole-body regeneration. However, under low food conditions half-animals became the preferential self-repair mode. Remarkably, both regenerating and half-animals showed very similar survival chances under respective food quantities. As a consequence of impaired food uptake after injury, degeneration of the digestive system would often occur indicating limited energy storage capacities. Taken together, this indicates that half-animals may represent an alternative energy-saving trajectory which implies self-repair plasticity as an adaptive trade-off between high regeneration costs and low energy storage capacities. We conclude that self-repair plasticity could lead to higher population fitness of ctenophores under adverse conditions such as in ships’ ballast water tanks which is postulated to be the major vector source for the species’ spreading around the globe.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic, Norwegian University of Science and Technology, GEOMAR - Helmholtz Centre for Ocean Research Kiel, University of Florida
Authors: Bading, K. T. (Ekstern), Kaehlert, S. (Ekstern), Chi, X. (Ekstern), Jaspers, C. (Intern), Martindale, M. Q. (Ekstern), Javidpour, J. (Ekstern)
Publication date: 1 Dec 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Scientific Reports
Volume: 7
Issue number: 1
Article number: 16419
ISSN (Print): 2045-2322
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.63 SJR 1.625 SNIP 1.401
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.057 SNIP 1.684 CiteScore 5.3
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.103 SNIP 1.544 CiteScore 4.75
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.886 SNIP 1.51 CiteScore 4.06
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.458 SNIP 0.896 CiteScore 2.44
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
ISI indexed (2011): ISI indexed no
Original language: English
Electronic versions:
Publishers version
DOIs: 10.1038/s41598-017-16346-w
Links: https://www.nature.com/articles/s41598-017-16346-w
Source: Scopus
Source-ID: 85035356315
How to target inter-regional phase synchronization with dual-site Transcranial Alternating Current Stimulation

Large-scale synchronization of neural oscillations is a key mechanism for functional information exchange among brain areas. Dual-site Transcranial Alternating Current Stimulation (ds-TACS) has been recently introduced as non-invasive technique to manipulate the temporal phase relationship of local oscillations in two connected cortical areas. While the frequency of ds-TACS is matched, the phase of stimulation is either identical (in-phase stimulation) or opposite (anti-phase stimulation) in the two cortical target areas. In-phase stimulation is thought to synchronize the endogenous oscillations and hereby to improve behavioral performance. Conversely, anti-phase stimulation is thought to desynchronize neural oscillations in the two areas, which is expected to decrease performance. Critically, in- and anti-phase ds-TACS should only differ with respect to temporal phase, while all other stimulation parameters such as focality and stimulation intensity should be matched to enable an unambiguous interpretation of the behavioral effects. Using electric field simulations based on a realistic head geometry, we tested how well this goal has been met in studies, which have employed ds-TACS up to now. Separating the induced electrical fields in their spatial and temporal components, we investigated how the chosen electrode montages determined the spatial field distribution and the generation of phase variations in the injected electric fields. Considering the basic physical mechanisms, we derived recommendations for an optimized stimulation montage. The latter allows for a principled design of in- and anti-phase ds-TACS conditions with matched spatial distributions of the electric field. This knowledge will help cognitive neuroscientists to design optimal ds-TACS configurations, which are suited to probe unambiguously the causal contribution of phase coupling to specific cognitive processes in the human brain.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Cognitive Systems, Center for Magnetic Resonance, Department of Electrical Engineering, University of Copenhagen, Danish Research Centre for Magnetic Resonance
Authors: Saturnino, G. B. (Ekstern), Madsen, K. H. (Intern), Siebner, H. R. (Ekstern), Thielscher, A. (Intern)
Pages: 68-80
Publication date: 1 Dec 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: NeuroImage
Volume: 163
ISSN (Print): 1053-8119
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.31 SJR 3.823 SNIP 1.752
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 4.48 SNIP 1.84 CiteScore 6.71
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.201 SNIP 2.029 CiteScore 6.9
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 4.376 SNIP 2.026 CiteScore 7.06
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.922 SNIP 1.937 CiteScore 6.86
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.626 SNIP 1.81 CiteScore 6.31
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
Interference-exact radiative transfer equation

The Purcell effect, i.e., the modification of the spontaneous emission rate by optical interference, profoundly affects the light-matter coupling in optical resonators. Fully describing the optical absorption, emission, and interference of light hence conventionally requires combining the full Maxwell's equations with stochastic or quantum optical source terms accounting for the quantum nature of light. We show that both the nonlocal wave and local particle features associated with interference and emission of propagating fields in stratified geometries can be fully captured by local damping and scattering coefficients derived from the recently introduced quantized fluctuational electrodynamics (QFED) framework. In addition to describing the nonlocal optical interference processes as local directionally resolved effects, this allows reformulating the well known and widely used radiative transfer equation (RTE) as a physically transparent interference-exact model that extends the useful range of computationally efficient and quantum optically accurate interference-aware optical models from simple structures to full optical devices.

General information

State: Published
Organisations: Department of Photonics Engineering, Nanophotonics Theory and Signal Processing, Aalto University
Authors: Partanen, M. (Ekstern), Häyrynen, T. (Intern), Oksanen, J. (Ekstern)
Number of pages: 6
Publication date: 1 Dec 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Scientific Reports
Volume: 7
Issue number: 1
Article number: 11534
ISSN (Print): 2045-2322
ROLLER FILTRATION APPARATUS

The present invention relates to the field of filtering, more precisely the present invention concerns an apparatus and a method for the separation of dry matter from a medium and the use of said apparatus. One embodiment discloses an apparatus for the separation of dry matter and liquid from a medium, comprising a plurality of press rollers, a separation chamber for receiving the medium and defined, in cross section, by the press rollers, and at least one chamber filter located inside and enclosed by the separation chamber. The apparatus is preferably configured such that a negative pressure can be established in said chamber filter(s) relative to the separation chamber such that liquid in the medium can be sucked into the chamber filter(s) and dry matter in the medium can pass between corresponding press roller.

General information
State: Published
Organisations: National Food Institute, Research Group for Food Production Engineering, Research Group for Microbial Biotechnology and Biorefining
Authors: Stubbe, P. (Intern), Bøje Hansen, P. (Intern)
Publication date: 30 Nov 2017

Publication information
IPC: B01D 33/073 A I
Patent number: WO2017202934
Date: 30/11/2017
Priority date: 26/05/2016
Priority number: EP20160171485
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017202934
Publication: Research › Patent – Annual report year: 2017
VARIANTS OF ACETYLSEROTONIN O-METHYLTRANSFERASE AND USES THEREOF
Described herein are variants of acetylserotonin O-methyltransferase (ASMT) as well as vectors and recombinant microbial host cells expressing such ASMT variant and their use in producing melatonin and related compounds. Preferred ASMT variants provide for a higher turnover of N-acetylserotonin into melatonin.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, iLoop
Authors: Luo, H. (Intern)
Publication date: 30 Nov 2017

Publication information
IPC: C12P 17/10 A I
Patent number: WO2017202897
Date: 30/11/2017
Priority date: 24/05/2016
Priority number: EP20160171032
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017202897
Publication: Research › Patent – Annual report year: 2017

LANDSPLANREDEGØRELSEN 2017 – lever ikke op til behovet for en fremadrettet plan

General information
State: Published
Organisations: Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Authors: Hendriksen, K. (Intern), Poppel, B. (Ekstern), Jørgensen, U. (Ekstern)
Publication date: 17 Nov 2017

Publication information
Newspaper: Sermitsiaq
Volume: 2017
No.: 46
Ratings:
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Main Research Area: Technical/natural sciences
Electronic versions:
171113_Sermitsiaq_kronik_LPR2017_Master_1_.pdf
Source: PublicationPreSubmission
Source-ID: 139633114
Publication: Communication › Feature article – Annual report year: 2017

Bacterial cells with improved tolerance to isobutyric acid
Bacterial cells genetically modified to improve their tolerance to certain commodity chemicals, such as isobutyric acid and related compounds, and methods of preparing and using such bacterial cells for production of isobutyric acid and related compounds.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, iLoop, Bacterial Cell Factory Optimization, Global Econometric Modeling, Department of Biotechnology and Biomedicine, Bacterial Synthetic Biology, ALE Technology & Software Development
Authors: Lennen, R. (Intern), Nielsen, A. T. (Intern), Herrgård, M. (Intern), Sommer, M. O. A. (Intern), Feist, A. (Intern), Mohamed, E. T. T. (Intern)
Publication date: 16 Nov 2017

Publication information
IPC: C12P 7/52 A I
Patent number: WO2017194696
A METHOD FOR CREATING STRUCTURES OR DEVICES USING AN ORGANIC ICE RESIST

The invention relates to a method for creating an organic resist on a surface of a cooled substrate, the method comprising the steps of condensing a vapour into a solid film on the surface of the cooled substrate; patterning at least part of the solid film by exposing selected portions of said solid film to at least one electron beam thereby creating the organic resist on the surface of the cooled substrate in accordance with a predetermined pattern; wherein the created organic resist remains essentially intact at ambient conditions; and using the created organic resist as a mask for creating semiconductor structures and/or semiconductor devices.

A METHOD FOR PREPARING A SUBSTRATE BY APPLYING A SAMPLE TO BE ANALYSED

The invention relates to a method for preparing a substrate (105a) comprising a sample reception area (110) and a sensing area (111). The method comprises the steps of: 1) applying a sample on the sample reception area; 2) rotating the substrate around a predetermined axis; 3) during rotation, at least part of the liquid travels from the sample reception area to the sensing area due to capillary forces acting between the liquid and the substrate; and 4) removing the wave of particles and liquid formed at one end of the substrate. The sensing area is closer to the predetermined axis than the sample reception area. The sample comprises a liquid part and particles suspended therein.
PROCESS FOR THE PREPARATION OF ALLOY NANOPARTICLES COMPRISING A NOBLE AND A NON-NOBLE METAL

The present invention concerns a chemical process for preparing nanoparticles of an alloy comprising both a noble metal, such as platinum, and a non-noble transition or lanthanide metal, such as yttrium, gadolinium or terbium. The process is carried out by reduction with hydrogen and removal of volatile species in gas form at the reaction temperature.

Engineered mammalian cells for production of recombinant proteins

The present invention relates to mammalian cells modified to provide for improved expression of a recombinant protein of interest. In particular, the invention relates to CHO cells and other host cells in which the expression of one or more endogenous secreted proteins has been disrupted, as well as to the preparation, identification and use of such cells in the production of recombinant proteins.

HIGH PRECISION COMPUTED TOMOGRAPHY FOR METROLOGY

Disclosed is a CT system for performing measurements on an object. The CT system comprises a support element for supporting the object; a radiation source for radiating the object at a plurality of different angles; a radiation detector assembly for detecting radiation passed through the object and in response thereto generate radiation data; and a processing unit operatively connected to the radiation detector assembly. The radiation detector assembly comprises a support, a first detector array, and a second detector array, the first detector array and the second detector array being
attached to the support. The processing is configured to generate tomographic images of the object by processing radiation data received from the radiation detector assembly together with first calibration data describing properties of the first detector array and second calibration data describing properties of the second detector array.

**General information**
State: Published
Organisations: Department of Physics, Neutrons and X-rays for Materials Physics
Authors: Gundlach, C. (Intern), Poulsen, H. F. (Intern)
Publication date: 2 Nov 2017

**Publication information**
IPC: G01N 23/04 A I
Patent number: WO2017186804
Date: 02/11/2017
Priority date: 26/04/2016
Priority number: EP20160167137
Original language: English
Electronic versions:
WO2017186804A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017186804
Publication: Research › Patent – Annual report year: 2017

**High throughput in vivo protease inhibitor selection platform**
The invention relates to a recombinant microbial cell comprising a selection platform for screening for a protease inhibitor, wherein the platform comprises transgenes encoding a protease having selective peptide bond cleavage activity at a recognition site amino acid sequence; and transgenes encoding polypeptides conferring resistance to microbial growth inhibitors; wherein the polypeptides comprise the recognition site amino acid sequence cleavable by the protease. Protease inhibitors are detected by their ability to inhibit protease specific cleavage and inactivation of the polypeptides whose activity is required for conferring resistance to the microbial growth inhibitors. The invention further relates to recombinant microbial host cell libraries of metagenomic DNA that further comprise the selection platform; and the use of a recombinant microbial cell comprising the selection platform for screening for a protease inhibitor.

**General information**
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Department of Biotechnology and Biomedicine, Bacterial Synthetic Biology
Authors: Van Der Helm, E. (Intern), Sommer, M. (Intern)
Publication date: 2 Nov 2017

**Publication information**
IPC: C12Q 1/37 A I
Patent number: WO2017186854
Date: 02/11/2017
Priority date: 27/04/2016
Priority number: EP20160167213
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017186854
Publication: Research › Patent – Annual report year: 2017

**The accountability imperative for quantifying the uncertainty of emission forecasts: evidence from Mexico**
© 2017 Informa UK Limited, trading as Taylor & Francis Group Governmental climate change mitigation targets are typically developed with the aid of forecasts of greenhouse-gas (GHG) emissions. The robustness and credibility of such forecasts depends, among other issues, on the extent to which forecasting approaches can reflect prevailing uncertainties. We apply a transparent and replicable method to quantify the uncertainty associated with projections of gross domestic product growth rates for Mexico, a key driver of GHG emissions in the country. We use those projections to produce probabilistic forecasts of GHG emissions for Mexico. We contrast our probabilistic forecasts with Mexico’s governmental deterministic forecasts. We show that, because they fail to reflect such key uncertainty, deterministic forecasts are ill-suited for use in target-setting processes. We argue that (i) guidelines should be agreed upon, to ensure that governmental forecasts meet certain minimum transparency and quality standards, and (ii) governments should be held accountable for the appropriateness of the forecasting approach applied to prepare governmental forecasts, especially
when those forecasts are used to derive climate change mitigation targets. POLICY INSIGHTS

No minimum transparency and quality standards exist to guide the development of GHG emission scenario forecasts, not even when these forecasts are used to set national climate change mitigation targets. No accountability mechanisms appear to be in place at the national level to ensure that national governments rely on scientifically sound processes to develop GHG emission scenarios. Using probabilistic forecasts to underpin emission reduction targets represents a scientifically sound option for reflecting in the target the uncertainty to which those forecasts are subject, thus increasing the validity of the target. Setting up minimum transparency and quality standards, and holding governments accountable for their choice of forecasting methods could lead to more robust emission reduction targets nationally and, by extension, internationally.

**General information**

State: Accepted/In press
Organisations: Department of Management Engineering, UNEP DTU Partnership, Delft University of Technology, Observatoire Français des conjonctures économiques
Authors: Puig, D. (Intern), Morales-Nápoles, O. (Ekstern), Bakhtiari, F. (Intern), Landa, G. (Ekstern)
Number of pages: 10
Publication date: 2 Nov 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Climate Policy
ISSN (Print): 1469-3062
Ratings:
- BFI (2017): BFI-level 1
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 2.23 SJR 1.165 SNIP 1.414
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): SJR 1.596 SNIP 1.268 CiteScore 2.42
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 1
- Scopus rating (2014): SJR 1.215 SNIP 0.955 CiteScore 1.82
- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 0.777 SNIP 0.827 CiteScore 1.36
- ISI indexed (2013): ISI indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): SJR 0.95 SNIP 0.945 CiteScore 1.57
- ISI indexed (2012): ISI indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): SJR 1.019 SNIP 0.873 CiteScore 1.35
- ISI indexed (2011): ISI indexed yes
- BFI (2010): BFI-level 1
- Scopus rating (2010): SJR 0.808 SNIP 1.15
- BFI (2009): BFI-level 1
- Scopus rating (2009): SJR 1.683 SNIP 1.241
- BFI (2008): BFI-level 1
- Scopus rating (2008): SJR 0.885 SNIP 0.962
- Web of Science (2008): Indexed yes
- Scopus rating (2007): SJR 0.398 SNIP 0.719
- Scopus rating (2006): SJR 0.701 SNIP 1.388
- Web of Science (2006): Indexed yes
- Scopus rating (2005): SJR 0.92 SNIP 1.256
- Scopus rating (2004): SJR 0.983 SNIP 1.511
- Scopus rating (2003): SJR 0.684 SNIP 1.051
- Web of Science (2003): Indexed yes
- Scopus rating (2002): SJR 0.878 SNIP 0.993
- Web of Science (2002): Indexed yes
Corticomuscular coherence in the acute and subacute phase after stroke

Objective Stroke is one of the leading causes of physical disability due to damage of the motor cortex or the corticospinal tract. In the present study we set out to investigate the role of adaptations in the corticospinal pathway for motor recovery during the subacute phase after stroke. Methods We examined 19 patients with clinically diagnosed stroke and 18 controls. The patients had unilateral mild to moderate weakness of the hand. Each patient attended two sessions at approximately 3 days (acute) and 38 days post stroke (subacute). Task-related changes in the communication between motor cortex and muscles were evaluated from coupling in the frequency domain between EEG and EMG during movement of the paretic hand. Results Corticomuscular coherence (CMC) and intermuscular coherence (IMC) were reduced in patients as compared to controls. Paretic hand motor performance improved within 4–6 weeks after stroke, but no change was observed in CMC or IMC. Conclusions CMC and IMC were reduced in patients in the early phase after stroke. However, changes in coherence do not appear to be an efficient marker for early recovery of hand function following stroke. Significance This is the first study to demonstrate sustained reduced coherence in acute and subacute stroke.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, University of Copenhagen
Authors: Larsen, L. H. (Ekstern), Zibrandtsen, I. C. (Ekstern), Wienecke, T. (Ekstern), Kjaer, T. W. (Ekstern), Christensen, M. S. (Intern), Nielsen, J. B. (Ekstern), Langberg, H. (Ekstern)
Pages: 2217-2226
Publication date: 1 Nov 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Clinical Neurophysiology
Volume: 128
Issue number: 11
ISSN (Print): 1388-2457
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.81 SJR 2.514 SNIP 2.033
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.395 SNIP 1.505 CiteScore 2.72
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.572 SNIP 0.437 CiteScore 2.61
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.122 SNIP 1.468 CiteScore 3
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.168 SNIP 0.302 CiteScore 3.03
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Design optimization of offshore wind farms with multiple types of wind turbines

Most studies on offshore wind farm design assume a uniform wind farm, which consists of an identical type of wind turbines. In order to further reduce the cost of energy, we investigate the design of non-uniform offshore wind farms, i.e., wind farms with multiple types of wind turbines and hub-heights. Given a set of different types of wind turbines with a different default hub height for each type, we can specify the design of a wind farm by the types of turbines, number of turbines for each type, and turbine locations. We consider the optimization of such design to minimize the levelized cost of energy, which is calculated using a capital cost model that covers the turbine cost and the balance of plant cost. An empirical wind turbine design cost and scaling model is utilized to model the cost of turbines with different sizes. Constraints on wind farm boundary, wind turbine proximity and total capacity are also included. We solve the problem with a newly developed extended random search algorithm and tested it in a realistic design optimization problem based on the Horns Rev 1 offshore wind farm in Denmark. The optimized non-uniform designs are compared with their uniform counterparts. We find that a non-uniform design can achieve a lower levelized cost of energy than its uniform counterparts, when the capital cost per MW is slightly lower for the smaller size turbine. Comparison with the mixed-discrete particle swarm optimization algorithm is also carried out for a non-uniform wind farm design problem with a fixed number of turbines, which shows the effectiveness and superiority of the proposed algorithm. Finally, the advantages and possible disadvantages of non-uniform design are also identified and discussed.
Online short-term forecast of greenhouse heat load using a weather forecast service

In some district heating systems, greenhouses represent a significant share of the total load, and can lead to operational challenges. Short term load forecast of such consumers has a strong potential to contribute to the improvement of the overall system efficiency. This work investigates the performance of recursive least squares for predicting the heat load of individual greenhouses in an online manner. Predictor inputs (weekly curves terms and weather forecast inputs) are...
selected in an automated manner using a forward selection approach. Historical load measurements from 5 Danish greenhouses with different operational characteristics were used, together with weather measurements and a weather forecast service. It was found that these predictors of reduced complexity and computational load performed well at capturing recurring load profiles, but not fast frequency random changes. Overall, the root mean square error of the prediction was within 8–20% of the peak load for the set of consumers over the 8 months period considered.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems, Aalborg University
Authors: Vogler-Finck, P. J. (Ekstern), Bacher, P. (Intern), Madsen, H. (Intern)
Pages: 1298-1310
Publication date: 1 Nov 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Applied Energy
Volume: 205
ISSN (Print): 0306-2619
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.78 SJR 3.058 SNIP 2.573
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.912 SNIP 2.61 CiteScore 6.4
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.254 SNIP 3.28 CiteScore 6.93
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 3.164 SNIP 3.377 CiteScore 6.59
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.854 SNIP 3.108 CiteScore 5.69
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.473 SNIP 2.84 CiteScore 5.5
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.516 SNIP 2.25
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.003 SNIP 1.781
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.974 SNIP 1.215
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.179 SNIP 1.709
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.979 SNIP 1.293
Scopus rating (2005): SJR 1.043 SNIP 0.996
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.643 SNIP 0.839
**ELECTROCHEMICAL DEVICE FOR DETECTION OF SELECTED QUORUM SENSING SIGNALS**

For diagnostic purposes, and particularly point-of-care diagnostic purposes, there is a need for devices capable of detecting quorum sensing molecules such as AHL within a biological sample with high precision, and which furthermore are fast and simple to use. The present invention relates to an electrochemical device, comprising:

- at least one reference electrode (RE),
- at least one counter electrode (CE),
- two or more working electrodes (WEs), wherein each working electrode differ from the other working electrode(s) with respect to at least one of the following characteristics: surface area, size, material, and coating,
- a sample receiving area for receiving a biological sample, wherein the electrodes and the sample receiving area is fluidly connected,
- means for transferring the sample to the electrodes for measurement, and
- means for displaying a result of the measurement.

**Dynamic Relative Compression, Dynamic Partial Sums, and Substring Concatenation**

Given a static reference string $R$ and a source string $S$, a relative compression of $S$ with respect to $R$ is an encoding of $S$ as a sequence of references to substrings of $R$. Relative compression schemes are a classic model of compression and have recently proved very successful for compressing highly-repetitive massive data sets such as genomes and web-data. We initiate the study of relative compression in a dynamic setting where the compressed source string $S$ is subject to edit operations. The goal is to maintain the compressed representation compactly, while supporting edits and allowing efficient random access to the (uncompressed) source string. We present new data structures that achieve optimal time for updates and queries while using space linear in the size of the optimal relative compression, for nearly all combinations of parameters. We also present solutions for restricted and extended sets of updates. To achieve these results, we revisit the dynamic partial sums problem and the substring concatenation problem. We present new optimal or near optimal bounds for these problems. Plugging in our new results we also immediately obtain new bounds for the string indexing for patterns with wildcards problem and the dynamic text and static pattern matching problem.
CRYSTAL STRUCTURE OF HUMAN DOPAMINE BETA-HYDROXYLASE

A crystalline form of dopamine β-hydroxylase is provided. X-ray crystallography reveals the space group and cell dimensions, as well as the atomic coordinates. The information can be used for identifying one or more modulators of dopamine β-hydroxylase, which can then be chemically synthesised and used in treatment. A process for preparing the...
crystalline form of human dopamine β-hydroxylase is also provided.

General information
State: Published
Organisations: Department of Chemistry, Metalloprotein Chemistry and Engineering, Københavns Universitet
Authors: Harris, P. H. (Forskerdatabase), Christensen, H. E. M. (Intern), Vendelboe, T. V. (Intern)
Publication date: 12 Oct 2017

Publication information
IPC: C12N 9/02 A1
Patent number: WO2017174762
Date: 12/10/2017
Priority date: 07/04/2016
Priority number: EP20160164227
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017174762
Publication: Research › Patent – Annual report year: 2017

Optimized microbial cells for production of melatonin and other compounds
Described herein are recombinant microbial host cells comprising biosynthetic pathways and their use in producing oxidation products and downstream products, e.g., melatonin and related compounds, as well as enzyme variants, nucleic acids, vectors and methods useful for preparing and using such cells. In specific aspects, the present invention relates to monoxygenases, e.g., amino acid hydroxylases, with a modified cofactor-dependency, and to enzyme variants and microbial cells providing for an improved supply of cofactors.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, iLoop, Department of Systems Biology
Authors: Luo, H. (Intern), Förster, J. (Intern)
Publication date: 5 Oct 2017

Publication information
IPC: C12P 17/10 A1
Patent number: WO2017167866
Date: 05/10/2017
Priority date: 19/05/2016
Priority number: EP20160170405
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017167866
Publication: Research › Patent – Annual report year: 2017

Robotic system and method for manufacturing of objects
The present disclosure relates to a method and a system for manufacturing a mould (17) for creation of complex objects, such as concrete objects, by controlling and moving two end effectors (1) of a robotic system, the two end effectors (1) having a flexible cutting element (3) attached to and extending between the two end effectors (1), the method comprising the steps of: defining at least one surface (8) representing the inner surface of the mould (17); dividing the surface (8) into a number of segments represented by planar curves (9, 11, 12) on the surface (8); for each planar curve, calculating at least one elastic curve representing the planar curve; for each calculated elastic curve, calculating a set of data corresponding to placement and direction of the two end effectors (1) for configuring the flexible cutting element to a shape corresponding to the calculated elastic curve; sequentially positioning the end effectors (1) according to each set of data,

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Mathematics
Authors: Gravesen, J. (Intern), Brander, D. (Intern), Bærentzen, J. A. (Ekstern), Markvorsen, S. (Intern), Bjerre Nørbjerg, T. (Intern), Hornbak Steenstrup, K. (Intern)
Advanced fabrication of hyperbolic metamaterials

Hyperbolic metamaterials can provide unprecedented properties in accommodation of high-k (high wave vector) waves and enhancement of the optical density of states. To reach such performance the metamaterials have to be fabricated with as small imperfections as possible. Here we report on our advances in two approaches in fabrication of optical metamaterials. We deposit ultrathin ultrasmooth gold layers with the assistance of organic material (APTM) adhesion layer. The technology supports the stacking of such layers in a multiperiod construction with alumina spacers between gold films, which is expected to exhibit hyperbolic properties in the visible range. As the second approach we apply the atomic layer deposition technique to arrange vertical alignment of layers or pillars of heavily doped ZnO or TiN, which enables us to produce hyperbolic metamaterials for the near- and mid-infrared ranges.

CHEMICAL VAPOUR DEPOSITION FROM A RADIATION-SENSITIVE PRECURSOR

The present invention relates in one aspect to a method of depositing a thin film on a substrate by chemical vapour deposition (CVD) from a radiation-sensitive precursor substance. The method comprises the steps of: (i) placing the substrate in a reaction chamber of a CVD system; (ii) heating the substrate, wherein heating includes the transmission of electromagnetic heating radiation from a controllable radiative heat source through the reaction chamber towards the substrate, wherein the radiative heat source is controlled to provide electromagnetic radiation as one or more heating pulses, each heating pulse followed by an idle period; (iii) during at least one of the idle periods, providing a pressure pulse of precursor substance inside the reaction chamber by feeding at least one precursor substance to the reaction chamber so as to establish a reaction partial pressure for thin film deposition from said precursor substance onto the substrate and subsequently, after a dwell time, removing the precursor substance so as to reduce the partial pressure of
the precursor substance in the reaction chamber to below a threshold; and (iv) repeating steps (ii) and (iii) until a desired thin film is formed. According to a further aspect, the invention relates to a chemical vapour deposition (CVD) system for depositing a thin film onto a substrate using precursor substances containing at least one radiation sensitive species.

**General information**
State: Published
Organisations: Department of Micro- and Nanotechnology, Nanocarbon
Authors: Stoot, A. C. (Intern), Camilli, L. (Intern)
Publication date: 14 Sep 2017

**Publication information**
IPC: C23C 16/48 A1
Patent number: WO2017153510
Date: 14/09/2017
Priority date: 09/03/2016
Priority number: EP20160159305
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017153510
Publication: Research › Patent – Annual report year: 2017

---

**Coherent laser phase retrieval in the presence of measurement imperfections and incoherent light**

Phase retrieval is a powerful numerical method that can be used to determine the wavefront of laser beams based only on intensity measurements, without the use of expensive, low-resolution specialized wavefront sensors such as Shack–Hartmann sensors. However, phase retrieval techniques generally suffer from poor convergence and fidelity when the input measurements contain electronic or optical noise and/or an incoherent intensity contribution overlapped with the otherwise spatially coherent laser beam. Here, we present an implementation of a modified version of the standard multiple-plane Gerchberg–Saxton algorithm and demonstrate that it is highly successful at extracting the intensity profile and wavefront of the spatially coherent part of the light from various lasers, including tapered laser diodes, at a very high fidelity despite the presence of incoherent light and noise.

**General information**
State: Published
Organisations: Department of Photonics Engineering, Diode Lasers and LED Systems
Authors: Hansen, A. K. (Intern)
Pages: 7341-7345
Publication date: 10 Sep 2017
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Applied Optics
Volume: 56
Issue number: 26
ISSN (Print): 1559-128X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.61 SJR 0.633 SNIP 1.095
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.826 SNIP 1.225 CiteScore 1.66
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.066 SNIP 1.534 CiteScore 2.04
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.991 SNIP 1.616 CiteScore 1.98
Concentration of nanoparticles and/or microparticles in flow conditions by dielectrophoresis
A device for concentration of nanoparticles and/or microparticles in liquid flow conditions by dielectrophoresis is disclosed in this invention.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Nano Bio Integrated Systems
Authors: Rozlosnik, N. (Intern), Dimaki, M. (Intern), Olsen, M. H. (Ekstern), Svendsen, W. E. (Intern)
Publication date: 8 Sep 2017

Publication information
IPC: B01L 3/00 A I
Patent number: WO2017148785
Date: 08/09/2017
Priority date: 01/03/2016
Contracting a planar graph efficiently

We present a data structure that can maintain a simple planar graph under edge contractions in linear total time. The data structure supports adjacency queries and provides access to neighbor lists in $O(1)$ time. Moreover, it can report all the arising self-loops and parallel edges. By applying the data structure, we can achieve optimal running times for decremental bridge detection, 2-edge connectivity, maximal 3-edge connected components, and the problem of finding a unique perfect matching for a static planar graph. Furthermore, we improve the running times of algorithms for several planar graph problems, including decremental 2-vertex and 3-edge connectivity, and we show that using our data structure in a black-box manner, one obtains conceptually simple optimal algorithms for computing MST and 5-coloring in planar graphs.

Determination of thermal characteristics of standard and improved hollow concrete blocks using different measurement techniques

The lighter weight, improved thermal properties and better acoustic insulation of hollow-core concrete blocks are few of the characteristics that one encounters when comparing them to traditional Maltese globigerina limestone solid blocks. As a result, hollow concrete blocks have recently been in greater demand. However, their transmittance, or U-value, is still quite high and does not meet the minimum energy requirements for constructing new buildings. This paper is focused on the investigation of the thermal properties of a new building block, developed as part of a nationally-funded research project ThermHCB, with the aim of improving the U-value of such blocks without changing their compressive strength, physical dimensions or manufacturing process. Measurement techniques were applied to obtain comparative values of the thermal transmittance for standard and improved HCBs, using different EN and draft standards. Compressive testing was carried out concurrently in order to ensure that the minimum benchmark compressive strength was reached. The comparison between these results provides information on the reliability of the methodologies used to determine the thermal properties of building elements in-situ, without having to conduct such tests in a laboratory hot box setup.
Optimal pseudorandom sequence selection for online c-VEP based BCI control applications

Background: In a c-VEP BCI setting, test subjects can have highly varying performances when different pseudorandom sequences are applied as stimulus, and ideally, multiple codes should be supported. On the other hand, repeating the experiment with many different pseudorandom sequences is a laborious process. Aims: This study aimed to suggest an efficient method for choosing the optimal stimulus sequence based on a fast test and simple measures to increase the performance and minimize the time consumption for research trials. Methods: A total of 21 healthy subjects were included in an online wheelchair control task and completed the same task using stimuli based on the m-code, the gold-code, and the Barker-code. Correct/incorrect identification and time consumption were obtained for each identification. Subject-specific templates were characterized and used in a forward-step first-order model to predict the chance of completion and accuracy score. Results: No specific pseudorandom sequence showed superior accuracy on the group basis. When isolating the individual performances with the highest accuracy, time consumption per identification was not significantly increased. The Accuracy Score aids in predicting what pseudorandom sequence will lead to the best performance using only the templates. The Accuracy Score was higher when the template resembled a delta function the most and when repeated templates were consistent. For completion prediction, only the shape of the template was a significant predictor. Conclusions: The simple and fast method presented in this study as the Accuracy Score, allows c-VEP based BCI systems to support multiple pseudorandom sequences without increase in trial length. This allows for more personalized BCI systems with better performance to be tested without increased costs.
A bacterial cell factory for efficient production of ethanol from whey

The invention relates to a method for homo-ethanol production from lactose using a genetically modified lactic acid bacterium of the invention, where the cells are provided with a substrate comprising dairy waste supplemented with an amino nitrogen source (such as acid hydrolysed corn steep liquor). The invention further relates to genetically modified lactic acid bacterium and its use for homo-ethanol production from lactose in dairy waste. The lactic acid bacterium comprises both genes (lacABCD, LacEF, lacG) encoding enzymes catalysing the lactose catabolism pathway; and transgenes (pdc and adhB) encoding enzymes catalysing the conversion of pyruvate to ethanol. Additionally a number of genes (Idh, pta and adhE) are deleted in order to maximise homo-ethanol production as compared to production of lactate, acetoin and acetate production.

General information
State: Published
Organisations: National Food Institute, Research Group for Microbial Biotechnology and Biorefining
Authors: Jensen, P. R. (Intern), Liu, J. (Intern), Solem, C. (Intern), Dantoft, S. H. (Intern)
Publication date: 31 Aug 2017

Publication information
IPC: C12N 15/ 75 A I
Patent number: WO2017144672
Date: 31/08/2017
Priority date: 25/02/2016
Priority number: EP20160157325
Original language: English
Electronic versions:
WO2017144672A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017144672
Publication: Research › Patent – Annual report year: 2017
A DEVICE AND METHOD FOR MEASURING TAR IN A TAR-ENVIRONMENT
The present disclosure describes a device and corresponding method for measuring tar in a tar environment, e.g., a tar producing environment such as a stove or a combustion engine, based on UV absorption spectroscopy. A first measurement along an optical path in the tar environment is performed at a wavelength less than 340 nm at which both tar and non-tar elements absorb. This measurement is compensated for non-tar absorption by means of a second measurement at a wavelength equal to or greater than 340 nm at which tar does not absorb. From the non-tar compensated absorbance value a measure of tar in the tar environment is derived and an air intake in the tar environment is regulated based on the measure of tar.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre
Authors: Clausen, S. (Intern), Fateev, A. (Intern)
Publication date: 31 Aug 2017

Publication information
IPC: G01N 21/ 84 A N
Patent number: WO2017144507
Date: 31/08/2017
Priority date: 22/02/2016
Priority number: EP20160156675
Original language: English
Electronic versions:
WO2017144507A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017144507
Publication: Research › Patent – Annual report year: 2017

A set of robotic building elements
A set of building elements (900), comprising one or more building elements (101;701;901..907) with a housing (119) which is selected from a group of straight, bend, L-shaped, and T-shaped bodies with one or more end-portions (121); wherein the building elements are configured with at least one connector (103) configured as a plug integrated with or installed in at least some of the end-portions (121). The connectors (103) comprise: an abutment face (201) with a centre portion (202); a diagonally magnetized magnet arranged behind the abutment face (201); and a pair of a female engagement member (504) extending radially from the centre portion (202) and a male engagement member (503) extending from the centre portion (202); wherein a depth (D) of the female engagement member and a height (H) of the corresponding male engagement member is greater than a width (Wm) of the male engagement member or greater than a width (Wf) of the female engagement member. At least a first building element among the building elements (101;701) comprises at least a first one of the connectors (103); wherein the at least first one of the connectors (103) is rotatable mounted in a bearing (108) fixed to the first building element. A drive unit (114) is coupled to turn the first one of connectors (103) in response to a control signal and an energy storage unit (117) is coupled to supply operating power the drive unit. Preferably, the body members (119) are tubular or tubular with one or more branches.

General information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control, Centre for Playware
Authors: Christensen, D. J. (Intern), Pacheco, M. (Intern)
Publication date: 31 Aug 2017

Publication information
IPC: A63H 29/ 22 A N
Patent number: WO2017144505
Date: 31/08/2017
Priority date: 24/02/2016
Priority number: EP20160157134
Original language: English
Electronic versions:
WO2017144505A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017144505
Publication: Research › Patent – Annual report year: 2017
Improved biological processes for the production of aryl sulfates
The present invention generally relates to the field of biotechnology as it applies to the production of aryl sulfates using recombinant host cells. More particularly, the present invention pertains to recombinant host cells comprising (e.g., expressing) a polypeptide having aryl sulfotransferase activity, wherein said recombinant host cells have been modified to have an increased uptake of sulfate compared to identical host cells that does not carry said modification. Further provided are processes for the production of aryl sulfates, such as zosteric acid, employing such recombinant host cells.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization, Research Groups
Authors: Jendresen, C. B. (Intern), Nielsen, A. T. (Intern)
Publication date: 31 Aug 2017

Improved process for producing a fermentation product from a lignocellulose-containing material
The present invention relates to the production of hydrolyzates from a lignocellulose-containing material, and to fermentation of the hydrolyzates. More specifically, the present invention relates to the detoxification of phenolic inhibitors and toxins formed during the processing of lignocellulose-containing material by sulfating the phenolic inhibitors and toxins using aryl sulfotransferase (EC 2.8.2.1) and sulfate transporter.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization, Research Groups
Authors: Jendresen, C. B. (Intern), Nielsen, A. T. (Intern)
Publication date: 31 Aug 2017

Milk allergy prevention and treatment
The invention provides a new strategy for achieving desensitisation or induction of tolerance to milk protein allergens, e.g. BLG, in humans or animals, comprising formulating and using a composition comprising a purified intact expressed milk protein together with one or more purified peptides from said intact milk protein.

General information
Evaluation of pharmacokinetic model designs for subcutaneous infusion of insulin aspart

Effective mathematical modelling of continuous subcutaneous infusion pharmacokinetics should aid understanding and control in insulin therapy. Thorough analysis of candidate model performance is important for selecting the appropriate models. Eight candidate models for insulin pharmacokinetics included a range of modelled behaviours, parameters and complexity. The models were compared using clinical data from subjects with type 1 diabetes with continuous subcutaneous insulin infusion. Performance of the models was compared through several analyses: R² for goodness of fit; the Akaike Information Criterion; a bootstrap analysis for practical identifiability; a simulation exercise for predictability. The simplest model fit poorly to the data (R² = 0.53), had the highest Akaike score, and worst prediction. Goodness of fit improved with increasing model complexity (R² = 0.85–0.92) but Akaike scores were similar for these models. Complexity increased practical non-identifiability, where small changes in the dataset caused large variation (CV > 10%) in identified parameters in the most complex models. Best prediction was achieved in a relatively simple model. Some model complexity was necessary to achieve good data fit but further complexity introduced practical non-identifiability and worsened prediction capability. The best model used two linear subcutaneous compartments, an interstitial and plasma compartment, and two identified variables for interstitial clearance and subcutaneous transfer rate. This model had optimal performance trade-off with reasonable fit (R² = 0.85) and parameterisation, and best prediction and practical identifiability (CV < 2%).

General information

State: Published
Organisations: Department of Applied Mathematics and Computer Science, Scientific Computing, Dynamical Systems, University of Canterbury, University of Copenhagen
Authors: Mansell, E. J. (Ekstern), Schmidt, S. (Ekstern), Docherty, P. D. (Ekstern), Nørgaard, K. (Ekstern), Jørgensen, J. B. (Intern), Madsen, H. (Intern)
Pages: 477-489
Publication date: 22 Aug 2017
Main Research Area: Technical/natural sciences
We investigated serendipitous INTEGRAL observations carried out at the time of the LIGO/Virgo burst candidate G298048. The satellite was covering a fraction of the probability of the LIGO-Virgo localization. The best sensitivity depends on the source location. We investigated the SPI-ACS light curves between -30 and +30 s from the trigger time (2017-08-17 12:41:04 UTC, T0) on temporal scales from 0.1 to 100 s. In the SPI-ACS data, we detect a short and relatively weak transient with S/N of at T0, with an S/N larger than 3 coincident with the GBM trigger (Connaughton 2017, GCN 21506). Further analysis is ongoing, and will be reported in the coming circulars.

**General information**

State: Published

Organisations: National Space Institute, Astrophysics and Atmospheric Physics, University of Geneva, CEA Saclay, IRAP, National Institute for Astrophysics, Institute for Space Research, European Space Agency, Max-Planck-Institut fur extraterrestrische Physik, University College Dublin, Russian Academy of Sciences

Authors: Savchenko, V. (Ekstern), Mereghetti, S. (Ekstern), Ferrigno, C. (Ekstern), Kuulkers, E. (Ekstern), Bazzano, A. (Ekstern), Bozzo, E. (Ekstern), Courvoisier, T. J. (Ekstern), Brandt, S. (Intern), Diehl, R. (Ekstern), Hanlon, L. (Ekstern), Laurent, P. (Ekstern), Lutovinov, A. (Ekstern), Roques, J. (Ekstern), Sunyaev, R. (Ekstern), Ubertini, P. (Ekstern)

Publication date: 17 Aug 2017

**Publication information**

Type: Observation Report Circulars
Source/Publisher: GCN Circulars Archive
Last modified date: 17/08/2017

Main Research Area: Technical/natural sciences

**GCN CIRCULAR 21507, LIGO/Virgo G298048: INTEGRAL detection of a prompt gamma-ray counterpart**

We investigated serendipitous INTEGRAL observations carried out at the time of the LIGO/Virgo burst candidate G298048. The satellite was covering a fraction of the probability of the LIGO-Virgo localization. The best sensitivity depends on the source location. We investigated the SPI-ACS light curves between -30 and +30 s from the trigger time (2017-08-17 12:41:04 UTC, T0) on temporal scales from 0.1 to 100 s. In the SPI-ACS data, we detect a short and relatively weak transient with S/N of at T0, with an S/N larger than 3 coincident with the GBM trigger (Connaughton 2017, GCN 21506). Further analysis is ongoing, and will be reported in the coming circulars.

**Continuous subcutaneous insulin infusion, Goodness of fit, Parameter identification, Pharmacokinetic modelling, Practical identifiability, Type 1 diabetes**

DOIs: 10.1007/s10928-017-9535-z

Source: Scopus

Source-ID: 85027876150

Publication: Research - peer-review → Journal article – Annual report year: 2017
Wavelength tuneable led light source

Disclosed herein is an illumination system (200) for spectrally tuning in fluorescence imaging applications such as endoscopic applications in a body cavity comprising bodily fluids or microscopic applications.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radiation Physics
Authors: Lindvold, L. R. (Intern), Hermann, G. G. (Ekstern)
Publication date: 17 Aug 2017

Publication information
IPC: G02B 26/ 00 A N
Patent number: WO2017137350
Date: 17/08/2017
Priority date: 11/02/2016
Priority number: EP20160155157
Original language: English
Electronic versions:
WO2017137350A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017137350
Publication: Research › Patent – Annual report year: 2017
GCN CIRCULAR 21478, LIGO/Virgo G297595: INTEGRAL search for a prompt gamma-ray counterpart
We investigated serendipitous INTEGRAL observations carried out at the time of the LIGO/Virgo burst candidate G297595. The satellite was pointing at RA=240.554 Dec=-55.181, far from the high-probability area of LIGO localization. For the full LIGO 90% confidence region the best upper limit is set by the anti-coincidence shield of the spectrometeron board of INTEGRAL (SPI/ACS). The localization of G297595 is close to optimal for SPI-ACS observation.

Multi-criteria assessment tool for sustainability appraisal of remediation alternatives for a contaminated site
Purpose: In order to improve and support decision-making for the selection of remedial techniques for contaminated sites, a multi-criteria assessment (MCA) method has been developed. The MCA framework is structured in a decision process actively involving stakeholders, and compares the sustainability of remediation alternatives by integrating environmental, societal, and economic criteria in the assessment. Materials and methods: The MCA includes five main decision criteria: remedial effect, remediation cost, remediation time, environmental impacts, and societal impacts. The main criteria are divided into a number of sub-criteria. The environmental impacts consider secondary impacts to the environment caused by remedial activities and are assessed by life-cycle assessment (LCA). The societal impacts mainly consider local impacts and are assessed in a more qualitative manner on a scale from 1 to 5. The performance on each main criterion is normalized to a score between 0 and 1, with 1 being the worst score. An overall score is obtained by calculating a weighted sum with criteria weights determined by stakeholders. The MCA method was applied to assess remediation alternatives for the Groyne 42 site, one of the largest contaminated sites in Denmark. Results and discussion: The compared remediation alternatives for the site were: (1) excavation of the site followed by soil treatment; (2) in situ alkaline hydrolysis; (3) in situ thermal remediation; and (4) continued encapsulation of the site by sheet piling. Criteria weights were derived by a stakeholder panel. The stakeholders gave the highest weighting to the remedial effect of the methods and to the societal impacts. For the Groyne 42 case study, the excavation option obtained the lowest overall score in the MCA, and was therefore found to be the most sustainable option. This was especially due to the fact that this option obtained a high score in the main categories Effect and Social impacts, which were weighted highest by the stakeholders. Conclusions: The developed MCA method is structured with five main criteria. Effect and time are included in addition to the three pillars of sustainability (environment, society, and economy). The remedial effect of remediation is therefore assessed and weighted separately from the main criteria environment. This structure makes interpretation of criteria scores more transparent and emphasizes the importance of effect and time as decision parameters. This also facilitated an easier weighting procedure for the stakeholders in the case study, who expressed a wish to weigh the remedial effect independently from the secondary environmental impacts.
Dispersion tailoring of a silicon strip waveguide employing Titania-Alumina thin-film coating

We numerically demonstrate dispersion tailoring of a silicon strip waveguide employing Titania-Alumina thin-film coating using a finite-difference mode solver. The proposed structure exhibits spectrally-flattened near-zero anomalous dispersion within the telecom wavelength range. We also numerically predict the wavelength conversion efficiency for degenerate four-wave mixing, and obtain a 3 dB bandwidth of 80 nm.
Strain tuning of optical properties in Bi$_2$Se$_3$

Based on symmetry principles we determine the most general Hamiltonian for the low energy physics of Bi$_2$Se$_3$, including contributions due to a static electric field and strain. The full three-dimensional model is projected into the surface states at $k=0$, giving an effective two-dimensional Hamiltonian for the surface states. Contributions from the strain tensor breaks the anisotropy of the surface state spectrum, giving an elliptical Dirac cone. Within this model we calculate the absorption spectrum for an ultra-thin film. We show that the fundamental absorption edge can be effectively tuned by application of uniaxial strain.

Mode conversion enables optical pulling force in photonic crystal waveguides

We propose a robust scheme to achieve optical pulling force using the guiding modes supported in a hollow core double-mode photonic crystal waveguide instead of the structured optical beams in free space investigated earlier. The waveguide under consideration supports both the 0th order mode with a larger forward momentum and the 1st order mode with a smaller forward momentum. When the 1st order mode is launched, the scattering by the object inside the waveguide results in the conversion from the 1st order mode to the 0th order mode, thus creating the optical pulling force according to the conservation of linear momentum. We present the quantitative agreement between the results derived from the mode conversion analysis and those from rigorous simulation using the finite-difference in the time-domain numerical method. Importantly, the optical pulling scheme presented here is robust and broadband with naturally occurred lateral equilibriums and has a long manipulation range. Flexibilities of the current configuration make it valuable for the
optical force tailoring and optical manipulation operation, especially in microfluidic channel systems.

General information
State: Published
Organisations: Technical University of Denmark, Department of Photonics Engineering, Plasmonics and Metamaterials, Harbin Institute of Technology, North South University
Authors: Zhu, T. (Ekstern), Novitsky, A. (Intern), Cao, Y. (Ekstern), Mahdy, M. R. (Ekstern), Wang, Z. L. (Ekstern), Sun, F. (Ekstern), Jiang, Z. (Ekstern), Ding, W. (Ekstern)
Publication date: 7 Aug 2017
Main Research Area: Technical/natural sciences

Publication information
Volume: 111
Issue number: 6
Article number: 061105
ISSN (Print): 0003-6951
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.67 SJR 1.132 SNIP 0.996
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.085 SNIP 0.983 CiteScore 2.47
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.799 SNIP 1.462 CiteScore 3.25
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.149 SNIP 1.652 CiteScore 3.77
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.554 SNIP 1.754 CiteScore 3.76
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.805 SNIP 1.94 CiteScore 4.04
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.926 SNIP 1.789
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.857 SNIP 1.848
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.934 SNIP 1.83
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 3.039 SNIP 1.913
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 3.457 SNIP 2.288
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 3.709 SNIP 2.382
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 3.904 SNIP 2.38
Cuvette and method for measuring refractive index in a spectrophotometer

Embodiments of the present invention include a cuvette (100) for use in determining a refractive index of a sample matter in a spectrophotometer (600), the cuvette comprising a container (102) for holding the sample matter, the container (102) having an entry window (121) that allows input radiation to reach the sample matter, the container furthermore having an exit window (122) that allows a part of the input radiation to exit the container part, the entry window and the exit window defining a radiation path; and comprising a photonic crystal (101) rigidly attached to the container or integrally formed in the container and arranged in the radiation path, the photonic crystal having a grating part (111) causing a reflectance spectrum of the photonic crystal to exhibit a resonance. A spectrophotometer is also provided.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Optofluidics
Authors: Kristensen, A. (Intern), Sørensen, K. T. (Intern), Højlund-Nielsen, E. (Intern)
Publication date: 3 Aug 2017

Publication information
IPC: G02B 6/122 A1
Patent number: WO2017129196
Date: 03/08/2017
Priority date: 14/10/2016
Priority number: DKPA201670814
Original language: English
Electronic versions:
WO2017129196A1.pdf
Main Research Area: Technical/natural sciences
Source-ID: WO2017129196
Publication: Research - Patent – Annual report year: 2017

»Oh-my-God«-partiklen
Detekteret. Nogle partikler fra det ydre rum har så høj energi, at de egentlig ikke burde være her. De er kosmologiens svar på humlebien, der ikke kan flyve, og fysikerne leder stadig efter en god forklaring

General information
State: Published
Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Pedersen, J. O. P. (Intern)
Pages: 2-3
Publication date: 28 Jul 2017

Publication information
Pages (from-to): 2-3
GEOMETRICAL CALIBRATION OF X-RAY CT SCANNERS
A method of performing calibration scan and measurement scan in one and the same scanning operation with a calibration object having the fiducial marks arranged in positions spanning a volume enclosing at least a central portion of the measuring object. This avoids the need for one or more separate calibration scans to be performed in addition to the scanning of the measurement object. Considerable time is thereby saved. The fiducial objects are thus distributed, preferably evenly, around the measuring object, whereby homogeneous calibration is ensured. After having performed a scan of the measuring object together with the calibration object and thereby obtained scan data on the measuring object and corresponding scan data on the calibration object the scan data on the fiducial marks of the calibration object are used to calibrate the CT scanner, and the scan data on the measuring object are used to calculate geometric properties of the measuring object.

Resonant power converter with dead-time control of synchronous rectification circuit
The invention relates in a first aspect to a resonant power converter comprising a synchronous rectifier for supplying a DC output voltage. The synchronous rectifier is configured for alternately connecting a resonant output voltage to positive and negative DC output nodes via first and second semiconductor switches, respectively, separated by intervening dead-time periods in accordance with first and second rectification control signals. A dead-time controller is coupled to the resonant output voltage or the resonant input voltage and configured for adaptively adjusting lengths of the dead-time periods via the first and second rectification control signals.

General information
State: Published
Organisations: Department of Electrical Engineering, Electronics, Department of Applied Electronics
Authors: Ekhtiari, M. (Intern), Zsurzsan, T. (Intern), Andersen, M. A. E. (Intern)
Publication date: 20 Jul 2017

Publication information
IPC: H02M 3/335 A I
Patent number: WO2017121720
Date: 20/07/2017
Priority date: 12/01/2016
Priority number: EP20160150905
Original language: English
Characteristics of Xanthosoma sagittifolium roots during cooking, using physicochemical analysis, uniaxial compression, multispectral imaging and low field NMR spectroscopy

To effectively promote the industrial utilization of cocoyam (Xanthosoma sagittifolium) roots for enhanced food sustainability and security, there is a need to study their molecular, mechanical and physicochemical properties in detail. The physicochemical and textural characteristics of the red and white varieties of cocoyam roots were thus analysed by low field nuclear magnetic resonance relaxometry, multispectral imaging, uniaxial compression testing, and relevant physicochemical analysis in the current study. Both varieties had similar dry matter content, as well as physical and mechanical properties. However, up to four fast-interacting water populations were observed in the roots, dependent on the root variety and their degree of gelatinization during cooking. Changes in the relaxation parameters indicated weak gelatinization of starch at approximately 80 °C in both varieties. However, shorter relaxation times and a higher proportion of restricted water in the white variety indicated that this variety was slightly more sensitive towards gelatinization. A strong negative correlation existed between dry matter and all multispectral wavelengths >800 nm, suggesting the potential use of that spectral region for rapid analysis of dry matter and water content of the roots. The small, but significant differences in the structural and gelatinization characteristics of the two varieties indicated that they may not be equally suited for further processing, e.g. to flours or starches. Processors thus need to choose their raw materials wisely dependent on the aimed product characteristics. However, the spectroscopic methods applied in the study were shown to be effective in assessing important quality attributes during cooking of the roots.

General information
State: Published
Organisations: National Food Institute, Research Group for Food Production Engineering, Research Group for Nano-Bio Science, Technical University of Denmark, University of Iceland, Kwame Nkrumah University of Science and Technology
Authors: Boakye, A. A. (Ekstern), Gudjónsdóttir, M. (Ekstern), Skytte, J. L. (Intern), Chronakis, I. S. (Intern), Wireko-Manu, F. D. (Ekstern), Oduro, I. (Ekstern)
Number of pages: 14
Pages: 2670-2683
Publication date: 8 Jul 2017
Main Research Area: Technical/natural sciences
Improving performance of single-path code through a time-predictable memory hierarchy

Deriving the Worst-Case Execution Time (WCET) of a task is a challenging process, especially for processor architectures that use caches, out-of-order pipelines, and speculative execution. Despite existing contributions to WCET analysis for these complex architectures, there are open problems. The single-path code generation overcomes these problems by generating time-predictable code that has a single execution trace. However, the simplicity of this approach comes at the cost of longer execution times. This paper addresses performance improvements for single-path code. We propose a time-predictable memory hierarchy with a prefetcher that exploits the predictability of execution traces in single-path code to speed up code execution. The new memory hierarchy reduces both the cache-miss penalty time and the cache-miss rate on the instruction cache. The benefit of the approach is demonstrated through benchmarks that are executed on an FPGA implementation.
A method for manufacturing a hollow mems structure
The present invention relates to a method for manufacturing an at least partly hollow MEMS structure. In a first step one or more through-going openings is/are provided in core material. The one or more through-going openings is/are then covered by an etch-stop layer. After this step, a bottom electrically conducting layer, one or more electrically conducting vias and a top electrically conducting layer are created. The bottom layer is connected to the vias and vias are connected to the top layer. The vias are formed by filling at least one of the one or more through-going openings. The method further comprises the step of creating bottom and top conductors in the respective bottom and top layers. Finally, excess core material is removed in order to create the at least partly hollow MEMS structure which may include a MEMS inductor.

General information
State: Published
Organisations: DTU Danchip, Department of Micro- and Nanotechnology, Silicon Microtechnology
Authors: Han, A. (Intern), Thanh, H. L. (Intern), Birkeland, K. (Intern), Jørgensen, A. M. (Intern), Jensen, F. (Ekstern)
Publication date: 29 Jun 2017

Publication information
IPC: H01F 17/00 A I
Patent number: WO2017108218
Date: 29/06/2017
Priority date: 23/12/2015
Priority number: EP20150202490
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017108218
Publication: Research › Patent – Annual report year: 2017

Biostable glucose permeable polymer
A new biostable glucose permeable polymer has been developed which is useful, for example, in implantable glucose sensors. This biostable glucose permeable polymer has a number of advantageous characteristics and, for example, does not undergo hydrolytic cleavage and degradation, thereby providing a composition that facilitates long term sensor stability in vivo. The versatile characteristics of this polymer allow it to be used in a variety of contexts, for example to form the body of an implantable glucose sensor. The invention includes the polymer composition, sensor systems formed from this polymer composition, and methods for making and using such sensor systems.

General information
State: Published
Organisations: Department of Electrical Engineering, Department of Photonics Engineering
Publication date: 22 Jun 2017

Publication information
Country: United States
IPC: C08G 71/02 A I
Patent number: US2017172471
Date: 22/06/2017
Priority date: 18/12/2015
Priority number: US201514974250
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: US2017172471
Publication: Research › Patent – Annual report year: 2017

Radiation sensitive medium for recording an absorbed dose distribution
The invention relates to a radiation sensitive medium for recording an absorbed dose distribution from an external radiation source such as e.g. a linear particle accelerator used for e.g. cancer treatment or radiation processing. The invention further relates to a method for measuring the absorbed doses distribution in a radiation sensitive medium.
SCANNING AND TRACKING MONITORING APPARATUS AND METHOD

Disclosed is a scanning monitoring apparatus for medical imaging, the scanning monitoring apparatus comprising a controller unit and a display, wherein the controller unit during a scanning session is configured to obtain tracking data (102) of a subject in a medical scanner, obtain scanner data indicative of operating parameters of the medical scanner (104); determine an output of a verification function based on the tracking data and the scanner data (106); and control the scanning monitoring apparatus according to the output of the verification function (108). A notification signal may be provided if the output is indicative of an erroneous scanning.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics
Authors: Olesen, O. V. (Intern), Benjaminsen, C. (Intern)
Publication date: 22 Jun 2017

Publication information
IPC: A61B 6/00 A I
Patent number: WO2017102860
Date: 22/06/2017
Priority date: 14/12/2015
Priority number: EP20150199948
Original language: English
Electronic versions:
WO2017102860A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017102860
Publication: Research › Patent – Annual report year: 2017

Scenarios for sustainable heat supply and heat savings in municipalities - the case of Helsingør, Denmark

Local climate action is not only a domain of large cities, but also smaller urban areas that increasingly address climate change mitigation in their policy. The Danish municipality of Helsingør can achieve a substantial CO2 emissions reduction by transforming its heat supply and deploying heat savings. In this paper, we model the heating system of Helsingør, assess it from a simple socio- and private-economic perspective, develop future scenarios, and conduct an iterative process to derive a cost-optimal mix between district heating, individual heating and heat savings. The results show that in 2030 it is cost-optimal to reduce the heating demand by 20–39% by implementing heat savings, to deploy 32%–41% of district heating and to reduce heating-related CO2 emissions by up to 95% in comparison to current emissions. In 2050, the cost-optimal share of district heating in Helsingør increases to between 38 and 44%. The resulting average heating costs and CO2 emissions are found to be sensitive to biomass and electricity price. Although the findings of the study are mainly applicable for Helsingør, the combined use of the Least Cost Tool and modelling with energyPRO is useful in planning of heating and/or cooling supply for different demand configurations, geographical region and scale.
Bacterial cells with improved tolerance to polyamines
Provided are bacterial cells genetically modified to improve their tolerance to certain commodity chemicals, such as polyamines, and methods of preparing and using such bacterial cells for production of polyamines and other compounds.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, iLoop, Bacterial Cell Factory Optimization, Global Econometric Modeling, Department of Biotechnology and Biomedicine, Bacterial Synthetic Biology, ALE Technology & Software Development
Authors: Lennen, R. (Intern), Nielsen, A. T. (Intern), Herrgaard, M. (Intern), Sommer, M. O. A. (Intern), Feist, A. (Intern), Tharwat Tolba Mohamed, E. (Intern)
Publication date: 15 Jun 2017

Kit-of-parts for use in a prime-boost vaccination strategy to protect cloven-footed animals against foot-and-mouth disease virus infection
The present invention relates to a kit-of-parts for use in immunizing an animal against foot-and-mouth disease virus (FMDV) infection. In particular, the present invention relates to a kit-of-parts containing a priming composition and a boosting composition for use in a prime-boost FMDV-vaccination strategy.

General information
State: Published
Organisations: National Veterinary Institute, Virology
Authors: Belsham, G. (Intern), Gullberg, M. (Intern), Polacek, C. (Intern)
Publication date: 15 Jun 2017
METHOD OF MANUFACTURING A COMPOSITE STRUCTURE INCLUDING A TEXTILE FABRIC ASSEMBLY

The invention relates to a textile fabric assembly (1) comprising at least two textile layers (2). The textile layers (2) are joined at a plurality of points (3) and/or along a plurality of lines (6) so that they form inner and outer walls, respectively. The invention also relates to a method of manufacturing a composite structure (10). The method may comprise providing a form (8) that has a shape corresponding to a desired shape of an internal cavity in the composite structure (10) to be manufactured. The textile fabric assembly (1) is arranged around the form (8), and a curable material (9) is filled into the at least one inner space (4) between the textile layers (2). The form (8) may be inflatable. Alternatively, the method may comprise arranging the textile fabric assembly (1) around an initial structure and/or mechanically fastened to a surface of an initial structure to be reinforced and then filling it with a curable material (9).

Condition monitoring of a rotor arrangement in particular a wind turbine

The present invention relates to a method of determining the condition of a device comprising a rotor arrangement. The rotor arrangement comprising a rotational shaft and a number rotor blades each connected at the root to the rotational shaft and extending radially from the rotational shaft. Sensors are arranged to measure for each rotor blade corresponding values of one or more of the following parameters: azimuth angle (Φ) (or a parameter related to the azimuth angle), root bending moment(s) (q), such as the edgewise and/or flapwise root bending moments. The method comprises, while the rotor arrangement rotates, recording corresponding values of azimuth angle and edgewise and flapwise root bending moments for a plurality of rotations of rotor arrangement, transforming by use of e.g. a multi blade coordinate transformation, a Park's transformation or similar transformation the recorded edgewise and flapwise root bending moments (q) into a coordinate system rotating with the rotational shaft, thereby obtaining transformed root bending moments (qf). The method further comprising identifying periodicity in each of the transformed root bending moments, determining the condition of the rotor arrangement to be faulty, in case the one or more periodicities are identified in the transformed root bending moments.
**Optical measuring system with an interrogator and a polymer-based single-mode fibre optic sensor system**

The present invention relates to an optical measuring system comprising a polymer-based single-mode fibre-optic sensor system (102), an optical interrogator (101), and an optical arrangement (103) interconnecting the optical interrogator (101) and the polymer-based single-mode fibre-optic sensor system (102). The invention further relates to an optical interrogator adapted to be connected to a polymer-based single-mode fibre-optic sensor system via an optical arrangement. The interrogator comprises a broadband light source arrangement (104) and a spectrum analysing arrangement which receives and analyses light reflected from the polymer-based single-mode fibre-optic sensor system.

**General information**

State: Published
Organisations: Department of Photonics Engineering, Fiber Sensors and Supercontinuum Generation
Authors: Nielsen, K. (Intern), Bang, O. (Intern)
Publication date: 8 Jun 2017

**Publication information**

IPC: G01D 5/353 A I
Patent number: WO2017093458
Date: 08/06/2017
Priority date: 02/12/2015
Priority number: EP20150197578
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017093458
Publication: Research › Patent – Annual report year: 2017

**Best laid plans of lions and men**

We answer the following question dating back to J. E. Littlewood (1885-1977): Can two lions catch a man in a bounded area with rectifiable lakes? The lions and the man are all assumed to be points moving with at most unit speed. That the lakes are rectifiable means that their boundaries are finitely long. This requirement is to avoid pathological examples where the man survives forever because any path to the lions is infinitely long. We show that the answer to the question is not always "yes" by giving an example of a region R in the plane where the man has a strategy to survive forever. R is a polygonal region with holes and the exterior and interior boundaries are pairwise disjoint, simple polygons. Our construction is the first truly two-dimensional example where the man can survive. Next, we consider the following game played on the entire plane instead of a bounded area: There is any finite number of unit speed lions and one fast man who can run with speed 1 + for some value > 0. Can the man always survive? We answer the question in the affirmative for any constant > 0.

**General information**

State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic, University of Copenhagen
Authors: Abrahamsen, M. (Ekstern), Holm, J. (Ekstern), Rotenberg, E. (Intern), Wulff-Nilsen, C. (Ekstern)
Number of pages: 556
Pages: 61-616
Publication date: 1 Jun 2017

**Host publication information**

Title of host publication: 33rd International Symposium on Computational Geometry, SoCG 2017
Volume: 77
Publisher: Schloss Dagstuhl-Leibniz-Zentrum für Informatik GmbH, Dagstuhl Publishing
ISBN (Electronic): 9783959770385
Main Research Area: Technical/natural sciences
Conference: 33rd International Symposium on Computational Geometry, SoCG 2017, Brisbane, Australia, 04/07/2017 - 04/07/2017
DOIs:
Cauchy Noise Removal by Nonconvex ADMM with Convergence Guarantees

Image restoration is one of the essential tasks in image processing. In order to restore images from blurs and noise while also preserving their edges, one often applies total variation (TV) minimization. Cauchy noise, which frequently appears in engineering applications, is a kind of impulsive and non-Gaussian noise. Removing Cauchy noise can be achieved by solving a nonconvex TV minimization problem, which is difficult due to its nonconvexity and nonsmoothness. In this paper, we adapt recent results in the literature and develop a specific alternating direction method of multiplier to solve this problem. Theoretically, we establish the convergence of our method to a stationary point. Experimental results demonstrate that the proposed method is competitive with other methods in visual and quantitative measures. In particular, our method achieves higher PSNRs for 0.5 dB on average.
A family of microbial lysine transporter polypeptides
The present invention provides a genetically modified microbial cell for production of lysine, comprising a transgene encoding a polypeptide capable of exporting lysine from the cell. The genetically modified microbial cell for production of lysine may be further characterized by genetic modifications that confer reduced lysine metabolism and/or enhanced lysine synthesis as compared to the parent cell from which said genetically modified cell was derived. The invention further provides a method for producing lysine using the genetically modified microbial cell. The invention further provides a novel family of lysine transporter polypeptides; and the use of said polypeptide to enhance production of extracellular lysine in a microbial cell.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, iLoop, Department of Biotechnology and Biomedicine, Bacterial Synthetic Biology
Authors: Malla, S. (Intern), Sommer, M. O. A. (Intern), van der Helm, E. (Intern), Wieschalka, S. (Ekstern), Förster, J. (Intern)
Publication date: 26 May 2017

Publication information
IPC: C12P 13/08 A1
Patent number: WO2017085241
Date: 26/05/2017
Priority date: 19/11/2015
Priority number: EP20150195401
Original language: English
Electronic versions:
WO2017085241A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017085241
Publication: Research › Patent – Annual report year: 2017
chance correlation. The external validation against two separate prediction datasets demonstrated the model has good predicting ability within its applicability domain ($R^2_{ext} > 0.8$), namely MW between 30 and 1178 g/mol and temperature between 4 and 180 °C. By covering a much wider range of organic chemicals and materials, this QPPR facilitates high-throughput estimates of human exposures for chemicals encapsulated in solid materials.

**General information**

State: Published
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, Transport DTU, University of Michigan
Authors: Huang, L. (Ekstern), Fantke, P. (Intern), Jolliet, O. (Ekstern)
Pages: 1128-1140
Publication date: 26 May 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Indoor Air
Volume: 27
Issue number: 6
ISSN (Print): 0905-6947
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.55
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.88
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 4.57
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.63
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.72
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.42
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.757 SNIP 2.168
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.933 SNIP 3.724
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.637 SNIP 2.622
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.347 SNIP 1.283
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
MICROFLUIDIC DEVICE POSSESSING STRUCTURES ENABLING DIFFERENTIAL ANALYSIS OF A SINGLE CELL’S CONSTITUENTS

A method and a micro fluidic device comprising at least one micro fluidic structure for differential extraction of nuclear and extra-nuclear constituents of a single cell, said micro fluidic structure comprising a feeding channel for receiving a volume of a sample containing at least one cell, at least one trapping structure for capturing a single cell, and at least one output channel in fluid connection with the at least one trapping structure, wherein the at least one trapping structure extends from one side of the feeding channel substantially perpendicular to longitudinal axis of the feeding channel, the at least one trapping structure possessing an aperture at its end opposite to the fluid channel and in fluid communication with an output channel, said aperture being configured to provide a narrow section such that the nucleus of a cell captured in the trapping structure cannot pass through said narrow section into the output channel.

Method to predetermine current/power flow change in a dc grid

The invention relates to a method for controlling current/power flow within a power transmission system, comprising two or more interconnected converter stations. The method comprises the steps of: providing a DC admittance matrix given from the DC grid; providing a current distribution matrix for a number of, such as for all possible AC/DC converter outages; providing a DC bus voltage vector for the DC grid; the DC bus voltage vector being a vector containing the values of the voltage change at the AC/DC converters, measured at the AC/DC converters, before, during and after a forced current change occurs at one of the AC/DC converters; establishing a generalized droop feedback gain matrix G; controlling current/power flow within DC grid towards predefined setpoints, by use of control law. The invention presents an analytical approach to derive the generalized feedback gain allowing to differentiate the system response, i.e. current sharing, e.g. for different converter outages. The control approach aims at improving the DC voltage droop control by combining the local voltage signal available at the converter terminals, with remote voltage signals at different locations in the DC system, by means of communication. The local voltage feedback control is used for a fast, reliable system response. The invention also relates to a control device, implementing the method in the power transmission system.
Could baseline establishment be counterproductive for emissions reduction? Insights from Vietnam's building sector

This article provides insights into the role of institutions involved in climate governance working towards a future low-carbon society at the national level, within the global climate change governance architecture. Specifically, it contributes to understanding the fragmented governance of energy efficiency policy in developing countries by focussing on Vietnam’s building sector, identifying key institutions related to underlying discourses, national and international power relations, resource distribution and coalitions. It uses the case of baseline setting in developing Nationally Appropriate Mitigation Actions (NAMAs) to illustrate institutional dynamics, nationally and transnationally, as well as to question whether demands for baseline setting achieve the ideal trade-off between actual GHG emissions reduction and institutionalized demands for accountability. The analysis reveals that, in addition to domestic efforts and challenges, the international agenda greatly influences the energy efficiency policy arena. The article presents lessons to be learnt about policy processes from the specific Vietnamese case, reflecting on the role of international actors and discourses in it. Finally, it argues for the abolition of baselines in favour of adequate monitoring and evaluation, from the perspective that requirement for deviation from fictitious baselines is unproductive and only serves an international techno-managerial discourse.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, UNEP DTU Partnership
Authors: Henrysson, M. (Intern), Lütken, S. (Intern), Puig, D. (Intern)
Number of pages: 12
Publication date: 10 May 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Climate Policy
ISSN (Print): 1469-3062
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.23 SJR 1.165 SNIP 1.414
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.596 SNIP 1.268 CiteScore 2.42
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.215 SNIP 0.955 CiteScore 1.82
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.777 SNIP 0.827 CiteScore 1.36
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.95 SNIP 0.945 CiteScore 1.57
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.019 SNIP 0.873 CiteScore 1.35
ISI indexed (2011): ISI indexed yes
The reverse tragedy of the commons: an exploratory account of incentives for under-exploitation in an open innovation environment

This paper presents an empirical account of a phenomenon that we refer to as the ‘reverse tragedy of the commons’ in open innovation. The name signifies the ‘under-exploitation’ of intellectual property (IP) under weak appropriability. The name is this graphic because the tragedy is costly, and can also render IP effectively worthless and block innovation in the short to medium term. We propose that the tragedy is borne out of the interaction between enterprise characteristics, a competitive setting and the framework that is set by the policy intervention. This finding is pertinent to policy-makers with regard to the design of research, development and innovation instruments, as well as managers who must determine how to implement open practices in innovation.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Technology and Innovation Management, Gaia Consulting, Prime Minister’s Office
Authors: Piirainen, K. A. (Intern), Raivio, T. (Ekstern), Lähteenmäki-smith, K. (Ekstern), Alkærsig, L. (Intern), Li-Ying, J. (Intern)
Number of pages: 14
Publication date: 5 May 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Technology Analysis and Strategic Management
ISSN (Print): 0953-7325
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.56 SJR 0.653 SNIP 0.88
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.651 SNIP 0.639 CiteScore 1.43
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.562 SNIP 0.834 CiteScore 1.22
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.548 SNIP 0.792 CiteScore 1.37
Sensitivity-based research prioritization through stochastic characterization modeling

Product developers using life cycle toxicity characterization models to understand the potential impacts of chemical emissions face serious challenges related to large data demands and high input data uncertainty. This motivates greater focus on model sensitivity toward input parameter variability to guide research efforts in data refinement and design of experiments for existing and emerging chemicals alike. This study presents a sensitivity-based approach for estimating toxicity characterization factors given high input data uncertainty and using the results to prioritize data collection according to parameter influence on characterization factors (CFs). Proof of concept is illustrated with the UNEP-SETAC scientific consensus model USEtox.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, National Academies of Sciences, Leiden University, School of Sustainable Engineering and the Built Environment
Authors: Wender, B. A. (Ekstern), Prado-Lopez, V. (Ekstern), Fantke, P. (Intern), Ravikumar, D. (Ekstern), Seager, T. P. (Ekstern)
Number of pages: 9
Publication date: 29 Apr 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Life Cycle Assessment
ISSN (Print): 0948-3349
Ratings:
BFI (2017): BFI-level 2
Det varer ved

Naturvidenskaben siger ikke, at livet ikke har mening, Den siger blot, at den ikke kan besvare spørgsmålet. Som forsker kan man– også uden at være troende – deducere sig frem til, at kristendommen udgør et filosofisk tilfredsstillende
grundlag for tilværelsen.

Forskerhjerner på march gør ingen gavn
En gåtur i flok løser ikke videnskabens problemer - i morgens yder jeg mit bidrag ved at blive hjemme og forskes

High-level production of diacetyl in a metabolically engineered lactic acid bacterium
The present invention provides a genetically modified lactic acid bacterium capable of producing diacetyl under aerobic conditions. Additionally, the invention provides a method for producing diacetyl using the genetically modified lactic acid bacterium under aerobic conditions in the presence of a source of iron-containing porphyrin and a metal ion selected from Fe3+, Fe2+ and Cu2+. The lactic acid bacterium is genetically modified by deletion of those genes in its genome that encode polypeptides having lactate dehydrogenase (E.C 1.1.1.27/E.C.1.1.1.28); α-acetolactate decarboxylase (E.C 4.1.1.15); water-forming NADH oxidase (E.C. 1.6.3.4); phosphotransacetylase (E.C.2.3.1.8) activity; and optionally devoid of or deleted for genes encoding polypeptides having diacetyl reductase ((R)-acetoin forming; EC: 1.1.1.303); D-acetoin reductase; butanediol dehydrogenase ((R,R)-butane-2,3-diol forming; E.C. 1.1.1.4/1.1.1.-) and alcohol dehydrogenase (E.C. 1.2.1.10) activity. The invention provides for use of the genetically modified lactic acid bacterium for the production of diacetyl and a food product.
**A system for improved production titers in fermentations**

The invention provides a genetically modified micro-organism for intracellular biosynthesis of a cellular metabolite, comprising a synthetic error correction system having a penalty gene, whose expression leads to arrested growth or cell death (e.g. a toxin gene) in combination with a survival gene, whose expression provides an antidote that restores cell viability and normal growth (e.g. a cognate antitoxin gene). Alternatively, the system has a survival gene, alone, whose expression is essential for growth (i.e. essential gene). The synthetic error correction system further comprises a biosensor, whose function is to induce expression of the survival gene which leads to cell growth, only, when the cell produces a pre-defined level of a given metabolite. The invention further encompasses: a method for producing the genetically modified micro-organism; a method for producing a cellular metabolite with the genetically modified micro-organism; and use of the genetically modified micro-organism for producing a cellular metabolite.

**General information**

State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Synthetic Biology
Authors: Rugbjerg, P. (Intern), Sarup-Lytzen, K. (Intern), Sommer, M. O. A. (Intern)
Publication date: 6 Apr 2017

**Publication information**

IPC: C12P 1/04 A I
Patent number: WO2017055360
Date: 06/04/2017
Priority date: 28/09/2015
Priority number: EP20150187150
Original language: English
Electronic versions:
WO2017055360A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017055360
Publication: Research › Patent – Annual report year: 2017

**SEQUENTIAL ELECTRODIALYTIC EXTRACTION OF PHOSPHORUS COMPOUNDS**

The present invention relates to an apparatus for electrodialytic extraction of phosphorus from a particulate material in suspension and to a method for electrodialytic phosphorus recovery, which uses the apparatus. The method may be applied for wastewater treatment, and/or treatment of particulate material rich in phosphorus. The present invention provides an apparatus for electrodialytic extraction of phosphorus from a particulate material comprising acidic and/or alkaline soluble phosphorus compounds, in suspension, comprising: • a first electrodialytic cell comprising a first anolyte compartment comprising a first anolyte, and a first catholyte compartment comprising a first catholyte, wherein the compartments of the first cell are separated by a cation exchange membrane, wherein the first anolyte is the particulate material in suspension, the first electrodialytic cell configured for exposing the particulate material to acidic conditions; • a second electrodialytic cell comprising a second anolyte compartment comprising a second anolyte, and a second catholyte compartment comprising a second catholyte, wherein the compartments of the second cell are separated by an anion exchange membrane, the second electrodialytic cell configured for exposing the particulate material to alkaline conditions; and • filtration means in fluid communication with the first and second electrodialytic cells, and configured to filter the first anolyte, and transfer the residual into the second catholyte compartment to be comprised in the second catholyte, and transfer the filtrate into the second anolyte compartment to be comprised in the second anolyte.

**General information**

State: Published
Organisations: Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Authors: Viader, R. P. (Ekstern), Mølgaard Ottesen, L. (Intern), Erland Jensen, P. (Intern)
Publication date: 6 Apr 2017
Micro-fabrication of three dimensional pyrolysed carbon microelectrodes

The present invention relates in one aspect to a method of producing a three-dimensional microscale patterned resist template for a pyrolysed carbon microelectrode structure by means of UV-lithography. Coating a planar substrate with an epoxy-based negative photoresist, such as an SU-8 photoresist; soft baking the photoresist layer; performing a full depth exposure with UV light through a first mask; performing a partial depth exposure with UV light through a second mask; wherein the full depth exposure and the partial depth exposure are aligned to ensure that the first and second latent images are connected to each other; post-exposure baking the photoresist layer; and developing the microscale patterned resist template as a free-standing structure of cross-linked resist with lateral hanging structures that are supported by vertical support structures at a free height above the substrate. The method is characterized by a soft baking temperature below 70 °C. Repetitive coating and partial depth exposure allows for the fabrication of multiple level laterally interconnected structures. Carbonization of the resist template provides truly three-dimensional carbon microelectrode structures.

Electrokinetische Ausrüstung zur Wiederaufnahme von Poren

The invention relates to a device and an associated electrokinetic method which allows the pores (superficial and deep) of a porous material to be filled, by forcing the precipitation therein of a product of low solubility in water by creating an electric field which will mobilise the cations and anions supplied by previously selected solutions. This method comprises two phases. In the first phase, the pores located at a specified distance from the surface of contact between the porous material and the anodic or cathodic compartment are plugged. In a second phase, the rest of the pores, mainly those which are on the surface level, are collapsed. As a result of the designed device and the plugging system contained therein, the porous material is not affected at any moment by chemical alteration processes caused by contact with extreme pH values. This device allows the treatment to be applied to vertical surfaces.
Binding of hydrophobic antigens to surfaces

A first aspect of the present invention is a method of detecting antibodies comprising the steps of: i) providing a first group of beads comprising a surface modified with C1-C10 alkyl groups comprising amine, ammonium, ether and/or hydroxyl groups, ii) contacting said first group of beads with a first hydrophobic antigen to provide a first group of bead-antigen conjugates by adsorption of the first hydrophobic antigen on the first group of beads, iii) isolating said bead-antigen conjugates, iv) contacting said bead-antigen conjugates with a sample to bind antibodies therein to provide bead-antigen-antibody conjugates, and v) detecting said bead-antigen-antibody conjugates. Further aspects include an antibody detection kit, a bead-antigen conjugate and a composition comprising at least two different groups of bead-antigen-conjugates.

METHOD AND APPARATUS FOR CHARACTERIZATION OF A SOLAR CELL

The present disclosure relates to a method for characterization of a solar cell, comprising the steps of: providing an optical probe light; modulating the optical probe light with a modulation frequency of between 100 kHz and 50 MHz, thereby obtaining a modulated probe light; scanning the modulated probe light such that said modulated probe light is incident on at least a part of the surface of the solar cell, and such that the part of the solar cell exposed to the modulated probe light converts the modulated probe light to an electrical signal; detecting and analyzing said electrical signal; and estimating variations in the solar cell, thereby electrically characterizing the solar cell. The disclosure further relates to a solar cell characterization apparatus for characterization of a solar cell, comprising: a light source for generating an optical probe light; a modulation unit, configured to produce modulated probe light by modulating the optical probe light with a modulation frequency of between 100 kHz and 0 MHz; a light scanning unit for scanning the modulated probe light such that said modulated probe light is incident on at least a part of the surface of the solar cell; and a signal analyzer, configured to detect and analyze electrical signals produced by the solar cell as a response to exposure of the modulated probe light.
Modelling of electricity savings in the Danish households sector: from the energy system to the end-user

In this paper, we examine the value of investing in energy-efficient household appliances from both an energy system and end-user perspectives. We consider a set of appliance categories constituting the majority of the electricity consumption in the private household sector, and focus on the stock of products which need to be replaced. First, we look at the energy system and investigate whether investing in improved energy efficiency can compete with the cost of electricity supply from existing or new power plants. To assess the analysis, Balmorel, a linear optimization model for the heat and power sectors, has been extended in order to endogenously determine the best possible investments in more efficient home appliances. Second, we propose a method to relate the optimal energy system solution to the end-user choices by incorporating consumer behaviour and electricity price addition due to taxes. The model is nonexclusively tested on the Danish energy system under different scenarios. Computational experiments show that several energy efficiency measures in the household sector should be regarded as valuable investments (e.g. an efficient lighting system) while others would require some form of support to become profitable. The analysis quantifies energy and economic savings from the consumer side and reveals the impacts on the Danish power system and surrounding countries. Compared to a business-as-usual energy scenario, the end-user attains net economic savings in the range of 30–40 EUR per year, and the system can benefit of an annual electricity demand reduction of 140–150 GWh. The paper enriches the existing literature about energy efficiency modelling in households, contributing with novel models, methods, and findings related to the Danish case.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Systems Analysis, Management Science
Authors: Baldini, M. (Intern), Trivella, A. (Intern)
Number of pages: 19
Publication date: 13 Mar 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Energy Efficiency
ISSN (Print): 1570-646X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.74 SNIP 0.816
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.675 SNIP 0.971 CiteScore 1.16
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.998 SNIP 1.172 CiteScore 1.38
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.704 SNIP 1.211 CiteScore 1.33
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 1.155 SNIP 1.541 CiteScore 1.91
A method for fabricating a three-dimensional carbon structure

A method for fabricating a three-dimensional carbon structure (4) is disclosed. A mould (1) defining a three-dimensional shape is provided, and natural protein containing fibres are packed in the mould (1) at a predetermined packing density. The packed natural protein containing fibre structure (3) undergoes pyrolysis, either while still in the mould (1) or after having been removed from the mould (1). Thereby a three-dimensional porous and electrically conducting carbon structure (4) having a three-dimensional shape defined by the three-dimensional shape of the mould (1) and a porosity defined by the packing density of the packed natural protein containing fibre structure (3) is obtained. The carbon structure (4) is well suited for use as a scaffold for tissue engineering, or for material for batteries, fuel cells, supercapacitors, sorbents for separation processes, gas storage, supports for many important catalysts, etc.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Bioanalytics, BioLabChip
Authors: Mohanty, S. (Intern), Emnéus, J. (Intern), Wolff, A. (Intern), Heiskanen, A. (Intern)
Publication date: 9 Mar 2017

Durable fuel electrode

The present invention relates to a composite for an electrode, a composite precursor, a method of manufacturing a composite, and the composite obtained by said method. The invention further relates to an electrode comprising the composite, as well as a solid state electrochemical cell comprising the composite. The invention also relates to the use of the composite as a fuel electrode, solid oxide fuel cell, and/or solid oxide electrolyser. The invention discloses a composite for an electrode, comprising a three-dimensional network of dispersed metal particles, stabilised zirconia particles and pores, wherein the size of the pores is smaller than the size of the metal particles, wherein the size of the metal particles is essentially equal to or smaller than the size of the stabilised zirconia particles, wherein the porosity is below 33, 30, or 29 vol%, more preferably below 26 or 24 vol%, and most preferably below 23, 22, 21, 18, 15, or 13 vol%, and/or wherein the pores are essentially exclusively generated from the volume created by reducing a corresponding metal oxide to the metal particles.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Ceramic Engineering & Science, Applied Electrochemistry, Mixed Conductors
Authors: Brodersen, K. (Intern), Hauch, A. (Intern), Chen, M. (Intern), Hjelm, J. (Intern)
Publication date: 23 Feb 2017
Self-closing sheet for encapsulating and dumping a bulk of material

The invention relates to a sheet (1) to be placed in relation to a split barge (100) for encapsulating a bulk of material (101) to be dumped when the bulk of material is released, the sheet comprising a material containing portion (4) and at least one material free portion (3) extending from at least two opposed sides of the material containing portion, wherein that the immersed sheet encapsulating the bulk of material comprises an encapsulated body (20) encapsulated by the material containing (4) portion and a self-closing portion (22) being at least a part of the material free portion (3) both extending from an assembly point (21), wherein a closing length of the self-closing portion (22) correspond to at least 5% of the circumventing length of the encapsulated body (20), the circumventing length extending from the assembly point (21) to the assembly point (21). The invention further relates to a method of encapsulating a bulk of material by means of a sheet.
GUIDE BLADE FOR AN OVERFLOW STRUCTURE TO BE PLACED ON A VESSEL

The invention relates to a guide blade (1) for an overflow structure (100) to be placed on a vessel, the guide blade comprising a primary contact surface (4) for guiding a stream of a water mixture into an overflow structure and a secondary contact surface (5) being a backside of the primary contact surface (4), the primary contact surface having an edge (2) configured for abutting an overflow structure (100) and at least one free edge, wherein the guide blade is configured for being attachable to a unit to be arrange on or in an inlet (109) of an overflow structure or directly on or in an inlet (109) of an overflow structure by means of one or more fastening elements or by welding. The invention further relates to an overflow system comprising one or more guide blades and an overflow structure. The invention further relates to a method of guiding a stream of a watery mixture approaching and/or entering an overflow structure by means of one or more guide blades.

General information
State: Published
Organisations: Technical University of Denmark
Authors: Jensen, J. H. (Intern)
Publication date: 15 Feb 2017

Learning from CDM SD tool experience for Article 6.4 in the Paris Agreement

The Paris Agreement (PA) emphasizes the intrinsic relationship between climate change and sustainable development (SD) and welcomes the 2030 agenda for the global Sustainable Development Goals (SDGs). Yet, there is a lack of assessment approaches to ensure that climate and development goals are achieved in an integrated fashion and trade-offs avoided. Article 6.4 of the PA introduces a new Sustainable Mitigation on Mechanism (SMM) with the dual aim to contribute to the mitigation of greenhouse gas emissions and foster SD. The Kyoto Protocol’s Clean Development Mechanism (CDM) has a similar objective and in 2014, the CDM SD tool was launched by the Executive Board of the CDM to highlight the SD benefits of CDM activities. This article analyses the usefulness of the CDM SD tool for stakeholders and compares the SD tool’s SD reporting requirements against other flexible mechanisms and multilateral standards to provide recommendations for improvement. A key conclusion is that the Paris Agreement’s SMM has a stronger political mandate than the CDM to measure that SD impacts are ‘real, measurable and long-term’. Therefore, recommendations for an improved CDM SD tool are a relevant starting point to develop rules, modalities and procedures for SD assessment in Article 6.4 as well as for other cooperative mitigation approaches.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, UNEP DTU Partnership, Wuppertal Institute for Climate, Environment and Energy
Authors: Olsen, K. H. (Intern), Arens, C. (Ekstern), Mersmann, F. (Ekstern)
Number of pages: 13
Publication date: 13 Feb 2017
Main Research Area: Technical/natural sciences
Learning from CDM SD tool, experience for Article 6.4 of the Paris Agreement.pdf
Learning_from_CDM_SD_tool_experience_for_Article_6_4_of_the_Paris_Agreement_1_.pdf
DOI: 10.1080/14693062.2016.1277686
DOI: 10.1080/14693062.2016.1277686

Bibliographical note
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

Source: PublicationPreSubmission
Source-ID: 126581154
Publication: Research - peer-review › Journal article – Annual report year: 2017

Professor om kystsikring: Ingen universelle løsninger

General information
En verden uden ende

Varmt og fredeligt
Verdensvejret 2016. En historisk kraftig El Niño fik varmen op fra oceanet, men vi slap for de store ulykker.
**Content dependent Information flow control**

Information flow control extends access control by not only regulating who is allowed to access what data but also the subsequent use of the data. Applications within communications systems require such information flow control to be dependent on the actual contents of the data. We develop a combined Hoare logic and type system for enforcing content dependent information flow policies dealing with both integrity and confidentiality. We establish the soundness of the Hoare logic with respect to an instrumented operational semantics and illustrate the development on a running example.

We also argue that a well-established approach to non-interference fails to distinguish between integrity and confidentiality. The development is performed for programs written in a concurrent language with synchronous communication and separate data domains.

---

**Context-dependent individual behavioral consistency in Daphnia**

The understanding of consistent individual differences in behavior, often termed "personality," for adapting and coping with threats and novel environmental conditions has advanced considerably during the last decade. However, advancements are almost exclusively associated with higher-order animals, whereas studies focusing on smaller aquatic organisms are still rare. Here, we show individual differences in the swimming behavior of Daphnia magna, a clonal freshwater invertebrate, before, during, and after being exposed to a lethal threat, ultraviolet radiation (UVR). We show consistency in swimming velocity among both mothers and daughters of D. magna in a neutral environment, whereas this pattern breaks down when exposed to UVR. Our study also, for the first time, illustrates how the ontogenetic development in swimming and refuge-seeking behavior of young individuals eventually approaches that of adults. Overall, we show that aquatic invertebrates are far from being identical robots, but instead they show considerable individual differences in behavior that can be attributed to both ontogenetic development and individual consistency. Our study also demonstrates, for the first time, that behavioral consistency and repeatability, that is, something resembling "personality," is context and state dependent in this zooplankter taxa.
In this paper, we propose a unified aggregation and relaxation approach for topology optimization with stress constraints. Following this approach, we first reformulate the original optimization problem with a design-dependent set of constraints into an equivalent optimization problem with a fixed design-independent set of constraints. The next step is to perform constraint aggregation over the reformulated local constraints using a lower bound aggregation function. We demonstrate that this approach concurrently aggregates the constraints and relaxes the feasible domain, thereby making singular optima accessible. The main advantage is that no separate constraint relaxation techniques are necessary, which reduces the parameter dependence of the problem. Furthermore, there is a clear relationship between the original feasible domain and the perturbed feasible domain via this aggregation parameter.

General information
State: Published
Organisations: Department of Wind Energy, Wind Turbine Structures and Component Design, Delft University of Technology
Authors: Verbart, A. (Intern), Langelaar, M. (Ekstern), Keulen, F. V. (Ekstern)
Pages: 1-17
Publication date: Feb 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Structural and Multidisciplinary Optimization
ISSN (Print): 1615-147x
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.14
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.42
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.77
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 2.86
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 2.08
ISI indexed (2012): ISI indexed yes
En jetstrøm i Jordens Indre
Magnetfelt. 3000 kilometer under Jordens overflade bevæger en tung, varm strøm af metal sig rundt. Strømme i Jordens indre er med til at holde liv i det magnetfelt, som beskytter Jorden mod Solen.

Professor om kystsikring: København er vigtigere end Jylland
General information
State: Published
Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Pedersen, J. O. P. (Intern)
Number of pages: 1
Pages: 11
Publication date: 27 Jan 2017
**Stormvejr i rummet**


**General information**

State: Published
Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Pedersen, J. O. P. (Intern)
Pages: 11
Publication date: 20 Jan 2017

**Publication information**

Pages (from-to): 11
Newspaper: Weekendavisen
Volume: 3
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Main Research Area: Technical/natural sciences
Publication: Communication › Newspaper article – Annual report year: 2017

**A strain gauge**

The invention relates to a strain gauge of a carrier layer and a meandering measurement grid (101) positioned on the carrier layer, wherein the measurement grid comprises a number of measurement grid sections placed side by side with gaps in between, and a number of end loops (106) interconnecting the measurement grid sections at their ends. The end loops at both ends of the measurement grid extend a length (L, 500) in the axial direction in millimetres of a factor times a ratio between a width of a grid section and the gap distance, wherein the factor is larger or equal to 1.5. The invention further relates to a method for manufacturing a strain gauge as mentioned above.

**General information**

State: Published
Organisations: Department of Wind Energy, Composites and Materials Mechanics
Authors: Mikkelsen, L. P. (Intern), Gili, J. (Ekstern)
Publication date: 19 Jan 2017

**Publication information**

IPC: G01L 1/ 22 A I
Patent number: WO2017009365
Date: 19/01/2017
Priority date: 14/07/2015
Priority number: EP20150176608
Original language: English
Electronic versions:
A windshield washer concentrate and the use thereof

The present invention relates to a windshield washer concentrate comprising a first compound and alcohol, wherein said first compound is ammonium acetate or ammonium formate or a combination thereof, and wherein the concentrate comprises the first compound in an amount of at least 5 g per litre alcohol.

Production of n-glycoproteins for enzyme assisted glycomodification

The present invention relates to a cell comprising a gene encoding a polypeptide of interest, wherein the polypeptide of interest is expressed comprising one or more posttranslational modification patterns. These modifications are useful for example in improvement of pharmacokinetic properties, i.e. by attaching PEG chains to proteins. The present invention also relates to methods for producing the antibodies and compositions comprising the antibodies, and their uses.

A METHOD OF SECURITY SCANNING OF CARRY-ON ITEMS, AND A CARRY-ON ITEMS SECURITY SCANNING SYSTEM

A security scanning system (1) comprises a first stage module (3) having at least one X-ray source (6) and at least three first detectors (7) that are line-shaped and arranged in mutually different orientations and have at least dual energy.
resolution. A group of carry-on items (4) on a carrier are scanned simultaneously in the first stage module solely by transmission contrast radiography generating projections of two-dimensional image data. A processing device (9) reconstructs a 3D representation of the carry-on items and analyzes the 3D representation to determine whether further scanning is required.

General information
State: Published
Organisations: Department of Physics, Neutrons and X-rays for Materials Physics
Authors: Poulsen, H. F. (Intern), Olsen, U. L. (Intern), Kehres, J. (Intern)
Publication date: 12 Jan 2017

Publication information
IPC: G01V 5/00 A I
Patent number: WO2017005757
Date: 12/01/2017
Priority date: 06/07/2015
Priority number: EP20150175560
Original language: English
Electronic versions:
WO2017005757A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017005757
Publication: Research › Patent – Annual report year: 2017

Fire retardant formulations
The present invention relates to compositions where a substrate is liable to catch fire such as bituminous products, paints, carpets or the like. The invention relates to a composition comprising 40-95 weight % of a substrate to be rendered fire resistant such as bituminous material or paint, carpets which substrate is mixed with 5-60 weight % of a fire retardant component. The invention relates to a fire retardant component comprising or being constituted of attapulgite, and a salt being a source of a blowing or expanding agent, where the attapulgite and the salt are electrostatically connected by mixing and subjecting the mixture of the two components to agitation. Also, the invention relates to compositions comprising 40-95 weight % of a substrate to be rendered fire resistant mixed with 5-60 weight % of a fire retardant according to claim 1 or 2, which fire retardant component is mixed with the substrate or coated onto the substrate or applied as a separate layer to the substrate. The composition might additionally comprise between 0-60 weight % of 20 other materials functioning as filler, plasticizer or the like.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Amphiphilic Polymers in Biological Sensing, Center for Nanostructured Graphene
Authors: Ullah, S. (Intern), Almdal, K. (Intern)
Publication date: 12 Jan 2017

Publication information
IPC: C09K 21/12 A I
Patent number: WO2017005546
Date: 12/01/2017
Priority date: 09/07/2015
Priority number: EP20150176039
Original language: English
Electronic versions:
WO2017005546A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017005546
Publication: Research › Patent – Annual report year: 2017

Ultrafine particle number flux over and in a deciduous forest
Ultrafine particles (UFP, particles with diameters (Dp) < 100nm) play a key role in climate forcing; thus, there is interest in improved understanding of atmosphere-surface exchange of these particles. Long-term flux measurements from a deciduous forest in the Midwestern USA (taken during December 2012 to May 2014) show that although a substantial fraction of the data period indicates upward fluxes of UFP, on average, the forest is a net sink for UFP during both leaf-
active and leaf-off periods. The overall mean above-canopy UFP number flux computed from this large data set is $-4.90 \times 10^6$ m$^{-2}$ s$^{-1}$ which re-emphasizes the importance of these ecosystems to UFP removal from the atmosphere. Although there remain major challenges to accurate estimation of the UFP number flux and in drawing inferences regarding the actual surface exchange from measurements taken above the canopy, the above the canopy mean flux is shown to be downward throughout the day (except at 23.00) with largest-magnitude fluxes during the middle of the day. On average, nearly three quarters of the total UFP capture by this ecosystem occurs at the canopy. This fraction increases to 78% during the leaf-active period, but the over-storey remains dominant over the subcanopy even during the leaf-off period.

**General information**

State: Published
Organisations: Department of Wind Energy, Cornell University, Aarhus University
Authors: Pryor, S. (Ekstern), Barthelmie, R. (Ekstern), Larsen, S. E. (Intern), Sørensen, L. (Ekstern)
Pages: 405-522
Publication date: 11 Jan 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Journal of Geophysical Research: Atmospheres
Volume: 122
Issue number: 1
ISSN (Print): 2169-897X
Ratings:

- BFI (2017): BFI-level 2
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 3.36 SJR 1.996 SNIP 1.313
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 2.288 SNIP 1.362 CiteScore 3.39
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 2.324 SNIP 1.349 CiteScore 3.27
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 2
- Scopus rating (2013): SJR 2.357 SNIP 1.44 CiteScore 3.38
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 2.365 SNIP 1.35 CiteScore 2.93
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 2.239 SNIP 1.301 CiteScore 3.03
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 2.449 SNIP 1.324
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 2.347 SNIP 1.359
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 2
- Scopus rating (2008): SJR 2.101 SNIP 1.296
- Web of Science (2008): Indexed yes
- Scopus rating (2007): SJR 2.054 SNIP 1.26
- Web of Science (2007): Indexed yes
- Scopus rating (2006): SJR 2.166 SNIP 1.351
Hygge-stormfloden og den falske sikkerhed

General information
State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems
Authors: Arnbjerg-Nielsen, K. (Intern)
Publication date: 9 Jan 2017

Publication information
Type: Blogmedie
Source/Publisher: Point of view international
Last modified date: 09/01/2017
Main Research Area: Technical/natural sciences
Electronic versions:
Hygge_stormfloden_og_den_falske_sikkerhed_POV.pdf
Links:
http://pov.international/hygge-stormfloden-og-den-falske-sikkerhed/
Publication: Research › Internet publication – Annual report year: 2017

PROCESS FOR HYDROGENOLYSIS OF ALPHA-HYDROXY ESTERS OR ACIDS USING A HETEROGENEOUS CATALYST
The present invention relates to a method for hydrogenolysis of alpha-hydroxy esters or acids, comprising reacting the alpha-hydroxy ester or acid in the presence of a heterogeneous catalyst. The present invention also relates to a method for producing propionic acid ester, and the use of any of the methods for the production of propionic acid esters, such as alkyl propionate.

General information
State: Published
Organisations: Department of Chemistry, Centre for Catalysis and Sustainable Chemistry, Organic Chemistry
Authors: Saravanamurugan, S. (Intern), Khokarale, S. G. (Intern), Riisager, A. (Intern)
Publication date: 5 Jan 2017

Publication information
IPC: C07C 67/327 A I
Patent number: WO2017001285
Date: 05/01/2017
Priority date: 25/06/2015
Priority number: EP20150173952
Original language: English
Resonant power converter comprising adaptive dead-time control.
The invention relates in a first aspect to a resonant power converter comprising: a first power supply rail for receipt of a positive DC supply voltage and a second power supply rail for receipt of a negative DC supply voltage. The resonant power converter comprises a resonant network with an input terminal for receipt of a resonant input voltage from a driver circuit. The driver circuit is configured for alternatingly pulling the resonant input voltage towards the positive and negative DC supply voltages via first and second semiconductor switches, respectively, separated by intervening dead-time periods in accordance with one or more driver control signals. A dead-time controller is configured to adaptively adjusting the dead-time periods based on the resonant input voltage.

Street light detection
Disclosed is a method, a vehicle and a system for measuring light from one or more outdoor lamps on a road, the system comprising a number of light sensors configured to be arranged in a fixed position relative to a vehicle, where at least a first part of the light sensors is configured for measuring light from the one or more outdoor lamps, wherein at least a second part of the light sensors comprises at least two light sensors configured for detecting the angle which the light from the one or more outdoor lamps arrives at in the second part of the light sensors; a processing unit configured for calculating the position relative to the vehicle of the one or more outdoor lamps based on the detected angle which the light arrives in, and wherein the processing unit is configured for calculating the light on the road based on the light measured in the fixed position relative to the vehicle and based on the calculated position of the one or more outdoor lamps.
GCN CIRCULAR 20366, LIGO/Virgo G268556: INTEGRAL search of temporally coincident prompt hard X-ray emission
We investigated serendipitous INTEGRAL observations carried out at the time of the LIGO/Virgo G268556. The satellite was pointing at RA = 00:04:02 Dec = +67:14:38, away from the high-probability region, derived from the LIGO Bayestar pipeline.

General information
State: Published
Organisations: National Space Institute, Astrophysics and Atmospheric Physics, University of Geneva, CEA Saclay, IRAP, National Institute for Astrophysics, Institute for Space Research, European Space Agency, Max-Planck-Institut fur extraterrestrische Physik, University College Dublin, Russian Academy of Sciences
Authors: Savchenko, V. (Ekstern), Ferrigno, C. (Ekstern), Mereghetti, S. (Ekstern), Kuulkers, E. (Ekstern), Bazzano, A. (Ekstern), Bozzo, E. (Ekstern), Couvoisier, T. J. (Ekstern), Brandt, S. (Intern), Diehl, R. (Ekstern), Hanlon, L. (Ekstern), Laurent, P. (Ekstern), Lutovinov, A. (Ekstern), Roques, J. (Ekstern), Sunyaev, R. (Ekstern), Ubertini, P. (Ekstern)
Publication date: 4 Jan 2017

Publication information
Type: Observation Report Circulars
Source/Publisher: GCN Circulars Archive
Last modified date: 04/01/2017
Main Research Area: Technical/natural sciences
Electronic versions:
GCN_20366.pdf
Links:

100-Gbps RZ Data Reception in 67-GHz Si-Contacted Germanium Waveguide p-i-n Photodetectors
We demonstrate 100-Gbps silicon-contacted germanium waveguide p-i-n photodetectors integrated on imec’s silicon photonics platform. The performance of 14 and 20 μm long devices is compared. The responsivity of the devices is 0.74 and 0.92 A/W at 1550 nm, respectively.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, IMEC, Ghent University
Authors: Chen, H. (Ekstern), Galil, M. (Intern), Verheyen, P. (Ekstern), De Heyn, P. (Ekstern), Lepage, G. (Ekstern), De Coster, J. (Ekstern), Balakrishnan, S. (Ekstern), Ablis, P. (Ekstern), Oxenløwe, L. K. (Intern), Van Campenhout, J. (Ekstern), Roelkens, G. (Ekstern)
Pages: 722-726
Publication date: 2017
A 10.5-Tb/s optical transmission (15 x 100 Gb/s QPSK channels per core) over 2520 km of multicore fiber is achieved using an integrated multicore transmission link consisting of directly spliced multicore components, such as fan-in/fan-out fiber couplers, a 60-km trench-assisted seven-core hexagonal fiber and cladding-pumped erbium-ytterbium-doped fiber amplifiers.
100 GHz Externally Modulated Laser for Optical Interconnects Applications

We report on a 116 Gb/s on-off keying (OOK), four pulse amplitude modulation (PAM) and 105-Gb/s 8-PAM optical transmitter using an InP-based integrated and packaged externally modulated laser for high-speed optical interconnects with up to 30 dB static extinction ratio and over 100-GHz 3-dB bandwidth with 2 dB ripple. In addition, we study the tradeoff between power penalty and equalizer length to foresee transmission distances with standard single mode fiber.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, KTH - Royal Institute of Technology, Acreo Swedish ICT AB, Tektronix GmbH
Pages: 1174-1179
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information:
Journal: Journal of Lightwave Technology
Volume: 35
Issue number: 6
ISSN (Print): 0733-8724
10 GHz frequency comb spectral broadening in AlGaAs-on-Insulator nano-waveguide with ultra-low pump power

We experimentally demonstrated 10 GHz frequency comb spectral broadening with a 30-dB bandwidth of 238 nm in an 11-mm long AlGaAsOI nano-waveguide. The 10-GHz 230-fs pump pulse has an average power of only 12 mW.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Nanophotonic Devices
Authors: Hu, H. (Intern), Pu, M. (Intern), Yvind, K. (Intern), Oxenløwe, L. K. (Intern)
Number of pages: 2
Pages: 1-2
Publication date: 2017

1.142 μm GaAsBi/GaAs Quantum Well Lasers Grown by Molecular Beam Epitaxy

As a promising new class of near-infrared light emitters, GaAsBi laser diodes (LDs) are considered to have a high energy efficiency and an insensitive temperature dependence of the band gap. In this paper, we realize the longest ever reported lasing wavelength up to 1.142 μm at room temperature in GaAsBi0.058/GaAs quantum well LDs grown by molecular beam epitaxy. The output power is up to 127 mW at 300 K under pulsed mode. We also demonstrate continuous wave mode operation up to 273 K for the first time. The temperature coefficient of the GaAsBi/GaAs LD is 0.26 nm/K in the temperature range of 77-350 K, lower than that of both InGaAsP/InP and InGaAs/GaAs LDs. The characteristic temperature is extracted to be 139 K in the temperature range of 77-225 K and decreases to 79 K at 225-350 K.

General information
State: Published
Organisations: Department of Photonics Engineering, Diode Lasers and LED Systems, Centre of Excellence for Silicon Photonics for Optical Communications, CAS - Shanghai Institute of Microsystem and Information Technology
Authors: Wu, X. (Ekstern), Pan, W. (Ekstern), Zhang, Z. (Ekstern), Li, Y. (Ekstern), Cao, C. (Ekstern), Liu, J. (Ekstern), Zhang, L. (Ekstern), Song, Y. (Ekstern), Ou, H. (Intern), Wang, S. (Ekstern)
Pages: 1322-1326
Publication date: 2017
Main Research Area: Technical/natural sciences
120 Gb/s Multi-Channel THz Wireless Transmission and THz Receiver Performance Analysis

A photonic multi-channel terahertz (THz) wireless transmission system in the 350-475 GHz band is experimentally demonstrated. The employment of six THz carriers modulated with 10 Gbaud Nyquist quadrature phase-shift keying baseband signal per carrier results in an overall capacity of up to 120 Gb/s. The THz carriers with high-frequency stability and low phase noise are generated based on photonic photomixing of 25-GHz spaced six optical tones and a single optical local oscillator derived from a same optical frequency comb in an ultrabroadband uni-travelling carrier photodiode. The bit-error-rate performance below the hard decision forward error correction threshold of 3.8×10−3 for all the channels is successfully achieved after wireless delivery. Furthermore, we also investigate the influence of the harmonic spurs in a THz receiver on the performance of transmission system, and the experimental results suggest more than 30 dB spur suppression ratio in downconverted intermediate frequency signals for obtaining less than 1 dB interference.

General information

State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Ultrafast Infrared and Terahertz Science, Tianjin University, Zhejiang University
Authors: Jia, S. (Ekstern), Yu, X. (Ekstern), Hu, H. (Intern), Yu, J. (Ekstern), Morioka, T. (Intern), Jepsen, P. U. (Intern), Oxenløwe, L. K. (Intern)
Pages: 310-13
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: IEEE photonics Technology Letters
Volume: 29
Issue number: 3
ISSN (Print): 1041-1135
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.52 SJR 1.018 SNIP 1.279
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.263 SNIP 1.327 CiteScore 2.62
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.461 SNIP 1.614 CiteScore 2.78
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.487 SNIP 1.547 CiteScore 2.95
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.623 SNIP 1.706 CiteScore 2.46
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.51 SNIP 2.012 CiteScore 2.48
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.474 SNIP 1.623
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.775 SNIP 1.804
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 2.081 SNIP 1.818
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.345 SNIP 1.566
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.112 SNIP 1.884
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.97 SNIP 2.454
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 3.286 SNIP 2.716
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 3.44 SNIP 2.467
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 3.566 SNIP 2.117
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 3.519 SNIP 1.678
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 2.345 SNIP 1.202
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 2.44 SNIP 1.302

Original language: English
Optical communication devices, equipment and systems, Optical harmonic generation, frequency conversion, parametric oscillation and amplification, Optical communication equipment, Free-space optical links, Photoelectric devices, Codes, error statistics, forward error correction, free-space optical communication, optical frequency combs, optical receivers, phase noise, phase shift keying, photodiodes, THz receiver performance analysis, photonic multichannel terahertz wireless transmission system, THz carrier, Nyquist quadrature phase-shift keying baseband signal per carrier, high-frequency stability, photonic photomixing, optical tones, single optical local oscillator, optical frequency comb, ultrabroadband uni-travelling carrier photodiode, bit-error-rate performance, hard decision forward error correction threshold, harmonic spurs, spur suppression ratio, downconverted intermediate frequency signals, bit rate 120 Gbit/s, bandwidth 350 THz to 475 THz, frequency 25 GHz, Optical fibers, Optical modulation, Optical amplifiers, Optical mixing, Optical attenuators, Wireless communication, uni-travelling carrier photodiode (UTC-PD), THz photonics, THz wireless communication

125-GHz Microwave Signal Generation Employing an Integrated Pulse Shaper
We propose and experimentally demonstrate an on-chip pulse shaper for 125-GHz microwave waveform generation. The pulse shaper is implemented based on a silicon-on-insulator (SOI) platform that has a structure with eight-tap finite impulse response (FIR) and there is an amplitude modulator on each tap. By controlling the thermal heaters on the amplitude modulators, we obtain several signals centered at 125 GHz with typical envelopes, such as square envelope, triangular envelope, sawtooth envelope, Gaussian envelope, etc. Our scheme has some significant advantages, such as...
the central frequency of the generated microwave waveforms is larger than 100 GHz, and it has wide bandwidth when changing the time delay of the adjacent taps and compactness, capability for integration with electronics and small power consumption are also its merits.
1,2-Fucosyllactose Does Not Improve Intestinal Function or Prevent Escherichia coli F18 Diarrhea in Newborn Pigs
Objectives: Infectious diarrhea, a leading cause of morbidity and deaths, is less prevalent in breastfed infants compared with infants fed infant formula. The dominant human milk oligosaccharide (HMO), α-1,2-fucosyllactose (2′-FL), has structural homology to bacterial adhesion sites in the intestine and may in part explain the protective effects of human milk. We hypothesized that 2′-FL prevents diarrhea via competitive inhibition of pathogen adhesion in a pig model for sensitive newborn infants. Methods: Intestinal cell studies were coupled with studies on cesarean-delivered newborn pigs (n=24) without (control) or with inoculation of enterotoxigenic Escherichia coli F18 (7.5×10¹⁰/day for 8 days) fed either no (F18) or 10 g/L 2′-FL (2FL-F18). Results: In vitro studies revealed decreased pathogen adhesion to intestinal epithelial cells with 2′-FL (5 g/L; P<0.001). F18 pigs showed more diarrhea than control pigs (P<0.01). Administration of 2′-FL to F18 pigs failed to prevent diarrhea, although the relative weight loss tended to be reduced (−19 vs −124 g/kg, P=0.12), higher villi were observed in the distal small intestine (P<0.05), and a trend toward increased proportion of mucosa and activities of some brush border enzymes in the proximal small intestine. In situ abundance of α-1,2-fucose and E coli was similar between groups, whereas sequencing showed higher abundance of Enterobacteriaceae in F18, Enterococcus in control and Lachnospiraceae in 2FL-F18 pigs. Conclusions: 2′-FL inhibited in vitro adhesion of E coli F18 to epithelial cells, but had limited effects on diarrhea and mucosal health in newborn pigs challenged with E coli F18.

General information
State: Published
Organisations: National Veterinary Institute, University of Copenhagen, Arla Foods
Authors: Cilieborg, M. S. (Intern), Sangild, P. T. (Ekstern), Jensen, M. L. (Ekstern), Østergaard, M. V. (Ekstern), Christensen, L. (Ekstern), Rasmussen, S. O. (Ekstern), Mørbak, A. L. (Ekstern), Jrgensen, C. B. (Ekstern), Bering, S. B. (Ekstern)
Pages: 310-318
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Pediatric Gastroenterology and Nutrition
Volume: 64
Issue number: 2
ISSN (Print): 0277-2116
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 1.24 SNIP 1.297 CiteScore 2.25
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.261 SNIP 1.258 CiteScore 2.27
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
12 Mode, MIMO-Free OAM Transmission

Simultaneous MIMO-free transmission of a record number (12) of orbital angular momentum modes over 1.2 km is demonstrated. WDM compatibility of the system is shown by using 60 WDM channels with 25 GHz spacing and 10 Gbaud QPSK.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Fiber Optics, Devices and Non-linear Effects, Boston University, Technical University of Denmark, OFS Fitel Denmark ApS, University of Naples Federico II
Authors: Ingerslev, K. (Intern), Gregg, P. (Ekstern), Galili, M. (Intern), Da Ros, F. (Intern), Hu, H. (Intern), Bao, F. (Ekstern), Usuga Castaneda, M. A. (Intern), Kristensen, P. (Ekstern), Rubano, A. (Ekstern), Marrucci, L. (Ekstern), Ramachandran, S. (Ekstern), Rottwitt, K. (Intern), Morioka, T. (Intern), Oxenløwe, L. K. (Intern)
Number of pages: 3
Publication date: 2017

Host publication information
Title of host publication: Optical Fiber Communication Conference 2017
Publisher: Optical Society of America (OSA)
Article number: M2D.1
15 x 200 Gbit/s 16-QAM SDM transmission over an integrated 7-core cladding-pumped repeatered multicore link in a recirculating loop

We investigate a complete realistic integrated multicore system consisting of directly spliced components: homogeneous trench-assisted 7-core fiber with a length of 60 km, cladding-pumped 7-core amplifiers, integrated 7-core isolators, and fiberized fan-in/fan-out couplers. We analyze the performance of an in-line repeatered multicore transmission system in a recirculating loop by transmitting a 200 Gbit/s 16-QAM test channel and 14 x 100 Gbit/s QPSK neighboring channels between the wavelengths of 1558.58 nm and 1564.27 nm in a 50 GHz grid. For every position of the test channel within the considered band we demonstrate transmission distances over 720 km.
1.5-μm Directly modulated transmission over 66 km of SSMF with an integrated hybrid III-V/SOI DFB laser

A hybrid III-V/SOI directly modulated DFB laser operating at 1.5 μm is fabricated, showing a side mode suppression ratio above 50 dB and a 3-dB bandwidth of 12 GHz. Error-free transmission (BER<10^{-9}) at 10 Gb/s over 66-km SSMF is demonstrated without dispersion compensation and FEC.
This special section of Energy & Fuels contains contributed papers from the 17th International Conference on Petroleum Phase Behavior and Fouling (Petrophase 2016). Petrophase 2016 was organized by the Technical University of Denmark and Schlumberger and took place in Elsinore (Helsingør) Denmark from June 19th to 23rd at the Beach Hotel Marienlyst. Petrophase is an international conference aimed at researchers in industry and academia dedicated to the study of the properties and chemistry of petroleum fluids and their effect on producing, processing, and refining in the upstream, midstream, and downstream industries. The conference started in 1999 as “The International Conference on Petroleum Phase Behavior & Fouling” and has since evolved into an annual event taking place in countries all around the world. Petrophase has been fortunate to have enjoyed financial and organizational support from many academic and industrial institutions through the years. Despite its growth over the years, Petrophase has always had the feel of an intimate conference where all participants are present in all of the activities.

**1872**

**General information**

State: Published
Organisations: National Space Institute, Geodesy, COWI A/S, COWI AS, Danish Coastal Authority
Authors: Sørensen, C. S. (Intern), Sørensen , P. (Ekstern), Jürgensen, C. (Ekstern), Jørgensen, N. (Ekstern), Jebens, M. (Ekstern), Knudsen, P. (Intern)
Number of pages: 1
Pages: 108
Publication date: 2017

**Host publication information**

Title of host publication: 19. Danske Havforskermøde. Program & præsentationer
Main Research Area: Technical/natural sciences
Conference: 19. Danske Havforskermøde, Helsingør, Denmark, 25/01/2017 - 25/01/2017
Electronic versions:

PROGRAM_OG_ABSTRACT_BOG.PDF
Source: PublicationPreSubmission
Source-ID: 128573212

Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2017

**1967: Industri**

**General information**

State: Published
Organisations: Department of Physics
Authors: Skyggebjerg, L. K. (Intern)
1.9 W yellow, CW, high-brightness light from a high efficiency semiconductor laser-based system

Semiconductor lasers are ideal sources for efficient electrical-to-optical power conversion and for many applications where their small size and potential for low cost are required to meet market demands. Yellow lasers find use in a variety of bio-related applications, such as photocoagulation, imaging, flow cytometry, and cancer treatment. However, direct generation of yellow light from semiconductors with sufficient beam quality and power has so far eluded researchers. Meanwhile, tapered semiconductor lasers at near-infrared wavelengths have recently become able to provide near-diffraction-limited, single frequency operation with output powers up to 8 W near 1120 nm.

We present a 1.9 W single frequency laser system at 562 nm, based on single pass cascaded frequency doubling of such a tapered laser diode. The laser diode is a monolithic device consisting of two sections: a ridge waveguide with a distributed Bragg reflector, and a tapered amplifier. Using single-pass cascaded frequency doubling in two periodically poled lithium niobate crystals, 1.93 W of diffraction-limited light at 562 nm is generated from 5.8 W continuous-wave infrared light. When turned on from cold, the laser system reaches full power in just 60 seconds. An advantage of using a single pass configuration, rather than an external cavity configuration, is increased stability towards external perturbations. For example, stability to fluctuating case temperature over a 30 K temperature span has been demonstrated. The combination of high stability, compactness and watt-level power range means this technology is of great interest for a wide range of biological and biomedical applications. © (2017) COPYRIGHT Society of Photo-Optical Instrumentation Engineers (SPIE)
In this study an analysis strategy towards using the resonant inelastic X-ray scattering (RIXS) technique more effectively compared with X-ray absorption spectroscopy (XAS) is presented. In particular, the question of when RIXS brings extra information compared with XAS is addressed. To answer this question the RIXS plane is analysed using two models: (i) an exciton model and (ii) a continuum model. The continuum model describes the dipole pre-edge excitations while the exciton model describes the quadrupole excitations. Applying our approach to the experimental 1s2p RIXS planes of VO2 and TiO2, it is shown that only in the case of quadrupole excitations being present is additional information gained by RIXS compared with XAS. Combining this knowledge with methods to calculate the dipole contribution in XAS measurements gives scientists the opportunity to plan more effective experiments.
1-Pb/s (32 SDM/46 WDM/768 Gb/s) C-band Dense SDM Transmission over 205.6-km of Single-mode Heterogeneous Multi-core Fiber using 96-Gbaud PDM-16QAM Channels

We demonstrate the first 1-Pb/s unidirectional inline-amplified transmission over 205.6-km of single-mode 32-core fiber within C-band only. 96-Gbaud LDPC-coded PDM-16QAM channels with FEC redundancy of 12.75% realize high-aggregate spectral efficiency of 217.6 b/s/Hz

**General information**

State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, NTT Corporation, Fujikura Ltd., Hokkaido University, University of Southampton, Coriant R&D GmbH
Number of pages: 3
Publication date: 2017

**Host publication information**

Title of host publication: Proceedings of Optical Fiber Communication Conference 2017
Publisher: Optical Society of America (OSA)
Article number: Th5B
ISBN (Print): 978-1-943580-24-8
Main Research Area: Technical/natural sciences
Conference: Optical Fiber Communication Conference 2017, Los Angeles, United States, 19/03/2017 - 19/03/2017
DOIs: 10.1364/OFC.2017.Th5B.1

**Bibliographical note**
From the session: Postdeadline Session II (Th5B)
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

200 Gbit/s 16QAM WDM transmission over a fully integrated cladding pumped 7-Core MCF System

A complete, realistic integrated system is investigated, consisting of directly spliced 7-core MCF, cladding-pumped 7-core amplifiers, isolators, and couplers. The system is demonstrated in a 16QAM C-band WDM scenario over 720 km.

**General information**

State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Coriant R&D GmbH, University of Southampton, Christian Albrechts University, Fujikura Ltd., NTT Corporation
22q11.2 Deletion Syndrome Is Associated With Impaired Auditory Steady-State Gamma Response

The 22q11.2 deletion syndrome confers a markedly increased risk for schizophrenia. 22q11.2 deletion carriers without manifest psychotic disorder offer the possibility to identify functional abnormalities that precede clinical onset. Since schizophrenia is associated with a reduced cortical gamma response to auditory stimulation at 40 Hz, we hypothesized that the 40 Hz auditory steady-state response (ASSR) may be attenuated in nonpsychotic individuals with a 22q11.2 deletion. Eighteen young nonpsychotic 22q11.2 deletion carriers and a control group of 27 noncarriers with comparable age range (12-25 years) and sex ratio underwent 128-channel EEG. We recorded the cortical ASSR to a 40 Hz train of clicks, given either at a regular inter-stimulus interval of 25 ms or at irregular intervals jittered between 11 and 37 ms. Healthy noncarriers expressed a stable ASSR to regular but not in the irregular 40 Hz click stimulation. Both gamma power and inter-trial phase coherence of the ASSR were markedly reduced in the 22q11.2 deletion group. The ability to phase lock cortical gamma activity to regular auditory 40 Hz stimulation correlated with the individual expression of negative symptoms in deletion carriers (ρ = -0.487, P = .041). Nonpsychotic 22q11.2 deletion carriers lack efficient phase locking of evoked gamma activity to regular 40 Hz auditory stimulation. This abnormality indicates a dysfunction of fast intracortical oscillatory processing in the gamma-band. Since ASSR was attenuated in nonpsychotic deletion carriers, ASSR deficiency may constitute a premorbid risk marker of schizophrenia.
25-Gb/s Transmission Over 2.5-km SSMF by Silicon MRR Enhanced 1.55-μm III-V/SOI DML

The use of a micro-ring resonator (MRR) to enhance the modulation extinction ratio and dispersion tolerance of a directly modulated laser is experimentally investigated with a bit rate of 25 Gb/s as proposed for the next generation data center communications. The investigated system combines a 11-GHz 1.55-μm directly modulated hybrid III-V/SOI DFB laser realized by bonding III-V materials (InGaAlAs) on a silicon-on-insulator (SOI) wafer and a silicon MRR also fabricated on SOI. Such a transmitter enables error-free transmission (BER <10^-9) at 25 Gb/s data rate over 2.5-km standard single mode fiber without dispersion compensation nor forward error correction. As both laser and MRR are fabricated on the SOI platform, they could be combined into a single device with enhanced performance, thus providing a cost-effective transmitter for short reach applications.

**General information**

State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Nanophotonic Devices, Thales, Thales, Lab 3 5, F-91767 Palaiseau, France, Acreo Swedish ICT AB, FOTON Laboratory, III-V Lab, KTH - Royal Institute of Technology
Authors: Cristofori, V. (Intern), Da Ros, F. (Intern), Ozolins, O. (Ekstern), Chaibi, M. E. (Ekstern), Bramerie, L. (Ekstern), Ding, Y. (Intern), Pang, X. (Ekstern), Shen, A. (Ekstern), Gallet, A. (Ekstern), Duan, G. (Ekstern), Hassan, K. (Ekstern), Olivier, S. (Ekstern), Popov, S. (Ekstern), Jacobsen, G. (Ekstern), Oxenløwe, L. K. (Intern), Peucheret, C. (Ekstern)
Pages: 960-963
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: IEEE Photonics Technology Letters
Volume: 29
Issue number: 12
ISSN (Print): 1041-1135
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.52 SJR 1.018 SNIP 1.279
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.263 SNIP 1.327 CiteScore 2.62
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.461 SNIP 1.614 CiteScore 2.78
Web of Science (2014): Indexed yes
ISI indexed (2013): ISI indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.487 SNIP 1.547 CiteScore 2.95
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.623 SNIP 1.706 CiteScore 2.46
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.51 SNIP 2.012 CiteScore 2.48
ISI indexed (2010): ISI indexed yes
Web of Science (2010): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.474 SNIP 1.623
Web of Science (2009): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.775 SNIP 1.804
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 2.081 SNIP 1.818
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.345 SNIP 1.566
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.112 SNIP 1.884
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.97 SNIP 2.454
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 3.286 SNIP 2.716
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 3.44 SNIP 2.467
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 3.566 SNIP 2.117
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 3.519 SNIP 1.678
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 2.345 SNIP 1.202
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 2.44 SNIP 1.302
Original language: English
Photonic integrated circuits, Resonators filters, Optical transmitters
DOIs:
10.1109/LPT.2017.2700497
Source: FindIt
Source-ID: 2370682565
Publication: Research - peer-review › Journal article – Annual report year: 2017
25-Gb/s transmission over 2.5-km SSMF by silicon MRR enhanced 1.55-μm III-V/SOI DML

The use of a micro-ring resonator (MRR) to enhance the modulation extinction ratio and dispersion tolerance of a directly modulated laser (DML) is experimentally investigated with a bit rate of 25 Gb/s as proposed for the next generation data center communications. The investigated system combines a 11-GHz 1.55-μm directly modulated hybrid III-V/SOI DFB laser realized by bonding III-V materials (InGaAlAs) on a silicon-on-insulator (SOI) wafer and a silicon MRR also fabricated on SOI. Such a transmitter enables error-free transmission (BER < 10^{-9}) at 25 Gb/s data rate over 2.5-km SSMF without dispersion compensation nor forward error correction (FEC). As both laser and MRR are fabricated on the SOI platform, they could be combined into a single device with enhanced performance, thus providing a cost-effective transmitter for short reach applications.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Nanophotonic Devices, CEA-Leti, 17 rue des Martyrs, F-38054, Grenoble, France, Acreo Swedish ICT AB, University of Rennes, III-V Lab, KTH - Royal Institute of Technology
Authors: Cristofori, V. (Intern), Da Ros, F. (Intern), Ozolins, O. (Ekstern), Chaibi, M. E. (Ekstern), Bramerie, L. (Ekstern), Ding, Y. (Intern), Pang, X. (Ekstern), Shen, A. (Ekstern), Gallet, A. (Ekstern), Duan, G. (Ekstern), Hassan, K. (Ekstern), Olivier, S. (Ekstern), Popov, S. (Ekstern), Jacobsen, G. (Ekstern), Oxenløwe, L. K. (Intern), Peucheret, C. (Ekstern)
Number of pages: 4
Pages: 357-360
Publication date: 2017

Host publication information
Title of host publication: Proceedings of 2017 IEEE Photonics Conference
Publisher: IEEE
ISBN (Print): 9781509065783
Series: 2017 Ieee Photonics Conference (ipc)
Main Research Area: Technical/natural sciences
Conference: 2017 IEEE 14th International Conference on Group IV Photonics (GFP), Berlin, Germany, 23/08/2017 - 23/08/2017
Photonic integrated circuits, Resonators flters, Optical transmitters
DOIs:
10.1109/IPCon.2017.8116138
Source: FindIt
Source-ID: 2393790440
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

26-Gb/s DMT Transmission Using Full C-Band Tunable VCSEL for Converged PONs

Wavelength division multiplex (WDM) passive optical network (PON) is considered for converged fixed mobile broadband access networking. We propose to utilize low-cost tunable lasers at the remote sites, together with a centralized wavelength locker. Practical implementations require a transparently added downstream signaling channel and upstream per-channel pilot tones for channel tagging and remote wavelength control. We demonstrate, for the first time, 26-Gbps discrete multitone transmission modulated on a low-cost wide tunable vertical surface emitting laser over up to 40 km of standard single-mode fiber. The results confirm that converged fixed mobile WDM-PON systems based on low-cost lasers carrying discrete multitone modulation are a technically viable approach.

General information
State: Published
Organisations: Department of Photonics Engineering, Metro-Access and Short Range Systems, Networks Technology and Service Platforms, Vertilas GmbH, Technical University of Darmstadt, ADVA Optical Networking SE
Pages: 1475-8
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Photonics Technology Letters
Volume: 29
Issue number: 17
ISSN (Print): 1041-1135
Ratings:
2D Numerical Modelling of the Resin Injection Pultrusion Process Including Experimental Resin Kinetics and Temperature Validation

In the present study, a two-dimensional (2D) transient Eulerian thermo-chemical analysis of a carbon fibre epoxy thermosetting Resin Injection Pultrusion (RIP) process is carried out. The numerical model is implemented using the well known unconditionally stable Alternating Direction Implicit (ADI) scheme. The total heat of reaction and the cure kinetics of the epoxy thermosetting are determined using Differential Scanning Calorimetry (DSC). A very good agreement is observed between the fitted cure kinetic model and the experimental measurements. The numerical steady state temperature predictions inside the composite profile are validated by comparison with experimental measurements and good agreement is found.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Fiberline Composites A/S
Authors: Rasmussen, F. S. (Intern), Sonne, M. R. (Intern), Larsen, M. (Ekstern), Spangenberg, J. (Intern), Lilleheden, L. T. (Ekstern), Hattel, J. H. (Intern)
Number of pages: 10
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 21st International Conference on Composite Materials (ICCM-21)
Main Research Area: Technical/natural sciences
Conference: 21st International Conference on Composite Materials (ICCM-21), Xi'an, China, 20/08/2017 - 20/08/2017
Composites, Pultrusion, Curing, Modelling, Characterization
Electronic versions:
Source: PublicationPreSubmission
Source-ID: 137485887
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

2D of hexagonal plasmonic necklaces for enhanced second harmonic generation

Hexagonal plasmonic necklaces of silver nanoparticles organized in 2D superlattices on functional ferroelectric templates are fabricated in large-scale spatial regions by using a surfactant-free photo-deposition process. The plasmonic necklaces support broad radiative plasmonic resonances allowing the enhancement of second harmonic generation (SHG) at the ferroelectric domain boundaries. A 400-fold SHG enhancement is achieved at the near-UV spectral region with subsequent interest for technological applications.

General information
State: Published
Organisations: Department of Photonics Engineering, Structured Electromagnetic Materials, Universidad Autónoma de Madrid, Universidad Autonoma de Madrid
Authors: Gómez-Tornero, A. (Ekstern), Tserkezis, C. (Intern), Mateos, L. (Ekstern), Bausà, L. E. (Ekstern), Ramírez, M. O. (Ekstern)
Number of pages: 6
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Advanced Materials
Volume: 29
Issue number: 15
Article number: 1605267
ISSN (Print): 0935-9648
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 17.79
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
30-year mesoscale model simulations for the "Noise from wind turbines and risk of cardiovascular disease" project

General information
State: Published
Organisations: Department of Wind Energy, Meteorology & Remote Sensing, Resource Assessment Modelling
Authors: Pena Diaz, A. (Intern), Hahmann, A. N. (Intern)
Publication date: 2017

Publication information
Original language: English
Series: DTU Wind Energy E
Volume: 0055
Main Research Area: Technical/natural sciences
Electronic versions:
DTU_WindEnergyReport_0055_EN_.pdf
Additional files:
TitlePage.pdf
Publication: Research - peer-review › Report – Annual report year: 2017
30 years of data reveal dramatic increase in abundance of brown trout following the removal of a small hydromam

Humans and freshwater ecosystems have a long history of cohabitation. Today, nearly all major rivers of the world have an in-stream structure which changes water flow, substrate composition, vegetation, and fish assemblage composition. The realization of these effects and their subsequent impacts on population sustainability and conservation has led to a collective effort aimed to find ways to mitigate these impacts. Barrier removal has recently received greater interest as a potential solution to restore river connectivity, and reestablish high quality habitats, suitable for feeding, refuge and spawning of fish. In the present study, we present thirty years of data from electrofishing surveys obtained at two sites, both prior to and following the removal of a small-scale hydropower dam in Central Jutland, Denmark. We demonstrate that the dam removal has led to a dramatic increase in trout density, especially in young of the year. Surprisingly, we found that this increase was not just upstream of the barrier, where the ponded zone previously was, but also downstream of the barrier, despite little changes in habitat in that area. These findings suggest that barrier removal may be the soundest conservation option to reinstate fish population productivity.
3.400 laks vandrede op i Skjern Å i 2016

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Jepsen, N. (Intern)
Publication date: 2017

Publication information
Source/Publisher: Fiskepleje.dk
Main Research Area: Technical/natural sciences
Links:
Publication: Communication › Internet publication – Annual report year: 2017

340nm UV LED excitation in time-resolved fluorescence system for europium-based immunoassays detection

In immunoassay analyzers for in-vitro diagnostics, Xenon flash lamps have been widely used as excitation light sources. Recent advancements in UV LED technology and its advantages over the flash lamps such as smaller footprint, better wall-plug efficiency, narrow emission spectrum, and no significant afterglow, have made them attractive light sources for gated detection systems. In this paper, we report on the implementation of a 340 nm UV LED based time-resolved fluorescence system based on europium chelate as a fluorescent marker. The system performance was tested with the immunoassay based on the cardiac marker, TnI. The same signal-to-noise ratio as for the flash lamp based system was obtained, operating the LED below specified maximum current. The background counts of the system and its main contributors were measured and analyzed. The background of the system of the LED based unit was improved by 39% compared to that of the Xenon flash lamp based unit, due to the LEDs narrower emission spectrum and longer pulse width. Key parameters of the LED system are discussed to further optimize the signal-to-noise ratio and signal-to-background, and hence the sensitivity of the instrument.

General information
State: Published
Organisations: Department of Photonics Engineering, Optical Sensor Technology, Radiometer Medical ApS
Authors: Rodenko, O. (Intern), Fodgaard, H. (Ekstern), Tidemand-Lichtenberg, P. (Intern), Pedersen, C. (Intern)
Number of pages: 7
Publication date: 2017

Host publication information
Title of host publication: Proceedings of SPIE
Volume: 10072
Publisher: SPIE - International Society for Optical Engineering
Article number: 100720M
Series: Proceedings of SPIE, the International Society for Optical Engineering
Volume: 10072
ISSN: 0277-786X
3.5 W of diffraction-limited green light at 515 nm from SHG of a single-frequency tapered diode laser

Multi-Watt efficient compact green laser sources are required for a number of applications e.g. within biophotonics, laser pumping and laser displays. We present generation of 3.5 W of diffraction-limited green light at 515 nm by second harmonic generation (SHG) of a tapered diode laser, itself yielding more than 9 W at 1030 nm. SHG is performed in single pass through a cascade of two nonlinear crystals with re-focusing and dispersion compensating optics between the two nonlinear crystals. The laser is single-frequency and the output power is stabilized to better than ±0.4%.

3D continuum phonon model for group-IV 2D materials

A general three-dimensional continuum model of phonons in two-dimensional materials is developed. Our first-principles derivation includes full consideration of the lattice anisotropy and flexural modes perpendicular to the layers and can thus be applied to any two-dimensional material. In this paper, we use the model to not only compare the phonon spectra among the group-IV materials but also to study whether these phonons differ from those of a compound material such as molybdenum disulfide. The origin of quadratic modes is clarified. Mode coupling for both graphene and silicene is obtained, contrary to previous works. Our model allows us to predict the existence of confined optical phonon modes for
the group-IV materials but not for molybdenum disulfide. A comparison of the long-wavelength modes to density-functional results is included.

**General information**

State: Published
Organisations: Department of Photonics Engineering, University of West Georgia, King Abdullah University of Science and Technology
Authors: Willatzen, M. (Intern), Lew Yan Voon, L. C. (Ekstern), Gandi, A. N. (Ekstern), Schwingenschlogl, U. (Ekstern)
Pages: 1345-1356
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Beilstein Journal of Nanotechnology
Volume: 8
Issue number: 1
ISSN (Print): 2190-4286
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.86 SJR 1.065 SNIP 0.986
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.958 SNIP 0.952 CiteScore 3.05
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.162 SNIP 1.078 CiteScore 2.67
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.27 SNIP 1.069 CiteScore 2.56
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 1.04 SNIP 1.045 CiteScore 2.01
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 0.399 SNIP 0.469
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Web of Science (2010): Indexed yes
Original language: English
Molybdenum and Alloys, Nanotechnology, Chemical Products Generally, Mechanics, Graphene, Molybdenum disulfide, Phonon, Silicone, Two-dimensional materials, Continuum mechanics, Molybdenum, Sulfur compounds, Continuum Modeling, Density functionals, First-principles derivations, Lattice anisotropy, Optical phonon modes, Phonons
Electronic versions:
Beilstein_Willatzen_2017.pdf
DOIs:
10.3762/bjnano.8.136
Source: FindIt
Source-ID: 2372181509
Publication: Research - peer-review › Journal article – Annual report year: 2017

---

**3D Engineering PEG-Diacrylate hydrogels for mimicking human mechanical microenvironments**

**General information**

State: Published
Organisations: Department of Micro- and Nanotechnology, Polymer Microsystems for Cell Processing, Sophion Bioscience A/S
Authors: Christensen, R. K. (Intern), Wilson, S. (Ekstern), Skafte-Pedersen, P. (Ekstern), Larsen, N. B. (Intern)
Publication date: 2017

---
3D Engineering PEG-Diacrylate hydrogels for mimicking human mechanical microenvironments

**General information**

State: Published
Organisations: Department of Micro- and Nanotechnology, Polymer Microsystems for Cell Processing, Sophion Bioscience A/S
Authors: Christensen, R. K. (Intern), Larsen, N. B. (Intern), Wilson, S. (Ekstern), Skafte-Pedersen, P. (Ekstern)
Publication date: 2017
Event: Abstract from Italian-Nordic Polymer Future Workshop, Pisa, Italy.
Main Research Area: Technical/natural sciences
Electronic versions:

Abstract_Pisa2017_09_RieKChristensen_.pdf

Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

3D Finite Element Modelling of Drilling Process of Al2024-T3 Alloy with solid tooling and Experimental Validation

Drilling is an indispensable process for many manufacturing industries due to its importance for assembling components. This study presents a 3D finite element modelling (3D FEM) approach for drilling process of aluminium 2024-T3. The 3D model of drilling tools for two facet HSSCo and four facet HSS were generated including their geometries. The simulations were carried out for both drills under different cutting conditions. The numerically obtained thrust forces were compared against experimental results. The tool stress distribution, chip formation and temperature distribution in the chip area were determined numerically. The results confirm the ability and advantage of 3D FE modelling of the drilling process.

**General information**

State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering
Authors: Davoudinejad, A. (Intern), Tosello, G. (Intern)
Number of pages: 3
Publication date: 2017

**Host publication information**

Title of host publication: Proceedings of the 17th International Conference of the European Society for Precision Engineering and Nanotechnology
Publisher: The European Society for Precision Engineering and Nanotechnology
ISBN (Electronic): 978-0-9957751-0-7
Main Research Area: Technical/natural sciences
Conference: 17th euspen International Conference & Exhibition, Hannover, Germany, 29/05/2017 - 29/05/2017
Finite element modelling, Drilling, Force, Chip, Temperature distribution
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

3D Finite Element Modelling of Drilling Process of Al2024-T3 Alloy with solid tooling and Experimental Validation

Drilling is an indispensable process for many manufacturing industries due to the importance of the process for assembling components. This study presents a 3D finite element modeling (3D FEM) approach for drilling process of aluminum 2024-T3. The 3D model of tool for two facet HSSCo and four facet HSS were generated based on the details geometry. The simulations were carried out for both drills in different cutting conditions. The numerically obtained thrust forces were compared against experimental results. The tool stress distribution, chip formation and temperature distribution in the chip area were determined numerically. The results confirm the ability and advantage of 3D FE model of the drilling process.

**General information**

State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering
Authors: Davoudinejad, A. (Intern), Tosello, G. (Intern)
Number of pages: 1
Publication date: 2017
Event: Poster session presented at 17th euspen International Conference & Exhibition, Hannover, Germany.
Main Research Area: Technical/natural sciences
3d Finite Element Modelling of Non-Crimp Fabric Based Fibre Composite Based on X-Ray Ct Data

Due to the high number of fatigue load cycles during the life of a wind turbine blade, fatigue is one of the main design concerns. However, it is still not possible to realistically predict the fatigue life of the non-crimp fabric based fibre composites commonly used for the main load carrying parts of wind turbine blades. Existing modelling attempts generally consider the fibre bundle structure as a perfect pattern, however recent experimental X-ray CT studies [1,2] have shown that the local variations in the fibre bundle structure have a large influence on the observed fatigue damage initiation and progression in the material. In the current study, the real bundle structure inside a non-crimp fabric based fibre composite is extracted from 3D X-ray CT images and imported into ABAQUS for numerical modelling. The local stress concentrations when loaded in tension caused by the fibre bundle structure are examined and compared to experimental observations of the fatigue damage. In the current study the bundle structure is manually segmented, however the possibility of automatic segmentation in the future is also discussed. The study shows the potential of X-ray CT based modelling for increased understanding of the fatigue damage mechanisms, but also sets the stage for modelling across scales including the variations caused by manufacturing process.

General information
State: Published
Organisations: Department of Wind Energy, Composites and Materials Mechanics, Department of Applied Mathematics and Computer Science, Chalmers University of Technology
Authors: Jespersen, K. M. (Intern), Asp, L. (Ekstern), Mikkelsen, L. P. (Intern)
Number of pages: 1
Pages: 90
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 30th Nordic Seminar on Computational Mechanics (NSCM-30)
Editors: Høsberg, J., Pedersen, N.
BFI conference series: Nordic Seminar on Computational Mechanics (5010906)
Main Research Area: Technical/natural sciences
Conference: 30th Nordic Seminar on Computational Mechanics (NSCM-30), Copenhagen, 25/10/2017 - 25/10/2017
Non-crimp fabric based composite, X-ray CT based modelling, Finite element modelling, Fatigue damage

Electronic versions:
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2017

3D Finite Element Simulation of Micro End-Milling by Considering the Effect of Tool Run-Out

Understanding the micro milling phenomena involved in the process is critical and difficult through physical experiments. This study presents a 3D finite element modeling (3D FEM) approach for the micro end-milling process on Al6082-T6. The proposed model employs a Lagrangian explicit finite element formulation to perform coupled thermo-mechanical transient analyses. FE simulations were performed at different cutting conditions to obtain realistic numerical predictions of chip formation, temperature distribution, and cutting forces by considering the effect of tool run-out in the model. The radial run-out is a significant issue in micro milling processes and influences the cutting Stability due to chip load and force variations. The Johnson–Cook (JC) material constitutive model was applied and its constants were determined by an inverse method based on the experimental cutting forces acquired during the micro end-milling tests. The FE model prediction capability was validated by comparing the numerical model results with experimental tests. The maximum tool temperature was predicted in a different angular position of the cutter which is difficult or impossible to obtain in experiments. The predicted results of the model, involving the run-out influence, showed a good correlation with experimental chip formation and the signal shape of cutting forces.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Politecnico di Milano
Authors: Davoudinejad, A. (Intern), Tosello, G. (Intern), Parenti, P. (Ekstern), Annoni, M. (Ekstern)
Number of pages: 20
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Micromachines
Volume: 8
Issue number: 6
A double-curved diverging lens over a flat row–column-addressed (RCA) 2-D array can extend its inherent rectilinear 3-D imaging field-of-view (FOV) to a curvilinear volume region, which is necessary for applications such as abdominal and cardiac imaging. A concave lens with radius of 12.7 mm was manufactured using RTV664 silicone. The diverging properties of the lens were evaluated based on measurements on several phantoms. The measured 6 dB FOV in contact with a material similar to human soft tissue was less than 15% different from the theoretical predictions, i.e., a curvilinear FOV of $32^\circ \times 32^\circ$. A synthetic aperture imaging sequence with single element transmissions was designed for imaging down to 14 cm at a volume rate of 88 Hz. The performance was evaluated in terms of signal-to-noise ratio (SNR), FOV, and full-width-at-half-maximum (FWHM). The penetration depth in a tissue mimicking phantom with 0.5 dB/(cm MHz) attenuation was 13 cm. The results of this study confirm that the proposed lens approach is an effective method for increasing the FOV, when imaging with RCA 2-D arrays.

General information
State: Published
Organisations: Department of Electrical Engineering, Biomedical Engineering, Department of Micro- and Nanotechnology, MEMS-Applied Sensors, Center for Fast Ultrasound Imaging, Sound Technology, Inc., BK Ultrasound
Number of pages: 4
Publication date: 2017

Host publication information
Title of host publication: 2017 IEEE International Ultrasonics Symposium (IUS)
Publisher: IEEE
ISBN (Electronic): 978-1-5386-3383-0
Main Research Area: Technical/natural sciences
Conference: 2017 IEEE International Ultrasonics Symposium (IUS), Washington, United States, 06/09/2017 - 06/09/2017
Electronic versions:
Bouzari_et_al_IUS2017.pdf
DOIs:
10.1109/ULTSYM.2017.8092496
Source: PublicationPreSubmission
Source-ID: 134786565
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

3D printed barium titanate/poly-(vinylidene fluoride) nano-hybrid with anisotropic dielectric properties
Electrospun BaTiO$_3$ nanofibers (BTNFs) are synthesized and blended in a poly(vinylidene fluoride) (PVDF) matrix to obtain a flexible nano-hybrid composite with high dielectric constant (flexible high-$k$). The blending is performed with different BTNF contents (0.6, 4.5, 20 vol%). The rheological properties of the starting materials are optimized to shape the
hybrid by the precision-extrusion-based fuse deposition modeling technique. The 3D-printed BTNFs allow complex shapes with different degrees of fiber alignment as the result of printing shear stress and the chemical composition of the starting material. The dielectric properties of the nano-hybrid are controlled by anisotropy with an enhancement in the nanofiber cross direction (⊥), where the dielectric constant $k^\perp$ at 1 kHz is increased to ca. 200 from 13 of the PVDF matrix.

3D Printing of Bio-inspired surfaces
The ability of the gecko to scurry across smooth or rough surfaces, regardless of inclination (vertical or even upside down), has been traced to the multiscale hierarchical structures of the gecko toe [1 - 3]. Considering all the strategies to manufacture bio-inspired surfaces, the most common is polymer replica molding (REM) [4]. This project will further study the influence of pillar size, shape, aspect ratio, tilting angle and levels of hierarchies in terms of wettability and adhesion, using a cost effective rapid prototyping method with direct light processing (DLP). The aim of this project will be to seek the feasibility to rapid prototype gecko surface geometries. Furthermore, a micromanufacturing method is proposed using DLP and a mask.
3D protein-structure-oriented discovery of clinical relation across chronic lymphocytic leukemia patients

Chronic lymphocytic leukemia (CLL) is the most common adult leukemia with still unclear etiology. Indications of antigenic pressure have been hinted, using sequence and structure-based reasoning. The accuracy of such approaches, and in particular of the ones derived from 3D models obtained from the patient’s antibody amino acid sequences, is intimately connected to both the reliability of the models and the quality of the methods used to compare and group them. The proposed work provides a sophisticated method for the classification of CLL patients based on clustering the amino acid sequences of the clonotypic B-cell receptor immunoglobulin, which is the ideal clone-specific marker, critical for clonal behavior and patient outcome. A novel CLL patient clustering method is hereby proposed, combining bioinformatics methods with the extraction of 3D object descriptors, used in machine learning applications. The proposed methodology achieved an efficient and highly informative grouping of CLL patients in accordance to their biological and clinical properties.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Department of Bio and Health Informatics, Immunoinformatics and Machine Learning, Technical University of Denmark, Center For Research And Technology - Hellas, Carlsberg Research Laboratory
Authors: Mochament, K. (Ekstern), Agathangelidis, A. (Ekstern), Polychronidou, E. (Ekstern), Palaskas, C. (Ekstern), Kalamaras, E. (Ekstern), Moschonas, P. (Ekstern), Stamatopoulos, K. (Ekstern), Chailyan, A. (Ekstern), Overby, N. (Ekstern), Marcatili, P. (Intern), Hadzidimitriou, A. (Ekstern), Tzovaras, D. (Ekstern)
Pages: 139-150
Publication date: 2017
Conference: 5th International Work-Conference on Bioinformatics and Biomedical Engineering, IWBBIO 2017, Granada, Spain, April 26–28, 2017, Granada, Spain, 26/04/2017 - 26/04/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Lecture Notes in Computer Science
Volume: 10209
ISSN (Print): 0302-9743
Ratings:
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.67 SJR 0.315 SNIP 0.552
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.328 SNIP 0.618 CiteScore 0.37
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.325 SNIP 0.678 CiteScore 0.42
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.329 SNIP 0.699 CiteScore 0.49
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.323 SNIP 0.708 CiteScore 0.49
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.325 SNIP 0.721 CiteScore 0.49
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.314 SNIP 0.634
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.305 SNIP 0.548
3D thermal simulations and modeling of multi-finger InP DHBTs for millimeter-wave power amplifiers

This paper presents the comparison between the simulated and measured thermal resistance of InP Double Heterojunction Bipolar Transistors (DHBT). 3D thermal simulations were carried out in order to compute the temperature distribution across the full structure due to a constant power excitation of devices with up to 8 emitter fingers. The surface temperature profile was then used to compute the average thermal resistance of the multi-finger devices. The comparison with the corresponding results obtained by electrical measurements show a good agreement. The temperature profiles from several simulations are used to extract the thermal resistance matrix used in the electro-thermal coupling network of a compact large-signal model.

General information
State: Published
Organisations: Department of Electrical Engineering, Electromagnetic Systems, III-V Lab
Authors: Midili, V. (Intern), Nodjiadjim, V. (Ekstern), Johansen, T. K. (Intern), Riet, M. (Ekstern), Squartecchia, M. (Intern), Dupuy, J. (Ekstern), Konczykowska, A. (Ekstern)
Number of pages: 5
Pages: 1-5
Publication date: 2017

Host publication information
Title of host publication: Proceedings of Microwave and Optoelectronics Conference (IMOC), 2017 SBMO/IEEE MTT-S International
Publisher: IEEE
ISBN (Print): 978-1-5090-6242-3
ISBN (Electronic): 978-1-5090-6241-6
Main Research Area: Technical/natural sciences
Conference: 2017 SBMO/IEEE MTT-S International Microwave and Optoelectronics Conference (IMOC), Águas de Lindoia, Brazil, 27/08/2017 - 27/08/2017
InP DHBT, Multifinger, Thermal simulations, Compact large-signal model, Millimeter-Wave, Power amplifiers
DOIs:
10.1109/IMOC.2017.8121069
Source: FindIt
Source-ID: 2393853414
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

3R og dyrevelfærd på Veterinærinstituttet
4D Study of Grain Growth in Armco Iron Using Laboratory X-ray Diffraction Contrast Tomography: Paper

Using a novel laboratory diffraction contrast tomography (LabDCT) technique, a non-destructive 4D study was conducted to investigate the evolution in 3D of the grain structure during grain growth in an Armco iron sample. The 3D grain morphology and the crystallographic orientations of more than 300 grains were determined at three temporal states during annealing. The correlation between growth of grains and grain orientation is explored. The results demonstrate the capability of the LabDCT technique to allow detailed studies of grain growth, and thereby provide the necessary 4D experimental evidence required for further understanding of grain growth.
4-PAM Dispersion-Uncompensated Transmission with Micro-Ring Resonator Enhanced 1.55-µm DML

Real-time transmission of 14-GBd 4-PAM signal is demonstrated by combining a commercial 1.55-µm DML with a silicon MRR. BER below the HD-FEC threshold is measured after 26-km SSMF transmission without offline digital signal processing.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Acreo Swedish ICT AB, FOTON Laboratory, KTH - Royal Institute of Technology
Authors: Da Ros, F. (Intern), Cristofori, V. (Intern), Ozolins, O. (Ekstern), Chaibi, M. E. (Ekstern), Pang, X. (Ekstern), Jacobsen, G. (Ekstern), Popov, S. (Ekstern), Galili, M. (Intern), Oxenløwe, L. K. (Intern), Peucheret, C. (Ekstern)
Number of pages: 2
Publication date: 2017

Host publication information
Title of host publication: CLEO: Science and Innovations 2017
Publisher: Optical Society of America OSA
Article number: STu1M.5
Main Research Area: Technical/natural sciences
Conference: CLEO: Science and Innovations 2017, San Jose, United States, 14/05/2017 - 14/05/2017
DOIs: 10.1364/CLEO_SI.2017.STu1M.5

Bibliographical note
From the session: Optical Interconnect Systems (STu1M)
Source: PublicationPreSubmission
Source-ID: 133890349
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

4th NordicRAS Workshop on Recirculating Aquaculture Systems Aalborg, Denmark, 12-13 October 2017: Book of Abstracts

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Aquaculture
Authors: Dalsgaard, A. J. T. (ed.) (Intern)
Number of pages: 56
Publication date: 2017

Publication information
Publisher: National Institute of Aquatic Resources, Technical University of Denmark
ISBN (Print): 978-87-7481-241-8
62 years of population dynamics of European perch (Perca fluviatilis) in a mesotrophic lake tracked using angler diaries: The role of commercial fishing, predation and temperature

Standardised angler diaries could produce useful proxy data for assessing fish population density and size distribution, but few rigorous studies about their utility exist. We use 62 years of angling diary data (1949–2010), from a large mesotrophic lake, to investigate population structure (abundance, mean size and record size) of European perch (Perca fluviatilis L.) in relation to the impact of three commercial fishers with different fishing strategies, pike (Esox lucius L.) predation and temperature. We found that anglers’ harvest rates of perch varied by a factor of 10 over time, indicating large variation in population abundance over decadal time scales. Our statistical analysis revealed that the anglers’ harvest rates of perch were related to pike CPUE (proxy of pike predation), temperature and commercial fishing directly through the harvest of perch and indirectly through the harvest of pike, the top predator of the lake. The size distribution and growth rates of perch caught by anglers also changed substantially during the study period, most likely controlled by density-dependent mechanisms as well as size-selective commercial harvest. The effect of selective harvest on size-structure was stronger than ecological density dependence. We conclude that commercial harvesting may exert strong impacts on the quality of the angling experiences, at least in the studied case. Moreover, our work showcases the value of detailed angler diaries to study and monitor changes in freshwater fish populations, but it also underlines the need for supplementary data on biotic and abiotic factors to reach the full potential of angler diary data.
700 kg jern med de smukkeste krystaller


General information
State: Published
Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Pedersen, J. O. P. (Intern)
Number of pages: 1
Pages: 35
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Kvant
Volume: 28
Issue number: 1
ISSN (Print): 0905-8893
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
700 kilo jern

A 1D version of EllipSys
A one-dimensional version of EllipSys, labeled as EllipSys1D is presented. Three atmospheric boundary layer test cases are used to show that results of EllipSys1D are exactly the same or very similar as results of EllipSys3D, while EllipSys1D uses 3 to 4 orders of magnitude less CPU hours compared to EllipSys3D.

A 3D human co-culture microtissue model for nanoparticle effect and uptake studies at the placental barrier

A 3-D numerical model of the influence of meanders on groundwater discharge to a gaining stream in an unconfined sandy aquifer

Groundwater discharge to streams depends on stream morphology and groundwater flow direction, but are not always well understood. Here a 3-D groundwater flow model is employed to investigate the impact of meandering stream geometries on groundwater discharge to streams in an unconfined and homogenous sandy aquifer at the reach scale (10–200 m). The effect of meander geometry was examined by considering three scenarios with varying stream sinuosity. The interaction with regional groundwater flow was examined for each scenario by considering three groundwater flow directions. The sensitivity of stream morphology and flow direction to other parameters was quantified by varying the stream width, the meander amplitude, the magnitude of the hydraulic gradient, the hydraulic conductivity, and the aquifer thickness. Implications for a real stream were then investigated by simulating groundwater flow to a stream at a field site located in Grindsted, Denmark. The simulation of multiple scenarios was made possible by the employment of a computationally efficient coordinate transform numerical method. Comparison of the scenarios showed that the geometry of meanders greatly affect the spatial distribution of groundwater flow to streams. The shallow part of the aquifer discharges to the outward pointing meanders, while deeper groundwater flows beneath the stream and enters from the opposite side. The balance between these two types of flow depends on the aquifer thickness and meander geometry. Regional groundwater flow can combine with the effect of stream meanders and can either enhance or smooth the effect of a meander bend, depending on the regional flow direction. Results from the Grindsted site model showed that real meander geometries had similar effects to those observed for the simpler sinuous streams, and showed that despite large temporal variations in stream discharge, the spatial pattern of flow is almost constant in time for a gaining stream.

General information
State: Published
Organisations: Department of Environmental Engineering, Water Resources Engineering, Office for Study Programmes and Student Affairs, Technical University of Denmark, University of Bergen
Authors: Balbarini, N. (Intern), Boon, W. M. (Ekstern), Nicolajsen, E. (Ekstern), Nordbotten, J. M. (Ekstern), Bjerg, P. L. (Intern), Binning, P. J. (Intern)
Number of pages: 14
Pages: 168-181
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Hydrology
Volume: 552
ISSN (Print): 0022-1694
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.89 SJR 1.745 SNIP 1.759
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.708 SNIP 1.771 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.679 SNIP 2.005 CiteScore 3.45
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.71 SNIP 1.997 CiteScore 3.36
ISI indexed (2013): ISI indexed yes
A 60-year record of $^{129}$I in Taal Lake sediments (Philippines): Influence of human nuclear activities at low latitude region

The influence of human nuclear activities on environmental radioactivity is not well known at low latitude region that are distant from nuclear test sites and nuclear facilities. A sediment core collected from Taal Lake in the central Philippines was analyzed for $^{129}$I and $^{127}$I to investigate this influence in a low-latitude terrestrial system. A baseline of $^{129}$I/$^{127}$I atomic ratios was established at $(2.04-5.14) \times 10^{-12}$ in the pre-nuclear era in this region. Controlled by the northeasterly equatorial trade winds, increased $^{129}$I/$^{127}$I ratios of $(20.1-69.3) \times 10^{-12}$ suggest that atmospheric nuclear weapons tests at the Pacific Proving Grounds in the central Pacific Ocean was the major source of $^{129}$I in the sediment during 1956–1962. The $^{129}$I/$^{127}$I ratios, up to $157.5 \times 10^{-12}$ after 1964, indicate a strong influence by European nuclear fuel reprocessing plants. The East Asian Winter Monsoon is found to be the dominant driving force in the atmospheric dispersion of radioactive iodine ($^{129}$I) from the European nuclear fuel reprocessing plants to Southeast Asia, which is also important for dispersion of other airborne pollutants from the middle-high, to low latitude regions. A significant $^{129}$I/$^{127}$I peak at 42.8 cm in the Taal Lake core appears to be the signal of the Chernobyl accident in 1986. In addition, volcanic activities are reflected in the iodine isotope profiles in the sediment core, suggesting the potential of using iodine isotopes as an indicator of volcanic eruptions.
Abaqus2Matlab: A suitable tool for finite element post-processing

A suitable piece of software is presented to connect Abaqus, a sophisticated finite element package, with Matlab, the most comprehensive program for mathematical analysis. This interface between these well-known codes not only benefits from the image processing and the integrated graph-plotting features of Matlab but also opens up new opportunities in results post-processing, statistical analysis and mathematical optimization, among many other possibilities. The software architecture and usage are appropriately described and two problems of particular engineering significance are addressed to demonstrate its capabilities. Firstly, the software is employed to assess cleavage fracture through a novel 3-parameter Weibull probabilistic framework. Then, its potential to create and train neural networks is used to identify damage parameters through a hybrid experimental-numerical scheme, and model crack propagation in structural materials by means of a cohesive zone approach. The source code, detailed documentation and a large number of tutorials can be freely downloaded from www.abaqus2matlab.com.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, National Technical University of Athens, Universidad de Oviedo
Authors: Papazafeiropoulos, G. (Ekstern), Muñiz-Calvente, M. (Ekstern), Martínez Pañeda, E. (Intern)
Pages: 9-16
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Advances in Engineering Software
Volume: 105
ISSN (Print): 0965-9978
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.901 SNIP 1.95 CiteScore 3.26
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.771 SNIP 1.936 CiteScore 2.54
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.759 SNIP 1.858 CiteScore 2.13
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.818 SNIP 2.025 CiteScore 2.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.757 SNIP 2.074 CiteScore 1.92
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.745 SNIP 1.872 CiteScore 1.82
A Bayesian Additive Model for Understanding Public Transport Usage in Special Events

Public special events, like sports games, concerts and festivals are well known to create disruptions in transportation systems, often catching the operators by surprise. Although these are usually planned well in advance, their impact is difficult to predict, even when organisers and transportation operators coordinate. The problem highly increases when several events happen concurrently. To solve these problems, costly processes, heavily reliant on manual search and personal experience, are usual practice in large cities like Singapore, London or Tokyo. This paper presents a Bayesian additive model with Gaussian process components that combines smart card records from public transport with context information about events that is continuously mined from the Web. We develop an efficient approximate inference algorithm using expectation propagation, which allows us to predict the total number of public transportation trips to the special event areas, thereby contributing to a more adaptive transportation system. Furthermore, for multiple concurrent event scenarios, the proposed algorithm is able to disaggregate gross trip counts into their most likely components related to specific events and routine behavior. Using real data from Singapore, we show that the presented model outperforms the best baseline model by up to 26 percent in R-2 and also has explanatory power for its individual components.

General information
State: Published
Organisations: Department of Management Engineering, Transport DTU, Transport Modelling, Singapore-MIT Alliance for Research and Technology, University of Coimbra
Authors: Rodrigues, F. (Intern), Borysov, S. S. (Ekstern), Ribeiro, B. (Ekstern), Pereira, F. C. (Intern)
Pages: 2113-2126
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Transactions on Pattern Analysis and Machine Intelligence
Volume: 39
Issue number: 11
ISSN (Print): 0162-8828
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 13.59 SJR 6.298 SNIP 6.317
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 5.357 SNIP 7.658 CiteScore 12.66
A Bayesian inference approach to unveil supply curves in electricity markets

With increased competition in wholesale electricity markets, the need for new decision-making tools for strategic producers has arisen. Optimal bidding strategies have traditionally been modeled as stochastic profit maximization problems. However, for producers with non-negligible market power, modeling the interactions with rival participants is fundamental. This can be achieved through equilibrium and hierarchical optimization models. The efficiency of these methods relies on the strategic producer's ability to model rival participants' behavior and supply curve. But a substantial gap remains in the literature on modeling this uncertainty. In this study we introduce a Bayesian inference approach to reveal the aggregate supply curve in a day-ahead electricity market. The proposed algorithm relies on Markov Chain Monte Carlo and Sequential Monte Carlo methods. The major appeal of this approach is that it provides a complete model of the uncertainty of the aggregate supply curve, through an estimate of its posterior distribution. We show on a small case study that we are able to reveal accurately the aggregate supply curve with no prior information on rival participants. Finally we show how this piece of information can be used by a price-maker producer in order to devise an optimal bidding strategy.
A bayesian inference-based detection mechanism to defend medical smartphone networks against insider attacks

With the increasing digitization of the healthcare industry, a wide range of devices (including traditionally non-networked medical devices) are Internet- and inter-connected. Mobile devices (e.g. smartphones) are one common device used in the healthcare industry to improve the quality of service and experience for both patients and healthcare workers, and the underlying network architecture to support such devices is also referred to as medical smartphone networks (MSNs). MSNs, similar to other networks, are subject to a wide range of attacks (e.g. leakage of sensitive patient information by a malicious insider). In this work, we focus on MSNs and present a compact but efficient trust-based approach using Bayesian inference to identify malicious nodes in such an environment. We then demonstrate the effectiveness of our approach in detecting malicious nodes by evaluating the deployment of our proposed approach in a real-world environment with two healthcare organizations.
A Bilevel Model for Participation of a Storage System in Energy and Reserve Markets

We develop a decision-making tool based on a bilevel complementarity model for a merchant price-maker energy storage system to determine the most beneficial trading actions in pool-based markets, including day-ahead (as joint energy and reserve markets) and balancing settlements. The uncertainty of net load deviation in real-time is incorporated into the model using a set of scenarios generated from the available forecast in the day-ahead. The objective of this energy storage system is to maximize its expected profit. The day-ahead products of energy storage system include energy as well as reserve commitment (as one of the ancillary services), whereas its balancing product is the energy deployed from the committed reserve. The proposed model captures the interactions of different markets and their impacts on the functioning of the storage system. It also provides an insight for storage system into clearing process of multiple markets and enables such a facility to possibly affect the outcomes of those markets to its own benefit through strategic price and quantity offers. The validity of the proposed approach is evaluated using a numerical study.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electricity markets and energy analytics, University of Calgary
Authors: Nasrolahpour, E. (Ekstern), Kazempour, J. (Intern), Zareipour, H. (Ekstern), Rosehart, W. D. (Ekstern)
Number of pages: 16
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Transactions on Sustainable Energy
ISSN (Print): 1949-3029
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 7.8 SJR 2.636 SNIP 2.883
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 3.031 SNIP 3.235 CiteScore 7.09
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.972 SNIP 3.954 CiteScore 7.03
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.384 SNIP 3.777 CiteScore 7.03
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 1.355 SNIP 3.731 CiteScore 6.58
ISI indexed (2012): ISI indexed no
Scopus rating (2011): SJR 0.818 SNIP 3.133 CiteScore 5.13
ISI indexed (2011): ISI indexed no
Original language: English
Energy storage system, Energy, Reserve, Balancing market, Strategic bidding
Electronic versions:
Ab Initio Assessment of the Bonding in Disulfonates Containing Divalent Nitrogen and Phosphorus Atoms

The iminodisulfonate, \([\text{N(SO}_3\text{)}_2]^{3-}\), and phosphinodisulfonate, \([\text{P(SO}_3\text{)}_2]^{3-}\), ions have been investigated by performing ab initio MP2/6-311+G** calculations. The nitrogen and phosphorus atoms as part of the ions are shown to be divalent with a negative charge and two lone pairs on the nitrogen and phosphorus atoms. The experimentally known calcium sodium iminodisulfonate trihydrate and the analogous unknown compound calcium sodium phosphinodisulfonate trihydrate have also been investigated using the MP2/6-311+G** calculations. For the nitrogen compound, only minor changes occur in the iminodisulfonate ion when it becomes part of the calcium sodium iminodisulfonate trihydrate. For the phosphorus compound, the geometry of the phosphinodisulfonate ion changes significantly as part of calcium sodium phosphinodisulfonate trihydrate. Furthermore, the charges associated with the atoms in calcium sodium phosphinodisulfonate trihydrate are quite different from those of the phosphinodisulfonate ion. For calcium sodium iminodisulfonate trihydrate, the Raman spectrum has been measured, and it compares well with the spectrum derived using HF/6-31+G** calculations.

Abortion and mortality in farm mink (Neovison vison) associated with feed-born Clostridium limosum

Disease in mink clinically characterized by abortion and increased mortality among pregnant female mink on 28 Danish farms was observed during April and May 2015. Most of these farms suffered extensive disease problems, including a significant increase in the number of mated females without litters. Pathological, microbiological and molecular biological methods were applied to investigate the cause of disease. Necropsies of animals found dead revealed fragile and partially dissolved (liquefying) uterine tissue, with the presence of Gram positive rod-shaped bacteria. These slow growing bacteria were isolated by anaerobic culturing and identified as Clostridium limosum by both MALDI-TOF mass spectrometry analysis and 16S rRNA gene sequencing. All the performed tests for relevant differential diagnoses were negative. Foodborne disease was indicated because all the affected farms were served by the same feed factory. A specific PCR-based analysis was developed for positive identification of C. limosum and used to screen archived feed samples from the implicated feed factory. Both C. limosum 16S rRNA genes and C. limosum collagenase genes were identified in both mixed feed and more specifically in raw chicken carcass used as one of the components in the mixed feed, which was
therefore identified as the most likely source of contamination. Based on the results of this investigation it is concluded that C. limosum can be associated with abortion and increased mortality in pregnant mink females and it is consequently recommended that raw materials contaminated with C. limosum should be avoided in mink feed, in particular during the whelping season.

**General information**

**State:** Published  
**Organisations:** National Food Institute, Research Group for Gut Microbiology and Immunology, University of Copenhagen, Copenhagen Consulting, Bindslev Animal Hospital  
**Authors:** Hammer, A. S. (Ekstern), Andresen, L. (Ekstern), Aalbaek, B. (Ekstern), Damborg, P. (Ekstern), Weiss, V. (Ekstern), Christiansen, M. L. (Ekstern), Selsing, S. (Ekstern), Bahl, M. I. (Intern)  
**Number of pages:** 5  
**Pages:** 229-233  
**Publication date:** 2017  
**Main Research Area:** Technical/natural sciences

**Publication information**

**Journal:** Veterinary Microbiology  
**Volume:** 203  
**ISSN (Print):** 0378-1135  
**Ratings:**  
BFI (2017): BFI-level 2  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 2  
Scopus rating (2016): CiteScore 2.65 SJR 1.326 SNIP 1.208  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 2  
Scopus rating (2015): SJR 1.393 SNIP 1.21 CiteScore 2.56  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 2  
Scopus rating (2014): SJR 1.281 SNIP 1.262 CiteScore 2.54  
Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 2  
Scopus rating (2013): SJR 1.438 SNIP 1.484 CiteScore 3  
ISI indexed (2013): ISI indexed yes  
Web of Science (2013): Indexed yes  
BFI (2012): BFI-level 2  
Scopus rating (2012): SJR 1.437 SNIP 1.579 CiteScore 3.18  
ISI indexed (2012): ISI indexed yes  
Web of Science (2012): Indexed yes  
BFI (2011): BFI-level 2  
Scopus rating (2011): SJR 1.562 SNIP 1.738 CiteScore 3.27  
ISI indexed (2011): ISI indexed yes  
Web of Science (2011): Indexed yes  
BFI (2010): BFI-level 2  
Scopus rating (2010): SJR 1.371 SNIP 1.476  
Web of Science (2010): Indexed yes  
BFI (2009): BFI-level 2  
Scopus rating (2009): SJR 1.29 SNIP 1.472  
Web of Science (2009): Indexed yes  
BFI (2008): BFI-level 2  
Scopus rating (2008): SJR 1.169 SNIP 1.3  
Web of Science (2008): Indexed yes  
Scopus rating (2007): SJR 1.043 SNIP 1.322  
Web of Science (2007): Indexed yes  
Scopus rating (2006): SJR 1.022 SNIP 1.401  
Web of Science (2006): Indexed yes
To reach the UN sustainable development goal, there is a need for comprehensive and robust tools to help decision-making identify the solutions that best support sustainable development. The decisions must have a system perspective, consider the life cycle, and all relevant impacts caused by the solution. Life Cycle Assessment (LCA) is a tool that has these characteristics and the ambition with this book is to offer a comprehensive and up-to-date introduction to the tool and its underlying methodological considerations and potential applications. The book consists of five parts. The first part introduces LCA. The second part is a textbook aiming at university students from undergraduate to PhD level, and professionals from industry and within policy making. It follows ISO 14040/14044 structure, draws upon a variety of LCA methods published over the years, especially the ILCD, and offers prescriptions and recommendations for all the most important methodological choices that you meet when performing an LCA. The third part introduces applications of LCA and life cycle thinking by policy- and decision-makers in government and industry. The fourth part is a Cookbook guiding you through the concrete actions to undertake when performing an LCA. The fifth part contains some appendices. The book can be used as a textbook, the chapter can be read as stand alone, and you can use the Cookbook as a manual on how to perform an LCA.

A Branch-and-Price algorithm for railway rolling stock rescheduling
How to best reschedule their fleet of rolling stock units during a disruption is an optimization problem regularly faced by railway operators. Despite the problem’s high complexity, it is still usually solved manually. In this paper we propose a path based mathematical formulation and solve it using a Branch-and-Price algorithm. We demonstrate that, unlike flow based approaches, our formulation is more easily extended to handle certain families of constraints, such as train unit
maintenance restrictions. The proposed algorithm is benchmarked on several real-life instances provided by the suburban railway operator in Copenhagen, DSB S-tog. When used in combination with a lower bound method taken from the literature we show that near-optimal solutions to this rescheduling problem can be found within a few seconds. Furthermore, we show that the proposed methodology can be used, with minor modification, on a tactical planning level, where it produces near-optimal rolling stock schedules in minutes of CPU time.

**General information**

State: Published
Organisations: Department of Management Engineering, Management Science, Operations Research, Transport DTU, Optimation
Authors: Lusby, R. M. (Intern), Haahr, J. T. (Ekstern), Larsen, J. (Intern), Pisinger, D. (Intern)
Pages: 228-250
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Transportation Research. Part B: Methodological
Volume: 99
ISSN (Print): 0191-2615
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.57 SJR 2.742 SNIP 2.433
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.027 SNIP 2.85 CiteScore 5.15
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.007 SNIP 3.022 CiteScore 4.21
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.203 SNIP 3.487 CiteScore 4.64
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.226 SNIP 3.162 CiteScore 3.3
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.804 SNIP 3.552 CiteScore 3.82
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.989 SNIP 2.903
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.39 SNIP 2.832
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.363 SNIP 3.098
Scopus rating (2007): SJR 2.207 SNIP 3.11
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.257 SNIP 3.212
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.9 SNIP 2.858
Scopus rating (2004): SJR 2.242 SNIP 2.271
Scopus rating (2003): SJR 1.597 SNIP 2.078
A Branch-and-Price Approach to the Feeder Network Design Problem

In this paper we consider the problem of designing a container liner shipping feeder network. The designer has to choose which port to serve during many rotations that start and end at a central hub. Many operational characteristics are considered, such as variable leg-by-leg speeds and cargo transit times. Realistic instances are generated from the LinerLib benchmark suite. The problem is solved with a branch-and-price algorithm, which can solve most instances to optimality within one hour. The results also provide insights on the cost structure and desirable features of optimal routes. These insights were obtained by means of an analysis where scenarios are generated varying internal and external conditions, such as fuel costs and port demands.

General information
State: Published
Organisations: Department of Management Engineering, Management Science, Operations Research, Transport DTU, RWTH Aachen University, Maersk Line
Authors: Santini, A. (Ekstern), Plum, C. E. M. (Ekstern), Røpke, S. (Intern)
Pages: 607–622
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: European Journal of Operational Research
Volume: 264
ISSN (Print): 0377-2217
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.83 SJR 2.505 SNIP 2.339
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.334 SNIP 2.412 CiteScore 3.59
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.186 SNIP 2.485 CiteScore 3.21
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.346 SNIP 2.735 CiteScore 3.25
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.418 SNIP 2.588 CiteScore 3.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.401 SNIP 2.441 CiteScore 3.02
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
A brief comparison of Simon and Simeck

SIMECK is a new lightweight block cipher design based on combining the design principles of the SIMON and Speck block cipher. While the design allows a smaller and more efficient hardware implementation, its security margins are not well understood. The lack of design rationals of its predecessors further leaves some uncertainty on the security of SIMECK. In this work we give a short analysis of the impact of the design changes by comparing the upper bounds on the probability of differential and linear trails with SIMON. We also give a comparison of the effort of finding those bounds, which surprisingly is significantly lower for SIMECK while covering a larger number of rounds at the same time. Furthermore, we provide new differentials for SIMECK which can cover more rounds compared to previous results on SIMON and study how to choose good differentials for attacks and show that one can find better differentials by building them from a larger set of trail with initially lower probability. We also provide experimental results for the differentials for SIMON32 and SIMECK32 which show that there exist keys for which the probability of the differential is significantly higher than expected. Based on this we mount key recovery attacks on 19/26/33 rounds of SIMECK32/48/64, which also give insights on the reduced key guessing effort due to the different set of rotation constants.
A broad range quorum sensing inhibitor working through sRNA inhibition

For the last decade, chemical control of bacterial virulence has received considerable attention. Ajoene, a sulfur-rich molecule from garlic has been shown to reduce expression of key quorum sensing regulated virulence factors in the opportunistic pathogen *Pseudomonas aeruginosa*. Here we show that the repressing effect of ajoene on quorum sensing occurs by inhibition of small regulatory RNAs (sRNA) in *P. aeruginosa* as well as in *Staphylococcus aureus*, another important human pathogen that employs quorum sensing to control virulence gene expression. Using various reporter constructs, we found that ajoene lowered expression of the sRNAs RsmY and RsmZ in *P. aeruginosa* and the small dual-function regulatory RNA, RNAIII in *S. aureus*, that controls expression of key virulence factors. We confirmed the modulation of RNAIII by RNA sequencing and found that the expression of many QS regulated genes encoding virulence factors such as hemolysins and proteases were lowered in the presence of ajoene in *S. aureus*. Importantly, our findings show that sRNAs across bacterial species potentially may qualify as targets of anti-virulence therapy and that ajoene...
could be a lead structure in search of broad-spectrum compounds transcending the Gram negative-positive borderline.

**General information**

**State:** Published

**Organisations:** Department of Chemistry, Organic Chemistry, University of Copenhagen, Imperial College London, Statens Serum Institut

**Authors:** Jakobsen, T. H. (Ekstern), Warming, A. N. (Ekstern), Vejborg, R. M. (Ekstern), Moscoso, J. A. (Ekstern), Stegger, M. (Ekstern), Lorenzen, F. (Ekstern), Rybtke, M. T. (Ekstern), Andersen, J. B. (Ekstern), Petersen, R. (Intern), Andersen, P. S. (Ekstern), Nielsen, T. E. (Intern), Tolker-Nielsen, T. (Ekstern), Filloux, A. (Ekstern), Ingmer, H. (Ekstern), Givskov, M. (Ekstern)

**Pages:** 9857

**Publication date:** 2017

**Main Research Area:** Technical/natural sciences

**Publication information**

**Journal:** Scientific Reports

**Volume:** 7

**Issue number:** 1

**ISSN (Print):** 2045-2322

**Ratings:**

- BFI (2017): BFI-level 1
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 4.63 SJR 1.625 SNIP 1.401
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): SJR 2.057 SNIP 1.684 CiteScore 5.3
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 1
- Scopus rating (2014): SJR 2.103 SNIP 1.544 CiteScore 4.75
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 1.886 SNIP 1.51 CiteScore 4.06
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): SJR 1.458 SNIP 0.896 CiteScore 2.44
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- ISI indexed (2011): ISI indexed no

**Original language:** English

**Microbiology, Pathogenesis**

**Electronic versions:**

s41598_017_09886_8.pdf

**DOIs:**

10.1038/s41598-017-09886-8

**Bibliographical note**

This article is licensed under a Creative Commons Attribution 4.0 International.

Source: Findit

Source-ID: 2373327309

Publication: Research - peer-review > Journal article – Annual report year: 2017

**A brute-force spectral approach for wave estimation using measured vessel responses**

The article introduces a spectral procedure for sea state estimation based on measurements of motion responses of a ship in a short-crested seaway. The procedure relies fundamentally on the wave buoy analogy, but the wave spectrum estimate is obtained in a direct - brute-force - approach, and the procedure is simple in its mathematical formulation. The actual formulation is extending another recent work by including vessel advance speed and short-crested seas. Due to its simplicity, the procedure is computationally efficient, providing wave spectrum estimates in the order of a few seconds, and the estimation procedure will therefore be appealing to applications related to real-time, onboard control and decision support systems for safe and efficient marine operations. The procedure's performance is evaluated by use of numerical
simulation of motion measurements, and it is shown that accurate wave spectrum estimates can be obtained for all wave directions in short-crested waves, taking the wave system to be composed by both wind generated sea and swell.

**General information**
State: Submitted
Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, Norwegian University of Science and Technology
Authors: Nielsen, U. D. (Intern), H. Brodtkorb, A. (Ekstern), J. Sørensen, A. (Ekstern)
Number of pages: 37
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Marine Structures
ISSN (Print): 0951-8339
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.49 SJR 1.655 SNIP 2.636
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.618 SNIP 2.602 CiteScore 2.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.431 SNIP 3.026 CiteScore 2.18
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.314 SNIP 2.871 CiteScore 2.42
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.836 SNIP 3.464 CiteScore 1.76
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.611 SNIP 2.795 CiteScore 1.82
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.136 SNIP 2.518
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.165 SNIP 2.795
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.821 SNIP 2.891
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.185 SNIP 1.652
Scopus rating (2006): SJR 1.404 SNIP 1.983
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.646 SNIP 1.796
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.814 SNIP 1.364
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.561 SNIP 0.847
Web of Science (2003): Indexed yes
Absolute Quantification of Protein and mRNA Abundances Demonstrate Variability in Gene-Specific Translation Efficiency in Yeast

Protein synthesis is the most energy-consuming process in a proliferating cell, and understanding what controls protein abundances represents a key question in biology and biotechnology. We quantified absolute abundances of 5,354 mRNAs and 2,198 proteins in Saccharomyces cerevisiae under ten environmental conditions and protein turnover for 1,384 proteins under a reference condition. The overall correlation between mRNA and protein abundances across all conditions was low (0.46), but for differentially expressed proteins (n = 202), the median mRNA-protein correlation was 0.88. We used these data to model translation efficiencies and found that they vary more than 400-fold between genes. Non-linear regression analysis detected that mRNA abundance and translation elongation were the dominant factors controlling protein synthesis, explaining 61% and 15% of its variance. Metabolic flux balance analysis further showed that only mitochondrial fluxes were positively associated with changes at the transcript level. The present dataset represents a crucial expansion to the current resources for future studies on yeast physiology.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Yeast Cell Factories, Chalmers University of Technology, University of Tartu
Authors: Lahtvee, P. (Ekstern), Sanchez, B. J. (Ekstern), Smialowska, A. (Ekstern), Kasvandik, S. (Ekstern), Eiseleman, I. (Intern), Gatto, F. (Ekstern), Nielsen, J. (Intern)
Pages: 495-504
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Cell Systems
Volume: 4
Issue number: 5
ISSN (Print): 2405-4712
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 4.31
Original language: English
DOIs:
10.1016/j.cels.2017.03.003
Source: PublicationPreSubmission
Source-ID: 130946802
Publication: Research - peer-review › Journal article – Annual report year: 2017

Absorbed dose, equivalent dose, measured dose rates, and implications for OSL age estimates: Introducing the Average Dose Model

Luminescence ages are calculated by dividing an absorbed dose by the dose rate to which the natural dosimeter has been exposed. In practice, one measures an equivalent dose, De; in the absence of an alpha dose contribution, this should be indistinguishable from the dose absorbed in nature. Here we first review the relationship between absorbed dose, equivalent dose and dose rate, and the measurements that lead to their estimation; we restate that, in contrast to recent suggestions, an equivalent dose is not a physically different quantity from a beta or gamma dose absorbed by quartz grains. Statistical analysis of OSL data is of great importance when dealing with single grain data, since such data commonly exhibit significant scatter. However, dose rate measurements provide an arithmetic mean of dose rates absorbed by individual grains; in this article, we propose a new model to estimate the average dose absorbed by the grains. We thus introduce a new model for OSL age estimates: the Average Dose Model (ADM). We argue that ADM ages should be more accurate than Central Age Model (CAM) based ages, and we provide experimental evidence supporting this expectation. We also argue that the use of the Finite Mixture Model should be avoided. Finally, we discuss the implications for multi-grain age estimates derived from well-bleached samples.
Absorption enhancement in graphene with an efficient resonator

Graphene can be utilized in designing tunable terahertz (THz) devices due to its tunability of sheet conductivity, suffering however with weak light-graphene interactions. In this paper, an absorption enhancement in graphene using a Fabry–Perot resonator is presented, and its performance has been numerically investigated using finite element method. The Fabry–Perot resonator consists of a continuous layer of graphene film sandwiched between the polymethyl
methacrylate and silicon layers on an Au substrate which is covered by periodic gold ribbons. Numerical results show that the absorption performance is significantly enhanced by use of the Fabry–Perot resonator and a narrow band perfect absorption is achieved in THz regime. The influence of structural parameters on the absorption performance is further analyzed, and the absorption peak frequency can be flexibly controlled by adjusting the chemical potential of graphene which could be conveniently achieved by applying a bias voltage. The proposed structure here has a promising potential for developing advanced THz optics-electronics devices.

**General information**

State: Published
Organisations: Department of Photonics Engineering, Structured Electromagnetic Materials, China Jiliang University
Authors: Xiao, B. (Ekstern), Gu, M. (Ekstern), Qin, K. (Ekstern), Xiao, S. (Intern)
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Optical and Quantum Electronics
Volume: 49
Issue number: 5
Article number: 177
ISSN (Print): 0306-8919
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.02 SJR 0.321 SNIP 0.629
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.392 SNIP 0.668 CiteScore 1.05
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.373 SNIP 0.591 CiteScore 0.98
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.547 SNIP 0.861 CiteScore 1.29
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.473 SNIP 0.787 CiteScore 0.95
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.463 SNIP 0.617 CiteScore 0.77
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.439 SNIP 0.517
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.688 SNIP 0.645
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.562 SNIP 0.646
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.66 SNIP 0.654
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.558 SNIP 0.549
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.754 SNIP 0.695
Web of Science (2005): Indexed yes
Acanthoecid choanoflagellates from the Atlantic Arctic Region - a baseline study

The examination and statistical analysis of loricate choanoflagellate material collected from Greenland waters during the period 1988-1998 represents a de facto baseline study of heterotrophic nanoflagellates from the Atlantic Arctic Region. The geographic sites sampled are Disko Bay (West Greenland) and the high-arctic North-East Water (NEW) and North Water (NOW) polynya. The analyses encompass close to 50 taxa. Some of these are described as new species, i.e. Acanthocorbis glacialis, A. reticulata and Diaphanoeca dilatanda. Two distinct clusters of species that are separated in time and space occur at all three sampling sites. A PCA analysis of NEW and NOW data points to that one community is linked to e.g. an early season high nutrient and low phytoplankton biomass scenario, whereas the other is predominant when nutrient levels are exhausted and the phytoplankton biomass high or declining. The material additionally allows for a comprehensive examination of e.g. the Cosmoeca ventricosa morphological variability encountered, as well as puts on record bimodal size variability within a number of species.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic
Authors: Thomsen, H. A. (Intern), Østergaard, J. B. (Ekstern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Heliyon
Volume: 3
Issue number: 7
Article number: e00345
ISSN (Print): 2405-8440
Ratings:
Scopus rating (2016): CiteScore 0.55 SJR 0.173 SNIP 0.423
Original language: English
 Ecology, Microbiology
Electronic versions:
Publishers version
DOIs:
10.1016/j.heliyon.2017.e00345
Source: FindIt
Source-ID: 2372954961
Publication: Research - peer-review › Journal article – Annual report year: 2017

A Cas9-based toolkit to program gene expression in Saccharomyces cerevisiae

Despite the extensive use of Saccharomyces cerevisiae as a platform for synthetic biology, strain engineering remains slow and laborious. Here, we employ CRISPR/Cas9 technology to build a cloning-free toolkit that addresses commonly encountered obstacles in metabolic engineering, including chromosomal integration locus and promoter selection, as well as protein localization and solubility. The toolkit includes 23 Cas9-sgRNA plasmids, 37 promoters of various strengths and temporal expression profiles, and 10 protein-localization, degradation and solubility tags. We facilitated the use of these parts via a web-based tool, that automates the generation of DNA fragments for integration. Our system builds upon existing gene editing methods in the thoroughness with which the parts are standardized and characterized, the types and number of parts available and the ease with which our methodology can be used to perform genetic edits in yeast. We
demonstrated the applicability of this toolkit by optimizing the expression of a challenging but industrially important enzyme, taxadiene synthase (TXS). This approach enabled us to diagnose an issue with TXS solubility, the resolution of which yielded a 25-fold improvement in taxadiene production.

**General information**

**State:** Published  
**Organisations:** Novo Nordisk Foundation Center for Biosustainability, Synthetic Biology Tools for Yeast, Joint Bioenergy Institute, University of California at Berkeley  
**Authors:** Apel, A. R. (Ekstern), d'Espaux, L. (Ekstern), Wehrs, M. (Ekstern), Sachs, D. (Ekstern), Li, R. A. (Ekstern), Tong, G. J. (Ekstern), Garber, M. (Ekstern), Nnadi, O. (Ekstern), Zhuang, W. (Ekstern), Hillson, N. J. (Ekstern), Keasling, J. D. (Intern), Mukhopadhyay, A. (Ekstern)  
**Pages:** 496-508  
**Publication date:** 2017  
**Main Research Area:** Technical/natural sciences

**Publication information**

**Journal:** Nucleic Acids Research  
**Volume:** 45  
**Issue number:** 1  
**ISSN (Print):** 0305-1048  
**Ratings:**  
BFI (2017): BFI-level 2  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 2  
Scopus rating (2016): CiteScore 9.28 SJR 7.397 SNIP 2.657  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 2  
Scopus rating (2015): SJR 7.239 SNIP 2.639 CiteScore 9.48  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 2  
Scopus rating (2014): SJR 6.576 SNIP 2.568 CiteScore 8.74  
Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 2  
Scopus rating (2013): SJR 6.582 SNIP 2.266 CiteScore 8.46  
ISI indexed (2013): ISI indexed yes  
Web of Science (2013): Indexed yes  
BFI (2012): BFI-level 2  
Scopus rating (2012): SJR 6.13 SNIP 2.392 CiteScore 8.62  
ISI indexed (2012): ISI indexed yes  
Web of Science (2012): Indexed yes  
BFI (2011): BFI-level 2  
Scopus rating (2011): SJR 5.758 SNIP 2.172 CiteScore 7.86  
ISI indexed (2011): ISI indexed yes  
Web of Science (2011): Indexed yes  
BFI (2010): BFI-level 2  
Scopus rating (2010): SJR 5.24 SNIP 2.034  
Web of Science (2010): Indexed yes  
BFI (2009): BFI-level 2  
Scopus rating (2009): SJR 5.571 SNIP 1.869  
BFI (2008): BFI-level 2  
Scopus rating (2008): SJR 4.641 SNIP 1.557  
Web of Science (2008): Indexed yes  
Scopus rating (2007): Indexed yes  
Web of Science (2007): Indexed yes  
Scopus rating (2006): SJR 4.55 SNIP 2.04  
Web of Science (2006): Indexed yes  
Scopus rating (2005): SJR 4.992 SNIP 2.152
A case study of life cycle impacts of small-scale fishing techniques in Thailand

Fish provides an important source of protein, especially in developing countries, and the amounts of fish consumed are increasing worldwide (mostly from aquaculture). More than half of all marine fish are caught by small-scale fishery operations. However, no life cycle assessment (LCA) of small-scale fisheries and no LCA of marine fishery operations in Asia (Thailand) exists today. We perform LCAs to compare the impacts of three different fishing techniques: crab gill-nets, squid traps, and fish traps. Primary data sourced from four different fishers were used. We distinguished the life cycle inventories for three different seasons (northeast monsoon, southwest monsoon and pre-monsoon), since the time spent on the water and catch varied significantly between the seasons. Our results showed the largest impacts from artisanal fishing operations affect climate change, human toxicity, and fossil and metal depletion. Our results are, in terms of global warming potential, comparable with other artisanal fisheries. Between different fishing operations, impacts vary between a factor of 2 (for land transformation impacts) and up to a factor of more than 20 (fossil fuel depletion and marine eutrophication). This shows that the way in which operations are performed have a very strong influence on results. Seasonality plays a relevant role for the assessment. Our results highlight that it is important to account for seasonal aspects in LCAs. We encourage a continual effort for collecting and modeling inventory processes, as well as making them available, in order to guarantee that LCA studies outside of Europe can be performed more easily.
A Case Study of Offshore Advection of Boundary Layer Rolls over a Stably Stratified Sea Surface

Streaky structures of narrow (8-9 km) high wind belts have been observed from SAR images above the Baltic Sea during stably stratified conditions with offshore winds from the southern parts of Sweden. Case studies using the WRF model and in situ aircraft observations indicate that the streaks originate from boundary layer rolls generated over the convective air above Swedish mainland, also supported by visual satellite images showing the typical signature cloud streets. The simulations indicate that the rolls are advected and maintained at least 30-80 km off the coast, in agreement with the streaks observed by the SAR images. During evening when the convective conditions over land diminish, the streaky structures over the sea are still seen in the horizontal wind field; however, the vertical component is close to zero. Thus advected feature from a land surface can affect the wind field considerably for long times and over large areas in coastal regions. Although boundary layer rolls are a well-studied feature, no previous study has presented results concerning their persistence during situations with advection to a strongly stratified boundary layer. Such conditions are commonly encountered during spring in coastal regions at high latitudes.

Accelerated anaerobic hydrolysis rates under a combination of intermittent aeration and anaerobic conditions

Anaerobic hydrolysis in activated return sludge was investigated in laboratory scale experiments to find if intermittent aeration would accelerate anaerobic hydrolysis rates compared to anaerobic hydrolysis rates under strict anaerobic conditions. The intermittent reactors were set up in a 240 h experiment with intermittent aeration (3h:3h) in a period of 24 h followed by a subsequent anaerobic period of 24 h in a cycle of 48 hours which was repeated 5 times during the experiment. The anaerobic reactors were kept under strict anaerobic conditions in the same period (240 h). Two methods for calculating hydrolysis rates based on soluble COD were compared. Two-way ANOVA with the Bonferroni post-test was performed in order to register any significant difference between reactors with intermittent aeration and strictly anaerobic conditions respectively. The experiment demonstrated a statistically significant difference in favor of the reactors with intermittent aeration showing a tendency towards accelerated anaerobic hydrolysis rates due to application of intermittent aeration. The conclusion of the work is thus that intermittent aeration applied in the activated return sludge process (ARP) can improve the treatment capacity further in full scale applications.
Accelerating time to benefit: Deconstructing innovative organizational practices in five projects

Despite the ubiquitous pressure for speed, our approaches to accelerate projects remain constrained to the old-fashioned understanding of the project as a vehicle to deliver products and services, not value. This article explores an attempt to accelerate time to benefit. We describe and deconstruct the implementation of a large intervention undertaken in five project-based organizations in Denmark – the Project Half Double where the same project methodology has been applied in five projects, each of them in five distinct organizations in Denmark, as a bold attempt to realize double the benefit in half of the time. Although all cases valued speed and speed to benefit, and implemented most practices proposed by the methodology, only three of the five projects were more successful in decreasing time to speed. Based on a multi-case study comparison between these five different projects and their respective organizations, we propose five complementary explanations for the different results.

General information
State: Published
Organisations: Department of Management Engineering, Engineering Systems, Center for Bachelor of Engineering Studies, Afdelingen for Produktionsudvikling, Aarhus University
Authors: Svejvig, P. (Forskerdatabase), Geraldi, J. (Intern), Grex, S. (Intern)
Number of pages: 19
Publication date: 2017

Host publication information
Title of host publication: Conference proceedings of International Research Network on Organizing by Projects (IRNOP 2017)
Publisher: Design Society
Main Research Area: Technical/natural sciences
Conference: International Research Network on Organizing by Projects, IRNOP 2017, Boston, United States, 11/06/2017 - 11/06/2017

Electronic versions:
IRNOP_2017_Accelerating_time_to_benefit.pdf
Source: PublicationPreSubmission
Source-ID: 130532597
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Accessing Tri-substituted γ-Lactam Scaffolds Via Cascade Reactions: What Opportunities For Libraries!

The European Lead Factory is an EU-based initiative (part of the Innovative Medicines Initiative), which has been set to foster drug discovery in Europe. Among the objectives, a 200,000-compound collection is being generated. Lactams represent a large class of valuable scaffolds for medicinal chemistry and remain a wide and interesting area of study. In this context, 2 libraries based on a 1,4,5 γ-lactam core have been designed and produced using cascade reactions involving an aldehyde moiety, an amine and a nucleophilic partner as the key reaction. One library is focused on a 3-MCR on oxo-esters, while the other is based on a Ritter-type cascade. On several occasions these multi-component and one-pot processes have been used directly as the production step, thus allowing very fast and diverse library syntheses, whereas in other cases, the choice of partners bearing other anchoring groups permitted further functionalization and the production of even more diverse members of the libraries. The > 1,000 compounds based on these scaffolds have been delivered for HTS at the European Screening Center where they are currently being tested.

General information
State: Published
Organisations: Department of Chemistry, Organic Chemistry, EDELDRIS
Authors: Bonnet, K. (Ekstern), Clausen, M. H. (Intern), Fleury-Brégeot, N. (Ekstern), Lardy, C. (Ekstern), Morgentin, R. (Ekstern), Nielsen, T. E. (Intern), Petersen, M. Å. (Intern), Rasmussen, M. O. (Ekstern), Roche, D. (Ekstern), Wu, P. (Intern)
Publication date: 2017
Conference: Experimental Biology 2016 Meeting, San Diego, United States, 02/04/2016 - 02/04/2016
Main Research Area: Technical/natural sciences
Acclimation of ammonia tolerant methanogenic consortia using different bioreactor types

General information
Acclimation to extremely high ammonia levels during continuous biomethanation process

State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering, IMDEA Energy, Zagazig University
Number of pages: 4
Publication date: 2017
Main Research Area: Technical/natural sciences
Ammonia inhibition, Anaerobic digestion, CSTR reactor, Methane, Microalgae
Electronic versions:
Acclimation_to_extremely_high_ammonia_levels_during_continuous_biomethanation_process.pdf
Source: PublicationPreSubmission
Source-ID: 140024712
Publication: Research - peer-review › Paper – Annual report year: 2017

Accuracy and Precision of Plane Wave Vector Flow Imaging for Laminar and Complex Flow In Vivo

In this study, a comparison between velocity fields for a plane wave 2-D vector flow imaging (VFI) method and a computational fluid dynamics (CFD) simulation is made. VFI estimates are obtained from the scan of a flow phantom, which mimics the complex flow conditions in the carotid artery. Furthermore, the precision of the VFI method is investigated under laminar and complex flow conditions in vivo. The carotid bifurcation of a healthy volunteer was scanned using both fast plane wave ultrasound and magnetic resonance imaging (MRI). The acquired MRI geometry of the bifurcation was used for fabricating an anthropomorphic flow phantom, which was also ultrasound scanned. The same geometry was used in a CFD simulation to calculate the velocity field. Results showed that similar flow patterns and vortices were estimated using CFD and VFI in the phantom. Velocity magnitudes were estimated with a mean difference within 15 %, however, it was 23 % in the external branch. For the in vivo scan, the precision in terms of mean standard deviation (SD) of estimates aligned to the cardiac cycle was highest in the center of the common carotid artery (SD 4.7° for angles) and lowest in the external branch and close to the vessel wall (SD 15.0° for angles).

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, MEMS-AppliedSensors, Department of Electrical Engineering, Biomedical Engineering, Center for Fast Ultrasound Imaging, Copenhagen University Hospital
Number of pages: 4
Publication date: 2017
Host publication information
Title of host publication: Proceedings of IEEE International Ultrasonics Symposium
Publisher: IEEE
Main Research Area: Technical/natural sciences
Conference: 2017 IEEE International Ultrasonics Symposium (IUS), Washington, United States, 06/09/2017 - 06/09/2017
Accuracy of averaged auditory brainstem response amplitude and latency estimates

Objective: The aims were to 1) establish which of the four algorithms for estimating residual noise level and signal-to-noise ratio (SNR) in auditory brainstem responses (ABRs) perform better in terms of post-average wave-V peak latency and amplitude errors and 2) determine whether SNR or noise floor is a better stop criterion where the outcome measure is peak latency or amplitude. Design: The performance of the algorithms was evaluated by numerical simulations using an ABR template combined with electroencephalographic (EEG) recordings obtained without sound stimulus. The suitability of a fixed SNR versus a fixed noise floor stop criterion was assessed when variations in the wave-V waveform shape reflecting inter-subject variation was introduced. Study sample: Over 100 hours of raw EEG noise was recorded from 17 adult subjects, under different conditions (e.g. sleep or movement). Results: ABR feature accuracy was similar for the four algorithms. However, it was shown that a fixed noise floor leads to higher ABR wave-V amplitude accuracy; conversely, a fixed SNR yields higher wave-V latency accuracy. Conclusion: Similar performance suggests the use of the less computationally complex algorithms. Different stop criteria are recommended if the ABR peak latency or the amplitude is the outcome measure of interest.

General information
State: Published
Authors: Madsen, S. M. K. (Intern), M. Harte, J. (Ekstern), Elberling, C. (Ekstern), Dau, T. (Intern)
Pages: 1–9
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Audiology
ISSN (Print): 1499-2027
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.07 SJR 1.289 SNIP 1.245
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.191 SNIP 1.217 CiteScore 1.79
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.3 SNIP 1.273 CiteScore 1.89
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.191 SNIP 1.499 CiteScore 1.94
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.232 SNIP 1.296 CiteScore 1.79
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.29 SNIP 1.209 CiteScore 1.78
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.075 SNIP 1.118
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.179 SNIP 1.11
Accuracy of dual-Doppler lidar retrievals of near-shore winds

Abstract: In this presentation the accuracy in retrieving horizontal wind speed and wind direction using a dual-Doppler lidar system will be described. First, the line of sight wind speed uncertainty is described followed by the detailed description of the various sources of errors in laser beam pointing with a particular focus on static errors. A methodology for assessing static pointing errors is presented accompanied with results from the method implementation. Afterwards, mathematical relations for the horizontal wind speed and wind direction uncertainties are derived. For the end, the derived mathematical relations are implemented for the uncertainty assessment of the dual-Doppler retrievals of near-shore winds that took place during the RUNE experiment.

General information
State: Published
Organisations: Department of Wind Energy, Meteorology & Remote Sensing
Authors: Vasiljevic, N. (Intern), Courtney, M. (Intern)
Number of pages: 32
Publication date: 2017

Publication information
Media of output: PowerPoint
Original language: English
Place of publication: Kgs. Lyngby
Publisher: Danmarks Tekniske Universitet (DTU)
Main Research Area: Technical/natural sciences
Electronic versions:
Submitted_Vasiljevic.pptx
Publication: Research › Sound/Visual production (digital) – Annual report year: 2017

Accuracy of food photographs for quantifying food servings in a lunch meal setting among Danish children and adults

Visual aids, such as food photographs, are widely used in estimating food quantities in dietary surveys. The present study aimed to assess how accurately Danish adults and children can estimate food portion sizes using 37 series of photographs illustrating four to six different portion sizes under real-life conditions; determine whether adults were more accurate than children; and estimate the error caused by using portion size photographs to estimate weights of foods consumed in macronutrient calculation. Six hundred and twenty-two adults and 109 children were recruited in three workplace canteens and in two schools, respectively, to estimate their lunchtime portions based on photographs. Participants were instructed to keep the foods separated on their plate when taking lunch. Participants thereafter estimated their own portions by looking at the relevant series of photographs. The actual food portions were then weighed. The proportion of correct estimations was 42% overall (range 19-77%). The mean difference (%) between estimated and actual weight was 17% (range 1-111%). Small portion size photographs were more often used correctly compared to larger portion photographs. Children had as many correct estimations as adults, although they overestimated portions more. Participants using fractions of (or more than) one photograph to estimate the portion of a food had significantly
larger errors. When calculating the macronutrient content of a weekly menu using the estimated portion sizes, protein had the largest error (29%). When used in a real-life situation, the portion size photographs validated in the present study showed a certain inaccuracy compared to the actual weights.

**General information**

State: Accepted/In press
Organisations: National Food Institute, Division of Risk Assessment and Nutrition
Number of pages: 10
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Journal of Human Nutrition and Dietetics
ISSN (Print): 0952-3871
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.51 SJR 1.051 SNIP 1.021
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.033 SNIP 0.93 CiteScore 2.17
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.628 SNIP 1.038 CiteScore 1.9
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.912 SNIP 1.146 CiteScore 2.11
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.836 SNIP 1 CiteScore 1.94
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.693 SNIP 0.789 CiteScore 1.63
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.729 SNIP 1.053
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.676 SNIP 0.88
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.709 SNIP 0.827
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.913 SNIP 0.91
Scopus rating (2006): SJR 0.561 SNIP 0.874
Scopus rating (2005): SJR 0.516 SNIP 0.951
Scopus rating (2004): SJR 0.437 SNIP 0.803
Scopus rating (2003): SJR 0.287 SNIP 0.502
Scopus rating (2002): SJR 0.253 SNIP 0.4
Scopus rating (2001): SJR 0.265 SNIP 0.586
Scopus rating (2000): SJR 0.248 SNIP 0.437
Scopus rating (1999): SJR 0.29 SNIP 0.417
Original language: English
dietary assessment, dietary surveys, food portion size, portion size estimations, portion size photographs
DOIs:
10.1111/jhn.12490
Source: FindIt
Source-ID: 2371778878
Publication: Research - peer-review › Journal article – Annual report year: 2017
Accuracy of surface strain measurements from transmission electron microscopy images of nanoparticles

Strain analysis from high-resolution transmission electron microscopy (HRTEM) images offers a convenient tool for measuring strain in materials at the atomic scale. In this paper we present a theoretical study of the precision and accuracy of surface strain measurements directly from aberration-corrected HRTEM images. We examine the influence of defocus, crystal tilt and noise, and find that absolute errors of at least 1–2% strain should be expected. The model structures include surface relaxations determined using molecular dynamics, and we show that this is important for correctly evaluating the errors introduced by image aberrations.

General information
State: Published
Organisations: Department of Physics, Theoretical Atomic-scale Physics, Center for Electron Nanoscopy
Authors: Madsen, J. (Intern), Liu, P. (Intern), Wagner, J. B. (Intern), Hansen, T. W. (Intern), Schiøtz, J. (Intern)
Number of pages: 12
Pages: 1-12
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Advanced Structural and Chemical Imaging
Volume: 3
Issue number: 1
ISSN (Print): 2198-0926
Ratings:
Web of Science (2016): Indexed yes
Original language: English
High-resolution transmission electron microscopy, Strain mapping, Nanoparticles, Surface strain
Electronic versions:
Untitled.pdf
DOIs:
10.1186/s40679-017-0047-0

Bibliographical note
This article is distributed under the terms of the Creative Commons Attribution 4.0 International License
Source: FindIt
Source-ID: 2392492959
Publication: Research - peer-review › Journal article – Annual report year: 2017

Accuracy of young male drivers’ self-assessments of driving skill

Accurate self-assessment of skill is important because it creates an appropriate level of confidence and hence behaviour. Inaccurate self-assessment of driving ability has been linked to reckless driving and accidents. Inaccurate self-assessment of driving skills may be a contributing factor to the over-representation of young male drivers in accident statistics. Most previous research on self-assessment of driving skills did not compare self-reported skills to objectively measured driving skills, so the aims of this study were: (1) to test the accuracy of young male drivers’ self-assessments of specific driving skills by comparing them with performance in a driving simulator; (2) to test whether self-assessment accuracy varied with driving skill, driving experience and sensation-seeking propensity. We found that young male drivers’ self-assessments were inconsistent with their driving performance, and that this inconsistency varied with driving skill, driving experience and sensation-seeking propensity. Groups with particularly inaccurate self-assessments are at high risk, because of their relative lack of skill, high mileage and sensation-seeking propensity. Self-assessments of hazard prediction and detection skills were particularly inaccurate. Understanding self-assessments of driving skill is crucial, but further studies are needed to allow preventive policies and interventions to take factors affecting self-assessments into account.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Transport DTU, University of Queensland
Authors: Martinussen, L. M. (Intern), Møller, M. (Intern), Prato, C. G. (Ekstern)
Pages: 228-235
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Transportation Research. Part F: Traffic Psychology and Behaviour
Volume: 46
Accurate particle speed prediction by improved particle speed measurement and 3-dimensional particle size and shape characterization technique

Accurate particle mass and velocity measurement is needed for interpreting test results in erosion tests of materials and coatings. The impact and damage of a surface is influenced by the kinetic energy of a particle, i.e. particle mass and velocity. Particle mass is usually determined with optical methods, e.g. laser light scattering, and velocity by the double disk (DD) method. In this article we present two novel techniques, which allow a more accurate measurement of mass, velocity and shape, and we later compare the experimentally obtained flow velocities of particles with a simulation that also includes the particle’s shape parameter, known as sphericity. Mass and sphericity are obtained from 3-dimensional
data with an industrial X-ray computed tomography (CT) scanner. CT data can be used to accurately determine the volume-basis median of the particles (using the volume-equivalent particle diameter). Velocity is measured with a fast 2-dimensional particle imaging method using a pulsed LED. Good agreement of the measured and simulated particle velocity was found when including the sphericity from CT results. 2-dimensional optical particle size measurements in the jet of an erosion rig are compared with detailed 3-dimensional CT measurements and a low angle laser light scattering (LALLS) measurement system for six different samples of particles. It is shown that the particle volume or mass is usually overestimated by 16–22% when using 2-dimensional methods or LALLS. For CT allows additionally the surface-equivalent diameter to be calculated by using 2-dimensional projections of each particle, these results can be used to correct particle diameters measured with the particle imaging method using a pulsed LED.

**General information**

State: Published  
Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre, Department of Photonics Engineering, Physikalisch-Technische Bundesanstalt, Ricerca Sistema Energetico SpA  
Authors: Cernuschi, F. (Ekstern), Rothleitner, C. (Ekstern), Clausen, S. (Intern), Neuschaefer-Rube, U. (Ekstern), Illemann, J. (Ekstern), Lorenzoni, L. (Ekstern), Guardamagna, C. (Ekstern), Larsen, H. E. (Intern)  
Pages: 95-109  
Publication date: 2017  
Main Research Area: Technical/natural sciences

**Publication information**  
Journal: Powder Technology  
Volume: 318  
ISSN (Print): 0032-5910  
Ratings:  
BFI (2017): BFI-level 1  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 1  
Scopus rating (2016): CiteScore 3.16 SJR 0.983 SNIP 1.482  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 1  
Scopus rating (2015): SJR 0.965 SNIP 1.598 CiteScore 2.99  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 1  
Scopus rating (2014): SJR 0.89 SNIP 1.649 CiteScore 2.67  
Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 1  
Scopus rating (2013): SJR 0.901 SNIP 1.875 CiteScore 2.64  
ISI indexed (2013): ISI indexed yes  
BFI (2012): BFI-level 1  
Scopus rating (2012): SJR 0.854 SNIP 1.826 CiteScore 2.36  
ISI indexed (2012): ISI indexed yes  
BFI (2011): BFI-level 1  
Scopus rating (2011): SJR 0.921 SNIP 1.86 CiteScore 2.45  
ISI indexed (2011): ISI indexed yes  
Web of Science (2011): Indexed yes  
BFI (2010): BFI-level 1  
Scopus rating (2010): SJR 0.94 SNIP 1.547  
BFI (2009): BFI-level 1  
Scopus rating (2009): SJR 0.98 SNIP 1.65  
BFI (2008): BFI-level 1  
Scopus rating (2008): SJR 0.911 SNIP 1.597  
Web of Science (2008): Indexed yes  
Scopus rating (2007): SJR 0.854 SNIP 1.316  
Web of Science (2007): Indexed yes  
Scopus rating (2006): SJR 1.118 SNIP 1.324  
Web of Science (2006): Indexed yes  
Scopus rating (2005): SJR 1.253 SNIP 1.399
A CFD Investigation on the Effect of the Air Entrainment In Breaking Wave Impacts on a Mono-Pile

In impacts of breaking waves on offshore structures, it is still not well-known how the air entrainment phenomenon affects the exerted loads. In this paper, a developed CFD solver capable of simulating the air entrainment process was employed to reproduce an experimental investigation on the impact of a spilling wave against a circular cylinder. The exerted in-line force was computed with and without the inclusion of dispersed bubbles. Results showed that the magnitude of the computed force was affected when the entrainment of bubbles was simulated.

Achieving low return temperature for domestic hot water preparation by ultra-low-temperature district heating

District heating (DH) is a cost-effective method of heat supply, especially to area with high heat density. Ultra-low-temperature district heating (ULTDH) is defined with supply temperature at 35-45 degrees C. It aims at making utmost use of the available low-temperature energy sources. In order to achieve high efficiency of the ULTDH system, the return temperature should be as low as possible. For the energy-efficient buildings in the future, it is feasible to use ULTDH to cover the space heating demand. However, considering the comfort and hygiene requirements of domestic hot water (DHW) preparation, supplementary heating devices should be combined, which can affect the return temperature in different extents. This study analysed the return temperatures of different types of substations for DHW preparation with ULTDH, and developed improvements in the substation for better energy efficiency. Both the instantaneous and storage-type electric heating methods were Long-term measured as supplementary heating for ULTDH in the case substations in Denmark. We analysed the seasonal impacts of the return temperature from the DHW loop on the overall return temperature of district heating. To achieve lower return temperature and higher efficiency for DHW supply, an innovative substation was devised, which replaced the bypass with an instantaneous heat exchanger and a micro electric storage tank. The energy performance of the proposed substation and the resulting benefits for the DH system by the lower return temperature were investigated (C) 2017 The Authors. Published by Elsevier Ltd.
Achieving maximum sustainable yield in mixed fisheries: a management approach for the North Sea demersal fisheries

Achieving single species maximum sustainable yield (MSY) in complex and dynamic fisheries targeting multiple species (mixed fisheries) is challenging because achieving the objective for one species may mean missing the objective for another. The North Sea mixed fisheries are a representative example of an issue that is generic across most demersal fisheries worldwide, with the diversity of species and fisheries inducing numerous biological and technical interactions. Building on a rich knowledge base for the understanding and quantification of these interactions, new approaches have emerged. Recent paths towards operationalizing MSY at the regional scale have suggested the expansion of the concept into a desirable area of "pretty good yield", implemented through a range around FMSY that would allow for more flexibility in management targets. This article investigates the potential of FMSY ranges to combine long-term single-stock targets with flexible, short-term, mixed-fisheries management requirements applied to the main North Sea demersal stocks. It is shown that sustained fishing at the upper bound of the range may lead to unacceptable risks when technical interactions occur. An objective method is suggested that provides an optimal set of fishing mortality within the range, minimizing the risk of total allowable catch mismatches among stocks captured within mixed fisheries, and addressing explicitly the trade-offs between the most and least productive stocks.
A choice function hyper-heuristic framework for the allocation of maintenance tasks in Danish railways

A new signalling system in Denmark aims at ensuring fast and reliable train operations, however imposes very strict time limits on recovery plans in the event of failure. As a result, it is necessary to develop a new approach to the entire maintenance scheduling process. In the largest region of Denmark, the Jutland peninsula, there is a decentralised structure for maintenance planning, whereby the crew start their duties from their home locations rather than starting from a single depot. In this paper, we allocate a set of maintenance tasks in Jutland to a set of maintenance crew members, defining the sub-region that each crew member is responsible for. Two key considerations must be made when allocating tasks to crew members. Firstly a fair balance of workload must exist between crew members and secondly, the distance between two tasks in the same sub-region must be minimised, in order to facilitate quick response in the case of unexpected failure. We propose a perturbative selection hyper-heuristic framework to improve initial solutions by reassigning outliers, those tasks that are far away, to another crew member at each iteration, using one of five low-level heuristics. Results of two hyper-heuristics, using a number of different initial solution construction methods are presented over a set of 12 benchmark problem instances.

General information
State: Accepted/In press
Organisations: Management Science, Department of Management Engineering, Queen Mary University of London
Authors: Pour, S. M. (Intern), Drake, J. H. (Ekstern), Burke, E. K. (Ekstern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Computers & Operations Research
ISSN (Print): 0305-0548
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.77 SJR 2.326 SNIP 2.151
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.979 SNIP 2.042 CiteScore 3.09
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.313 SNIP 2.33 CiteScore 3.12
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.622 SNIP 2.979 CiteScore 3.62
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.823 SNIP 2.82 CiteScore 3.36
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.472 SNIP 2.495 CiteScore 3.05
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.449 SNIP 2.489
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.386 SNIP 2.405
Web of Science (2009): Indexed yes
Acid-base chemistry and proton conductivity of CsHSO₄, CsH₂PO₄ and their mixtures with N-heterocycles

Caesium hydrogen sulfate (CsHSO₄) and caesium dihydrogen phosphate (CsH₂PO₄) are solid acids that undergo superprotonic phase-transitions at about 140 and 230 °C, respectively. As a result, the proton conductivity is increased by several orders of magnitude. However, the practical operational temperature range is narrow due to decomposition of the high-conductivity phases. For CsHSO₄, it is known that this window can be extended to lower temperatures by addition of carefully selected N-heterocycles. The present work investigates if the same approach can be used to extend the practical operating temperature range of CsH₂PO₄ as well. Binary mixtures of CsH₂PO₄ with 1,2,4-triazole, benzimidazole or imidazole were prepared by means of mechanochemical synthesis. Mixtures based on CsHSO₄ were prepared as a basis for a comparative discussion. It was found that CsHSO₄ formed organic-inorganic salts, while CsH₂PO₄ formed heterogeneous mixtures with the N-heterocycles due to its weaker acidity. At a N-heterocycle content of 30 mol%, enhanced proton conductivity was observed for both solid acids at temperatures below their superprotonic phase transitions.

General information

State: Published
Organisations: Department of Energy Conversion and Storage, Proton conductors
Authors: Aili, D. (Intern), Gao, Y. (Intern), Han, J. (Intern), Li, Q. (Intern)
Pages: 13-19
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Solid State Ionics
Volume: 306
ISSN (Print): 0167-2738
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.41 SJR 0.751 SNIP 0.88
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.819 SNIP 1.033 CiteScore 2.5
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.843 SNIP 1.304 CiteScore 2.62
Acid-resistant organic coatings for the chemical industry: a review

Industries that work with acidic chemicals in their processes need to make choices on how to properly contain the substances and avoid rapid corrosion of equipment. Certain organic coatings and linings can be used in such environments, either to protect vulnerable construction materials, or, in combination with fiber reinforcement, to replace them. However, degradation mechanisms of organic coatings in acid service are not thoroughly understood and relevant quantitative investigations are scarce. This review describes the uses and limitations of acid-resistant coatings in the chemical industry, with a comparison to alternative resistant materials based on metals or ceramics. In addition, coating degradation phenomena, caused by acid exposure, are mapped to the extent possible, and analysis methods for detecting coating degradation type and severity are listed and discussed. It is concluded that more knowledge on chemical and physical degradation mechanisms is required, and that improvements in resistance to elevated temperatures and abrasion would decrease the risk of use and increase the potential application areas of organic coatings exposed to acidic environments in the chemical industry.
A codimension two bifurcation in a railway bogie system

In this paper, a comprehensive analysis is presented to investigate a codimension two bifurcation that exists in a nonlinear railway bogie dynamic system combining theoretical analysis with numerical investigation. By using the running velocity \( V \) and the primary longitudinal stiffness (Formula presented.) as bifurcation parameters the first and second Lyapunov coefficients are calculated to determine which kind of Hopf bifurcation can happen and how the system states change with the variance of the bifurcation parameters. It is found that multiple solution branches both stable and unstable coexist in a range of the bifurcation parameters which can lead to jumps in the lateral oscillation amplitude of the railway bogie system.
Furthermore, reduce the values of the bifurcation parameters gradually. Firstly, the supercritical Hopf bifurcation turns into a subcritical one with multiple limit cycles both stable and unstable near the Hopf bifurcation point. With a further reduction in the bifurcation parameters two saddle-node bifurcation points emerge, resulting in the loss of the stable limit cycle between these two bifurcation points.

**General information**
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Southwest Jiaotong University
Authors: Zhang, T. (Ekstern), True, H. (Intern), Dai, H. (Ekstern)
Number of pages: 14
Pages: 1-14
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Archive of Applied Mechanics
ISSN (Print): 0939-1533
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.44 SJR 0.738 SNIP 0.994
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.794 SNIP 1.01 CiteScore 1.17
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.942 SNIP 1.247 CiteScore 1.43
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.825 SNIP 1.261 CiteScore 1.55
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.637 SNIP 1.126 CiteScore 1.12
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.669 SNIP 1.319 CiteScore 1.15
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.585 SNIP 1.126
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.793 SNIP 1.082
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.833 SNIP 1.138
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.654 SNIP 0.89
Scopus rating (2006): SJR 0.557 SNIP 1.279
Scopus rating (2005): SJR 0.583 SNIP 0.613
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.581 SNIP 0.722
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.598 SNIP 0.969
Scopus rating (2002): SJR 1.031 SNIP 0.739
Scopus rating (2001): SJR 0.627 SNIP 1.337
Scopus rating (2000): SJR 0.821 SNIP 1.404
Scopus rating (1999): SJR 0.669 SNIP 0.687
Original language: English
A cohesive zone framework for environmentally assisted fatigue

We present a compelling finite element framework to model hydrogen assisted fatigue by means of a hydrogen- and cycle-dependent cohesive zone formulation. The model builds upon: (i) appropriate environmental boundary conditions, (ii) a coupled mechanical and hydrogen diffusion response, driven by chemical potential gradients, (iii) a mechanical behavior characterized by finite deformation J2 plasticity, (iv) a phenomenological trapping model, (v) an irreversible cohesive zone formulation for fatigue, grounded on continuum damage mechanics, and (vi) a traction-separation law dependent on hydrogen coverage calculated from first principles. The computations show that the present scheme appropriately captures the main experimental trends; namely, the sensitivity of fatigue crack growth rates to the loading frequency and the environment. The role of yield strength, work hardening, and constraint conditions in enhancing crack growth rates as a function of the frequency is thoroughly investigated. The results reveal the need to incorporate additional sources of stress elevation, such as gradient-enhanced dislocation hardening, to attain a quantitative agreement with the experiments.
A Colon Targeted Delivery System for Resveratrol Enriching in pH Responsive-Model

Background: Resveratrol effects on the prevention and treatment of colon cancer have been well documented recently, but low solubility, rapid absorption and metabolism of resveratrol limit its beneficial effects on colon cancer. Designing a formulation that enhances the solubility of resveratrol, protects resveratrol from oxidation and isomerization, and delivers it to the colon is a priority of food and drug industry. In this study, resveratrol-polyethylene glycol (PEG)-loaded pectin-chitosan polyelectrolyte complex was designed as a colon targeted delivery system. Methods: The effects of adding PEG, ultra-sonication time, pH, and pectin to chitosan ratio were investigated on particle size, polydispersity index (PDI), zeta potential by particle size analyzer, and scanning electron microscopy (SEM). Encapsulation efficiency (EE), release of resveratrol in simulated gastrointestinal fluid, and different pHs were analyzed via High Performance Liquid Chromatography (HPLC). Antioxidant activity was measured by (2, 2-diphenyl-1-picryl-hydrazyl-hydrate) DPPH free-radical method. Results: Results showed that colloidal stable micro-particles (725 ± 20 nm) with PDI < 0.3 and zeta potential +27 ± 2 mV was formed in the ratio of 5:1 of pectin to chitosan w/v % after a 10-min sonication. Encapsulation efficiency was 81 ± 7 %. The reduction of antioxidant activity of resveratrol loaded micro-particles after one month was less than 13%. Micro-particles released about 33% of resveratrol in the simulated gastric and intestinal fluids. Conclusion: Two-thirds of the loaded resveratrol in Pectin-Chitosan complex reached colon. The developed system had enough specification for enriching fruit based drinks due to remarkable colloidal stability in the pH range of 3.5 to 4.5.

General information
State: Published
Organisations: National Food Institute, Research Group for Food Production Engineering, Tabriz University of Medical Sciences
Authors: Andishmand, H. (Ekstern), Hamishehkar, H. (Ekstern), Mohammadifar, M. A. (Intern), Babazadeh, A. (Ekstern), Taghvimi, A. (Ekstern), Mohammadifar, M. A. (Intern), Mahnaz Tabibiazar (Ekstern)
Pages: 42-49
Publication date: 2017
Main Research Area: Technical/natural sciences
A Combination of Machine Learning and Cerebellar-like Neural Networks for the Motor Control and Learning of the Fable Modular Robot

We scaled up a bio-inspired control architecture for the motor control and motor learning of a real modular robot. In our approach, the Locally Weighted Projection Regression algorithm (LWPR) and a cerebellar microcircuit coexist, forming a Unit Learning Machine. The LWPR optimizes the input space and learns the internal model of a single robot module to command the robot to follow a desired trajectory with its end-effector. The cerebellar-like microcircuit refines the LWPR output delivering corrective commands. We contrasted distinct cerebellar-like circuits including analytical models and spiking models implemented on the SpiNNaker platform, showing promising performance and robustness results.

General Information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control, Centre for Playware, Copenhagen Center for Health Technology
Authors: Baira Ojeda, I. (Intern), Tolu, S. (Intern), Pacheco, M. (Intern), Christensen, D. J. (Intern), Lund, H. H. (Intern)
Pages: 62–66
Publication date: 2017
Main Research Area: Technical/natural sciences

A Combination of Machine Learning and Cerebellar Models for the Motor Control and Learning of a Modular Robot

We scaled up a bio-inspired control architecture for the motor control and motor learning of a real modular robot. In our approach, the Locally Weighted Projection Regression algorithm (LWPR) and a cerebellar microcircuit coexist, forming a Unit Learning Machine. The LWPR optimizes the input space and learns the internal model of a single robot module to command the robot to follow a desired trajectory with its end-effector. The cerebellar microcircuit refines the LWPR output delivering corrective commands. We contrasted distinct cerebellar circuits including analytical models and spiking models implemented on the SpiNNaker platform, showing promising performance and robustness results.
A combined aeroelastic-aeroacoustic model for wind turbine noise: Verification and analysis of field measurements

In this paper, semi-empirical engineering models for the three main wind turbine aerodynamic noise sources, namely, turbulent inflow, trailing edge and stall noise, are introduced. They are implemented into the in-house aeroelastic code HAWC2 commonly used for wind turbine load calculations and design. The results of the combined aeroelastic and aeroacoustic model are compared with field noise measurements of a 500kW wind turbine. Model and experimental data are in fairly good agreement in terms of noise levels and directivity. The combined model allows separating the various noise sources and highlights a number of mechanisms that are difficult to differentiate when only the overall noise from a wind turbine is measured.
A combined constraint handling framework: an empirical study

This paper presents a new combined constraint handling framework (CCHF) for solving constrained optimization problems (COPs). The framework combines promising aspects of different constraint handling techniques (CHTs) in different situations with consideration of problem characteristics. In order to realize the framework, the features of two popular used CHTs (i.e., Deb's feasibility-based rule and multi-objective optimization technique) are firstly studied based on their relationship with penalty function method. And then, a general relationship between problem characteristics and CHTs in different situations (i.e., infeasible situation, semi-feasible situation, and feasible situation) is empirically obtained. Finally, CCHF is proposed based on the corresponding relationship. Also, for the first time, this paper demonstrates that multi-objective optimization technique essentially can be expressed in the form of penalty function method. As CCHF combines promising aspects of different CHTs, it shows good performance on the 22 well-known benchmark test functions. In general, it is comparable to the other four differential evolution-based approaches and five dynamic or ensemble state-of-the-art approaches for constrained optimization.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Energy system operation and management, University of Shanghai for Science and Technology, Technical University of Berlin, Tongji University
Authors: Si, C. (Ekstern), Hu, J. (Intern), Lan, T. (Ekstern), Wang, L. (Ekstern), Wu, Q. (Ekstern)
Pages: 69-88
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Memetic Computing
Volume: 9
Issue number: 1
ISSN (Print): 1865-9284
A Combined Reliability Model of VSC-HVDC Connected Offshore Wind Farms Considering Wind Speed Correlation

This paper proposes a combined reliability model of voltage source converter-based high voltage direct current (VSC-HVDC) connected offshore wind farms (WFs) using the frequency and duration technique. Firstly, a two-dimensional multi-state WF model is developed considering wind speed variations and WTGs outage. The wind speed correlation between different WFs is included in the two-dimensional multistate WF model by using an improved k-means clustering method. Then, the entire system with two WFs and a three-terminal VSC-HVDC system is modeled as a multi-state generation unit. The proposed model is applied to the Roy Billinton test system (RBTS) for adequacy studies. Both the probability and frequency indices are calculated. The effectiveness and accuracy of the combined model is validated by comparing results with the sequential Monte Carlo simulation (MCS) method. The effects of the outage of VSC-HVDC system and wind speed correlation on the system reliability were analyzed. Sensitivity analyses were conducted to investigate the impact of repair time of the offshore VSC-HVDC system on system reliability.
A compact cyclic plasticity model with parameter evolution

This paper presents a compact model for cyclic plasticity based on energy in terms of external and internal variables, and plastic yielding described by kinematic hardening and a flow potential with an additive term controlling the nonlinear cyclic hardening. The model is basically described by five parameters: external and internal stiffness, a yield stress and a limiting ultimate stress, and finally a parameter controlling the gradual development of plastic deformation. Calibration against numerous experimental results indicates that typically larger plastic strains develop than predicted by the Armstrong–Frederick model, contained as a special case of the present model for a particular choice of the shape parameter. In contrast to previous work, where shaping the stress-strain loops is derived from multiple internal stress states, this effect is here represented by a single parameter, and it is demonstrated that this simple formulation enables very accurate representation of experimental results. An extension of the theory to account for model parameter evolution effects, e.g. in the form of changing yield level, is included in the form of extended evolution equations for the model parameters. Finally, it is demonstrated that the model in combination with a simple parameter interpolation scheme enables representation of ratcheting effects.
A comparative study of noise in supercontinuum light sources for ultra-high resolution optical coherence tomography

Supercontinuum (SC) light is a well-established technology, which finds applications in several domains ranging from chemistry to material science and imaging systems [1-2]. More specifically, its ultra-wide optical bandwidth and high average power make it an ideal tool for Optical Coherence Tomography (OCT). Over the last 5 years, numerous examples have demonstrated its high potential [3-4] in this context. However, SC light sources present pulse-to-pulse intensity variation that can limit the performance of any OCT system [5] by degrading their signal to noise ratio (SNR). To this goal, we have studied and compared the noise of several SC light sources and evaluated how their noise properties affect the performance of Ultra-High Resolution OCT (UHR-OCT) at 1300 nm. We have measured several SC light sources with different parameters (pulse length, energy, seed repetition rate, etc.). We illustrate the different noise measurements and their impact on a state of the art UHR-OCT system producing images of skin. The sensitivity of the system was higher than 95 dB, with an axial resolution below 4μm.

General information
State: Published
Organisations: Department of Photonics Engineering, Fiber Sensors and Supercontinuum Generation, NKT Photonics A/S, University of Kent
Authors: Maria J. (Ekstern), Bravo Gonzalo, I. (Intern), Bondu, M. (Ekstern), Engelsholm, R. D. (Intern), Feuchter, T. (Ekstern), Moselund, P. M. (Ekstern), Leick, L. (Ekstern), Bang, O. (Intern), Podoleanu, A. (Ekstern)
Number of pages: 6
Publication date: 2017

Host publication information
A comparative study on the activity of fungal lytic polysaccharide monoxygenases for the depolymerization of cellulose in soybean spent flakes

Lytic polysaccharide monoxygenases (LPMOs) are copper-dependent enzymes capable of the oxidative breakdown of polysaccharides. They are of industrial interest due to their ability to enhance the enzymatic depolymerization of recalcitrant substrates by glycoside hydrolases. In this paper, twenty-four lytic polysaccharide monoxygenases (LPMOs) expressed in Trichoderma reesei were evaluated for their ability to oxidize the complex polysaccharides in soybean spent flakes, an abundant and industrially relevant substrate. TrCel61A, a soy-polysaccharide-active AA9 LPMO from T. reesei, was used as a benchmark in this evaluation. In total, seven LPMOs demonstrated activity on pretreated soy spent flakes, with the products from enzymatic treatments evaluated using mass spectrometry and high performance anion exchange chromatography. The hydrolytic boosting effect of the top-performing enzymes was evaluated in combination with endoglucanase and beta-glucosidase. Two enzymes (TrCel61A and Aspte6) showed the ability to release more than 36% of the pretreated soy spent flake glucose - a greater than 75% increase over the same treatment without LPMO addition.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, DuPont™ Industrial Biosciences, DuPont Nutrition Biosciences Aps
Authors: Pierce, B. (Intern), Wittrup Agger, J. (Intern), Zhang, Z. (Ekstern), Wichmann, J. (Ekstern), Meyer, A. S. (Intern)
Pages: 85-94
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Carbohydrate Research
Volume: 449
ISSN (Print): 0008-6215
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.03 SJR 0.654 SNIP 0.801
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.59 SNIP 0.839 CiteScore 1.98
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.638 SNIP 0.856 CiteScore 2.01
A comparison between tracer gas and aerosol particles distribution indoors: The impact of ventilation rate, interaction of airflows, and presence of objects

The study investigated the separate and combined effects of ventilation rate, free convection flow produced by a thermal manikin, and the presence of objects on the distribution of tracer gas and particles in indoor air. The concentration of aerosol particles and tracer gas was measured in a test room with mixing ventilation. Three layouts were arranged: an empty room, an office room with an occupant sitting in front of a table, and a single-bed hospital room. The room occupant was simulated by a thermal manikin. Monodisperse particles of three sizes (0.07, 0.7, and 3.5 μm) and nitrous oxide tracer gas were generated simultaneously at the same location in the room. The particles and gas concentrations were measured in the bulk room air, in the breathing zone of the manikin, and in the exhaust air. Within the breathing zone of the sitting occupant, the tracer gas emerged as reliable predictor for the exposure to all different-sized test particles. A
change in the ventilation rate did not affect the difference in concentration distribution between tracer gas and larger particle sizes. Increasing the room surface area did not influence the similarity in the dispersion of the aerosol particles and the tracer gas.

**General information**

State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Institute of Chemical Process Fundamentals of the CAS
Authors: Bivolarova, M. P. (Intern), Ondráček, J. (Ekstern), Melikov, A. K. (Intern), Ždímal, V. (Ekstern)
Number of pages: 12
Pages: 1201-1212
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Indoor Air
Volume: 27
Issue number: 6
ISSN (Print): 0905-6947
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.55
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.88
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 4.57
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.63
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.72
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.42
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.757 SNIP 2.168
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.933 SNIP 3.724
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.637 SNIP 2.622
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.347 SNIP 1.283
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
A comparison of extreme structural responses and fatigue damage of semi-submersible type floating horizontal and vertical axis wind turbines

• A comprehensive comparison of floating HAWTs and VAWTs with different blade number.
• Extreme structural responses and fatigue damage are studied.
• Both operational and parked conditions are considered.
• The merits and disadvantages of floating HAWTs and VAWTs are revealed and highlighted.

General information
State: Published
Organisations: Department of Wind Energy, Aerodynamic design, Norwegian University of Science and Technology
Authors: Cheng, Z. (Ekstern), Aagaard Madsen, H. (Intern), Chai, W. (Ekstern), Gao, Z. (Ekstern), Moan, T. (Ekstern)
Pages: 207-219
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Renewable Energy
Volume: 108
ISSN (Print): 0960-1481
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.83 SJR 1.697 SNIP 2.044
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.845 SNIP 2.118 CiteScore 4.51
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.983 SNIP 2.687 CiteScore 4.51
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.066 SNIP 2.767 CiteScore 4.63
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.852 SNIP 2.745 CiteScore 3.97
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.688 SNIP 2.404 CiteScore 3.9
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.494 SNIP 2.215
A Comparison of Organic and Steam Rankine Cycle Power Systems for Waste Heat Recovery on Large Ships

This paper presents a comparison of the conventional dual pressure steam Rankine cycle process and the organic Rankine cycle process for marine engine waste heat recovery. The comparison was based on a container vessel, and results are presented for a high-sulfur (3 wt %) and low-sulfur (0.5 wt %) fuel case. The processes were compared based on their off-design performance for diesel engine loads in the range between 25% and 100%. The fluids considered in the organic Rankine cycle process were MM(hexamethyldisiloxane), toluene, n-pentane, i-pentane and c-pentane. The results of the comparison indicate that the net power output of the steam Rankine cycle process is higher at high engine loads, while the performance of the organic Rankine cycle units is higher at lower loads. Preliminary turbine design considerations suggest that higher turbine efficiencies can be obtained for the ORC unit turbines compared to the steam turbines. When the efficiency of the c-pentane turbine was allowed to be 10% points larger than the steam turbine efficiency, the organic Rankine cycle unit reaches higher net power outputs than the steam Rankine cycle unit at all engine loads for the low-sulfur fuel case. The net power production from the waste heat recovery units is generally higher for the low-sulfur fuel case. The steam Rankine cycle unit produces 18% more power at design compared to the high-sulfur fuel case, while the organic Rankine cycle unit using MM produces 33% more power.
A comparison of reflectance properties on polymer micro-structured functional surface

In this study, a functional micro-structure surface [1] has been developed as a combination of arrays of micro ridges. The scope of the surface is to achieve specific directional optical properties: that is, under constrained lighting, maximizing the reflectance from a certain viewing direction, and minimizing it from the corresponding horizontally orthogonal position, i.e. maximize the contrast between two horizontally orthogonal view positions at the same inclination (Figure 1). The sample is composed of 12 different anisotropic surfaces, that are designed as a combination of ridges defined by their pitch distance and their angle in respect to the surface (Figure 2). The geometry was obtained by precision milling of a tool steel bar and replicated through silicone replica technology [2], and by hot embossing using Acrylonitrile Butadiene Styrene (ABS). A digital microscope has been used as a gonioreflectometer to determine the directional surface reflectance of each surface to varying light and camera positions. The presented results show that the replication processes and the polymeric material have a strong impact on the contrast under constrained lightening. More specifically, the reflectance properties are strongly influenced by the geometry of the structure and by the colour.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, Danish Meteorological Institute
Authors: Regi, F. (Intern), Li, D. (Intern), Nielsen, J. B. (Intern), Zhang, Y. (Intern), Tosello, G. (Intern), Madsen, M. H. (Ekstern), Frisvad, J. R. (Intern), Aanæs, H. (Intern)
Number of pages: 1
Publication date: 2017
A comparison of the ground magnetic responses during the 2013 and 2015 St. Patrick's Day geomagnetic storms

The magnetosphere-ionosphere system response to extreme solar wind driving conditions depends on both the driving conditions and ionospheric conductivity. Since extreme driving conditions are rare, there are few opportunities to control for one parameter or another. The 17 March 2013 and 17 March 2015 geomagnetic storms driven by coronal mass ejections (CME) provide one such opportunity. The two events occur during the same solar illumination conditions; in particular, both occur near equinox on the same day of the year leading to similar ionospheric conductivity profiles. Moreover, both CMEs arrive at the same time of day leading to similar observing conditions (i.e., ground stations at similar magnetic local time in both events). We examine the ground magnetic response to each CME at a range of latitudes and in both the Northern and Southern Hemispheres, remote sensing several current systems. There are dramatic differences between the intensity, onset time and occurrence, duration, and spatial structure of the current systems in each case. For example, differing solar wind driving conditions lead to interhemispheric asymmetries in the high-latitude ground magnetic response during the 2015 storm; these asymmetries are not present in the 2013 storm.

General information
State: Published
Organisations: National Space Institute, Geomagnetism, Virginia Tech
Authors: Xu, Z. (Ekstern), Hartinger, M. D. (Ekstern), Clauer, R. C. (Ekstern), Peek, T. (Ekstern), Behlke, R. (Intern)
Pages: 4023–4036
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Geophysical Research: Space Physics
Volume: 122
ISSN (Print): 0148-0227
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.36 SJR 1.996 SNIP 1.313
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.288 SNIP 1.362 CiteScore 3.39
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.324 SNIP 1.349 CiteScore 3.27
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.357 SNIP 1.44 CiteScore 3.38
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.365 SNIP 1.35 CiteScore 2.93
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.239 SNIP 1.301 CiteScore 3.03
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.449 SNIP 1.324
Web of Science (2010): Indexed yes
A complete characterization of Galois subfields of the generalized Giulietti–Korchmáros function field

We give a complete characterization of all Galois subfields of the generalized Giulietti–Korchmáros function fields $C_n/F_{q^{2n}}$ for $n \geq 5$. Calculating the genera of the corresponding fixed fields, we find new additions to the list of known genera of maximal function fields.
A comprehensive approach to assess feathermeal as an alternative protein source in aquafeed

The effect of partially replacing fishmeal in aquafeed with feathermeal (FTH) at three levels (0%: FTH0, 8%: FTH8, 24%: FTH24) and two extrusion temperatures (100 and 130 °C) were evaluated in rainbow trout (Oncorhynchus mykiss) with respect to growth performance, metabolism response, and oxidative status of the feed proteins. Multivariate data analyses revealed that FTH24 correlated positively with high levels of: oxidation products, amino acids (AA) racemization, glucogenic AAs level in liver, feed intake (FI), specific growth rate (SGR), and feed conversion ratio (FCR); and low AAs digestibility. Both FI and SGR were significantly increased when 8 and 24% feathermeal was included in the feed extruded at 100 °C, while there was a negative effect on FCR in fish fed FTH24. In conclusion, higher oxidation levels in FTH24 may give rise to metabolic alterations while lower levels of FTH may be considered as fishmeal substitute in aquafeed for rainbow trout.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Aquaculture, Aarhus University, University of Copenhagen, BioMar A/S
A comprehensive gaze stabilization controller based on cerebellar internal models

Gaze stabilization is essential for clear vision; it is the combined effect of two reflexes relying on vestibular inputs: the vestibulocollic reflex (VCR), which stabilizes the head in space and the vestibulo-ocular reflex (VOR), which stabilizes the visual axis to minimize retinal image motion. The VOR works in conjunction with the opto-kinetic reflex (OKR), which is a visual feedback mechanism that allows to move the eye at the same speed as the observed scene. Together they keep the image stationary on the retina. In this work we implement on a humanoid robot a model of gaze stabilization based on the coordination of VCR and VOR and OKR. The model, inspired by neuroscientific cerebellar theories, is provided with learning and adaptation capabilities based on internal models. We present the results for the gaze stabilization model on three sets of experiments conducted on the SABIAN robot and on the iCub simulator, validating the robustness of the proposed control method. The first set of experiments focused on the controller response to a set of disturbance frequencies along the vertical plane. The second shows the performances of the system under three-dimensional disturbances. The last set of experiments was carried out to test the capability of the proposed model to stabilize the gaze in locomotion tasks. The results confirm that the proposed model is beneficial in all cases reducing the retinal slip (velocity of the image on the retina) and keeping the orientation of the head stable.

General information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control, Centre for Playware, Scuola Superiore SantAnna
Authors: Vannucci, L. (Ekstern), Falotico, E. (Ekstern), Tolu, S. (Intern), Cacucciolo, V. (Ekstern), Dario, P. (Ekstern), Lund, H. H. (Intern), Laschi, C. (Ekstern)
Number of pages: 14
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Bioinspiration & Biomimetics
Volume: 12
Issue number: 6
Article number: 065001
ISSN (Print): 1748-3182
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.6 SJR 0.875 SNIP 1.247
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.236 SNIP 1.975 CiteScore 3.29
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.016 SNIP 1.543 CiteScore 2.87
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.949 SNIP 1.856 CiteScore 3.04
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.727 SNIP 1.636 CiteScore 2.47
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.681 SNIP 1.382 CiteScore 2.18
ISI indexed (2011): ISI indexed no
A computer-aided approach for achieving sustainable process design by process intensification

Process intensification can be applied to achieve sustainable process design. In this paper, a systematic, 3-stage synthesis-intensification framework is applied to achieve more sustainable design. In stage 1, the synthesis stage, an objective function and design constraints are defined and a base case is synthesized. In stage 2, the design and analysis stage, the base case is analyzed using economic and environmental analyses to identify process hot-spots that are translated into design targets. In stage 3, the innovation design stage, phenomena-based process intensification is performed to generate flowsheet alternatives that satisfy the design targets thereby, minimizing and/or eliminating the process hot-spots. The application of the framework is highlighted through the production of para-xylene via toluene methylation where more sustainable flowsheet alternatives that consist of hybrid/intensified unit operations are generated from the application of phenomena-based process intensification.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, CAPEC-PROCESS, Chulalongkorn University
Authors: Anantasarn, N. (Ekstern), Suriyapraphadilok, U. (Ekstern), Babi, D. K. (Intern)
Pages: 56-73
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Computers and Chemical Engineering
Volume: 105
ISSN (Print): 0098-1354
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.39 SJR 1.008 SNIP 1.607
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.122 SNIP 1.724 CiteScore 3.04
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.184 SNIP 1.738 CiteScore 3.22
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.223 SNIP 1.776 CiteScore 3.06
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.161 SNIP 1.92 CiteScore 3.05
ISI indexed (2012): ISI indexed yes
A computer-aided software-tool for sustainable process synthesis-intensification

Currently, the process industry is moving towards the design of innovative, more sustainable processes that show improvements in both economic and environmental factors. The design space of unit operations that can be combined to generate process flowsheet alternatives considering known unit operations as well as reported hybrid/intensified unit operations is large and can be difficult to manually navigate in order to determine the best process flowsheet for the production of a desired chemical product. Therefore, it is beneficial to utilize computer-aided methods and tools to enumerate, analyze and determine within the design space, the more sustainable processes. In this paper, an integrated computer-aided software-tool that searches the design space for hybrid/intensified more sustainable process options is presented. Embedded within the software architecture are process synthesis and intensification methods that operate at multiple scales, namely, unit operation, task and phenomena. First a base case process flowsheet (if it is not already available) is generated through process synthesis considering only known unit operations. The generated or supplied base case is then analyzed in order to identify process bottlenecks/limitations (hot-spots) that are translated into design targets. Next, phenomena-based synthesis is performed to identify process flowsheets that match the design targets through the use of hybrid/intensified unit operations. As these process flowsheets satisfy all process constraints while also matching the design targets, they are therefore more sustainable than the base case. The application of the software-tool to the production of biodiesel is presented, highlighting the main features of the computer-aided, multi-stage, multi-scale methods that are able to determine more sustainable designs.
A concise account of techniques available for shipboard sea state estimation

This article gives a review of techniques applied to make sea state estimation on the basis of measured responses on a ship. The general concept of the procedures is similar to that of a classical wave buoy, which exploits a linear assumption between waves and the associated motions. In the frequency domain, this assumption yields the mathematical relation between the measured motion spectra and the directional wave spectrum. The analogy between a buoy and a ship is clear, and the author has worked on this wave buoy analogy for about fifteen years. In the article, available techniques for shipboard sea state estimation are addressed, but with a focus on only the wave buoy analogy. Most of the existing work is based on methods established in the frequency domain but, to counteract disadvantages of the frequency-domain procedures, newer studies are working also on procedures formulated directly in the time domain. Sample results from several studies are included, and the main findings from these are mentioned.
A configurable FPGA FEC unit for Tb/s optical communication

Decoding of FEC (forward error correction) for optical communication beyond 1 Tb/s is investigated. A configurable single FPGA solution is presented having configurations supporting bit-rates in the range from 40 Gb/s to 1.6 Tb/s. The design allows for trade-offs of bit-rate, footprint, and latency within the resources of the FPGA. A proof-of-concept lab experiment at 40 Gb/s was conducted and pre-FEC — post-FEC performance validated with simulated results.
A Consistent Methodology Based Parameter Estimation for a Lactic Acid Bacteria Fermentation Model

Lactic acid bacteria are used in many industrial applications, e.g. as starter cultures in the dairy industry or as probiotics, and research on their cell production is highly required. A first principles kinetic model was developed to describe and understand the biological, physical, and chemical mechanisms in a lactic acid bacteria fermentation. We present here a consistent approach for a methodology based parameter estimation for a lactic acid fermentation. In the beginning, just an initial knowledge based guess of parameters was available and an initial parameter estimation of the complete set of parameters was performed in order to get a good model fit to the data. However, not all parameters are identifiable with the given data set and model structure. Sensitivity, identifiability, and uncertainty analysis were completed and a relevant identifiable subset of parameters was determined for a new parameter estimation including an evaluation of the correlation and confidence intervals of those parameters to double-check identifiability issues. Such a consistent approach supports process modelling and understanding as i.e., one avoids questionable interpretations caused by estimates of actually unidentifiable parameters.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, CAPEC-PROCESS, PILOT PLANT, Chr. Hansen AS
Authors: Spann, R. (Intern), Roca, C. (Ekstern), Kold, D. (Ekstern), Eliasson Lantz, A. (Intern), Gernaey, K. V. (Intern), Sin, G. (Intern)
Pages: 2222-2226
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 27th European Symposium on Computer Aided Process Engineering (ESCAPE 27)
Volume: 40
Publisher: Elsevier Science
Editors: Espuña, A., Graells, M., Puigjaner, L.
Edition: 1
ISBN (Print): 9780444639653
ISBN (Electronic): 9780444639707
Main Research Area: Technical/natural sciences
Conference: 27th European Symposium on Computer Aided Process Engineering, Barcelona, Spain, 01/10/2017 - 01/10/2017
Lactic acid bacteria, Parameter estimation, Sensitivity analysis, Identifiability analysis, uncertainty analysis mathematical and computer techniques
DOIs: 10.1016/B978-0-444-63965-3.50372-X
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

A continuous hyperspatial monitoring system of evapotranspiration and gross primary productivity from Unmanned Aerial Systems

General information
State: Published
Organisations: Department of Environmental Engineering, Water Resources Engineering, National Space Institute, Geodesy, Atmospheric Environment, European Commission - Joint Research Center, Technical University of Denmark
Authors: Wang, S. (Intern), Bandini, F. (Intern), Jakobsen, J. (Intern), Zarco Tejada, P. J. (Ekstern), Köppl, C. J. (Ekstern), Olesen, D. H. (Intern), Ibrom, A. (Intern), Bauer-Gottwein, P. (Intern), Garcia, M. (Intern)
Number of pages: 1
Publication date: 2017
Conference: EGU General Assembly 2017, Vienna, Austria, 24/04/2017 - 24/04/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Geophysical Research Abstracts
Volume: 19
Article number: EGU2017-12426-4
ISSN (Print): 1607-7962
Ratings:
Web of Science (2014): Indexed yes
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
A Continuous-Time Delta-Sigma ADC for Portable Ultrasound Scanners

A fully differential fourth-order 1-bit continuous-time delta-sigma ADC designed in a 65nm process for portable ultrasound scanners is presented in this paper. The circuit design, implementation and measurements on the fabricated die are shown. The loop filter consists of RC-integrators, programmable capacitor arrays, resistors and voltage feedback DACs. The quantizer contains a pulse generator, a high-speed clocked comparator and a pull-down clocked latch to ensure constant delay in the feedback loop. Using this implementation, a small and low-power solution required for portable ultrasound scanner applications is achieved. The converter has a supply voltage of 1.2V, a bandwidth of 10MHz and an oversampling ratio of 16 leading to an operating frequency of 320MHz. The design occupies a die area of 0.0175mm². Simulations with extracted parasitics show a SNR of 45.2dB and a current consumption of 489 µA. However, by adding a model of the measurement setup used, the performance degrades to 42.1dB. The measured SNR and current consumption are 41.6dB and 495 µA, which closely fit with the expected simulations. Several dies have been measured, and an estimation of the die spread distribution is given.

General information
State: Published
Organisations: Department of Electrical Engineering, Electronics
Authors: Llimos Muntal, P. (Intern), Jørgensen, I. H. H. (Intern), Bruun, E. (Intern)
Number of pages: 10
Pages: 393-402
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Analog Integrated Circuits and Signal Processing
Volume: 92
Issue number: 3
ISSN (Print): 0925-1030
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.74 SJR 0.233 SNIP 0.579
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.204 SNIP 0.405 CiteScore 0.58
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.228 SNIP 0.647 CiteScore 0.64
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.262 SNIP 0.632 CiteScore 0.72
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.272 SNIP 0.568 CiteScore 0.72
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.292 SNIP 0.694 CiteScore 0.95
ISI indexed (2011): ISI indexed yes
A contribution to late Middle Paleolithic chronology of the Levant: New luminescence ages for the Atlit Railway Bridge site, Coastal Plain, Israel

The Atlit Railway Bridge (ARB) prehistoric site is located on the northern coastal plain of Israel, within natural caves which formed in calcareous aeolianites (kurkar), perhaps during a high sea-stand. Flint artifacts belonging to the Levantine later Mousterian tradition and faunal remains were found embedded in the kurkar infill of two caves. The aeolianites in which the caves had developed were previously constrained by IRSL50 dating of feldspars to be older than the last interglacial highest sea-stand (Frechen M. et al., 2004; Chronology of Pleistocene sedimentary cycles in the Carmel Coastal Plain of Israel. Quaternary International 121, 1e52), providing a maximum age for the artifacts.

Samples for luminescence dating were collected from the infill of the two caves (II and III), from the same deposits as the archaeological finds. Both quartz and alkali feldspars (KF) were extracted and measured using four different luminescence signals: optically stimulated luminescence (blue OSL) and violet stimulated luminescence (VSL) on quartz; and the infrared stimulated luminescence (IRSL) post-IR-IR290 signal and the IR50 signal corrected for anomalous fading on KF. The ages obtained from analyses of the different minerals and signals mostly agree within errors. The new luminescence ages date the sediment infill in Caves III and II to ~90 ka and ~70 ka, respectively, indicating that hominin occupation of this locality is coeval with the nearby Skhul Cave and Layer B in Tabun Cave.
A Contribution to the Understanding of the Combined Effect of Nitrogen and Boron in Grey Cast Iron

Inoculation is an essential part of controlling material properties in grey cast iron. Inoculation practice has for decades been based on the addition to the melt of small amounts of elements with a strong affinity to O (and S) just before casting takes place. This method is proven—both in theory and in practice—to be effective in most cases. But it has the disadvantage that the nucleation effect fades away over time. In particular, in heavy castings (slow cooling) this effect may cause non-uniform and unacceptable material properties in some parts of the casting. Nitrogen is also known to influence grey iron microstructure. Both graphite flake formation and matrix formation are influenced. However, the obtained effects differ considerably between different reported investigations. This investigation deals with the combined effect of nitrogen and boron and how it is possible to utilize this effect to enhance material properties in heavy grey iron castings. It is shown that the controlled additions of nitrogen and boron can be used to control the microstructure of thick section grey iron castings. A plausible theory for the formation of boron nitride nuclei effective for graphite growth is presented.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Mixed Conductors, Department of Mechanical Engineering , Manufacturing Engineering, Dansk Udviklings Formidling ApS
Authors: Strande, K. (Ekstern), Tiedje, N. S. (Intern), Chen, M. (Intern)
In real-time systems, the use of hardware accelerators can lead to a worst-case execution-time speed-up, to a simplification of its analysis, and to a reduction of its pessimism. When using FPGA technology, dynamic partial reconfiguration (DPR) can be used to minimize the area, by only loading those accelerators that are needed at any given point in time. The DPR controllers provided by the FPGA vendors satisfy a wide range of requirements and rely on software to manage the reconfiguration. This approach may lead to slow reconfiguration and unpredictable timing. This paper presents an open-source DPR controller specially developed for hard real-time systems and prototyped in connection with the open-source multi-core platform for real-time applications T-CREST. The controller enables a processor to perform reconfiguration in a time-predictable manner and supports different operating modes. The paper also presents a software tool for bitstream conversion, compression, and for reconfiguration time analysis. The DPR controller is evaluated in terms of hardware cost, operating frequency, speed, and bitstream compression ratio vs. reconfiguration time trade-off. A simple application example is also presented with the scope of showing the reconfiguration features of the controller.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Embedded Systems Engineering
Authors: Pezzarossa, L. (Intern), Schoeberl, M. (Intern), Sparse, J. (Intern)
Pages: 92-100
Publication date: 2017

Host publication information
Title of host publication: 2017 IEEE 20th International Symposium on Real-Time Distributed Computing
Publisher: IEEE
ISSN: 2375-5261
A Convex Reconstruction Model for X-ray Tomographic Imaging with Uncertain Flat-fields

Classical methods for X-ray computed tomography are based on the assumption that the X-ray source intensity is known, but in practice, the intensity is measured and hence uncertain. Under normal operating conditions, when the exposure time is sufficiently high, this kind of uncertainty typically has a negligible effect on the reconstruction quality. However, in time- or dose-limited applications such as dynamic CT, this uncertainty may cause severe and systematic artifacts known as ring artifacts. By carefully modeling the measurement process and by taking uncertainties into account, we derive a new convex model that leads to improved reconstructions despite poor quality measurements. We demonstrate the effectiveness of the methodology based on simulated and real data sets.

A coordination language for databases

We present a coordination language for the modeling of distributed database applications. The language, baptized Klaim-DB, borrows the concepts of localities and nets of the coordination language Klaim but re-incarnates the tuple spaces of Klaim as databases. It provides high-level abstractions and primitives for the access and manipulation of structured data, with integrity and atomicity considerations. We present the formal semantics of Klaim-DB and develop a type system that avoids potential runtime errors such as certain evaluation errors and mismatches of data format in tables, which are monitored in the semantics. The use of the language is illustrated in a scenario where the sales from different branches of a chain of department stores are aggregated from their local databases. Raising the abstraction level and encapsulating integrity checks in the language primitives have benefited the modeling task considerably.
Acoustic emission monitoring of the bending under tension test

Preliminary investigations have shown that acoustic emission has promising aspects as an online monitoring technique for assessment of tribological conditions during metal forming as regards to determination of the onset of galling. In the present study the acoustic emission measuring technique has been applied for online monitoring of the frictional conditions experienced during Bending Under Tension (BUT) testing. The BUT test emulates the forming conditions experienced when drawing sheet material over a die curvature as in deep drawing processes. Monitoring of the developed acoustic emission in BUT testing has been found to describe the frictional conditions during forming well and to allow for accurate assessment of the limits of lubrication.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering
Authors: Moghadam, M. (Intern), Sulaiman, M. H. B. (Intern), Christiansen, P. (Intern), Bay, N. O. (Intern)
Pages: 1421–1426
Publication date: 2017
Conference: International Conference on the Technology of Plasticity (ICTP 2017), Cambridge, United Kingdom, 17/09/2017 - 17/09/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Procedia Engineering
Acoustic Tweezing and Patterning of Concentration Fields in Microfluidics

We demonstrate theoretically that acoustic forces acting on inhomogeneous fluids can be used to pattern and manipulate solute concentration fields into spatiotemporally controllable configurations stabilized against gravity. A theoretical framework describing the dynamics of concentration fields that weakly perturb the fluid density and speed of sound is presented and applied to study manipulation of concentration fields in rectangular-channel acoustic eigenmodes and in Bessel-function acoustic vortices. In the first example, methods to obtain horizontal and vertical multilayer stratification of the concentration field at the end of a flow-through channel are presented. In the second example, we demonstrate acoustic tweezing and spatiotemporal manipulation of a local high-concentration region in a lower-concentration medium, thereby extending the realm of acoustic tweezing to include concentration fields.

General information
State: Published
Organisations: Department of Physics, Biophysics and Fluids
Authors: Karlsen, J. T. (Intern), Bruus, H. (Intern)
Number of pages: 10
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Physical Review Applied
Volume: 7
Issue number: 3
Article number: 034017
ISSN (Print): 2331-7019
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.83 SJR 2.072 SNIP 1.348
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 1.294 SJR 1.93 CiteScore 3.31
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
Original language: English
Electronic versions:
1_s2.0_S187770581735693X_main.pdf
DOIs:
10.1103/PhysRevApplied.7.034017
Acousto-optical phonon excitation in cubic piezoelectric slabs and crystal growth orientation effects

In this paper we investigate theoretically the influence of piezoelectric coupling on phonon dispersion relations. Specifically, we solve dispersion relations for a fully coupled zinc-blende freestanding quantum well for different orientations of the crystal unit cell. It is shown that the phonon mode density in GaAs can change by a factor of approximately 2–3 at $q_x = 1$ for different crystal-growth directions relative to the slab thickness direction. In particular, it is found that optical and acoustic phonon modes are always piezoelectrically coupled, independent of the crystal-growth direction, and will be jointly excited by electrical stimulus. We demonstrate this for an electrically excited freestanding slab for two cases of high-symmetry crystal-growth directions and finally show the impact of the Drude model for permittivity on the phonon dispersion. In particular, it is verified that the piezoelectric effect leads to a drastically enhanced coupling of acoustic and optical phonon modes and increase in the local phonon density of states near the plasma frequency where the permittivity approaches zero.
Acousto-optical phonon excitation in piezoelectric wurtzite slabs and crystal growth orientation effects

This paper presents a theoretical investigation of phonon dispersion in piezoelectric slabs of hexagonal crystal symmetry (wurtzite). Specifically we solve the fully coupled dispersion relations in a GaN free standing quantum well by varying the crystal growth direction from the [001] axis to the [010] axis. Accounting for the Drude model in solving the fully-coupled dispersion relations, phonon modes will generate an additional phonon band, with a high local density of phonon states, close to the plasma frequency. As opposed to cubic crystals with isotropic permittivity, the location of this band varies with crystal orientation. We also find that the phonon mode dependence on the crystal orientation is more pronounced for small in-plane wavenumbers.

General information
State: Published
Organisations: Department of Photonics Engineering, University of Southern Denmark
Authors: Duggen, L. (Ekstern), Willatzen, M. (Intern)
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Semiconductor Science and Technology
Volume: 32
Issue number: 6
Article number: 064001
ISSN (Print): 0268-1242
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 0.632 SNIP 0.866 CiteScore 1.75
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.675 SNIP 0.977 CiteScore 1.73
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.991 SNIP 1.088 CiteScore 1.72
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.173 SNIP 1.133 CiteScore 1.53
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.051 SNIP 0.982 CiteScore 1.42
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.01 SNIP 1.08 CiteScore 1.66
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.82 SNIP 0.88
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
A Cow- and Herd-specific Bio-Economic Model of Intramammary Infections in Dairy Cows

Introduction. Mastitis, or intramammary infection (IMI), is one of the most significant diseases in dairy herds worldwide. It is caused by environmental and contagious bacteria. Simulation models have proven useful for evaluating the effect of different control strategies. However, previous published models are not cow-specific and therefore not so detailed in the simulation of host-pathogen interactions. If a simulation model is to be used by dairy farmers as a decision-making tool, it needs to be cow-specific because daily management decisions are made on cow level. Furthermore, as IMI is often caused by more than one pathogen in the same herd, such a simulation model should also be pathogen-specific to account for different transmission characteristics and treatment effects. Moreover, as different strains of pathogens can have different transmission routes (i.e. environmental, contagious or mixed), the model should be able to reflect this diversity. Our objective was thus to create a pathogen-, cow- and herd-specific bio-economic simulation model that could simulate multiple pathogens and strains at the same time within a dairy herd. This model should be able to simulate realistic scenarios for specific herds, thus being a tool for decision-making for individual farmers.

Methods
We used an existing mechanistic, stochastic simulation model framework to create an IMI simulation model. This mechanistic model simulates a dairy herd in great detail; i.e. with individual lactation curves for all cows, continuous movement of cows between farm sections and continuous culling decisions made by the farmer. We expanded the model to simulate the individual quarters of cows. This procedure made it possible for cows to have up to four different infections at a time, one per quarter. We implemented two different transmission modes, namely environmental transmission based on a continuous reservoir of pathogens in the farm, and contagious IMI originating from other infected animals in the herd. Currently, the environmental pathogen included is Escherichia coli, and the contagious pathogens are Staphylococcus aureus, Streptococcus agalactiae and Streptococcus uberis. The contagious transmission is simulating transmission, e.g. via milk liners, and depends on the number of quarters with contagious pathogens in the herd. We chose to focus on these
four pathogens because they are common in Danish dairy farms. We modelled the increase in somatic cell count (SCC) due to subclinical infection. The reduction in milk yield for individual cows is then based on their SCC. Thus we are able to estimate the economic consequences of each IMI pathogen in the herd, simulate different control scenarios and estimate their epidemiological and economic effects.

**Acquired Immune Resistance Follows Complete Tumor Regression without Loss of Target Antigens or IFN gamma Signaling**

Cancer immunotherapy can result in durable tumor regressions in some patients. However, patients who initially respond often experience tumor progression. Here, we report mechanistic evidence of tumoral immune escape in an exemplary clinical case: a patient with metastatic melanoma who developed disease recurrence following an initial, unequivocal radiologic complete regression after T-cell-based immunotherapy. Functional cytotoxic T-cell responses, including responses to one mutant neoantigen, were amplified effectively with therapy and generated durable immunologic memory. However, these immune responses, including apparently effective surveillance of the tumor mutanome, did not prevent recurrence. Alterations of the MHC class I antigen-processing and presentation machinery (APM) in resistant cancer cells, but not antigen loss or impaired IFN gamma signaling, led to impaired recognition by tumor-specific CD8(+) T cells. Our results suggest that future immunotherapy combinations should take into account targeting cancer cells with intact and impaired MHC class I-related APM. Loss of target antigens or impaired IFN gamma signaling does not appear to be mandatory for tumor relapse after a complete radiologic regression. Personalized studies to uncover mechanisms leading to disease recurrence within each individual patient are warranted.
A Critical Analysis of the Environmental Dossiers from the OECD Sponsorship Programme for the Testing of Manufactured Nanomaterials

In 2015, the OECD finally published the findings of its seven year testing programme for manufactured nanomaterials. Here, we present the first in-depth analysis of the published OECD dossiers with regards to data on physical and chemical properties, environmental fate and ecotoxicology. Each individual study in the dossiers was reviewed with regard to, among other, which OECD Test Guidelines (TG) were used, and the reliability assigned to the study. We furthermore analyzed in detail the suspension methods used, how media quality was quantified and physical and chemical characterization performed prior, during and/or at the end of the study. We find that the information in the dossiers present an incomplete portfolio of nanomaterial ecotoxicological evaluations that are difficult to draw substantive conclusions from and that most of the studies were not designed to investigate the validity of the OECD Test Guidelines. We acknowledge the effort of the OECD WPMN and recommend that a follow-on program is established with well-defined goals, end-points and direct funding to qualified research laboratories to ensure valid, rigorous, reproducible and efficient research.

General information
State: Published
Organisations: Department of Environmental Engineering, Environmental Chemistry
A critical period of corticomuscular and EMG-EMG coherence detection in healthy infants aged 9-25 weeks: Corticomuscular and EMG-EMG coherence during early development

The early postnatal development of functional corticospinal connections in human infants is not fully clarified. We used EEG and EMG to investigate the development of corticomuscular and intramuscular coherence as indicators of functional corticospinal connectivity in healthy infants aged 1-66 weeks. EEG was recorded over leg and hand area of motor cortex. EMG recordings were made from right ankle dorsiflexor and right wrist extensor muscles. Quantification of the amount of corticomuscular coherence in the 20-40 Hz frequency band showed a significantly larger coherence for infants aged 9-25 weeks compared to younger and older infants. Coherence between paired EMG recordings from tibialis anterior muscle in the 20-40 Hz frequency band was also significantly larger for the 9-25 week age group. A low-amplitude, broad-duration (40-50 ms) central peak of EMG-EMG synchronization was observed for infants younger than 9 weeks, whereas a short-lasting (10-20 ms) central peak was observed for EMG-EMG synchronization in older infants. This peak was largest for infants aged 9-25 weeks. These data suggest that the corticospinal drive to lower and upper limb muscles shows significant developmental changes with an increase in functional coupling in infants aged 9-25 weeks, a period which coincides partly with the developmental period of normal fidgety movements. We propose that these neurophysiological findings may reflect the existence of a sensitive period where the functional connections between corticospinal tract fibres and spinal motoneurones undergo activity-dependent reorganization. This may be relevant for the timing of early therapy interventions in infants with pre-and perinatal brain injury.
A critical and in-depth analysis of the environmental aspect of the OECD SP dossiers

General information
State: Published
Organisations: Department of Environmental Engineering, Environmental Chemistry, Arizona State University
Authors: Hansen, S. F. (Intern), Hjorth, R. (Intern), Skjolding, L. M. (Intern), Bowman, D. M. (Ekstern), Maynard, A. (Ekstern), Baun, A. (Intern)
A critical and in-depth anEcotoxicity testing of nanoparticles - The quest for disclosing the nano-effect

General information
State: Published
Organisations: Department of Environmental Engineering, Environmental Chemistry
Authors: Baun, A. (Intern), Skjolding, L. M. (Intern), Sørensen, S. N. (Intern), Hjorth, R. (Intern), Hansen, S. F. (Intern), Hartmann, N. B. (Ekstern)
Pages: 48-48
Publication date: 2017

Host publication information
Title of host publication: Abstracts - 8th international symposium on nanotechnology, occupational and environmental health
Place of publication: Elsinore, Denmark
Publisher: National research centre for the working environment
Main Research Area: Technical/natural sciences
Conference: 8th international symposium on nanotechnology, occupational and environmental health, Elsinore, Denmark, 29/05/2017 - 29/05/2017
Electronic versions:
Nanotech_symp_A_critical_and_in_depth.pdf
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2017

A cross-sectional field study on potential associations between feed quality measures and usage of antimicrobials in commercial mink (Neovison vison)

Feed quality is generally assumed to affect health status in animal production. In previous studies, the feed producer has been found to affect the occurrence of gastrointestinal disease and antimicrobial use in Mink (Neovison vison). Mink are fed with moist, freshly produced feed, based on perishable ingredients. The objective of this study was to investigate the potential effect of specific feed parameters on antimicrobial use on herd level. The study was cross-sectional, including 1472 mink herds, responsible for 97% of oral antimicrobials prescribed for Danish mink during the study period, 2012-2014. Data were obtained from the national veterinary prescription database (VetStat), Kopenhagen Fur database, and the Voluntary Feed Control (Mink producers Organization). All feed batches subject to feed control were included. A multi-variable variance analysis was carried out analysing the effect of the feed parameters total volatile nitrogen, dry matter, crude protein and fat; total bacterial count (21 °C), and counts of sulphite producing bacteria (21 °C), Clostridium spp., faecal cocci (FC) (44 °C), yeast, and mould; presence of Salmonella spp. and Clostridium perfringens (dichotome). Three outcome variables were applied: prescription of oral antimicrobial on herd level within time slots of 3, 5 or 7 days after feeding. Two binomial models were developed, adjusting for significant effects (p < 0.0001) of Ps. aeruginosa infection, herd size, month (season) and year. Antimicrobial prescription was significantly (p < 0.0001) associated with FC (all time slots, both models). A negative association (p < 0.0001) with crude protein on antimicrobial prescription within a 7 day slot suggested an association between low content of crude protein and antimicrobial use. The associations need to be confirmed in controlled studies, and ideally, potential causalities should be investigated. The perspective of such findings could be the development of tests for control of feed ingredients prior to use in the feed production.

General information
State: Published
Organisations: National Veterinary Institute, Epidemiology, Department of Applied Mathematics and Computer Science, Diagnostic & Development, Kopenhagen Fur
Authors: Jensen, V. F. (Intern), Sommer, H. M. (Intern), Struve, T. (Ekstern), Clausen, J. (Ekstern), Chriél, M. (Intern)
Pages: 54–60
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Preventive Veterinary Medicine
Volume: 143
ISSN (Print): 0167-5877
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.2 SJR 1.185 SNIP 1.329
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.26 SNIP 1.23 CiteScore 2.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.267 SNIP 1.421 CiteScore 2.37
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.247 SNIP 1.552 CiteScore 2.49
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.274 SNIP 1.452 CiteScore 2.45
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.211 SNIP 1.303 CiteScore 2.24
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.155 SNIP 1.28
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.022 SNIP 1.34
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.066 SNIP 1.273
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.006 SNIP 1.36
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.056 SNIP 1.305
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.926 SNIP 1.438
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.807 SNIP 1.147
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.865 SNIP 1.346
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.924 SNIP 1.423
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.044 SNIP 1.415
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.945 SNIP 1.272
A cross-sectional study of oral antibacterial treatment patterns in relation to specific diarrhoeal pathogens in weaner pigs

According to international guidelines, the use of antibacterials should be evidence based and prudent. This register-based, cross-sectional study investigates the potential effect of laboratory findings on the patterns of antibacterial oral (batch) medication of weaner pigs, and the level of compliance with national guidelines for antibacterial use. The study population includes 1,736 weaner herds (∼65% of all Danish weaner pigs) that were subject to laboratory analysis from the National Veterinary Institute on Brachyspira pilosicoli, Lawsonia intracellularis, and E.coli (F4 and F18) in 2014. Antibacterial prescription data were obtained from the national database, VetStat. These showed that antibacterial prescriptions for use in weaner pigs was 8.6% lower in spring 2015 compared to spring 2014. The antibacterial use per pig tended (p = 0.08) to decrease more in herds with negative laboratory results compared to herds with a moderate or massive occurrence of either of the pathogens. Irrespective of the laboratory findings on diarrhoeal pathogens, tetracyclines were the most frequently used antibacterials by a substantial margin, both 3 months prior to and 2-5 months after laboratory analysis. According to the national guidelines, tetracyclines are the second or third-choice antibacterial for treatment of diarrhoeal pathogens, due to resistance and co-resistance patterns. Compliance with the guidelines increased in 14% of the herds, mostly following identification of B. pilosicoli within the herd. Between 10% and 20% of the herds did not use batch treatment, despite the presence of moderate–massive amounts of the pathogens.
A cryogenic measurement setup for characterization microwave devices

A cryogenic measurement setup for characterization microwave devices from room to cryogenic temperatures is presented. The setup allows testing microwave devices at variable temperatures ranging from 300 to 77 K. Frequency doubler (94/188 GHz) has been cooled to 77 K and peak efficiency of 32% at an input-power level of 207 mW is achieved. For verification experimental results the millimeter-wave GaAs Schottky barrier diode model is developed for CAD simulator. The simulated peak efficiency is 37% at 77 K. The estimation of simulated and measured data of the doubler efficiency versus temperature has the same trend from 77 to 300 K which confirmed the cryogenic measurement setup applicability.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Magnetic Resonance
Authors: Rybalko, O. (Intern)
Number of pages: 5
Pages: 3123-3127
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Microwave and Optical Technology Letters
Volume: 59
Issue number: 12
DOI: 10.1016/j.microl.2017.01.038
Original language: English
Pigs, Diarrhoea, Bacterial pathogens, Antibacterial choice, Evidence-based prescribing
Activation of Toll-like Receptor 2 in Human Synovium Explants Increase Tissue Turnover and Secretion of Interleukin-6

Background/Purpose:
The innate immune system is important for initiation and development of OA. Increased degradation of the cartilage release fragments into the synovial fluid, which can then bind to innate immune receptors in the synovium. The aim of this study was to investigate the effect of Toll like receptor 2 (TLR2) activation by synthetic agonists and a synthetic aggrecan 32 amino acid fragment (32-mer) on the tissue turnover and IL-6 secretion, in a human synovial membrane explant model.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Enzyme and Protein Chemistry, University of Copenhagen, Gentofte University Hospital, Nordic Bioscience A/S
Authors: Sharma, N. (Ekstern), Kayed, A. (Ekstern), Kjelgaard-Petersen, C. F. (Intern), Christiansen, T. G. (Ekstern), Karsdal, M. (Ekstern), Thudium, C. S. (Ekstern), Bay-Jensen, A. (Ekstern)
Number of pages: 4
Publication date: 2017
Conference: 2017 ACR/ARHP Annual Meeting, San Diego, United States, 03/11/2017 - 03/11/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Arthritis and Rheumatology
Volume: 69
Article number: 1063
ISSN (Print): 2326-5205
Ratings:
Scopus rating (2016): CiteScore 5.73
Scopus rating (2015): CiteScore 4.47
Original language: English
Electronic versions:
acabstracts_org_abstract_activation_of_toll_like_receptor_2.pdf
Source: Findit
Source-ID: 2392754671
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2017

Active and Passive Immunization Against Staphylococcus aureus Periprosthetic Osteomyelitis in Rats

Background/Aim: Staphylococcus aureus infection associated with orthopedic implants cannot always be controlled. We used a knee prosthesis model with implant-related osteomyelitis in rats to explore induction of an effective immune response with active and passive immunization. Materials and Methods: Fifty-two Sprague-Dawley rats were divided into active (N=28) and passive immunization groups (N=24). A bacterial inoculum of 10(3) S. aureus MN8 was injected into the tibia and the femur marrow before insertion of a non-constrained knee prosthesis in each rat. The active-immunization group received a synthetic oligosaccharide of polysaccharide poly-N-acetylglucosamine (PNAG), 9G1cNH(2) and the passive-immunization group received immunization with immunoglobulin from rabbits infected with S. aureus.
Results/Conclusion: Active immunization against PNAG significantly reduced the consequences of osteomyelitis infection from PNAG-producing intercellular adhesion (ica+) but not ica(-) S. aureus. Passive immunization resulted in better clinical assessments in animals challenged with either ica(+) or icaS. aureus, suggesting a lack of specificity in this antiserum.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Infection Microbiology, University Hospital Herlev, University of Copenhagen, Harvard Medical School
Pages: 45-50
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: In Vivo
Volume: 31
Issue number: 1
ISSN (Print): 0258-851X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
Active and reactive power support of MV distribution systems using battery energy storage

Adoption of Battery Energy Storage Systems (BESSs) for provision of grid services is increasing. This paper investigates the applications of BESS for the grid upgrade deferral and voltage support of Medium Voltage (MV) distribution systems. A BESS is modelled in Matlab/Simulink to perform peak load shaving and voltage support service from the perspective of Distribution System Operators (DSOs). An active power support algorithm is implemented and the effects of various load profiles as well as different Photovoltaic (PV) penetration scenarios on the operation of BESS and the optimal BESS converter size for peak load shaving are investigated. The BESS annual lifetime degradation is also estimated using a rainflow counting algorithm. A reactive power support algorithm embedded with Q-U droop control is proposed in order to reduce the voltage drop in a part of 10 kV distribution network of Nordhavn in Copenhagen, and the effects of active and reactive power support by BESS on the grid voltage are investigated.
Active Distribution Grid Management based on Robust AC Optimal Power Flow

Further integration of distributed renewable energy sources in distribution systems requires a paradigm change in grid management by the distribution system operators (DSO). DSOs are currently moving to an operational planning approach based on activating flexibility from distributed energy resources in day/ hour-ahead stages. This paper follows the DSO trends by proposing a methodology for active grid management by which robust optimization is applied to accommodate spatial-temporal uncertainty. The proposed method entails the use of a multi-period AC-OPF, ensuring a reliable solution for the DSO. Wind and PV uncertainty is modeled based on spatial-temporal trajectories, while a convex hull technique to define uncertainty sets for the model is used. A case study based on real generation data allows illustration and discussion of the properties of the model. An important conclusion is that the method allows the DSO to increase system reliability in the real-time operation. However, the computational effort grows with increases in system robustness.
Increasing environmental concerns are driving an evolution of the energy system, in which the electrification of the transport sector is considered to be a crucial element. Successful electric vehicle (EV) introduction potentially allows the reduction of CO2 emissions, but also represents a substantial challenge for the power system, especially at the distribution level where high EV concentrations cause various detrimental effects. More specifically, the low-voltage grid operation becomes challenging since uncontrolled EV charging typically coincides with the peak residential consumption, resulting in a considerable peak load and severe voltage deviations. However, EVs hold potential for providing services beyond transportation and, thus, should not be considered merely as passive loads. If managed properly, EVs become flexible resources which can enhance the grid operation, making them an attractive asset for the distribution system operator (DSO). This thesis investigates how EVs can mitigate the self-induced adverse effects and actively help the distribution grid operation, either autonomously or in coordination, e.g., with an EV aggregator. The general framework for EV integration is presented, including the contemporary technology, the relevant stakeholders and the most important challenges. EV flexibility provision to DSOs is studied both from the technical and the regulatory perspective in order to identify the barriers for active EV involvement, and provide a set of policy recommendations for overcoming them. The potential benefits and drawbacks of introducing EV reactive power capability for voltage support are analysed. A decentralised reactive power control is proposed which can, given the appropriate equipment sizing, support the distribution grid independent of the active power modulation. Such an autonomous controller relies only on the local voltage measurement and can be implemented in the short-term future by using the inherent functionality of the EV power electronics. The impact of the proposed control is investigated on a Danish low-voltage grid with the assessment of grid parameters in various conditions. A multi-objective framework is developed for the optimal EV day-ahead scheduling in unbalanced distribution grids. The framework assesses the trade-off between the DSO’s and the EV aggregator’s economic concerns, and uses a fuzzy-satisfying method to balance the interest of both parties. Moreover, the impact of the additional EV reactive power support is analysed when EVs are the only flexible resource, as well as when combined with other demand response. Experimental activities were conducted to validate the technical feasibility of contemporary EVs to provide flexibility services, both in a laboratory environment and in a real distribution grid. The emphasis was put on assessing several EV parameters, such as EV responsiveness and EV accuracy, to provide basis for future theoretical work, as well as recommendations for improvement. Overall, it is shown that EVs can actively support the distribution grid operation, but there is a critical gap between the political sustainability plans, and the implemented standards and regulatory framework. Moreover, it is demonstrated that DSOs can benefit from the potential EV reactive power control without substantially influencing the losses or the EV aggregator’s cost. Finally, it is proven that series-produced EVs are capable of providing various flexibility services within several seconds, but their accuracy might arise as a topic of concern.
Active Learning in Engineering Education: a (re)introduction

The informal network ‘Active Learning in Engineering Education’ (ALE) has been promoting Active Learning since 2001. ALE creates opportunity for practitioners and researchers of engineering education to collaboratively learn how to foster learning of engineering students. The activities in ALE are centred on the vision that learners construct their knowledge based on meaningful activities and knowledge. In 2014, the steering committee of the ALE network reinforced the need to discuss the meaning of Active Learning and that was the base for this proposal for a special issue. More than 40 submissions were reviewed by the European Journal of Engineering Education community and this theme issue ended up with eight contributions, which are different both in their research and Active Learning approaches. These different Active Learning approaches are aligned with the different approaches that can be increasingly found in indexed journals.

General information

State: Published
Organisations: Office for Study Programmes and Student Affairs, University of Minho, Chalmers University of Technology
Authors: Lima, R. M. (Ekstern), Andersson, P. H. (Intern), Saalman, E. (Ekstern)
Number of pages: 4
Pages: 1-4
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: European Journal of Engineering Education
Volume: 42
Issue number: 1
ISSN (Print): 0304-3797
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.01 SJR 0.501 SNIP 1.043
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.812 SNIP 1.456 CiteScore 1.34
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.84 SNIP 1.213 CiteScore 0.96
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.048 SNIP 1.105 CiteScore 0.95
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.163 SNIP 1.125 CiteScore 0.83
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.622 SNIP 1.543 CiteScore 1.19
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.931 SNIP 1.044
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.322 SNIP 0.973
BFI (2008): BFI-level 1
This is part II of a twofold paper series dealing with the design and implementation of model-based controllers meant for assisting the hybrid and developing the feedback-controlled lubrication regimes in active tilting pad journal bearings (active TPJBs). In both papers theoretical and experimental analyses are presented with focus on the reduction of rotor lateral vibration. This part is devoted to synthesising model-based LQG optimal controllers (LQR regulator + Kalman Filter) for the feedback-controlled lubrication and is based upon the mathematical model of the rotor-bearing system derived in part I. Results show further suppression of resonant vibrations when using the feedback-controlled or active lubrication, overweighting the reduction already achieved with hybrid lubrication, thus improving the whole machine dynamic performance.
Active tilting-pad journal bearings supporting flexible rotors: Part I – The hybrid lubrication

This is part I of a twofold paper series, of theoretical and experimental nature, presenting the design and implementation of model-based controllers meant for assisting the hybrid and developing the feedback-controlled lubrication regimes in active tilting-pad journal bearings (active TPJBs). In part I, the flexible rotor-active TPJB modelling is thoroughly covered by establishing the link between the mechanical and hydraulic systems for all regimes. The hybrid lubrication is herein covered in depth; from a control viewpoint, an integral controller to aid such a regime is designed using model-based standard tools. Results show slight improvement on the system dynamic performance by using the hybrid lubrication instead of the passive one. Further improvements are pursued with the active lubrication in part II.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics
Authors: Salazar, J. A. G. (Intern), Santos, I. (Intern)
Pages: 94-105
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Tribology International
Volume: 107
ISSN (Print): 0301-679X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.16 SJR 1.382 SNIP 2.094
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.437 SNIP 2.04 CiteScore 2.61
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.545 SNIP 2.5 CiteScore 2.44
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.473 SNIP 2.793 CiteScore 2.51
Active tuned mass damper for damping of offshore wind turbine vibrations

An active tuned mass damper (ATMD) is employed for damping of tower vibrations of fixed offshore wind turbines, where the additional actuator force is controlled using feedback from the tower displacement and the relative velocity of the damper mass. An optimum tuning procedure equivalent to the tuning procedure of the passive tuned mass damper combined with a simple procedure for minimizing the control force is employed for determination of optimum damper parameters and feedback gain values. By time domain simulations conducted in an aeroelastic code, it is demonstrated that the ATMD can be used to further reduce the structural response of the wind turbine compared with the passive tuned mass damper and this without an increase in damper mass. A limiting factor of the design of the ATMD is the displacement of the damper mass, which for the ATMD, increases to compensate for the reduction in mass.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, National Oilwell Varco Denmark I/S
Authors: Brodersen, M. L. (Intern), Bjørke, A. (Ekstern), Høgsberg, J. B. (Intern)
Pages: 783–796
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Active vibration-based structural health monitoring system for wind turbine blade: Demonstration on an operating Vestas V27 wind turbine

This study presents a structural health monitoring system that is able to detect structural defects of wind turbine blade such as cracks, leading/trailing-edge opening, or delamination. It is shown that even small defects of at least 15 cm size can be detected remotely without stopping the wind turbine. The structural health monitoring system presented is vibration-based: mechanical energy is artificially introduced by means of an electromechanical actuator, whose plunger periodically hits the blade. The induced vibrations propagate along the blade and are picked up by accelerometers mounted along the blade. The vibrations in mid-range frequencies are utilized: this range is above the frequencies excited by blade–wind interaction, ensuring a good signal-to-noise ratio. At the same time, the corresponding wavelength is short enough to deliver required damage detection resolution and long enough to be able to propagate the entire blade length. This article demonstrates the system on a Vestas V27 wind turbine. One blade of the wind turbine was equipped with the system, and a 3.5-month monitoring campaign was conducted while the turbine was operating normally. During the campaign, a defect—a trailing-edge opening—was artificially introduced into the blade and its size was gradually increased from the original 15 to 45 cm. Using a semi-supervised learning algorithm, the system was able to detect even the smallest amount of damage while the wind turbine was operating under different weather conditions. This article provides detailed information about the instrumentation and the measurement campaign and explains the damage detection algorithm.

General information
State: Published
Authors: Tcherniak, D. (Ekstern), Mølgaard, L. L. (Intern)
Pages: 536-550
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Structural Health Monitoring
Volume: 16
Issue number: 5
ISSN (Print): 1475-9217
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.01 SJR 1.044 SNIP 1.641
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.17 SNIP 1.752 CiteScore 2.37
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.924 SNIP 3.364 CiteScore 3.43
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.312 SNIP 2.645 CiteScore 2.86
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.781 SNIP 1.996 CiteScore 1.58
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.887 SNIP 2.038 CiteScore 1.65
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.821 SNIP 1.664
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.839 SNIP 2.157
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.565 SNIP 1.217
Scopus rating (2007): SJR 1.257 SNIP 2.489
Scopus rating (2006): SJR 0.784 SNIP 2.235
Activity-Based Collaboration for Interactive Spaces

Activity-based computing (ABC) is a conceptual and technological framework for designing interactive systems that offers a better mapping between the activities people conduct and the digital entities they use. In ABC, rather than interacting directly with lower-level technical entities like files, folder, documents, etc., users are able to interact with ‘activities’ which encapsulate files and other low-level resources. In ABC an ‘activity’ can be shared between collaborating users and can be accessed on different devices. As such, ABC is a framework that suits the requirements of designing interactive spaces. This chapter provides an overview of ABC with a special focus on its support for collaboration (‘Activity Sharing’) and multiple devices (‘Activity Roaming’). These ABC concepts are illustrated as implemented in two different interactive spaces technologies; ReticularSpaces [1] and the eLabBench [2, 3]. The chapter discusses the benefits of activity-based collaboration support for these interactive spaces, while also discussing limitations and challenges to be addressed in further research.

General information
State: Published
Organisations: Copenhagen Center for Health Technology, Department of Applied Mathematics and Computer Science, Embedded Systems Engineering, Centre National de la Recherche Scientifique, IT University of Copenhagen
Authors: Bardram, J. E. (Intern), Esbensen, M. (Forskerdatabase), Tabard, A. (Forskerdatabase)
Pages: 233-257
Publication date: 2017

Host publication information
Title of host publication: Collaboration Meets Interactive Spaces
Publisher: Springer
Editors: Anslow, C., Campos, P., Jorge, J.
ISBN (Print): 978-3-319-45852-6
ISBN (Electronic): 978-3-319-45853-3
Chapter: 11
Main Research Area: Technical/natural sciences
DOIs: 10.1007/978-3-319-45853-3_11
Publication: Research - peer-review › Book chapter – Annual report year: 2017

Activity of type i methanotrophs dominates under high methane concentration: Methanotrophic activity in slurry surface crusts as influenced by methane, oxygen, and inorganic nitrogen
Livestock slurry is a major source of atmospheric methane (CH₄), but surface crusts harboring methane-oxidizing bacteria (MOB) could mediate against CH₄ emissions. This study examined conditions for CH₄ oxidation by in situ measurements of oxygen (O₂) and nitrous oxide (N₂O), as a proxy for inorganic N transformations, in intact crusts using microsensors. This was combined with laboratory incubations of crust material to investigate the effects of O₂, CH₄, and inorganic N on CH₄ oxidation, using ¹³CH₄ to trace C incorporation into lipids of MOB. Oxygen penetration into the crust was 2 to 14 mm, confining the potential for aerobic CH₄ oxidation to a shallow layer. Nitrous oxide accumulated within or below the zone of O₂ depletion. With 102 ppmv CH₄ there was no O₂ limitation on CH₄ oxidation at O₂ concentrations as low as 2%, whereas CH₄ oxidation at 104 ppmv CH₄ was reduced at =5% O₂. As hypothesized, CH₄ oxidation was in general inhibited by inorganic N, especially NO₂⁻, and there was an interaction between N inhibition and O₂ limitation at 102 ppmv CH₄, as indicated by consistently stronger inhibition of CH₄ oxidation by NH₄⁺ and NO₃⁻ at 3% compared with 20% O₂. Recovery of ¹³C in phospholipid fatty acids suggested that both Type I and Type II MOB were active, with Type I dominating high-concentration CH₄ oxidation. Given the structural heterogeneity of crusts, CH₄ oxidation activity likely varies spatially as constrained by the combined effects of CH₄, O₂, and inorganic N availability in microsites.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, Aarhus University
Authors: Duan, Y. F. (Ekstern), Reinsch, S. (Intern), Ambus, P. (Intern), Elsgaard, L. (Ekstern), Petersen, S. O. (Ekstern)
Pages: 767-775
Acute and long-term CO2 exposure reduces the performance of Atlantic salmon in RAS

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Aquaculture
Authors: Khan, J. R. (Intern), Johansen, D. (Ekstern), Skov, P. V. (Intern)
Number of pages: 56
Pages: 47
Publication date: 2017

Host publication information
Title of host publication: 4th NordicRAS Workshop on Recirculating Aquaculture Systems. Aalborg, Denmark, 12-13 October 2017 : Book of Abstracts
Publisher: Technical University of Denmark, National Institute for Aquatic Resources
Editor: Dalsgaard, A. J. T.
ISBN (Print): 978-87-7481-241-8
ISBN (Electronic): 978-87-7481-240-1

Acute and semi-chronic toxicity of vanadium tested on copepods of the species Temora longicornis

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic, Department of Environmental Engineering, Environmental Chemistry, Technical University of Denmark
Authors: Kristiansen, M. H. (Ekstern), Iversen, N. H. (Ekstern), Koski, M. (Intern), Trapp, S. (Intern)
Number of pages: 1
Publication date: 2017

Host publication information
Title of host publication: Book of Abstracts Sustain 2017
Place of publication: Kgs. Lyngby, Denmark
Publisher: Technical University of Denmark (DTU)
Article number: Sustain Abstract A-10
Main Research Area: Technical/natural sciences
Conference: Sustain 2017, Kgs. Lyngby, Denmark, 06/12/2017 - 06/12/2017
Electronic versions:

Acute dosing of vortioxetine strengthens event-related brain activity associated with engagement of attention and cognitive functioning in rats

Studies of the antidepressant vortioxetine have demonstrated beneficial effects on cognitive dysfunction associated with depression. To elucidate how vortioxetine modulates neuronal activity during cognitive processing we investigated the effects of vortioxetine (3 and 10 mg/kg) in rats performing an auditory oddball (deviant target) task. We investigated neuronal activity in target vs non-target tone responses in vehicle-treated animals using electroencephalographic (EEG) recordings. Furthermore, we characterized task performance and EEG changes in target tone responses of vortioxetine vs controls. Quantification of event-related potentials (ERPs) was supplemented by analyses of spectral power and inter-trial phase-locking. The assessed brain regions included prelimbic cortex, the hippocampus, and thalamus. As compared to correct rejection of non-target tones, correct target tone responses elicited increased EEG power in all regions. Additionally, neuronal synchronization was increased in vehicle-treated rats during both early and late ERP responses to target tones. This indicates a significant consistency of local phases across trials during high attentional load. During early sensory processing, vortioxetine increased both thalamic and frontal synchronized gamma band activity and EEG power in...
all brain regions measured. Finally, vortioxetine increased the amplitude of late hippocampal P3-like ERPs, the rodent correlate of the human P300 ERP. These findings suggest differential effects of vortioxetine during early sensory registration and late endogenous processing of auditory discrimination. Strengthened P3-like ERP response may relate to the pro-cognitive profile of vortioxetine in rodents. Further investigations are warranted to explore the mechanism by which vortioxetine increases network synchronization during attentive and cognitive processing.

General information
State: Published
Organisations: Department of Electrical Engineering, Biomedical Engineering, Technical University of Denmark, Aalborg University, H. Lundbeck A/S
Authors: Laursen, B. (Ekstern), Bundgaard, C. H. (Ekstern), Graversen, C. (Ekstern), Grupe, M. (Ekstern), Sanchez, C. (Ekstern), Leiser, S. C. (Ekstern), Sørensen, H. B. D. (Intern), Drewes, A. (Ekstern), Bastlund, J. (Ekstern)
Pages: 37–47
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Brain Research
Volume: 1664
ISSN (Print): 0006-8993
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.75
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.74
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 3.013 SNIP 2.52 CiteScore 3.04
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 4.518 SNIP 2.957 CiteScore 3.22
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 4.622 SNIP 3.836 CiteScore 3.2
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 4.932 SNIP 2.763 CiteScore 2.89
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 4.748 SNIP 2.621
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 4.448 SNIP 2.031
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 3.492 SNIP 1.879
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 3.629 SNIP 2.078
Web of Science (2007): Indexed yes
Scopus rating (2005): SJR 3.916 SNIP 2.428
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 3.957 SNIP 2.741
Scopus rating (2003): SJR 4.369 SNIP 2.626
Scopus rating (2002): SJR 4.072 SNIP 2.259
Scopus rating (2001): SJR 4.418 SNIP 2.854
Scopus rating (2000): SJR 5.072 SNIP 3.194
Scopus rating (1999): SJR 4.066 SNIP 2.362
Original language: English
Electrophysiology, Neuronal Oscillation, P300 Event-Related Potential, Phase-Locking Factor, Rat, Vortioxetine
Acute hyperoxia induces systemic responses with no major changes in peripheral tissues in the Senegalese sole (Solea senegalensis Kaup, 1858)

Senegalese sole Solea senegalensis is currently farmed in recirculation aquaculture systems that often involve water reoxygenation, which in turn may cause acute or prolonged hyperoxia exposures. In order to understand the impact of acute hyperoxia on the fish immune system and peripheral tissues such as gills and gut, Senegalese sole juveniles (30g) were exposed to normoxia (100% O2sat) as control and two hyperoxic conditions (150 and 200% O2sat) and sampled at 4 and 24 h. Fish haematological profile, total and differential blood cell counts and plasma immune parameters were analysed. Histomorphology and immunofluorescence analyses of gills and intestine were performed, respectively, whereas head-kidney samples were used for assessing the expression of immune-related genes. Results indicate that acute hyperoxia exposure may reduce fish erythrocyte and haemoglobin levels. Moreover, decreases in total leucocytes numbers, circulating lymphocytes, monocytes, alternative complement pathway activity and expression of cyclooxygenase-2 were observed in fish exposed to hyperoxia. In contrast, hyperoxia did not induce major effects on gill histomorphology nor in the protein content of ion and glucose cotransporters as well as a macrophage marker (V-ATPase) in the intestine. Although the activation of humoral mechanisms and immune-related genes were not dramatically affected by acute hyperoxia, the compromised immune cell status and the reduction of some inflammatory indicators are issues to consider under acute hyperoxia conditions.

General information
State: Accepted/In press
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, University of Porto, Wilfrid Laurier University, Sea8 - Aquacria Piscícolas
Authors: Machado, M. (Ekstern), Malheiro, D. (Ekstern), Couto, A. (Ekstern), Wilson, J. M. (Ekstern), Guerreiro, M. (Ekstern), Azeredo, R. (Ekstern), Svendsen, J. C. (Intern), Afonso, A. (Ekstern), Serradeiro, R. (Ekstern), Costas, B. (Ekstern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Fish and Shellfish Immunology
ISSN (Print): 1050-4648
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.36 SJR 1.114 SNIP 1.16
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.268 SNIP 1.171 CiteScore 3.19
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.138 SNIP 1.089 CiteScore 2.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.001 SNIP 1.149 CiteScore 3.11
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.151 SNIP 1.174 CiteScore 3.02
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.196 SNIP 1.265 CiteScore 3.52
Acute toxicity of copper oxide nanoparticles to Daphnia magna under different test conditions

The acute toxicity of monodispersed 6 nm and <100 nm poly-dispersed copper oxide nanoparticles toward Daphnia magna was assessed using 48 h immobilization tests. CuSO₄ was used as a reference. Four different exposure conditions were tested, to study whether the toxicity of the nanoparticle suspensions changed in a way similar to what is known for dissolved Cu: first in ISO standard test conditions (pH 7.8), second with slight acidity (pH 6.5), third in the presence of citric acid, and fourth in the presence of humic acid. For all four exposure conditions, the toxicity of Cu employed in the three forms followed the same sequence, i.e., CuSO₄ > monodispersed 6 nm CuO ≫ poly-dispersed CuO. The toxicity of all Cu forms decreased from pH 6.5, ≫ pH 7.8, > pH 7.8 + citric acid, to ≫ pH 7.8 + humic acid. This pattern is in agreement with concentrations of Cu²⁺ calculated using the equilibrium model MINTEQ. These findings show that the acute toxicity of copper oxide nanoparticles is governed by test water composition and the chemical species Cu²⁺.

General information
State: Published
Organisations: Department of Environmental Engineering, Environmental Chemistry, Roskilde Universitet, Technical University of Denmark
Authors: Thit, A. (Ekstern), Huggins, K. (Ekstern), Selck, H. (Ekstern), Baun, A. (Intern)
Number of pages: 15
Pages: 665-679
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Toxicological and Environmental Chemistry
Volume: 99
Issue number: 4
ISSN (Print): 0277-2248
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
Adaptation to flood risk: Results of international paired flood event studies

As flood impacts are increasing in large parts of the world, understanding the primary drivers of changes in risk is essential for effective adaptation. To gain more knowledge on the basis of empirical case studies, we analyze eight paired floods, that is, consecutive flood events that occurred in the same region, with the second flood causing significantly lower damage. These success stories of risk reduction were selected across different socioeconomic and hydro-climatic contexts. The potential of societies to adapt is uncovered by describing triggered societal changes, as well as formal measures and spontaneous processes that reduced flood risk. This novel approach has the potential to build the basis for an international data collection and analysis effort to better understand and attribute changes in risk due to hydrological extremes in the framework of the IAHSs Panta Rhei initiative. Across all case studies, we find that lower damage caused by the second event was mainly due to significant reductions in vulnerability, for example, via raised risk awareness, preparedness, and improvements of organizational emergency management. Thus, vulnerability reduction plays an essential role for successful adaptation. Our work shows that there is a high potential to adapt, but there remains the challenge to stimulate measures that reduce vulnerability and risk in periods in which extreme events do not occur.

General information
State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems
Adapted wavelet transform improves time-frequency representations: a study of auditory elicited P300-like event-related potentials in rats.

Objective. Active auditory oddball paradigms are simple tone discrimination tasks used to study the P300 deflection of event-related potentials (ERPs). These ERPs may be quantified by time-frequency analysis. As auditory stimuli cause early high frequency and late low frequency ERP oscillations, the continuous wavelet transform (CWT) is often chosen for decomposition due to its multi-resolution properties. However, as the conventional CWT traditionally applies only one mother wavelet to represent the entire spectrum, the time-frequency resolution is not optimal across all scales. To account for this, we developed and validated a novel method specifically refined to analyse P300-like ERPs in rats. Approach. An adapted CWT (aCWT) was implemented to preserve high time-frequency resolution across all scales by commissioning of multiple wavelets operating at different scales. First, decomposition of simulated ERPs was illustrated using the classical CWT and the aCWT. Next, the two methods were applied to EEG recordings obtained from prefrontal cortex in rats performing a two-tone auditory discrimination task. Main results. While only early ERP frequency changes between responses to target and non-target tones were detected by the CWT, both early and late changes were successfully described with strong accuracy by the aCWT in rat ERPs. Increased frontal gamma power and phase synchrony was observed particularly within theta and gamma frequency bands during deviant tones. Significance. The study suggests superior performance of the aCWT over the CWT in terms of detailed quantification of time-frequency properties of ERPs. Our methodological investigation indicates that accurate and complete assessment of time-frequency components of short-time neural signals is feasible with the novel analysis approach which may be advantageous for characterisation of several types of evoked potentials in particularly rodents.
Adapting the Accreditation Procedures to a New Educational Technology
The FP7 PELARS project deals with the problem of developing a new educational technology for practical activities. As it is stated into the project proposal [1], the project produces and evaluates technology designs for analytic data generation for constructivist learning scenarios in Science, Technology, Engineering and Math (STEM) topics, including: technology solutions, infrastructure, activities, assessment, curricula, and classroom furniture and environment designs. The project addresses three different learning contexts (post-secondary design studios, post-secondary engineering sciences classrooms, and secondary-level high school STEM learning environments) across four national settings in the EU. In the upper defined context, this paper deals with the problem of adapting the accreditation of the engineering programs to the new educational technologies.

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Afdelingen for re-teknologi, University of Craiova
Authors: Cojocaru, D. (Ekstern), Tudor Tanasie, R. (Ekstern), Friesel, A. (Intern)
Pages: 851-857
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Information and Education Technology
Volume: 7
Issue number: 11
ISSN (Print): 2010-3689
Original language: English
Educational technology, Experiential learning, Accreditation
Electronic versions:
Adapting_the_Accreditation_Procedures_to_a_New_Educational_Technology.pdf
DOI:
10.18178/ijiet.2017.7.11.984
Publication: Research - peer-review » Conference article – Annual report year: 2017
Adaptive control in an artificial pancreas for people with type 1 diabetes

In this paper, we discuss overnight blood glucose stabilization in patients with type 1 diabetes using a Model Predictive Controller (MPC). We compute the model parameters in the MPC using a simple and systematic method based on a priori available patient information. We describe and compare 3 different model structures. The first model structure is an autoregressive integrated moving average with exogenous input (ARIMAX) structure. The second model structure is an autoregressive moving average with exogenous input (ARMAX) model, i.e. a model without an integrator. The third model structure is an adaptive ARMAX model in which we use a recursive extended least squares (RELS) method to estimate parameters of the stochastic part. In addition, we describe some safety layers in the control algorithm that improve the controller robustness and reduce the risk of hypoglycemia. We test and compare our control strategies using a virtual clinic of 100 randomly generated patients with a representative inter-subject variability. This virtual clinic is based on the Hovorka model. We consider the case where only half of the meal bolus is administered at mealtime, and the case where the insulin sensitivity increases during the night. The numerical results suggest that the use of an integrator leads to higher occurrence of hypoglycemia than for the controllers without the integrator. Compared to other control strategies, the adaptive MPC reduces both the time spent in hypoglycemia and the time spent in hyperglycemia.
Adaptive feedforward control of exhaust recirculation in large diesel engines

Environmental concern has led the International Maritime Organization to restrict NOₓ emissions from marine diesel engines. Exhaust gas recirculation (EGR) systems have been introduced in order to comply to the new standards. Traditional fixed-gain feedback methods are not able to control the EGR system adequately in engine loading transients so alternative methods are needed. This paper presents the design, convergence proofs and experimental validation of an adaptive feedforward controller that significantly improves the performance in loading transients. First the control concept is generalized to a class of first order Hammerstein systems with sensor delay and exponentially converging bounds of the control error are proven analytically. It is then shown how to apply the method to the EGR system of a two-stroke crosshead diesel engine. The controller is validated by closed loop simulation with a mean-value engine model, on an engine test bed and on a vessel operating at sea. A significant reduction of smoke formation during loading transients is observed both visually and with an opacity sensor.

General information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control, Linköping University, MAN Diesel & Turbo
Authors: Nielsen, K. V. (Intern), Blanke, M. (Intern), Eriksson, L. (Ekstern), Vejlgaard-Laursen, M. (Ekstern)
Pages: 26-35
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Control Engineering Practice
Volume: 65
ISSN (Print): 0967-0661
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.42 SJR 1.287 SNIP 2.156
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.194 SNIP 2.091 CiteScore 3.05
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.323 SNIP 2.626 CiteScore 3.26
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.433 SNIP 3.278 CiteScore 3.5
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Adaptive Feeding behavior and functional responses in pelagic copepods

Zooplankton may modify their feeding behavior in response to prey availability and presence of predators with implications to populations of both predators and prey. Optimal foraging theory predicts that such responses result in a type II functional response for passive foragers and a type III response for active foragers, with the latter response having a stabilizing effect on prey populations. Here, we test the theoretical predictions and the underlying mechanisms in pelagic copepods that are actively feeding (feeding-current feeders), passively feeding (ambushers), or that can switch between the two feeding modes. In all cases, individual behaviors are consistent with the resulting functional response. Passive ambushing copepods have invariant foraging behavior and a type II functional response, as predicted. When foraging actively, the species with switching capability change its functional response from type II to III and modify its foraging effort in response to prey density and predation risk, also as predicted by theory. The obligate active feeders, however, follow a type II response inconsistent with the theoretical prediction. A survey of the literature similarly finds consistent type II response in ambush feeding copepods, but variable (II or III) responses in active feeders. We examine reasons for why observed behaviors at times deviate from predictions, and discuss the population dynamics and food web implications of the two types of functional responses and their underlying mechanisms.
Adaptive Laboratory Evolution of Antibiotic Resistance Using Different Selection Regimes Lead to Similar Phenotypes and Genotypes

Antibiotic resistance is a global threat to human health, wherefore it is crucial to study the mechanisms of antibiotic resistance as well as its emergence and dissemination. One way to analyze the acquisition of de novo mutations conferring antibiotic resistance is adaptive laboratory evolution. However, various evolution methods exist that utilize different population sizes, selection strengths, and bottlenecks. While evolution in increasing drug gradients guarantees high-level antibiotic resistance promising to identify the most potent resistance conferring mutations, other selection regimes are simpler to implement and therefore allow higher throughput. The specific regimen of adaptive evolution may have a profound impact on the adapted cell state. Indeed, substantial effects of the selection regime on the resulting geno- and phenotypes have been reported in the literature. In this study we compare the geno- and phenotypes of Escherichia coli after evolution to Amikacin, Piperacillin, and Tetracycline under four different selection regimes. Interestingly, key mutations that confer antibiotic resistance as well as phenotypic changes like collateral sensitivity and cross-resistance emerge independently of the selection regime. Yet, lineages that underwent evolution under mild selection displayed a growth advantage independently of the acquired level of antibiotic resistance compared to lineages adapted under maximal selection in a drug gradient. Our data suggests that even though different selection regimens result in subtle genotypic and phenotypic differences key adaptations appear independently of the selection regime.
Adaptive management in the context of barriers in European freshwater ecosystems

Many natural habitats have been modified to accommodate for the presence of humans and their needs. Infrastructures such as hydroelectric dams, weirs, culverts and bridges are now a common occurrence in streams and rivers across the world. As a result, freshwater ecosystems have been altered extensively, affecting both biological and geomorphological components of the habitats. Many fish species rely on these freshwater ecosystems to complete their lifecycles, and the presence of barriers has been shown to reduce their ability to migrate and sustain healthy populations. In the long run, barriers may have severe repercussions on population densities and dynamics of aquatic animal species. There is currently an urgent need to address these issues with adequate conservation approaches. Adaptive management provides a relevant approach to managing barriers in freshwater ecosystems as it addresses the uncertainties of dealing with natural systems, and accommodates for future unexpected events, though this approach may not be suitable in all instances. A literature search on this subject yielded virtually no output. Hence, we propose a step-by-step guide for implementing adaptive management, which could be used to manage freshwater barriers.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, University of Durham, Durham University
Authors: Birnie-Gauvin, K. (Intern), Tummers, J. S. (Ekstern), Lucas, M. C. (Ekstern), Aarestrup, K. (Intern)
Pages: 436-441
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Environmental Management
Volume: 204
ISSN (Print): 0301-4797
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.28 SJR 1.141 SNIP 1.779
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.19 SNIP 1.717 CiteScore 3.86
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.228 SNIP 1.921 CiteScore 3.62
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.203 SNIP 2.014 CiteScore 3.84
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.377 SNIP 2.513 CiteScore 4.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.206 SNIP 2.181 CiteScore 3.66
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.13 SNIP 1.704
Web of Science (2010): Indexed yes
Adaptive Observer for Nonlinearly Parameterised Hammerstein System with Sensor Delay – Applied to Ship Emissions Reduction

Taking offspring in a problem of ship emission reduction by exhaust gas recirculation control for large diesel engines, an underlying generic estimation challenge is formulated as a problem of joint state and parameter estimation for a class of multiple-input single-output Hammerstein systems with first order dynamics, sensor delay and a bounded time-varying parameter in the nonlinear part. The paper suggests a novel scheme for this estimation problem that guarantees exponential convergence to an interval that depends on the sensitivity of the system. The system is allowed to be nonlinear parameterized and time dependent, which are characteristics of the industrial problem we study. The approach requires the input nonlinearity to be a sector nonlinearity in the time-varying parameter. Salient features of the approach include simplicity of design and implementation. The efficacy of the adaptive observer is shown on simulated cases, on tests with a large diesel engine on test bed and on tests with a container vessel.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Automation and Control, MAN Diesel & Turbo, Linköping University
Authors: Nielsen, K. V. (Ekstern), Blanke, M. (Intern), Eriksson, L. (Ekstern)
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Transactions on Control Systems Technology
ISSN (Print): 1063-6536
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.17 SJR 2.017 SNIP 2.755
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.85 SNIP 2.757 CiteScore 4.72
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.958 SNIP 3.042 CiteScore 4.34
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.825 SNIP 3.498 CiteScore 4.41
Adaptive Unscented Kalman Filter using Maximum Likelihood Estimation

The purpose of this study is to develop an adaptive unscented Kalman filter (UKF) by tuning the measurement noise covariance. We use the maximum likelihood estimation (MLE) and the covariance matching (CM) method to estimate the noise covariance. The multi-step prediction errors generated by the UKF are used for covariance estimation by MLE and CM. Then we apply the two covariance estimation methods on an example application. In the example, we identify the covariance of the measurement noise for a continuous glucose monitoring (CGM) sensor. The sensor measures the subcutaneous glucose concentration for a type 1 diabetes patient. The root-mean square (RMS) error and the computation time are used to compare the performance of the two covariance estimation methods. The results indicate that as the prediction horizon expands, the RMS error for the MLE declines, while the error remains relatively large for the CM method. For larger prediction horizons, the MLE provides an estimate of the noise covariance that is less biased than the estimate by the CM method. The CM method is computationally less expensive though.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Scientific Computing, Dynamical Systems
Authors: Mahmoudi, Z. (Intern), Poulsen, N. K. (Intern), Madsen, H. (Intern), Jørgensen, J. B. (Intern)
Number of pages: 6
Pages: 3859-3864
Publication date: 2017
Conference: 20th IFAC World Congress 2017, Toulouse, France, 09/07/2017 - 09/07/2017
A data assimilation system combining CryoSat-2 data and hydrodynamic river models

There are numerous hydrologic studies using satellite altimetry data from repeat-orbit missions such as Envisat or Jason over rivers. This study is one of the first examples for the combination of altimetry from drifting-ground track satellite missions, namely CryoSat-2, with a river model. CryoSat-2 SARIn Level 2 data is used to improve a 1D hydrodynamic model of the Brahmaputra River in South Asia, which is based on the Saint-Venant equations for unsteady flow and set up in the MIKE HYDRO River software. After calibration of discharge and water level the hydrodynamic model can accurately and bias-free represent the spatio-temporal variations of water levels. A data assimilation framework has been developed and linked with the model. It is a flexible framework that can assimilate water level data which are arbitrarily distributed in time and space. The setup has been used to assimilate CryoSat-2 water level observations over the Assam valley for the years 2010 to 2015, using an Ensemble Transform Kalman Filter (ETKF). Performance improvement in terms of discharge forecasting skill was then evaluated. For experiments with synthetic CryoSat-2 data the continuous ranked probability score (CRPS) was improved by up to 32%, whilst for experiments assimilating real data it could be improved by up to 10%. The developed methods are expected to be transferable to other rivers and altimeter missions. The model setup and calibration is based almost entirely on globally available remote sensing data.

General information
State: Accepted/In press
Organisations: Department of Environmental Engineering, Water Resources Engineering, DHI Denmark
Authors: Schneider, R. (Intern), Ridler, M. (Ekstern), Godiksen, P. N. (Ekstern), Madsen, H. (Ekstern), Bauer-Gottwein, P. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Hydrology
ISSN (Print): 0022-1694
Ratings:
BFI (2017): BFI-level 2
Adding Value to Bioethanol through a Purification Process Revamp

A comprehensive technical feasibility study was conducted of a bioethanol demonstration plant with the aim of converting parts of an existing fuel-grade bioethanol production into a more valuable solvent-grade ethanol. The study focuses on the separation unit, which consists of three consecutive distillation columns and a dehydration step using molecular sieves. This separation unit did not permit sufficient removal of crotonaldehyde and methanol for obtaining solvent-grade ethanol. Therefore, an additional distillation column after the dehydration step was investigated by simulation. It is operated at subatmospheric pressure and enables simultaneous removal of methanol, crotonaldehyde, and water in the distillate. The distillate meets the fuel-grade ethanol specifications, while the bottom product meets the solvent-grade specifications. It enables around 70% solvent-grade ethanol production and employs a vacuum pump that is already used in the considered plant. A stationary operating point is characterized by online operational data and experimental results of liquid samples. Particular emphasis during the characterization is put on trace compounds. Ethanol and the following 13 trace compounds were analyzed experimentally: Acetaldehyde, 1-propanal, 1-butanal, crotonaldehyde, benzaldehyde, ethyl acetate, methanol, 1-propanol, 1-butanol, 2-butanol, 2-methyl-1-propanol, 2-methyl-1-butanol, and 3-methyl-1-butanol. A simulation platform was established and evaluated with excellent agreement compared to the operational data. The beer composition (separation unit feed) and a complete stream summary for the separation unit is provided.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, CAPEC-PROCESS, Inbicon A/S, University of Copenhagen
Authors: Bisgaard, T. (Intern), Mauricio Iglesias, M. (Intern), Huusom, J. K. (Intern), Gernaey, K. V. (Intern), Dohrup, J. (Ekstern), Petersen, M. A. (Ekstern), Abildskov, J. (Intern)
Pages: 5692-5704
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Industrial and Engineering Chemistry Research
Volume: 56
Issue number: 19
ISSN (Print): 0888-5885
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.1 SJR 0.945 SNIP 1.139
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.949 SNIP 1.146 CiteScore 2.87
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.012 SNIP 1.292 CiteScore 2.85
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.982 SNIP 1.243 CiteScore 2.6
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.066 SNIP 1.338 CiteScore 2.56
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.086 SNIP 1.24 CiteScore 2.58
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.047 SNIP 1.165
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Additively manufactured metallic porous biomaterials based on minimal surfaces: A unique combination of topological, mechanical, and mass transport properties

Porous biomaterials that simultaneously mimic the topological, mechanical, and mass transport properties of bone are in great demand but are rarely found in the literature. In this study, we rationally designed and additively manufactured (AM) porous metallic biomaterials based on four different types of triply periodic minimal surfaces (TPMS) that mimic the properties of bone to an unprecedented level of multi-physics detail. Sixteen different types of porous biomaterials were rationally designed and fabricated using selective laser melting (SLM) from a titanium alloy (Ti-6Al-4V). The topology, quasi-static mechanical properties, fatigue resistance, and permeability of the developed biomaterials were then characterized. In terms of topology, the biomaterials resembled the morphological properties of trabecular bone including mean surface curvatures close to zero. The biomaterials showed a favorable but rare combination of relatively low elastic properties in the range of those observed for trabecular bone and high yield strengths exceeding those reported for cortical bone. This combination allows for simultaneously avoiding stress shielding, while providing ample mechanical support for bone tissue regeneration and osseointegration. Furthermore, as opposed to other AM porous biomaterials developed to date for which the fatigue endurance limit has been found to be of their yield (or plateau) stress, some of the biomaterials developed in the current study show extremely high fatigue resistance, with endurance limits up to 60% of their yield stress. It was also found that the permeability values measured for the developed biomaterials were in the range of values reported for trabecular bone. In summary, the developed porous metallic biomaterials based on TPMS mimic the topological, mechanical, and physical properties of trabecular bone to a great degree. These properties make them potential candidates to be applied as parts of orthopedic implants and/or as bone-substituting biomaterials. Statement of Significance Bone-substituting biomaterials aim to mimic bone properties. Although mimicking some of bone properties is feasible, biomaterials that could simultaneously mimic all or most of the relevant bone properties are rare. We used rational design and additive manufacturing to develop porous metallic biomaterials that exhibit an interesting combination of topological, mechanical, and mass transport properties. The topology of the developed biomaterials resembles that of trabecular bone including a mean curvature close to zero. Moreover, the developed biomaterials show an unusual combination of low elastic modulus to avoid stress shielding and high strength to provide mechanical support. The fatigue resistance of the developed biomaterials is also exceptionally high, while their permeability is in the range of values reported for bone. (C) 2017 Acta Materialia Inc. Published by Elsevier Ltd. All rights reserved.
Additive manufacturing: state-of-the-art and application framework

Additive manufacturing encompasses a class of production processes with increasing applications indifferent areas and supply chains. Due to its flexibility for production in small batches and the versatility of materials and geometries, this technology is recognized as being capable of revolutionizing the production processes as well as changing production strategies that are currently employed. However, there are different technologies under the generic label of additive manufacturing, materials and application areas with different requirements. Given the growing importance of additive manufacturing as a production process, and also considering the need to have a better insight into the potential applications for driving research and development efforts, this article presents a proposal of organization for additive manufacturing applications in seven areas. Additionally, the article provides a panorama of the current development stage of this technology, with a review of its major technological variants. The results presented aim to serve as a basis to support driving initiatives in additive manufacturing in companies, development agencies and research institutions.
Addressing Energy System Modelling Challenges: The Contribution of the Open Energy Modelling Framework (oemof)
The process of modelling energy systems is accompanied by challenges inherently connected with mathematical
modelling. However, due to modern realities in the 21st century, existing challenges are gaining in magnitude and are
supplemented with new ones. Modellers are confronted with a rising complexity of energy systems and high uncertainties
on different levels. In addition, interdisciplinary modelling is necessary for getting insight in mechanisms of an integrated
world. At the same time models need to meet scientific standards as public acceptance becomes increasingly important.
In this intricate environment model application as well as result communication and interpretation is also getting more
difficult.

In this paper we present the open energy modelling framework (oemof) as a novel approach for energy system modelling
and derive its contribution to existing challenges. Therefore, based on literature review, we outline challenges for energy
system modelling as well as existing and emerging approaches. Based on a description of the philosophy and elementary
structural elements of oemof, a qualitative analysis of the framework with regard to the challenges is undertaken. Inherent
features of oemof such as the open source, open data, non-proprietary and collaborative modelling approach are
preconditions to meet modern realities of energy modelling. Additionally, a generic basis with an object-oriented
implementation allows to tackle challenges related to complexity of highly integrated future energy systems and sets the
foundation to address uncertainty in the future. Experiences from the collaborative modelling approach can enrich
interdisciplinary modelling activities.

Our analysis concludes that there are remaining challenges that can neither be tackled by a model nor a modelling
framework. Among these are problems connected to result communication and interpretation.
Addressing fuel recycling in solid oxide fuel cell systems fed by alternative fuels

An innovative study on anode recirculation in solid oxide fuel cell systems with alternative fuels is carried out and investigated. Alternative fuels under study are ammonia, pure hydrogen, methanol, ethanol, DME and biogas from biomass gasification. It is shown that the amount of anode off-fuel recirculation depends strongly on type of the fuel used in the system. Anode recycling combined with fuel cell utilization factors have an important impact on plant efficiency, which will be analysed here. The current study may provide an in-depth understanding of reasons for using anode off-fuel recycling and its effect on plant efficiency. For example, it is found that anode recirculation is not needed when the plant is fed by ammonia. Further, it is found that when the system is fed by pure hydrogen then anode recirculation should be about 20% of the off-fuel if fuel cell utilization factor is 80%. Furthermore, it is found that for the case with methanol, ethanol and DME then at high utilization factors, low anode recirculation is recommended while at low utilization factors, high anode recirculation is recommended. If the plant is fed by biogas from biomass gasification then for each utilization factor, there exist an optimum anode recirculation at which plant efficiency maximizes.
Addressing the Conflict of Interest between Aggregators and DSOs in Deregulated Energy Markets

This paper investigates potential conflicts of interest between distribution system operators (DSOs) and aggregators. We propose a method to quantify the allowed operating range of residential flexible loads in a local distribution network. The calculated bounds can be used to formulate DSO services, tradable on a potential DSO service market platform. Aggregators are considered, concentrating thermostatically controlled loads and electric vehicles with vehicle2grid technology in order to perform arbitrage on the power market and to offer ancillary services.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Energy system operation and management
Number of pages: 6
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 52nd International Universities’ Power Engineering Conference
Publisher: IEEE
ISBN (Print): 978-1-5386-2344-2
Main Research Area: Technical/natural sciences
Conference: 52nd International Universities’ Power Engineering Conference, Greece, 29/08/2017 - 29/08/2017
Power distribution, Demand-side management, Load flow
Electronic versions:
PID4921149_checked.pdf
Source: PublicationPreSubmission
Source-ID: 136744630
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Addressing uncertainty in atomistic machine learning

Machine-learning regression has been demonstrated to precisely emulate the potential energy and forces that are output from more expensive electronic-structure calculations. However, to predict new regions of the potential energy surface, an assessment must be made of the credibility of the predictions. In this perspective, we address the types of errors that might arise in atomistic machine learning, the unique aspects of atomistic simulations that make machine-learning challenging, and highlight how uncertainty analysis can be used to assess the validity of machine-learning predictions. We suggest this will allow researchers to more fully use machine learning for the routine acceleration of large, high-accuracy, or extended-time simulations. In our demonstrations, we use a bootstrap ensemble of neural network-based calculators, and show that the width of the ensemble can provide an estimate of the uncertainty when the width is comparable to that
in the training data. Intriguingly, we also show that the uncertainty can be localized to specific atoms in the simulation, which may offer hints for the generation of training data to strategically improve the machine-learned representation.
A Decade of Solid Oxide Electrolysis Improvements at DTU Energy

Solid oxide electrolysis cells (SOECs) can efficiently convert electrical energy (e.g. surplus wind power) to energy stored in fuels such as hydrogen or other synthetic fuels. Performance and durability of the SOEC has increased orders of magnitudes within the last decade. This paper presents a short review of the R&D work on SOEC single cells conducted at DTU Energy from 2005 to 2015. The SOEC improvements have involved increasing the of the oxygen electrode performance, elimination of impurities in the feed streams, optimization of processing routes, and fuel electrode structure optimization. All together, these improvements have led to a decrease in long-term degradation rate from ~40 %/kh to ~0.4 %/kh for steam electrolysis at -1 A/cm², while the initial area specific resistance has been decreased from 0.44 Ωcm² to 0.15 Ωcm² at -0.5 A/cm² and 750 °C.

General information

State: Published
Organisations: Department of Energy Conversion and Storage, Applied Electrochemistry, Ceramic Engineering & Science, Mixed Conductors, Imaging and Structural Analysis
Number of pages: 12
Pages: 3-14
Publication date: 2017
Conference: PRIME 2016/230th ECS Meeting, Honolulu, United States, 02/10/2016 - 02/10/2016
Main Research Area: Technical/natural sciences

Publication information
Journal: ECS Transactions
Volume: 75
Issue number: 42
ISSN (Print): 1938-6737
Ratings:
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.4 SJR 0.231 SNIP 0.246
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.214 SNIP 0.257 CiteScore 0.36
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.214 SNIP 0.246 CiteScore 0.36
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.192 SNIP 0.237 CiteScore 0.27
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.24 SNIP 0.263 CiteScore 0.29
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.262 SNIP 0.284 CiteScore 0.36
ISI indexed (2011): ISI indexed no
A Decision Support Tool for Transient Stability Preventive Control

The paper presents a decision support tool for transient stability preventive control contributing to increased situation awareness of control room operators by providing additional information about the state of the power system in terms of transient stability. A time-domain approach is used to assess the transient stability for potentially critical faults. Potential critical fault locations are identified by a critical bus screening through analysis of pre-disturbance steady-state conditions. The identified buses are subject to a fast critical contingency screening determining the actual critical contingencies/buses. These two screenings aim at reducing the computational burden of the assessment, since only contingencies considered as critical are taken into account. The critical clearing times for the critical contingencies are determined. A preventive re-dispatch of generators to ensure a predefined minimum critical clearing time for faults at all buses is proposed, while costs are minimized. The results of the assessment are presented to the control room operator, who decides to accept the suggested dispatch or to repeat the assessment considering additional user-specific constraints. The effectiveness of the proposed method is demonstrated on a standard nine-bus and the New England test system.
A deep learning approach to adherence detection for type 2 diabetics

Diabetes has become one of the biggest health problems in the world. In this context, adherence to insulin treatment is essential in order to avoid life-threatening complications. In this pilot study, a novel adherence detection algorithm using Deep Learning (DL) approaches was developed for type 2 diabetes (T2D) patients, based on simulated Continuous Glucose Monitoring (CGM) signals. A large and diverse amount of CGM signals were simulated for T2D patients using a T2D adapted version of the Medtronic Virtual Patient (MVP) model for T1D. By using these signals, different classification algorithms were compared using a comprehensive grid search. We contrast a standard logistic regression baseline to Multi-Layer Perceptrons (MLPs) and Convolutional Neural Networks (CNNs). The best classification performance with an average accuracy of 77.5% was achieved with CNN. Hence, this indicates the potential of DL, when considering adherence detection systems for T2D patients.
A density functional theory study of the carbon-coating effects on lithium iron borate battery electrodes

Lithium iron borate (LiFeBO₃) is a promising cathode material due to its high theoretical specific capacity, inexpensive components and a small volume change during operation. Yet, challenges relating to severe air- and moisture-induced degradation necessitate the application of a protective coating on the electrode which also improves the electronic conductivity. However, not much is known about the preferential geometries of the coating as well as how these coating–electrode interfaces influence the lithium diffusion between the coating and the electrode. Here, we therefore present a density functional theory (DFT) study of the anchoring configurations of carbon coating on the LiFeBO₃ electrode and its implications on the interfacial lithium diffusion. Due to large barriers associated with Li-ion diffusion through a parallel-oriented pristine graphene coating on the FeBO₃ and LiFeBO₃ electrode surfaces, large structural defects in the graphene coating are required for fast Li-ion diffusion. However, such defects are expected to exist only in small concentrations due to their high formation energies. Alternative coating geometries were therefore investigated, and the configuration in which the graphene coating layers were anchored normal to the electrode surface at B and O atoms were found to be most stable. Nudged elastic band (NEB) calculations of the lithium diffusion barriers across the interface between the optimally oriented coating layers and the electrode show no kinetic limitations for lithium extraction and insertion. Additionally, this graphite-coating configuration showed partial blocking of electrode-degrading species.
Adequacy of Frequency Reserves for High Wind Power Generation

In this article, a new methodology is developed to assess the adequacy of frequency reserves to handle power imbalances caused by wind power forecast errors. The goal of this methodology is to estimate the adequate volume and speed of activation of frequency reserves required to handle power imbalances caused due to high penetration of wind power. An algorithm is proposed and developed to estimate the power imbalances due to wind power forecast error following activation of different operating reserves. Frequency containment reserve requirements for mitigating these power imbalances are developed through this methodology. Furthermore, the probability of reducing this frequency containment...
reserve requirement is investigated through this methodology with activation of different volumes and speed of frequency restoration reserve. Wind power generation for 2020 and 2030 scenarios for Continental Europe network are investigated based on which recommendations are made for requirements of frequency reserves in these scenarios. It has been observed through simulations that frequency containment reserve requirements reduce exponentially with increase in volume of frequency restoration reserve and remains almost unaffected by increase activation speed of frequency restoration reserve.

**General information**

State: Published

Organisations: Department of Wind Energy, Integration & Planning, Energinet.dk

Authors: Das, K. (Intern), Litong-Palima, M. (Intern), Maule, P. (Intern), Altin, M. (Intern), Hansen, A. D. (Intern), Sørensen, P. E. (Intern), Abildgaard, H. (Ekstern)

Number of pages: 9

Pages: 1286-1294

Publication date: 2017

Main Research Area: Technical/natural sciences

**Publication information**

Journal: I E T Renewable Power Generation

Volume: 11

Issue number: 8

ISSN (Print): 1752-1416

Ratings:

BFI (2017): BFI-level 2

Web of Science (2017): Indexed Yes

BFI (2016): BFI-level 2

Scopus rating (2016): CiteScore 3.55 SJR 0.988 SNIP 1.379

Web of Science (2016): Indexed yes

BFI (2015): BFI-level 2

Scopus rating (2015): SJR 1.054 SNIP 1.64 CiteScore 3.13

Web of Science (2015): Indexed yes

BFI (2014): BFI-level 2

Scopus rating (2014): SJR 1.375 SNIP 2.338 CiteScore 3.56

BFI (2013): BFI-level 2

Scopus rating (2013): SJR 1.814 SNIP 2.78 CiteScore 4.96

ISI indexed (2013): ISI indexed yes

Web of Science (2013): Indexed yes

BFI (2012): BFI-level 2

Scopus rating (2012): SJR 1.5 SNIP 2.854 CiteScore 4.64

ISI indexed (2012): ISI indexed yes

Web of Science (2012): Indexed yes

BFI (2011): BFI-level 1

Scopus rating (2011): SJR 1.374 SNIP 2.474 CiteScore 4.43

ISI indexed (2011): ISI indexed no

BFI (2010): BFI-level 1

Scopus rating (2010): SJR 1.893 SNIP 2.631

BFI (2009): BFI-level 1

Scopus rating (2009): SJR 0.856 SNIP 2.568

Web of Science (2009): Indexed yes

BFI (2008): BFI-level 1

Scopus rating (2008): SJR 0.878 SNIP 1.975

Original language: English

Electronic versions:

Adequacy_of_Frequency_Reserves.pdf

Source: PublicationPreSubmission

Source-ID: 127333110

Publication: Research - peer-review › Journal article – Annual report year: 2017
A Dereplication and Bioguided Discovery Approach to Reveal New Compounds from a Marine-Derived Fungus Stilbella fimetaria

A marine-derived Stilbella fimetaria fungal strain was screened for new bioactive compounds based on two different approaches: (i) bio-guided approach using cytotoxicity and antimicrobial bioassays; and (ii) dereplication based approach using liquid chromatography with both diode array detection and high resolution mass spectrometry. This led to the discovery of several bioactive compound families with different biosynthetic origins, including pimarane-type diterpenoids and hybrid polyketide-non ribosomal peptide derived compounds. Prefractionation before bioassay screening proved to be a great aid in the dereplication process, since separate fractions displaying different bioactivities allowed a quick tentative identification of known antimicrobial compounds and of potential new analogues. A new pimarane-type diterpene, myrcocin F, was discovered in trace amounts and displayed cytotoxicity towards various cancer cell lines. Further media optimization led to increased production followed by the purification and bioactivity screening of several new and known pimarane-type diterpenoids. A known broad-spectrum antifungal compound, ilicicolin H, was purified along with two new analogues, hydroxyl-ilicicolin H and ilicicolin I, and their antifungal activity was evaluated.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Natural Product Discovery, Department of Chemistry, Organic Chemistry, Fungal Degradation, Fungal Chemodiversity, German Cancer Research Center (DKFZ), Fundación MEDINA
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Drugs
Volume: 15
Issue number: 8
Article number: 253
ISSN (Print): 1660-3397
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.83 SJR 0.87 SNIP 1.304
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.777 SNIP 1.205 CiteScore 3.66
Web of Science (2015): Indexed yes
Scopus rating (2014): SJR 0.781 SNIP 1.356 CiteScore 3.59
Web of Science (2014): Indexed yes
Scopus rating (2013): SJR 0.934 SNIP 1.766 CiteScore 4.77
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 0.888 SNIP 1.605 CiteScore 4.16
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 0.975 SNIP 1.448 CiteScore 4.06
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
Scopus rating (2010): SJR 0.745 SNIP 1.277
Web of Science (2010): Indexed yes
Scopus rating (2009): SJR 0.439 SNIP 0.836
Scopus rating (2008): SJR 0.433 SNIP 0.329
Scopus rating (2007): SJR 0.501 SNIP 0.448
Scopus rating (2006): SJR 0.586 SNIP 0.931
Scopus rating (2005): SJR 0.173 SNIP 0.543
Original language: English
MS/HRMS, Antifungal, Bioguided-discovery, Cytotoxicity, Dereplication, Ilicicolin H, Marine-derived, Pimarane-type diterpenoids
FimH-mediated adhesion of Escherichia coli to bladder epithelium is a prerequisite for urinary tract infections. FimH is also essential for blood-borne bacterial dissemination, but the mechanisms are poorly understood. The purpose of this study was to assess the influence of different FimH mutations on bacterial adhesion using a novel adhesion assay, which models the physiological flow conditions bacteria are exposed to. We introduced 12 different point mutations in the mannose binding pocket of FimH in an E. coli strain expressing type 1 fimbriae only (MSC95-FimH). We compared the bacterial adhesion of each mutant across several commonly used adhesion assays, including agglutination of yeast, adhesion to mono- and tri-mannosylated substrates, and static adhesion to bladder epithelial and endothelial cells. We performed a comparison of these assays to a novel method that we developed to study bacterial adhesion to mammalian cells under flow conditions. We showed that E. coli MSC95-FimH adheres more efficiently to microvascular endothelium than to bladder epithelium, and that only endothelium supports adhesion at physiological shear stress. The results confirmed that mannose binding pocket mutations abrogated adhesion. We demonstrated that FimH residues E50 and T53 are crucial for adhesion under flow conditions. The coating of endothelial cells on biochips and modelling of physiological flow conditions enabled us to identify FimH residues crucial for adhesion. These results provide novel insights into screening methods to determine the effect of FimH mutants and potentially FimH antagonists.
Adhesive Joints in Wind Turbine Blades

General information
State: Submitted
Organisations: Department of Wind Energy
Authors: Jørgensen, J. B. (Intern)
Publication date: 2017

Publication information
Publisher: DTU Wind Energy
Original language: English
Main Research Area: Technical/natural sciences
DOIs:
10.11581/DTU:00000027

Relations
Projects:
Adhesive Joints in Wind Turbine Blades
Publication: Research › Ph.D. thesis – Annual report year: 2017

A Diagnostic and Predictive Framework for Wind Turbine Drive Train Monitoring
Vast amount of data are collected minute by minute from wind turbines around the world. This thesis represents a focused research effort into discovering new ways of processing these data streams in order to gain insights which can be used to lower the maintenance costs of wind turbines and increase the turbine availability.

First, it is demonstrated how simple sensor data streams can be leveraged based on a combination of non-linear predictive models and unsupervised fault detection to provide warnings of a critical bearing failure more than a month earlier compared to existing alarm systems. Second, early fault identification based on analysis of complex vibration patterns which is a domain previously reserved for human experts, is shown to be solved with high accuracy using deep learning architecture strained in a fully supervised sense from the data collected in a large scale wind turbine monitoring platform. The research shows a way towards a fully automatized data-driven wind turbine diagnostic processing system.
that is highly scalable and requires little or no feature engineering and system modeling.

**Adiposity, Dysmetabolic Traits, and Earlier Onset of Female Puberty in Adolescent Offspring of Women With Gestational Diabetes Mellitus: A Clinical Study Within the Danish National Birth Cohort**

**OBJECTIVE:**
Offspring of pregnancies affected by gestational diabetes mellitus (GDM) are at increased risk of the development of type 2 diabetes. However, the extent to which these dysmetabolic traits may be due to offspring and/or maternal adiposity is unknown. We examined body composition and associated cardiometabolic traits in 561 9- to 16-year-old offspring of mothers with GDM and 597 control offspring.

**RESEARCH DESIGN AND METHODS:**
We measured anthropometric characteristics; puberty status; blood pressure; and fasting glucose, insulin, C-peptide, and lipid levels; and conducted a DEXA scan in a subset of the cohort. Differences in the outcomes between offspring of mothers with GDM and control subjects were examined using linear and logistic regression models.

**RESULTS:**
After adjustment for age and sex, offspring of mothers with GDM displayed higher weight, BMI, waist-to-hip ratio (WHR), systolic blood pressure, and resting heart rate and lower height. Offspring of mothers with GDM had higher total and abdominal fat percentages and lower muscle mass percentages, but these differences disappeared after correction for offspring BMI. The offspring of mothers with GDM displayed higher fasting plasma glucose, insulin, C-peptide, HOMA-insulin resistance (IR), and plasma triglyceride levels, whereas fasting plasma HDL cholesterol levels were decreased. Female offspring of mothers with GDM had an earlier onset of puberty than control offspring. Offspring of mothers with GDM had significantly higher BMI, WHR, fasting glucose, and HOMA-IR levels after adjustment for maternal prepregnancy BMI, and glucose and HOMA-IR remained elevated in the offspring of mothers with GDM after correction for both maternal and offspring BMIs.

**CONCLUSIONS:**
In summary, adolescent offspring of women with GDM show increased adiposity, an adverse cardiometabolic profile, and earlier onset of puberty among girls. Increased fasting glucose and HOMA-IR levels among the offspring of mothers with GDM may be explained by the programming effects of hyperglycemia in pregnancy.
A Disentangled Recognition and Nonlinear Dynamics Model for Unsupervised Learning

This paper takes a step towards temporal reasoning in a dynamically changing video, not in the pixel space that constitutes its frames, but in a latent space that describes the non-linear dynamics of the objects in its world. We introduce the Kalman variational auto-encoder, a framework for unsupervised learning of sequential data that disentangles two latent representations: an object’s representation, coming from a recognition model, and a latent state describing its dynamics. As a result, the evolution of the world can be imagined and missing data imputed, both without the need to generate high dimensional frames at each time step. The model is trained end-to-end on videos of a variety of simulated physical systems, and outperforms competing methods in generative and missing data imputation tasks.
A divergent heritage for complex organics in Isheyevo lithic clasts

Primitive meteorites are samples of asteroidal bodies that contain a high proportion of chemically complex organic matter (COM) including prebiotic molecules such as amino acids, which are thought to have been delivered to Earth via impacts during the early history of the Solar System. Thus, understanding the origin of COM, including their formation pathway(s) and environment(s), is critical to elucidate the origin of life on Earth as well as assessing the potential habitability of exoplanetary systems. The Isheyevo CH/CBb carbonaceous chondrite contains chondritic lithic clasts with variable enrichments in $^{15}\text{N}$ believed to be of outer Solar System origin. Using transmission electron microscopy (TEM-EELS) and in situ isotope analyses (SIMS and NanoSIMS), we report on the structure of the organic matter as well as the bulk H and N isotope composition of Isheyevo lithic clasts. These data are complemented by electron microprobe analyses of the clast mineral chemistry and bulk Mg and Cr isotopes obtained by inductively coupled plasma and thermal ionization mass spectrometry, respectively (MC-ICPMS and TIMS). Weakly hydrated (A) clasts largely consist of Mg-rich anhydrous silicates with local hydrated veins composed of phyllosilicates, magnetite and globular and diffuse organic matter. Extensively hydrated clasts (H) are thoroughly hydrated and contain Fe-sulfides, sometimes clustered with organic matter, as well as magnetite and carbonates embedded in a phyllosilicate matrix. The A-clasts are characterized by a more $^{15}\text{N}$-rich bulk nitrogen isotope composition ($\delta^{15}\text{N} = 200–650\%$) relative to H-clasts ($\delta^{15}\text{N} = 50–180\%$) and contain extremely $^{15}\text{N}$-rich domains with $\delta^{15}\text{N} < 5000\%$. The D/H ratios of the clasts are correlated with the degree of clast hydration and define two distinct populations, which we interpret as reflecting mixing between D-poor fluid(s) and distinct organic endmember components that are variably D-rich. High-resolution N isotope data of $^{15}\text{N}$-rich domains show that the lithic clast diffuse organic matter is typically more $^{15}\text{N}$-rich than globular organic matter. The correlated $\delta^{15}\text{N}$ values and C/N ratios of nanoglobules require the existence of multiple organic components, in agreement with the H isotope data. The combined H and N isotope data suggest that the organic precursors of the lithic clasts are defined by an extremely $^{15}\text{N}$-poor (similar to solar) and $^{15}\text{N}$-rich component for A-clasts. In contrast, the composition of the putative fluids is inferred to include D-poor but moderately to extremely $^{15}\text{N}$-rich H- and N-bearing components. The variable $^{15}\text{N}$ enrichments in H- and A-clasts are associated with structural differences in the N bonding environments of their diffuse organic matter, which are dominated by amine groups in H-clasts and nitrile functional groups in A-clasts. We suggest that the isotopically divergent organic precursors in Isheyevo clasts may be similar to organic moieties in carbonaceous chondrites (CI, CM, CR) and thermally recalcitrant organic compounds in ordinary chondrites, respectively. The altering fluids, which are inferred to cause the $^{15}\text{N}$ enrichments observed in the clasts, may be the result of accretion of variable abundances of NH$_3$ and HCN ices. Finally, using bulk Mg and Cr isotope composition of clasts, we speculate on the accretion regions of the various primitive chondrites and components and the origin of the Solar System’s N and H isotope variability.

General information
State: Published
Organisations: Center for Electron Nanoscopy, University of Copenhagen, University of Hawaii at Manoa, University of Bern, The Open University
Pages: 119-148
Publication date: 2017
Main Research Area: Technical/natural sciences
Adjoint Optimisation of the Turbulent Flow in an Annular Diffuser

In the present study, a numerical optimisation of guide vanes in an annular diffuser, is performed. The optimisation is performed for the purpose of improving the following two parameters simultaneously; the first parameter is the uniformity perpendicular to the flow direction, a 1/3 diameter downstream of the expansion. The second parameter is the pressure loss introduced by these guide vanes. The optimisation yields an improvement of the uniformity of 1.5% and a 28% reduction in the over all pressure loss.

General information
State: Published
Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, Technical University of Denmark, MAN Diesel and Turbo
Administration of two probiotic strains during early childhood does not affect the endogenous gut microbiota composition despite probiotic proliferation

Probiotics are increasingly applied to prevent and treat a range of infectious, immune related and gastrointestinal diseases. Despite this, the mechanisms behind the putative effects of probiotics are poorly understood. One of the suggested modes of probiotic action is modulation of the endogenous gut microbiota, however probiotic intervention studies in adults have failed to show significant effects on gut microbiota composition. The gut microbiota of young children is known to be unstable and more responsive to external factors than that of adults. Therefore, potential effects of probiotic intervention on gut microbiota may be easier detectable in early life. We thus investigated the effects of a 6 month placebo-controlled probiotic intervention with Bifidobacterium animalis subsp. lactis (BB-12®) and Lactobacillus rhamnosus (LGG®) on gut microbiota composition and diversity in more than 200 Danish infants (N = 290 enrolled; N = 201 all samples analyzed), as assessed by 16S rRNA amplicon sequencing. Further, we evaluated probiotic presence and proliferation by use of specific quantitative polymerase chain reaction (qPCR). Probiotic administration did not significantly alter gut microbiota community structure or diversity as compared to placebo. The probiotic strains were detected in 91.3% of the fecal samples from children receiving probiotics and in 1% of the placebo treated children. Baseline gut microbiota was not found to predict the ability of probiotics to establish in the gut after the 6 month intervention. Within the probiotics group, proliferation of the strains LGG® and BB-12® in the gut was detected in 44.7% and 83.5% of the participants, respectively. A sub-analysis of the gut microbiota including only individuals with detected growth of the probiotics LGG® or BB-12® and comparing these to placebo revealed no differences in community structure or diversity. Six months of probiotic administration during early life did not change gut microbiota community structure or diversity, despite active proliferation of the administered probiotic strains. Therefore, alteration of the healthy infant gut microbiota is not likely to be a prominent mechanism by which these specific probiotics works to exert beneficial effects on host health. NCT02180581 . Registered 30 June 2014.
A Domain-Specific Language for Generic Interlocking Models and Their Properties

State-of-the-art railway interlocking systems typically adhere to the product line paradigm, where each individual system is obtained by instantiating a generic system with configuration data. In this paper, we present a domain-specific language, IDL, for specifying generic behavioural models and generic properties of interlocking systems. An IDL specification of a generic model consists of generic variable declarations and generic transition rules, and generic properties are generic state invariants. Generic models and generic properties can be instantiated with configuration data. This results in concrete models and concrete properties that can be used as input for a model checker to formally verify that the system model satisfies desired state invariants. The language and a configuration data instantiator based on the semantics have been implemented as components of the RobustRailS tool set for formal specification and verification of interlocking systems. They have successfully been applied to (1) define a generic model and generic safety properties for the new Danish interlocking systems and to (2) instantiate these generic artefacts for real-world stations and lines in Denmark. A novelty of this work is to provide a domain-specific language for generic models and an instantiator tool taking not only configuration data but also a generic model as input instead of using a hard-coded generator for instantiating only one fixed generic model and its properties with configuration data.
A DSM-based framework for integrated function modelling: concept, application and evaluation

Function modelling is proposed in the literature from different disciplines, in interdisciplinary approaches, and used in practice with the intention of facilitating system conceptualisation. However, function models across disciplines are largely diverse addressing different function modelling perspectives and using different structures and forms for representing the contained information. This hampers the exchange of information between the models and poses particular challenges to joint modelling and shared comprehension between designers from different disciplines. This article proposes an integrated function modelling framework, which specifically aims at relating between the different function modelling perspectives prominently addressed in different disciplines. It uses interlinked matrices based on the concept of DSM and MDM in order to facilitate cross-disciplinary modelling and analysis of the functionality of a system. The article further presents the application of the framework based on a product example. Finally, an empirical study in industry is presented. Therein, feedback on the potential of the proposed framework to support interdisciplinary design practice as well as on areas of further improvement has been obtained from participants working in industry.
Function modelling, DSM, Interdisciplinary product development, Conceptual design, Empirical study

Electronic versions:
A_DSM_based_framework_for_integrated_function_modelling_concept_application_and_evaluation.pdf

DOIs:
10.1007/s00163-016-0228-1

Bibliographical note
This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

Original language: English
Function modelling, DSM, Interdisciplinary product development, Conceptual design, Empirical study

Adsorptive performance of granular activated carbon in aquaculture and aquaria: a simplified method
A principle concern for aquaculturists and aquarium hobbyists is the control and removal of dissolved organic matter. Granular activated carbon is a well-established medium for the adsorption of dissolved organic substances associated with these issues. The selection of activated carbon for aquaria and aquaculture is not well-established due to innate heterogeneity of these waters. The means to completely characterize adsorption between carbon sources are generally not available to end users provided their level of expertise and/or resources at their disposal. This study introduces a relatively simple method for characterizing activated carbon quality and filter performance utilizing readily available and relatively safe indicator compounds to test adsorptive capabilities between different sources of granular activated carbon. Methylene blue and a commercial mix of humic and tannic substances were used to comparatively test adsorptive performance between two filter groups (i.e. sources of granular activated carbon) by tracking spectral absorbance with non-linear regression statistics, and validating removal trends against mature aquaculture water. Greater adsorptive capacities were consistently observed in one filter group throughout the indicator testing battery. Similar findings were observed between the two indicator tests, thereby confirming the method. This method can be adopted by commercial
aquaculture operations or aquarists to assist in comparatively screening particular types, particle sizes, and sources of granular activated carbon for specific water quality and engineering requirements.

**General information**
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Virginia Polytechnic Institute and State University
Authors: Taylor, D. (Intern), Kuhn, D. D. (Ekstern), Smith, S. (Ekstern)
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Journal of Applied Aquaculture
ISSN (Print): 1545-0805

**Ratings:**
Scopus rating (2016): SJR 0.238 SNIP 0.344 CiteScore 0.46
Scopus rating (2015): SNIP 0.26 SJR 0.247 CiteScore 0.39
Scopus rating (2014): SNIP 0.291 SJR 0.164 CiteScore 0.32
Scopus rating (2013): SNIP 0.343 SJR 0.189 CiteScore 0.25
Scopus rating (2012): SNIP 0.241 SJR 0.205 CiteScore 0.26
Scopus rating (2011): SNIP 0.372 SJR 0.241 CiteScore 0.36
Scopus rating (2010): SNIP 0.199 SJR 0.171
Scopus rating (2009): SNIP 0.596 SJR 0.277
Scopus rating (2008): SNIP 0.537 SJR 0.313
Scopus rating (2007): SNIP 0.38 SJR 0.293
Scopus rating (2006): SNIP 0.44 SJR 0.33
Scopus rating (2005): SNIP 0.416 SJR 0.283
Scopus rating (2004): SNIP 0.929 SJR 0.362
Scopus rating (2003): SNIP 0.295 SJR 0.293
Scopus rating (2002): SNIP 0.491 SJR 0.296
Scopus rating (2001): SNIP 0.372 SJR 0.216
Scopus rating (2000): SNIP 0.23 SJR 0.233
Scopus rating (1999): SNIP 0.662 SJR 0.259
Original language: English
DOIs: 10.1080/10454438.2017.1384780

**Advanced 3-D Ultrasound Imaging: 3-D Synthetic Aperture Imaging using Fully Addressed and Row-Column Addressed 2-D Transducer Arrays.**
Compared with conventional 2-D ultrasound imaging, real-time 3-D (or 4-D) ultrasound imaging has several advantages, resulting in a significant progress in the ultrasound imaging instrumentation over the past decade. Viewing the patient's anatomy as a volume helps physicians to comprehend the important diagnostic information in a noninvasive manner. Diagnostic and therapeutic decisions often require accurate estimates of e.g., organ, cyst, or tumor volumes. 3-D ultrasound imaging can provide these measurements without relying on the geometrical assumptions and operator-dependent skills involved in such estimations using 2-D scans. Although the detail resolution of ultrasound can not compete with 3-D imaging modalities such as CT and MRI, the combination of patient safety by using nonionizing radiation, cost-effectiveness, portability, and real-time imaging ability makes ultrasound the preferred choice in many clinical applications. Real-time 3-D ultrasound imaging is still not as widespread in use in the clinics as 2-D ultrasound imaging. Two limiting factors have traditionally been the low image quality as well as low volume rate achievable with a 2-D transducer array using the conventional 3-D beamforming technique, Parallel Beamforming. The first part of the scientific contributions of this Ph.D. project demonstrate that 3-D synthetic aperture imaging achieves a better resolution and a higher volume rate than the parallel beamforming technique. Data were obtained using both Field II simulations and measurements with the ultrasound research scanner SARUS and a 3.8 MHz 1024 element 2-D transducer array. In all investigations, 3-D synthetic aperture imaging achieved a better resolution, lower side-lobes, higher contrast, and better signal to noise ratio than parallel beamforming. This is achieved partly because synthetic aperture imaging removes the limitation of a fixed transmit focal depth and instead enables dynamic transmit focusing. Particularly, synthetic aperture technology provides a more robust method for volume imaging.
imaging could increase the achievable volume rate compared with parallel beamforming, to almost 50 times. Lately, the major ultrasound companies have produced ultrasound scanners using 2-D transducer arrays with enough transducer elements to produce high quality 3-D images. Because of the large matrix transducers with integrated custom electronics, these systems are extremely expensive. The relatively low price of ultrasound scanners is one of the factors for the widespread use of ultrasound imaging. The high price tag on the high quality 3-D scanners is limiting their market share.

Row-column addressing of 2-D transducer arrays is a low cost alternative to fully addressed 2-D arrays, for 3-D ultrasound imaging. Using row-column addressing, the number of transducer elements is dramatically reduced. This reduces the interconnection cost and removes the need to integrate custom made electronics into the probe. Two downsides of row-column addressing 2-D arrays are its lower lateral resolution due to its one-way focusing compared with two-way focusing in fully addressed 2-D arrays and also the inherent forward-looking imaging field of view. In the second part of the scientific contributions of this Ph.D. project, row-column addressing of 2-D arrays was investigated to assess the possibilities and drawbacks associated with transducer arrays using this addressing scheme, when integrated into probe handles. For that reason, two in-house prototyped 62+62 row-column addressed 2-D array transducer probes were manufactured using capacitive micromachined ultrasonic transducer (CMUT) and piezoelectric transducer (PZT) technology. Based on a set of acoustical measurements the center frequency, bandwidth, surface pressure, sensitivity, and acoustical cross-talks were evaluated and discussed. The imaging quality assessments were carried out based on Field II simulations as well as phantom measurements. Moreover, an analysis on comparing the lateral resolution with a fully addressed array were presented. To improve the imaging sensitivity, spatial matched filter beamforming was used as well as delay-and-sum approach. An analysis on increasing the inherent forward-looking achievable field of view of a flat row-column addressed 2-D array by using a double curved row-column addressed 2-D array was presented. A delay-and-sum beamforming approach suitable for a double curved row-column addressed 2-D array was introduced. Due to challenges on manufacturing double curved 2-D arrays, using a diverging acoustical lens was proposed and its imaging abilities were evaluated based on Field II simulations and measurements. Thereby, the inherent imaging limitation with flat row-column addressed 2-D arrays was overcome by using a diverging lens. Overall, having a low channel count and a large field of view, offers the potential to fabricate arrays with large aperture sizes, which is important for abdominal scans. Thus by using a curved row-column addressed 2-D array, 3-D imaging with equipment in the price range of conventional 2-D imaging could be possible. The main part of the thesis consists of eight scientific papers submitted for international conferences and journals during the Ph.D. project.

General information
State: Published
Organisations: Department of Electrical Engineering, Biomedical Engineering, BK Medical Aps
Authors: Bouzari, H. (Intern), Jensen, J. A. (Intern), Nikolov, S. I. (Ekstern), Stuart, M. B. (Intern)
Number of pages: 302
Publication date: 2017

Publication information
Publisher: Technical University of Denmark, Department of Electrical Engineering
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
PHD_Thesis_Bouzari.pdf

Relations
Projects:
Advanced 3-D Ultrasound Imaging: 3-D Synthetic Aperture Imaging using Fully Addressed and Row-Column Addressed 2-D Transducer Arrays.
Source: PublicationPreSubmission
Source-ID: 129911888
Publication: Research › Ph.D. thesis – Annual report year: 2017

Advances on integrated microwave photonics
Integrated microwave photonics has attracted a lot of attentions and makes significant improvement in last 10 years. We have proposed and demonstrated several schemes about microwave photonics including waveform generation, signal processing and energy-efficient micro-heaters. Our schemes are all fabricated on silicon-on-insulator chips and have advantages of compactness and capability to integrate with electronics.

General information
State: Published
Organisations: Department of Photonics Engineering, Nanophotonic Devices, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Structured Electromagnetic Materials, Huazhong University of Science and Technology
Authors: Dong, J. (Ekstern), Liao, S. (Ekstern), Yan, S. (Ekstern), Zhang, X. (Ekstern), Ding, Y. (Intern), Xiao, S. (Intern)
Number of pages: 3
Pages: 1-3
Advancing from underground to above-ground model predictive control in urban drainage

General information
State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems
Authors: Lund, N. S. V. (Intern), Borup, M. (Intern), Halvgaard, R. F. (Intern), Falk, A. K. V. (Intern), Mark, O. (Ekstern), Madsen, H. (Ekstern), Mikkelsen, P. S. (Intern)
Number of pages: 4
Publication date: 2017
Event: Abstract from 14th IWA/IAHR International Conference on Urban Drainage 2017, Prague, Czech Republic.
Main Research Area: Technical/natural sciences
Source: PublicationPreSubmission
Source-ID: 137754849
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Advancing Sentinel-1 use in Coastal Climate Impact Assessments and Adaptation – A Case Study from the Danish North Sea

Low-lying coastal communities face increasing challenges from rise in sea level, more extreme storm surge levels and floods. In addition, changing groundwater levels and precipitation patterns may further exacerbate the water-related impacts of climate change on society. Approximately 40,000 km2 of Europe’s North Sea region is already flood prone. Storm surges pose a real and substantial risk to this area, especially the densely populated areas. Climate and sea level research seek to provide robust regional projections of change and to address uncertainties and errors inherent in climate models. It is a challenge for coastal communities to transform this information in order to provide for local impact assessments and to implement adaptive measures. To this end, information about potential subsidence, its magnitudes and causes is important: subsidence may adversely affect the probability, extent and depths of future floods, and knowledge about subsidence will serve to reduce the total uncertainty about the anticipated climate impacts. If included in an 'impact integration system', reliable subsidence mapping may serve to deal with possible future outcomes in local management and planning.

The paper presents subsidence mapping using Sentinel-1 (S-1) data over a case study area on the Danish North Sea coast, and it addresses challenges to validate and reference results to the national datum levelling network. For this, repeated precision levelling (2006-2015) and ERS2 (1995-2001) data are used. In addition, the Sentinel-1 time series for selected scatter points are compared to groundwater level data from 10 wells and sea level data from two tide gauges to analyse their effect in the S-1 data. Likewise, the variations in the ocean water level (from tidal excursion and positive/negative surges etc.) and in the groundwater table (from ocean level and gradient, wave run-up, precipitation etc.) may in an initial evaluation suggest time-dependent and water-related mechanisms for the inferred subsidence encountered. These variations may thus serve to detail our understanding of S-1 results, and they may be indicative of system responses to subsidence under climate change scenarios. Results are put into perspective in relation to additional S-1 studies carried out by the authors as well as to literature to outline perspectives of further work to relate and apply S-1 data to improve local coastal climate impact assessments and adaptation.

General information
State: Published
Organisations: National Space Institute, Geodesy, Danish Agency for Data Supply and Efficiency, PPO.Labs, NORUT Information Technology, Danish Ministry of Energy, Utilities and Climate, Geological Survey of Norway
Authors: Sørensen, C. S. (Intern), Marinkovic, P. (Ekstern), Larsen, Y. (Ekstern), Knudsen, P. (Intern), Levinsen, J. (Ekstern), Broge, N. (Ekstern), Dehls, J. (Ekstern)
Number of pages: 1
Publication date: 2017
Advancing Sentinel-1 use in Coastal Climate Impact Assessments and Adaptation – A Case Study from the Danish North Sea

General information
State: Published
Organisations: National Space Institute, Geodesy, Danish Agency for Data Supply and Efficiency, PPO.Labs, NORUT Information Technology, Danish Ministry of Energy, Utilities and Climate, Geological Survey of Norway
Authors: Sørensen, C. S. (Intern), Marinkovic, P. (Ekstern), Larsen, Y. (Ekstern), Knudsen, P. (Intern), Levinsen, J. (Ekstern), Broge, N. (Ekstern), Dehls, J. (Ekstern)
Number of pages: 1
Publication date: 2017
Event: Poster session presented at Fringe 2017 Workshop, Helsinki, Finland.
Main Research Area: Technical/natural sciences
Electronic versions: Sorensen_etal_Fringe17_.pdf
Publication: Research - peer-review › Poster – Annual report year: 2017

A dynamic approach to real-time performance measurement in design projects

Recent developments in engineering design management point to the need for more dynamic, fine-grain measurement approaches able to deal with multi-dimensional, cross-level process performance in product design. Thus, this paper proposes a new approach to the measurement and management of individual and teamwork performance in engineering design projects. This integrates multiple, previously disparate, aspects of design management and performance measurement theory in a single framework. Further, a fully realised performance measurement approach is developed, which complements existing management strategies. This framework is synthesised from an extensive review and illustrated via an in-depth case study. As such, this work contributes to performance measurement theory in engineering design and has significant implications for both engineering design research and industry.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, University of Zagreb
Authors: Skec, S. (Ekstern), Cash, P. (Intern), Storga, M. (Ekstern)
Pages: 255-286
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Engineering Design
ISSN (Print): 0954-4828
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.19 SJR 0.64 SNIP 1.491
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.792 SNIP 1.607 CiteScore 2.12
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.172 SNIP 1.254 CiteScore 1.74
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.089 SNIP 1.64 CiteScore 2.06
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
A dynamic programming approach for quickly estimating large network-based MEV models

We propose a way to estimate a family of static Multivariate Extreme Value (MEV) models with large choice sets in short computational time. The resulting model is also straightforward and fast to use for prediction. Following Daly and Bierlaire (2006), the correlation structure is defined by a rooted, directed graph where each node without successor is an alternative. We formulate a family of MEV models as dynamic discrete choice models on graphs of correlation structures and show that the dynamic models are consistent with MEV theory and generalize the network MEV model (Daly and Bierlaire, 2006). Moreover, we show that these models can be estimated quickly using the concept of network flows and the nested fixed point algorithm (Rust, 1987). The main reason for the short computational time is that the new formulation allows to benefit from existing efficient solution algorithms for sparse linear systems of equations. We present numerical results based on simulated data with varying number of alternatives and nesting structures. We estimate large models, for example, a cross-nested model with 200 nests and 500,000 alternatives and 210 parameters that needs between 100–200 iterations to converge (4.3 h on an Intel(R) 3.2 GHz machine using a non-parallelized code). We also show that our approach allows to estimate a cross-nested logit model of 111 nests with a real data set of more than 100,000 observations in 14 h.

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis, Transport DTU, Ecole Polytechnique de Montreal, Universite de Montreal
Authors: Mai, T. (Ekstern), Frejinger, E. (Ekstern), Fosgerau, M. (Intern), Bastin, F. (Ekstern)
Pages: 179-197
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Transportation Research. Part B: Methodological
Volume: 98
Aeroelastic multidisciplinary design optimization of a swept wind turbine blade

Mitigating loads on a wind turbine rotor can reduce the cost of energy. Sweeping blades produces a structural coupling between flapwise bending and torsion, which can be used for load alleviation purposes. A multidisciplinary design
optimization (MDO) problem is formulated including the blade sweep as a design variable. A multifidelity approach is used to confront the crucial effects of structural coupling on the estimation of the loads. During the MDO, ultimate and damage equivalent loads are estimated using steady-state and frequency-domain–based models, respectively. The final designs are verified against time-domain full design load basis aeroelastic simulations to ensure that they comply with the constraints. A 10-MW wind turbine blade is optimized by minimizing a cost function that includes mass and blade root flapwise fatigue loading. The design space is subjected to constraints that represent all the necessary requirements for standard design of wind turbines. Simultaneous aerodynamic and structural optimization is performed with and without sweep as a design variable. When sweep is included in the MDO process, further minimization of the cost function can be obtained. To show this achievement, a set of optimized straight blade designs is compared to a set of optimized swept blade designs. Relative to the respective optimized straight designs, the blade mass of the swept blades is reduced of an extra 2% to 3% and the blade root flapwise fatigue damage equivalent load by a further 8%.

**General information**

State: Accepted/In press
Organisations: Department of Wind Energy, Wind turbine loads & control, Aerodynamic design, Fluid Mechanics
Authors: Pavese, C. (Intern), Tibaldi, C. (Intern), Zahle, F. (Intern), Kim, T. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Wind Energy
ISSN (Print): 1095-4244
Ratings:
- BFI (2017): BFI-level 2
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 3.37 SJR 1.104 SNIP 2.306
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 1.196 SNIP 2.086 CiteScore 3.06
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 1.272 SNIP 3.75 CiteScore 3.42
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 2
- Scopus rating (2013): SJR 1.275 SNIP 2.464 CiteScore 2.75
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 1.126 SNIP 2.39 CiteScore 2.36
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 1.024 SNIP 2.718 CiteScore 2.49
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 1.487 SNIP 2.013
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 1.124 SNIP 1.448
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 2
- Scopus rating (2008): SJR 0.826 SNIP 1.559
- Web of Science (2008): Indexed yes
- Scopus rating (2007): SJR 1.053 SNIP 1.453
- Web of Science (2007): Indexed yes
- Scopus rating (2006): SJR 0.637 SNIP 1.689
A facile approach to fabricate hierarchically structured poly(3-hexylthiophene-2,5-diyl) films

Microstructured surfaces have great potentials to improve the performances and efficiency of optoelectronic devices. In this work, a simple robust approach based on surface instabilities was presented to fabricate poly(3-hexylthiophene-2,5-diyl) (P3HT) films with ridge-like/wrinkled composite microstructures. Namely, the hierarchically patterned films were prepared by spin coating the P3HT/tetrahydrofuran (THF) solution on a polydimethylsiloxane (PDMS) substrate to form stable ridge-like structures, followed by solvent vapor swelling to create surface wrinkles with the orientation guided by the ridge-like structures. During spin coating of the P3HT/THF solution, the ridge-like structures were generated by the in-situ template of the THF swelling-induced creasing structures on the PDMS substrate. To our knowledge, it is the first report that the creasing structures are used as a recoverable template for patterning films. The crease-templated ridge-like structures were well modulated by the THF swelling time, the modulus of the PDMS substrate, the P3HT/THF solution concentration and the selective/blanket exposure of the PDMS substrate to O2 plasma. UV–vis and fluorescence spectrometry measurements indicated that the light absorption and fluorescent emission were improved on the hierarchically patterned P3HT films, which can be utilized to enhance the efficiencies of organic solar cells. Furthermore, this simple versatile method based on the solvent swelling-induced crease as the in-situ recoverable template has been extended to pattern other spin-coated films with different compositions.

General information

State: Published
Organisations: Department of Energy Conversion and Storage, Imaging and Structural Analysis, Tianjin University, Chinese Academy of Sciences
Pages: 928-939
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Journal of Polymer Science. Part B, Polymer Physics
Volume: 55
Issue number: 12
ISSN (Print): 0887-6266
Ratings:
  BFI (2017): BFI-level 1
  Web of Science (2017): Indexed Yes
  BFI (2016): BFI-level 1
  Scopus rating (2016): CiteScore 3.12 SJR 1.051 SNIP 0.963
  Web of Science (2016): Indexed yes
  BFI (2015): BFI-level 1
  Scopus rating (2015): SJR 1.241 SNIP 1.119 CiteScore 3.4
  Web of Science (2015): Indexed yes
  BFI (2014): BFI-level 1
  Scopus rating (2014): SJR 1.498 SNIP 1.423 CiteScore 3.91
  Web of Science (2014): Indexed yes
  BFI (2013): BFI-level 1
A Failure Locus for Hydrogen Assisted Failure
We investigate cracking in the presence of hydrogen by means of a hybrid experimental-numerical approach. Slow strain rate tests are conducted in a Nickel superalloy under different environmental conditions. Finite element analysis of crack initiation and subsequent growth is modeled by means of a hydrogen-dependent traction separation law. A special control algorithm is employed to overcome numerical instabilities intrinsically associated with cohesive zone formulations. The fracture energy is degraded by means of an experimentally-motivated hydrogen degradation relation. Numerical results provide important insight into the failure process, enabling to identify critical values of hydrogen concentration and remote stresses that trigger cracking. The work builds upon previous works by the authors and brings important insight into the technologically important problem of hydrogen assisted cracking.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, Universidad de Oviedo, University of Virginia
Authors: Fuentes-Alonso, S. (Ekstern), Harris, Z. D. (Ekstern), Burns, J. T. (Ekstern), Martínez Pañeda, E. (Intern)
Number of pages: 1
Pages: 225
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 30th Nordic Seminar on Computational Mechanics (NSCM-30)
Editors: Høsberg, J., Pedersen, N.
A fast and simple method to estimate relative, hyphal tensile-strength of filamentous fungi used to assess the effect of autophagy

Fungal hyphal strength is an important phenotype which can have a profound impact on bioprocess behavior. Until now, there is not an efficient method which allows its characterization. Currently available methods are very time consuming; thus, compromising their applicability in strain selection and process development. To overcome this issue, a method for fast and easy, statistically-verified quantification of relative hyphal tensile strength was developed. It involves off-line fragmentation in a high shear mixer followed by quantification of fragment size using laser diffraction. Particle size distribution (PSD) is determined, with analysis time on the order of minutes. Plots of PSD 90th percentile versus time allow estimation of the specific fragmentation rate. This novel method is demonstrated by estimating relative hyphal strength during growth in control conditions and rapamycin-induced autophagy for Aspergillus nidulans (paternal strain) and a mutant strain (ΔAnatg8) lacking an essential autophagy gene. Both strains were grown in shake flasks, and relative hyphal tensile strength was compared. The mutant strain grown in control conditions appears to be weaker than the paternal strain, suggesting that Anatg8 may play a role in other processes involving cell wall biosynthesis. Furthermore, rapamycin-induced autophagy resulted in apparently weaker cells even for the mutant strain. These findings confirm the utility of the developed method in strain selection and process development.
A fast surrogate model tailor-made for real time control

A surrogate model of a detailed hydraulic urban drainage model is created for supplying inflow forecasts to an MPC model for 31 separate locations. The original model is subdivided into 66 relationships extracted from the original model. The surrogate model is 9000 times faster than the original model, with just a minor deviation from the original model results.

General information
State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems
Authors: Borup, M. (Intern), Thrysøe, C. (Intern), Arnbjerg-Nielsen, K. (Intern), Righetti, F. (Intern), Mikkelsen, P. S. (Intern)
Number of pages: 4
Publication date: 2017
Event: Abstract from 14th IWA/IAHR International Conference on Urban Drainage 2017, Prague, Czech Republic.
Main Research Area: Technical/natural sciences
Surrogate models, Piecewise linear, Volume-discharge relationships, Real time control, Input models
Electronic versions:
SurModForRTC_2_0.pdf
Source: PublicationPreSubmission
Source-ID: 139171938
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017
A FEM based methodology to simulate multiple crack propagation in friction stir welds

In this work a numerical procedure, based on a finite element approach, is proposed to simulate multiple three-dimensional crack propagation in a welded structure. Cracks are introduced in a friction stir welded AA2024-T3 butt joint, affected by a process-induced residual stress scenario. The residual stress field was inferred by a thermo-mechanical FEM simulation of the process, considering temperature dependent elastic-plastic material properties, material softening and isotropic hardening. Afterwards, cracks introduced in the selected location of FEM computational domain allow stress redistribution and fatigue crack growth. The proposed approach has been validated by comparison with numerical outcomes provided by a consolidated FEM-DBEM procedure, available in literature. The discussed procedures are substantially equivalent in terms of SIFs evaluation along the crack front at the cracks insertion, as well as with respect to crack sizes measured in three different points for each propagation step. This FEM-based approach simulates the fatigue crack propagation by considering accurately the residual stress field generated by plastic deformations imposed on a structural component and has general validity.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, University of Salerno, Norwegian University of Science and Technology
Authors: Lepore, M. (Ekstern), Carlone, P. (Ekstern), Berto, F. (Ekstern), Sonne, M. R. (Intern)
Pages: 154-167
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Engineering Fracture Mechanics
ISSN (Print): 0013-7944
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.39 SJR 1.247 SNIP 1.676
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.362 SNIP 1.945 CiteScore 2.44
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.619 SNIP 2.214 CiteScore 2.28
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.483 SNIP 2.047 CiteScore 2.25
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.367 SNIP 2.112 CiteScore 1.82
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.793 SNIP 2.237 CiteScore 1.92
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.482 SNIP 1.946
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.734 SNIP 1.899
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.602 SNIP 2.235
Web of Science (2008): Indexed yes
Affibody scaffolds improve sesquiterpene production in *Saccharomyces cerevisiae*

Enzyme fusions have been widely used as a tool in metabolic engineering to increase pathway efficiency by reducing substrate loss and accumulation of toxic intermediates. Alternatively, enzymes can be co-localized through attachment to a synthetic scaffold via non-covalent interactions. Here we describe the use of affibodies for enzyme tagging and scaffolding. The scaffolding is based on the recognition of affibodies to their anti-idiotypic partners in vivo, and was first employed for co-localization of farnesyl diphosphate synthase and farnesene synthase in *S. cerevisiae*. Different parameters were modulated to improve the system, and the enzyme:scaffold ratio was most critical for its functionality. Ultimately, the yield of farnesene on glucose $\text{YS}_{\text{SFar}}$ could be improved by 135% in fed-batch cultivations using a 2-site affibody scaffold. The scaffolding strategy was then extended to a three-enzyme polyhydroxybutyrate (PHB) pathway, heterologously expressed in *E. coli*. Within a narrow range of enzyme and scaffold induction, the affibody tagging and scaffolding increased PHB production 7-fold. This work demonstrates how the versatile affibody can be used for metabolic engineering purposes.

**General information**

State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Yeast Cell Factories, Chalmers University of Technology, Royal Institute of Technology
Authors: Tippmann, S. (Ekstern), Anfelt, J. (Ekstern), David, F. (Ekstern), Rand, J. M. (Ekstern), Siewers, V. (Ekstern), Uhlén, M. (Intern), Nielsen, J. (Intern), Hudson, E. P. (Ekstern)
Number of pages: 10
Pages: 19-28
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: A C S Synthetic Biology
Volume: 6
Issue number: 1
ISSN (Print): 2161-5063
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 4.7 SJR 2.736 SNIP 1.024
Web of Science (2016): Indexed yes
Scopus rating (2015): SJR 2.269 SNIP 1.049 CiteScore 4.41
Web of Science (2015): Indexed yes
Scopus rating (2014): SJR 3.783 SNIP 1.219 CiteScore 3.84
Affinity Electrophoresis for Analysis of Catalytic Module-Carbohydrate Interactions

Affinity electrophoresis has long been used to study the interaction between proteins and large soluble ligands. The technique has been found to have great utility for the examination of polysaccharide binding by proteins, particularly carbohydrate binding modules (CBMs). In recent years, carbohydrate surface binding sites of proteins mostly enzymes have also been investigated by this method. Here, we describe a protocol for identifying binding interactions between enzyme catalytic modules and a variety of carbohydrate ligands.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, Department of Biotechnology and Biomedicine, Enzyme and Protein Chemistry, University of Michigan
Authors: Cockburn, D. (Ekstern), Wilkens, C. (Intern), Svensson, B. (Intern)
Pages: 119-127
Publication date: 2017

Host publication information
Title of host publication: Protein-Carbohydrate Interactions : Methods and Protocols
Volume: 1588
Publisher: Springer
Editors: Abbott, D. W., van Bueren, A. L.
ISBN (Print): 978-1-4939-6898-5
Chapter: 9

Series: Methods in Molecular Biology
ISSN: 1064-3745
Main Research Area: Technical/natural sciences
Protein Binding, Affinity electrophoresis, Carbohydrate binding module, Dissociation constant, Polyacrylamide gel electrophoresis, Polysaccharide, Surface binding site

DOIs:
10.1007/978-1-4939-6899-2_9
Source: FindIt
Source-ID: 2356847196
Publication: Research › Book chapter – Annual report year: 2017
A fire risk assessment model for residential high-rises with a single stairwell

As few or none prescriptive guidelines for fire risk assessment of residential high-rise buildings exist, it has been unclear which fire safety design features constitute an acceptable (adequate) safety level. In order to fill this gap a simplified risk-based decision-support tool, the Fire Risk Model (FRM), was developed. The FRM evaluates both the risk level to the occupants and the property risk level as a function of the building characteristics, height and fire safety features for single stairwell residential high-rise buildings. The acceptability of a high-rise design is then defined through comparison with the risk level associated with a 22 m high prescriptive design. The FRM and its applicability are introduced by summarily revisiting the concept of equivalency and adequate safety. The underlying assumptions and the pitfalls of equivalency assessments are discussed, and the associated performance of the FRM evaluated. It was found that compartmentation and the door configurations in the egress path play an important role, along with sprinklers, in order for the design to successfully keep the stairwell free from smoke. Specifically, modern curtain wall facades were found to result in a reduced safety level compared to traditional facades with a spandrel. When opting for a modern curtain wall, additional safety features were found to be required in order to obtain an equivalent safety level.
A Flexible Web-Based Approach to Modeling Tandem Photocatalytic Devices

There have been several works modeling the optimal band gaps for tandem photocatalytic water splitting devices under different assumptions. Due to the many parameters involved, it is impossible for the authors to consider every conceivable situation. In this work, we have developed a web-based model (WBM) that allows users to input data such as photoabsorber diode parameters, catalytic losses, ionic losses, light concentration, etc. This program also adds a new parameter that allows one to balance the photon absorption distribution between both photoabsorbers in a tandem device (by thinning the top photoabsorber), thus allowing for a broader range of band gap combinations that can still provide highly efficient devices. While this does not change the overall maximum efficiency point, at certain band gap combinations balancing the photon absorption distribution between photoabsorbers can increase Solar to Hydrogen (STH) efficiency by up to 15% points. An additional feature of the WBM is that it allows users to upload data of a single photoelectrode, and then investigate the optimal matching photoabsorber band gap to maximize tandem device efficiency. This work analyzes some of the best previous experimental photoelectrodes, and quantitatively relates their performance to what would typically be expected via modeling programs.

A Framework for Determining Product Modularity Levels

The application of modular products is seen as an important enabler for delivering customized products competitively. However, many companies struggle to find ways to implement modular products in a manner that suits their particular business. The literature includes examples of how modular products have been implemented in specific types companies (mostly mass producers), but little guidance exists on how to identify the right level of modularity for other types of companies (such as engineer-to-order companies). In this article, we address this gap by suggesting a framework that categorizes the different types of modularity, where the categories fit different types of companies. More specifically,
we introduce The Modularity Application Matrix – a conceptual tool that leads to a better understanding of partial modularization in relation to products. Through four case studies its application in practice is illustrated. This paper thereby contributes with new theoretical developments as well as a practical tool for practitioners in industries using partial modularization, such as, for example, the construction and building industry.

General information
State: Published
Organisations: Department of Management Engineering, Management Science, Operations Management, Department of Mechanical Engineering, Engineering Design and Product Development, NCC Construction Danmark A/S, University of Southern Denmark
Authors: Hvam, L. (Intern), Herbert-Hansen, Z. N. L. (Intern), Haug, A. (Ekstern), Kudsk, A. (Ekstern), Mortensen, N. H. (Intern)
Pages: 1-14
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Advances in Mechanical Engineering (New York)
Volume: 9
Issue number: 10
ISSN (Print): 1687-8132
Ratings:
Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 0.76 SJR 0.277 SNIP 0.589
Web of Science (2016): Indexed yes
Scopus rating (2015): SJR 0.253 SNIP 0.531 CiteScore 0.64
Scopus rating (2014): SJR 0.238 SNIP 0.498 CiteScore 0.63
Web of Science (2014): Indexed yes
Scopus rating (2013): SJR 0.348 SNIP 0.858 CiteScore 1.11
ISI indexed (2013): ISI indexed yes
Scopus rating (2012): SJR 0.378 SNIP 0.762 CiteScore 0.88
ISI indexed (2012): ISI indexed no
Scopus rating (2011): SJR 0.368 SNIP 1.183 CiteScore 1
ISI indexed (2011): ISI indexed no
Scopus rating (2010): SJR 0.102 SNIP 0
Original language: English
Electronic versions:
1687814017719420.pdf
DOIs:
10.1177/1687814017719420
Publication: Research - peer-review › Journal article – Annual report year: 2017

A Framework for International Location Decisions for Manufacturing Firms Published in Production Engineering
The purpose of this paper is to address current shortcomings in international location decisions (ILD), which were identified through an exploratory study, by developing a model that addresses previous limitations in research and encapsulates an adequate theories and frameworks. Based on insights from an exploratory study on 17 Danish manufacturing firms and a literature review of over a hundred publications, the Scope Model was developed with the MECE principles in mind in order to encompass all aspects as identified, while being supplemented by adequate tools and models in different phases of the ILD process. This paper presents an application-oriented model for facilitating ILDs in manufacturing firms, which is unique in its way of being exhaustive and yet able to decompose the ILD problem in different aspects and abstraction levels to assist firms in balancing and aligning their efforts with strategic goals and organizational values.

General information
State: Accepted/In press
Organisations: Office for Study Programmes and Student Affairs, Department of Management Engineering, Management Science, Operations Management, Technical University of Denmark
Authors: Schmidt, A. S. T. (Intern), Touray, E. (Ekstern), Herbert-Hansen, Z. N. L. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
A framework for medium-fidelity wake dynamics in moderately complex terrain

General information
State: Published
Organisations: Department of Wind Energy, Wind turbine loads & control, Aerodynamic design, Resource Assessment Modelling
Authors: Larsen, G. C. (Intern), van der Laan, P. (Intern), Ott, S. (Intern)
Number of pages: 23
Publication date: 2017

A Framework for Online Conformance Checking

Conformance checking – a branch of process mining – focuses on establishing to what extent actual executions of a process are in line with the expected behavior of a reference model. Current conformance checking techniques only allow for a-posteriori analysis: the amount of (non-)conformant behavior is quantified after the completion of the process instance. In this paper we propose a framework for online conformance checking: not only do we quantify (non-)conformant behavior as the execution is running, we also restrict the computation to constant time complexity per event analyzed, thus enabling the online analysis of a stream of events. The framework is instantiated with ideas coming from the theory of regions, and state similarity. An implementation is available in ProM and promising results have been obtained.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science , Software Engineering, Universitat Politècnica de Catalunya
Authors: Burattin, A. (Intern), Carmona, J. (Ekstern)
Number of pages: 12
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 13th International Workshop on Business Process Intelligence (BPI 2017)
Main Research Area: Technical/natural sciences
Conference: 13th International Workshop on Business Process Intelligence, Barcelona, Spain, 10/09/2017 - 10/09/2017
Online process mining, Conformance checking, Event stream
Electronic versions:
2017_online_conformance.pdf
Source: PublicationPreSubmission
Source-ID: 137907909
A Framework for Operational Due Diligence in Mergers and Acquisitions

The number of mergers and acquisitions (M&As) has over the last five years increased greatly (Institute of Mergers, Acquisitions and Alliances, 2016). Furthermore, private equity professionals point to operational performance gains to drive an acquisition decision and attribute cost reductions as the most important lever for value creation, after a private equity firm acquires a company (PwC, 2016). However, the overall success rate of M&A activity remains low and the approach to understand an acquisition target's operating model remains non-exhaustive and unstandardized. This paper investigates the pivotal determinants for assessing operational performance and identifying improvement potentials in an acquisition target. The research question is: "What are the fundamental operational determinants influencing the acquisition decision for private equity firms in the due diligence phase?" This paper presents an end-to-end framework which functions as a dynamic platform that simplifies the approach to conducting an operational due diligence (ODD). The framework focuses on identification and assessment of current operational performance and improvement drivers in the pre-acquisition phase.

A Framework for Organization-Aware Agents

Open systems are characterized by the presence of a diversity of heterogeneous and autonomous agents that act according to private goals. Organizations, such as those used in real-life to structure human activities such as task allocation, coordination and supervision, can regulate the agents' behavior space and describe the expected behavior of the agents. Assuming an open environment, where agents are developed independently of the Organizational structures, agents need to be able to reason about the structure, so that they can deliberate about their actions and act within the expected boundaries and work towards the objectives of the organization. In this paper, we present the AORTA reasoning framework and show how it can be integrated into typical BDI-agents. We provide operational semantics that enables agents to make organizational decisions in order to coordinate and cooperate without explicit coordination mechanisms within the agents. The organizational model is independent of that of the agents, and the approach is not tied to a specific organizational model, but uses an organizational metamodel. We show how AORTA helps agents work together in a system with an organization for choosing the best tender for a building project.
A framework of DYNAMIC data structures for string processing

In this paper we present DYNAMIC, an open-source C++ library implementing dynamic compressed data structures for string manipulation. Our framework includes useful tools such as searchable partial sums, succinct/gap-encoded bitvectors, and entropy/run-length compressed strings and FM indexes. We prove close-to-optimal theoretical bounds for the resources used by our structures, and show that our theoretical predictions are empirically tightly verified in practice.

To conclude, we turn our attention to applications. We compare the performance of five recently-published compression algorithms implemented using DYNAMIC with those of state-of-the-art tools performing the same task. Our experiments show that algorithms making use of dynamic compressed data structures can be up to three orders of magnitude more space-efficient (albeit slower) than classical ones performing the same tasks.
A framework of knowledge creation processes in participatory simulation of hospital work systems

Participatory simulation (PS) is a method to involve workers in simulating and designing their own future work system. Existing PS studies have focused on analysing the outcome, and minimal attention has been devoted to the process of creating this outcome. In order to study this process, we suggest applying a knowledge creation perspective. The aim of this study was to develop a framework describing the process of how ergonomics knowledge is created in PS. Video recordings from three projects applying PS of hospital work systems constituted the foundation of process mining analysis. The analysis resulted in a framework revealing the sources of ergonomics knowledge creation as sequential relationships between the activities of simulation participants sharing work experiences; experimenting with scenarios; and reflecting on ergonomics consequences. We argue that this framework reveals the hidden steps of PS that are essential when planning and facilitating PS that aims at designing work systems.

General information
State: Published
Organisations: Department of Management Engineering, Engineering Systems, Copenhagen Center for Health Technology
Authors: Andersen, S. N. (Intern), Broberg, O. (Intern)
Number of pages: 40
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Ergonomics
ISSN (Print): 0014-0139
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.8 SJR 0.913 SNIP 1.358
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.971 SNIP 1.447 CiteScore 1.83
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.921 SNIP 1.455 CiteScore 1.77
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.831 SNIP 1.405 CiteScore 1.91
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.979 SNIP 1.854 CiteScore 1.98
A framework to estimate concentrations of potentially unknown substances by semi-quantification in liquid chromatography electrospray ionization mass spectrometry

Risk assessment of exposure to chemicals from food and other sources rely on quantitative information of the occurrence of these chemicals. As screening analysis is increasingly used, a strategy to semi-quantify unknown or untargeted analytes is required. A proof of concept strategy to semi-quantifying unknown substances in LC-MS was investigated by studying the responses of a chemically diverse marker set of 17 analytes using an experimental design study. Optimal conditions were established using two optimization parameters related to weak-responding compounds and to the overall response. All the 17 selected analytes were semi-quantified using a different analyte to assess the quantification performance under various conditions. It was found that source conditions had strong effects on the responses, with the range of low-response signals varying from −80% to over +300% compared to centerpoints. Positive electrospray (ESI+) was found to have more complex source interactions than negative electrospray (ESI−). Choice of quantification marker resulted in better quantification if the retention time difference was minimized (12 out of 12 cases error factor <4.0) rather than if the accurate mass difference was minimized (7 out of 12 cases error factor <4.0). Using optimal conditions and retention time selection, semi-quantification in ESI+ (70% quantified, average prediction error factor 2.08) and ESI− (100% quantified, average prediction error factor 1.74) yielded acceptable results for untargeted screening. The method was successfully applied to an extract of food contact material containing over 300 unknown substances. Without identification and authentic standards, the method was able to estimate the concentration of a virtually unlimited number of compounds thereby providing valuable data to prioritize compounds in risk assessment studies.

General information
State: Published
Organisations: National Food Institute, Research Group for Analytical Food Chemistry
Authors: Pieke, E. N. (Intern), Granby, K. (Intern), Trier, X. (Intern), Smedsgaard, J. (Intern)
Number of pages: 12
Pages: 30-41
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Analytica Chimica Acta
A Full-Size High-Temperature Superconducting Coil Employed in a Wind Turbine Generator Setup

A full-size stationary experimental setup, which is a pole pair segment of a 2 MW high-temperature superconducting (HTS) wind turbine generator, has been built and tested under the HTS-GEN project in Denmark. The performance of the HTS coil is crucial to the setup, and further to the development of the full generator. This paper deals with the HTS coil employed in the setup. The coil utilizing YBCO tapes is double-layered with 152 turns per layer and is wound on an FeNi9 iron core. Several sensors are installed to monitor the operating status of the coil, e.g., temperature, field, and voltage.
The coil is tested in LN2 first, and then tested in the setup so that the magnetic environment in a real generator is reflected. The experimental results are reported, followed by a finite-element simulation and a discussion on the deviation of the results. The tested and estimated Ic in LN2 are 148 A and 143 A, respectively. When tested in the setup, the maximum temperature of the coil is controlled at 77 K and 40 K, and the I-V curves under both conditions are presented. It is found that the lower half coil that is closer to the stator has a smaller Ic due to a higher field level. The study is of significance to the development of HTS generators.

**General information**
State: Published
Authors: Song, X. (. (Intern), Mijatovic, N. (Intern), Kellers, J. (Ekstern), Bührer, C. (Ekstern), Rebsdorf, A. V. (Ekstern), Hansen, J. (Ekstern), Christensen, M. (Ekstern), Krause, J. (Ekstern), Wiezoreck, J. (Ekstern), Pütz, H. (Ekstern), Holbøll, J. (Intern)
Number of pages: 5
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**
Journal: IEEE Transactions on Applied Superconductivity
Volume: 27
Issue number: 4
Article number: 5201105
ISSN (Print): 1051-8223
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.42 SJR 0.395 SNIP 1.031
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.35 SNIP 0.935 CiteScore 1.27
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.47 SNIP 1.113 CiteScore 0.83
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.431 SNIP 1.171 CiteScore 1.32
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.575 SNIP 1.27 CiteScore 1.11
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.364 SNIP 1.063 CiteScore 1.16
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.468 SNIP 1.073
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.452 SNIP 1.033
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.878 SNIP 0.987
Scopus rating (2007): SJR 0.611 SNIP 1.104
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.731 SNIP 0.935
Scopus rating (2005): SJR 0.645 SNIP 0.996
A fully coupled air foil bearing model considering friction – Theory & experiment

The dynamics of air foil bearings (AFBs) are not yet fully captured by any model. The recent years have, however, seen promising results from nonlinear time domain models, and simultaneously coupled formulations are now available, avoiding the previous requirements for undesirably small time steps and temporal convergence studies.

In the present work, an alternative foil structure model is substituted for the simple elastic foundation model to avoid its inherent limitations. The new foil model is based on a truss representation from the literature, but incorporates the foil mass and a dynamic friction model. As a consequence of the friction model's velocity dependency, the foil mass is included to obtain a set of differential equations that can be coupled to the rotor and fluid domains while allowing a simultaneous solution.

Considerations leading to a practically applicable implementation are discussed and numerical results are compared with experimental data. The model predicts natural frequencies and mode shapes well, but it is not yet capturing the unbalance response when friction is considered. Possible causes for this discrepancy are discussed and it is suggested that sticking is a more prevalent state than previously assumed.
A fully coupled method for numerical modeling and dynamic analysis of floating vertical axis wind turbines

- Aerodynamic modeling of floating VAWTs is established using the Actuator Cylinder (AC) flow method.
- A fully coupled aero-hydro-servo-elastic simulation tool, i.e., SIMO-RIFLEX-AC, is developed for floating VAWTs.
- The developed simulation tool is verified to be accurate by a series of code-to-code comparisons.
- This simulation tool can be used for design and response analysis of different floating VAWT concepts.

General information

State: Published
Organisations: Department of Wind Energy, Aerodynamic design, Norwegian University of Science and Technology
A Fully Developed Flow Thermofluid Model for Topology Optimization of 3D-Printed Air-Cooled Heat Exchangers

In this work, density-based topology optimization is applied to the design of the air-side surface of dry-cooled power plant condensers. A topology optimization model assuming a steady-state, thermally and fluid dynamically fully developed internal flow is developed and used for this application. The conductance of the heat exchanger is maximized for a prescribed pressure drop and prescribed air-side temperature change across the heat exchanger. Polymer with infilled thermally conducting metal filaments is considered as the heat exchanger material which allows cost effective additive manufacturing techniques to be used to fabricate the obtained designs. Parametric studies are presented that analyze the effect of the material thermal conductivity and the heat exchanger unit cell height on the system's performance. The designs obtained from topology optimization are benchmarked against a simple optimized slot channel model in order to demonstrate the superior performance of the topology optimized designs. Thus, this work demonstrates the usefulness of topology optimization to fully exploit the design freedom afforded by additive manufacturing technologies.
A gain-loss framework based on ensemble flow forecasts to switch the urban drainage-wastewater system management towards energy optimization during dry periods

Precipitation is the cause of major perturbation to the flow in urban drainage and wastewater systems. Flow forecasts, generated by coupling rainfall predictions with a hydrologic runoff model, can potentially be used to optimize the operation of integrated urban drainage-wastewater systems (IUDWSs) during both wet and dry weather periods. Numerical weather prediction (NWP) models have significantly improved in recent years, having increased their spatial and temporal resolution. Finer resolution NWP are suitable for urban-catchment-scale applications, providing longer lead time than radar extrapolation. However, forecasts are inevitably uncertain, and fine resolution is especially challenging for NWP. This uncertainty is commonly addressed in meteorology with ensemble prediction systems (EPSs). Handling uncertainty is challenging for decision makers and hence tools are necessary to provide insight on ensemble forecast usage and to support the rationality of decisions (i.e. forecasts are uncertain and therefore errors will be made; decision makers need tools to justify their choices, demonstrating that these choices are beneficial in the long run).

This study presents an economic framework to support the decision-making process by providing information on when acting on the forecast is beneficial and how to handle the EPS. The relative economic value (REV) approach associates economic values with the potential outcomes and determines the preferential use of the EPS forecast. The envelope curve of the REV diagram combines the results from each probability forecast to provide the highest relative economic value for a given gain-loss ratio. This approach is traditionally used at larger scales to assess mitigation measures for adverse events (i.e. the actions are taken when events are forecast). The specificity of this study is to optimize the energy consumption in IUDWS during low-flow periods by exploiting the electrical smart grid market (i.e. the actions are taken when no events are forecast). Furthermore, the results demonstrate the benefit of NWP neighbourhood post-processing methods to enhance the forecast skill and increase the range of beneficial uses.
A GBT-framework towards modal modelling of steel structures

In modern structural steel frame design, the modelling of joints between beams and columns are based on very simple assumptions. The joints are most often assumed to behave as a perfect hinge or as a rigid joint. This means that in the overall static analysis relative rotations and changes in the moment curves due to joint deformations are neglected. This simplification eases the modelling but it is at the cost of losing a detailed understanding of the behaviour of the joint. This happens even though the European code has introduced the so-called component method in order to determine the rotational stiffness of a connection. Based on a modelling of any beam-to-column joint using finite shell elements and springs for single components such as bolts, it is the primary hypothesis that it is possible to formulate a generalized connection model with few degrees of freedom related to a relevant set of deformation modes. This hypothesis is based on the idea of modal decomposition performed in generalized beam theories (GBT). The question is – is it possible to formulate an eigenvalue problem with a solution corresponding to mode shapes for the deformation of the joint by using the finite element model and some type of GBT beam elements? It is believed that this is possible. The paper will address our investigations and show the progress of our research.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Structural Engineering
Authors: Hansen, A. B. (Intern), Jönsson, J. (Intern)
Number of pages: 9
Pages: 1822-1830
Publication date: 2017
Conference: EUROSTEEL 2017, Copenhagen, Denmark, 13/09/2017 - 13/09/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Ce/papers
Volume: 1
Issue number: 2-3
ISSN (Print): 2509-7075
Original language: English
Generalized beam theory, GBT, Connections, Thin-walled structures
DOIs: 10.1002/cepa.226
Source: FindIt
Source-ID: 2386059594
Publication: Research - peer-review › Conference article – Annual report year: 2017

A generalization of Gale's lemma

In this work, we present a generalization of Gale's lemma. Using this generalization, we introduce two sharp combinatorial lower bounds for $\text{coind}(B_0(G)) + 1$ and $\text{coind}(B(G)) + 2$, the two classic topological lower bounds for the chromatic number of a graph $G$.

General information
State: Accepted/In press
Organisations: Department of Applied Mathematics and Computer Science, Shahrood University of Technology
Authors: Alishahi, M. (Ekstern), Hajiabolhassan, H. (Intern)
Number of pages: 10
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Graph Theory
ISSN (Print): 0364-9024
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 0.71 SJR 1.084 SNIP 1.272
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.551 SNIP 1.597 CiteScore 0.85
BFI (2014): BFI-level 2
A generic methodology for processing route synthesis and design based on superstructure optimization

In this paper, a systematic framework for novel and sustainable synthesis-design of processing routes is presented along with the associated computer-aided methods and tools. In Stage 1, superstructure optimization is used to determine the optimal processing route(s). In Stage 2, the design issues are resolved and targets for improvement are identified through the use of integrated tools. In Stage 3, new alternatives are generated using the selected route and the previously identified targets. In addition to the various computer-aided tools, two special tools are presented: (1) a database employing a specially developed knowledge representation system, and (2) Super-O, a software interface that guides users through the formulation and solution of synthesis problems. Super-O transfers data between the different tools, including a library of generic models, representing a wide range of processing options. Application of the synthesis and design stages is highlighted through two case studies (biorefinery and carbon capture-utilization).

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, KT Consortium, CAPEC-PROCESS, Technical University of Denmark
Authors: Bertran, M. (Intern), Frauzem, R. (Intern), Sanchez-Arcilla, A. S. (Ekstern), Zhang, L. (Intern), Woodley, J. (Intern), Gani, R. (Intern)
Pages: 892-910
Publication date: 2017
Main Research Area: Technical/natural sciences
A genome-wide association study of thyroid stimulating hormone and free thyroxine in Danish children and adolescents

Background: Hypothyroidism is associated with obesity, and thyroid hormones are involved in the regulation of body composition, including fat mass. Genome-wide association studies (GWAS) in adults have identified 19 and 6 loci associated with plasma concentrations of thyroid stimulating hormone (TSH) and free thyroxine (fT4), respectively.

Objective: This study aimed to identify and characterize genetic variants associated with circulating TSH and fT4 in Danish children and adolescents and to examine whether these variants associate with obesity.

Methods: Genome-wide association analyses of imputed genotype data with fasting plasma concentrations of TSH and fT4 from a population-based sample of Danish children, adolescents, and young adults, and a group of children, adolescents, and young adults with overweight and obesity were performed (N = 1,764, mean age = 12.0 years [range 2.5-24.7]). Replication was performed in additional comparable samples (N = 2,097, mean age = 11.8 years [1.2-22.8]). Meta-analyses, using linear additive fixed-effect models, were performed on the results of the discovery and replication analyses.

Results: No novel loci associated with TSH or fT4 were identified. Four loci previously associated with TSH in adults were confirmed in this study population (PDE10A (rs2983511: beta = 0.112SD, p = 4.8.10(-16)), FOXE1 (rs7847663: beta = 0.223SD, p = 1.5 . 10(-20)), NR3C2 (rs9968300: beta = 0.194SD, p = 2.4 . 10(-11)), VEGFA (rs2396083: beta = 0.088SD, p = 2.2 . 10(-10))). Effect sizes of variants known to associate with TSH or fT4 in adults showed a similar direction of effect in our cohort of children and adolescents, 11 of which were associated with TSH or fT4 in our study (p...
A gentle introduction to epistemic planning: The DEL approach

Epistemic planning can be used for decision making in multi-agent situations with distributed knowledge and capabilities. Dynamic Epistemic Logic (DEL) has been shown to provide a very natural and expressive framework for epistemic planning. In this paper, we aim to give an accessible introduction to DEL-based epistemic planning. The paper starts with the most classical framework for planning, STRIPS, and then moves towards epistemic planning in a number of smaller steps, where each step is motivated by the need to be able to model more complex planning scenarios.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic
Authors: Bolander, T. (Intern)
Pages: 1-22
Publication date: 2017
Conference: 9th Workshop on Methods for Modalities, Kanpur, India, 08/01/2017 - 08/01/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Electronic Proceedings in Theoretical Computer Science
Volume: 243
ISSN (Print): 2075-2180
Ratings:
Web of Science (2017): Indexed yes
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: English
Software, Multi agent systems, Distributed knowledge, Dynamic epistemic logic, Epistemic planning, Multi agent, Decision making, Management, cs.AI, cs.LO, cs.MA
Electronic versions: 1703.02192.pdf
DOIs: 10.4204/EPTCS.243.1
Source: FindIt
Aggregation model for curtailable generation and sheddable loads

This study shows modelling developed during the first year of the SmartNet project. In particular, it presents a mathematical model for aggregation of curtailable generation and sheddable loads. The model determines the quantity and the cost of the flexibility provided by the flexible resources based on their physical and dynamic behaviours. The model also proposes a bidding strategy in order to translate the aggregated behaviour into market bids.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems, SINTEF, University of Strathclyde
Authors: Marthinsen, H. (Ekstern), Morch, A. Z. (Ekstern), Plečaš, M. (Ekstern), Kockar, I. (Ekstern), Džamarija, M. (Intern)
Number of pages: 5
Pages: 1562-1566
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 24th International Conference & Exhibition on Electricity Distribution (CIRED)
Volume: 2017
Publisher: IET
Series: Cired - Open Access Proceedings Journal
Volume: 2017
Number: 1
ISSN: 2515-0855
Main Research Area: Technical/natural sciences
Conference: 24th International Conference on Electricity Distribution, Glasgow, United Kingdom, 12/06/2017 - 12/06/2017
Electronic versions: OAP_CIREDS2017.0994.pdf
DOIs: 10.1049/oap-cired.2017.0994

Bibliographical note
This is an open access article published by the IET under the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0/)
Source: FindIt
Source-ID: 2392852930
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Aggregation of Single-phase Electric Vehicles for Frequency Control Provision Based on Unidirectional Charging

As the use of electric vehicles grows there is a greater possibility of using aggregated sets of electric vehicles as a large flexible unit to assist with the control of the power system. In this paper, the possibility of using electric vehicles as a flexible load for frequency control is investigated. The investigations are performed in a Pan-European interconnected grid with varying wind power penetration and different operational scenarios. Within this grid, the paper focuses on primary frequency control provision from electric vehicles and how the system behaves as the vehicles are being controlled within their respective areas. The investigations show that electric vehicles can be used for primary frequency control with different wind power penetration. By controlling the vehicles, the steady state frequency is improved and, since the vehicles react fast enough to the frequency changes, also frequency nadir and rate of change of frequency are positively affected.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Energy system operation and management, Energy resources, services and control, Technical University of Denmark
Authors: Sæmundsson, V. T. (Ekstern), Rezkalla, M. M. (Intern), Zecchino, A. (Intern), Marinelli, M. (Intern)
Number of pages: 6
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 52nd International Universities Power Engineering Conference
Publisher: IEEE
Main Research Area: Technical/natural sciences
Conference: 52nd International Universities Power Engineering Conference, Greece, 29/08/2017 - 29/08/2017
A gradient surface produced by combined electroplating and incremental frictional sliding

A Cu plate was first electroplated with a Ni layer, with a thickness controlled to be between 1 and 2 μm. The coated surface was then deformed by incremental frictional sliding with liquid nitrogen cooling. The combined treatment led to a multifunctional surface with a gradient in strain, chemical content, microstructure, and hardness. The chemical profile was measured by glow-discharge optical emission spectroscopy, showing diffusion of Ni into the heavily deformed Cu layer to a depth of about 40 μm. The microstructure and hardness were characterized and compared with a similarly processed Cu plate without Ni coating, showing a strong effect of the coated layer on the deformation. The experimental results are followed by an analysis of strengthening mechanisms and a discussion of the applicability of the new technique for increasing the durability and lifetime of components exposed to friction and wear, e.g., in wind turbines.

General information
State: Published
Organisations: Department of Wind Energy, Materials science and characterization, Advanced Technology Research Laboratories
Authors: Yu, T. (Intern), Hong, C. (Intern), Kitamura, K. (Ekstern), Tomatsu, K. (Ekstern), Taniyama, A. (Ekstern), Huang, X. (Intern), Hansen, N. (Intern)
Number of pages: 6
Publication date: 2017
Conference: 38th Risø International Symposium on Materials Science, Roskilde, Denmark, 04/09/2017 - 04/09/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: I O P Conference Series: Materials Science and Engineering
Volume: 219
ISSN (Print): 1757-8981
Ratings:
BFI (2017): BFI-level 1
A grid-independent EMMS/bubbling drag model for bubbling and turbulent fluidization

The EMMS/bubbling drag model takes the effects of meso-scale structures (i.e. bubbles) into modeling of drag coefficient and thus improves coarse-grid simulation of bubbling and turbulent fluidized beds. However, its dependence on grid size has not been fully investigated. In this article, we adopt a two-step scheme to extend the EMMS/bubbling model to the sub-grid level. Thus the heterogeneity index, HD, which accounts for the hydrodynamic disparity between homogeneous and heterogeneous fluidization, can be correlated as a function of both local voidage and slip velocity. Simulations over a periodic domain show the new drag model is less sensitive to grid size because of the additional dependence on local slip velocity. When applying the new drag model to simulations of realistic bubbling and turbulent fluidized beds, we find grid-independent results are easier to obtain for high-velocity turbulent fluidized bed cases. The simulation results indicate that the extended EMMS/bubbling drag model is a potential method for coarse-grid simulations of large-scale fluidized beds.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre, Chinese Academy of Sciences
Authors: Luo, H. (Intern), Lu, B. (Ekstern), Zhang, J. (Ekstern), Wu, H. (Intern), Wang, W. (Ekstern)
Pages: 47-57
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Chemical Engineering Journal
Volume: 326
ISSN (Print): 1385-8947
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.34
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 5.68
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
A Hidden Markov Movement Model for rapidly identifying behavioral states from animal tracks

1. Electronic telemetry is frequently used to document animal movement through time. Methods that can identify underlying behaviors driving specific movement patterns can help us understand how and why animals use available space, thereby aiding conservation and management efforts. For aquatic animal tracking data with significant measurement error, a Bayesian state-space model called the first-Difference Correlated Random Walk with Switching (DCRWS) has often been used for this purpose. However, for aquatic animals, highly accurate tracking data of animal movement are now becoming more common. 2. We developed a new Hidden Markov Model (HMMM) for identifying behavioral states from animal tracks with negligible error, which we called the Hidden Markov Movement Model (HMMM). We implemented as the basis for the HMMM the process equation of the DCRWS, but we used the method of maximum likelihood and the R package TMB for rapid model fitting. 3. We compared the HMMM to a modified version of the DCRWS for highly accurate tracks, the DCRWSnome, and to a common HMM for animal tracks fitted with the R package moveHMM. We show that the HMMM is both accurate and suitable for multiple species by fitting it to real tracks from a
grey seal, lake trout, and blue shark, as well as to simulated data. 4. The HMMM is a fast and reliable tool for making meaningful inference from animal movement data that is ideally suited for ecologists who want to use the popular DCRWS implementation for highly accurate tracking data. It additionally provides a groundwork for development of more complex modelling of animal movement with TMB. To facilitate its uptake, we make it available through the R package swim.

**General information**
State: Published
Organisations: National Institute of Aquatic Resources, Section for Marine Living Resources, Dalhousie University, Michigan State University
Pages: 2112-2121
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Ecology and Evolution
Volume: 7
Issue number: 7
ISSN (Print): 2045-7758
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 1.579 SNIP 1.048 CiteScore 2.86
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.686 SNIP 0.939 CiteScore 2.66
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.37 SNIP 0.886 CiteScore 2.37
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.876 SNIP 0.725 CiteScore 1.66
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.58 SNIP 0.518
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Web of Science (2011): Indexed yes
Original language: English
q-bio.QM
Electronic versions:

**Publishers version**
DOIs:
10.1002/ece3.2795
Source: FindIt
Source-ID: 2350110771
Publication: Research - peer-review › Journal article – Annual report year: 2017

**A high-performance Riccati based solver for tree-structured quadratic programs**
Robust multi-stage Model Predictive Control (MPC) is an increasingly popular approach to handle model uncertainties due to the simplicity of its problem formulation and other attractive properties. However, the exponential growth of the problem dimensions with respect to the robust horizon renders the online solution of such problems challenging and the development of tailored solvers crucial. In this paper, an interior point method is presented that can solve Quadratic Programs (QPs) arising in multi-stage MPC efficiently by means of a tree-structured Riccati recursion and a high-performance linear algebra library. A performance comparison with code-generated and general purpose sparse QP solvers shows that the computation times can be significantly reduced for all problem sizes that are practically relevant in embedded MPC applications. The presented implementation is freely available as part of the open-source software HPMPC.
**A high-speed Schottky detector for ultra-wideband communications**

This letter reviews the design procedure of a high-speed Schottky video detector for high-data-rate communications within the ultra-wideband (UWB) frequencies. The classic design approach for video detectors is extended with a mixer-like analysis, which results in a more detailed assessment of the detector performance. The designed circuit is reviewed and measurements are provided for a manufactured prototype. The detector can successfully demodulate 2.5 Gbps video signals around a 7 GHz carrier. The bitrate to carrier frequency ratio of 35.7% is the highest reported for detectors at UWB frequencies. Using 0 dBm carrier power, the lowest measured conversion loss is 10 dB for a video frequency of 1.1 GHz and better than 13 dB up to 1.8 GHz.

**General information**

State: Published
Organisations: Metro-Access and Short Range Systems, Department of Electrical Engineering, Electromagnetic Systems, Department of Photonics Engineering, Technical University of Denmark
Authors: Valdecasa, G. S. (Ekstern), Cimoli, B. (Intern), Blanco Granja, Á. (Ekstern), Jensen, J. B. (Intern), Tafur Monroy, I. (Intern), Johansen, T. K. (Intern), Vegas Olmos, J. J. (Intern)
Pages: 388-393
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Microwave & Optical Technology Letters
Volume: 59
Issue number: 2
ISSN (Print): 0895-2477
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.87 SJR 0.299 SNIP 0.568
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.337 SNIP 0.52 CiteScore 0.72
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.362 SNIP 0.594 CiteScore 0.71
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.371 SNIP 0.639 CiteScore 0.75
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.365 SNIP 0.584 CiteScore 0.83
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.392 SNIP 0.61 CiteScore 0.83
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.409 SNIP 0.55
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.476 SNIP 0.614
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.424 SNIP 0.6
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.58 SNIP 0.828
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.595 SNIP 0.688
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.601 SNIP 0.798
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.634 SNIP 0.818
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.65 SNIP 0.818
Scopus rating (2002): SJR 0.624 SNIP 0.732
Scopus rating (2001): SJR 0.594 SNIP 0.606
Scopus rating (2000): SJR 0.415 SNIP 0.544
Scopus rating (1999): SJR 0.606 SNIP 0.785
Original language: English
Schottky video detector, microwave detector, ultra-wideband, envelope detector, harmonic balance
DOIs:
10.1002/mop.30300
Source: FindIt
Source-ID: 2350139347
Publication: Research - peer-review › Journal article – Annual report year: 2016
A homogenization method for ductile-brittle composite laminates at large deformations
This paper presents a high fidelity homogenization method for periodically layered composite structures that accounts for plasticity in the matrix material and quasi-brittle damage in the reinforcing layers, combined with strong geometrical nonlinearities. A set of deliberately chosen internal kinematic variables results in a rigorous representation of the kinematics of the two constituents, which in turn allows for complex constitutive laws per constituent to be employed directly in the formulation. The model accounts for hyper-elastoplastic behavior in the matrix phase and hyper-elastic behavior in the reinforcement as well as for the bending stiffness of the reinforcement layers. Additionally to previously proposed models, the present method includes Lemaitre type damage for the reinforcement, making it applicable to a wider range of engineering applications. The capability of the proposed method in representing the combined effect of plasticity, damage and buckling at microlevel within a homogenized setting is demonstrated by means of direct comparisons to a reference discrete model.

General information
State: Accepted/In press
Organisations: Department of Mechanical Engineering, Solid Mechanics
Authors: Poulios, K. (Intern), Niordson, C. F. (Intern)
Number of pages: 36
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
ISSN (Print): 0029-5981
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.64 SJR 1.743 SNIP 1.566
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.912 SNIP 1.689 CiteScore 2.67
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.935 SNIP 1.927 CiteScore 2.73
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.415 SNIP 1.894 CiteScore 2.8
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.47 SNIP 2.103 CiteScore 2.7
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.193 SNIP 1.935 CiteScore 2.47
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.177 SNIP 1.717
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.983 SNIP 1.601
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 2.122 SNIP 1.74
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.023 SNIP 1.775
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.678 SNIP 1.823
A hybrid Constraint Programming/Mixed Integer Programming framework for the preventive signaling maintenance crew scheduling problem

A railway signaling system is a complex and interdependent system which should ensure the safe operation of trains. We introduce and address a mixed integer optimisation model for the preventive signal maintenance crew scheduling problem in the Danish railway system. The problem contains many practical constraints, such as temporal dependencies between crew schedules, the splitting of tasks across multiple days, crew competency requirements and several other managerial constraints. We propose a novel hybrid framework using Constraint Programming (CP) to generate initial feasible solutions to feed as ‘warm start’ solutions to a Mixed Integer Programming (MIP) solver for further optimisation. We apply the CP/MIP framework to a section of the Danish rail network and benchmark our results against both direct application of a MIP solver and modelling the problem as a Constraint Optimisation Problem (COP). Whereas the current practice of using a general purpose MIP solver is only able to solve instances over a two-week planning horizon, the hybrid framework generates good results for problem instances over an eight-week period. In addition, the use of a MIP solver to improve the initial solutions generated by CP is shown to be vastly superior to solving the problem as a COP.

General information
State: Accepted/In press
Organisations: Management Science, Department of Management Engineering, Operations Research, Queen Mary University of London, Banedanmark
Authors: Pour, S. M. (Intern), Drake, J. H. (Ekstern), Ejlertsen, L. S. (Ekstern), Rasmussen, K. M. (Intern), Burke, E. K. (Ekstern)
Number of pages: 26
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: European Journal of Operational Research
ISSN (Print): 0377-2217
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.83 SJR 2.505 SNIP 2.339
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.334 SNIP 2.412 CiteScore 3.59
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.186 SNIP 2.485 CiteScore 3.21
A hybridizable discontinuous Galerkin method for solving nonlocal optical response models

We propose Hybridizable Discontinuous Galerkin (HDG) methods for solving the frequency-domain Maxwell’s equations coupled to the Nonlocal Hydrodynamic Drude (NHD) and Generalized Nonlocal Optical Response (GNOR) models, which are employed to describe the optical properties of nano-plasmonic scatterers and waveguides. Brief derivations for both the NHD model and the GNOR model are presented. The formulations of the HDG method for the 2D TM mode are given, in which we introduce two hybrid variables living only on the skeleton of the mesh. The local field solutions are expressed in terms of the hybrid variables in each element. Two conservativity conditions are globally enforced to make the problem solvable and to guarantee the continuity of the tangential component of the electric field and the normal component of the current density. Numerical results show that the proposed HDG methods converge at optimal rate. We benchmark our implementation and demonstrate that the HDG method has the potential to solve complex nanophotonic problems.

General information
State: Published
Air Quality Monitoring System and Benchmarking

Air quality monitoring has become an integral part of smart city solutions. This paper presents an air quality monitoring system based on Internet of Things (IoT) technologies, and establishes a cloud-based platform to address the challenges related to IoT data management and processing capabilities, including data collection, storage, analysis, and visualization. In addition, this paper also benchmarks four state-of-the-art database systems to investigate the appropriate technologies for managing large-scale IoT datasets.

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis
Authors: Liu, X. (Intern), Nielsen, P. S. (Intern)
Pages: 459-470
Publication date: 2017

Airway exposure to multi-walled carbon nanotubes disrupts the female reproductive cycle without affecting pregnancy outcomes in mice

Background: The use of multiwalled carbon nanotubes (MWCNT) is increasing due to a growing use in a variety of products across several industries. Thus, occupational exposure is also of increasing concern, particularly since airway exposure to MWCNTs can induce sustained pulmonary acute phase response and inflammation in experimental animals, which may affect female reproduction. This proof-of-principle study therefore aimed to investigate if lung exposure by intratracheal instillation of the MWCNT NM-400 would affect the estrous cycle and reproductive function in female mice.

Results: Estrous cycle regularity was investigated by comparing vaginal smears before and after exposure to 67 μg of NM-400, whereas reproductive function was analyzed by measuring time to delivery of litters after instillation of 2, 18 or 67 μg of NM-400. Compared to normal estrous cycling determined prior to exposure, exposure to MWCNT significantly prolonged the estrous cycle during which exposure took place, but significantly shortened the estrous cycle immediately after the exposed cycle. No consistent effects were seen on time to delivery of litter or other gestational or litter parameters, such as litter size, sex ratio, implantations and implantation loss.

Conclusion: Lung exposure to MWCNT interfered with estrous cycling. Effects caused by MWCNTs depended on the time of exposure: the estrous stage was particularly sensitive to exposure, as animals exposed during this stage showed a higher incidence of irregular cycling after exposure. Our data indicates that MWCNT exposure may interfere with events leading to ovulation.

General information
State: Published
Organisations: National Food Institute, Research Group for Molecular and Reproductive Toxicology, National Research Center for Working Environment, Aarhus University, University of Copenhagen
Authors: Johansson, H. K. L. (Intern), Hansen, J. S. (Ekstern), Elfving, B. (Ekstern), Lund, S. P. (Ekstern), Kyjovska, Z. O. (Ekstern), Loft, S. (Ekstern), Barfod, K. K. (Ekstern), Jackson, P. (Ekstern), Vogel, U. B. (Intern), Hougaard, K. S. (Ekstern)
Number of pages: 13
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Particle and Fibre Toxicology
Volume: 14
Issue number: 1
A language-based approach to modelling and analysis of Twitter interactions

More than a personal microblogging site, Twitter has been transformed by common use to an information publishing venue, which public characters, media channels and common people daily rely on for, e.g., news reporting and consumption, marketing, and social messaging. The use of Twitter in a cooperative and interactive setting calls for the precise awareness of the dynamics regulating message spreading. In this paper, we describe Twitlang, a language for modelling the interactions among Twitter accounts. The associated operational semantics allows users to precisely determine the effects of their actions on Twitter, such as post, reply-to or delete tweets. The language is implemented in the form of a Maude interpreter, Twitlanger, which takes a language term as an input and explores the computations arising from the term. By combining the strength of Twitlanger and the Maude model checker, it is possible to automatically verify communication properties of Twitter accounts. We illustrate the benefits of our executable formalisation by means of an application scenario inspired from real life. While the scenario highlights the benefits of adopting Twitter for a cooperative use in the everyday life, our analysis shows that appropriate settings are essential for a proper usage of the platform, in respect of fulfilling those communication properties expected within collaborative and
A layered shell containing patches of piezoelectric fibers and interdigitated electrodes: Finite element modeling and experimental validation

The work gives a theoretical and experimental contribution to the problem of smart materials connected to double curved flexible shells. In the theoretical part the finite element modeling of a double curved flexible shell with a piezoelectric fiber patch with interdigitated electrodes (IDEs) is presented. The developed element is based on a purely mechanical eight-node isoparametric layered element for a double curved shell, utilizing first-order shear deformation theory. The electromechanical coupling of piezoelectric material is added to all elements, but can also be excluded by setting the piezoelectric material properties to zero. The electrical field applied via the IDEs is aligned with the piezoelectric fibers, and hence the direct d33 piezoelectric constant is utilized for the electromechanical coupling. The dynamic performance of a shell with a microfiber composite (MFC) patch is investigated using frequency response functions (FRFs) obtained via external impact test as well as internal random signal excitation using the MCF patch as an actuator. The experiments are used to validate the numerical results. Good agreement between theory and experiments is obtained in a large frequency range. Discrepancies and insights into optimal modeling frequency range and non-linear behavior are discussed.
A least squares approach for efficient and reliable short-term versus long-term optimization

The uncertainties related to long-term forecasts of oil prices impose significant financial risk on ventures of oil production. To minimize risk, oil companies are inclined to maximize profit over short-term horizons ranging from months to a few years. In contrast, conventional production optimization maximizes long-term profits over horizons that span more than a decade. To address this challenge, the oil literature has introduced short-term versus long-term optimization. Ideally, this
problem is solved by a posteriori multi-objective optimization methods that generate an approximation to the Pareto front of optimal short-term and long-term trade-offs. However, such methods rely on a large number of reservoir simulations and scale poorly with the number of objectives subject to optimization. Consequently, the large-scale nature of production optimization severely limits applications to real-life scenarios. More practical alternatives include ad hoc hierarchical switching schemes. As a drawback, such methods lack robustness due to unclear convergence properties and do not naturally generalize to cases of more than two objectives. Also, as this paper shows, the hierarchical formulation may skew the balance between the objectives, leaving an unfulfilled potential to increase profits. To promote efficient and reliable short-term versus long-term optimization, this paper introduces a natural way to characterize desirable Pareto points and proposes a novel least squares (LS) method. Unlike hierarchical approaches, the method is guaranteed to converge to a Pareto optimal point. Also, the LS method is designed to properly balance multiple objectives, independently of Pareto front’s shape. As such, the method poses a practical alternative to a posteriori methods in situations where the frontier is intractable to generate.

**General information**
State: Published
Organisations: Center for Energy Resources Engineering, Department of Applied Mathematics and Computer Science, Scientific Computing, Department of Informatics and Mathematical Modeling, Copenhagen Center for Health Technology
Authors: Christiansen, L. H. (Intern), Capolei, A. (Intern), Jørgensen, J. B. (Intern)
Pages: 411-26
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Computational Geosciences
Volume: 21
Issue number: 3
ISSN (Print): 1420-0597
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.6 SJR 0.933 SNIP 1.413
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.277 SNIP 1.517 CiteScore 2.91
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.232 SNIP 1.619 CiteScore 2.62
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.012 SNIP 1.393 CiteScore 2.09
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.856 SNIP 1.366 CiteScore 1.8
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.691 SNIP 1.01 CiteScore 1.92
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.741 SNIP 1.266
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.122 SNIP 1.787
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.664 SNIP 1.548
Scopus rating (2007): SJR 0.716 SNIP 1.489
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.92 SNIP 1.491
AlGaAs and AlGaAs/GaAs/AlGaAs nanowires grown by molecular beam epitaxy on silicon substrates: Paper

The data on growth peculiarities and physical properties of GaAs insertions embedded in AlGaAs nanowires grown on different (111) substrates by Au-assisted molecular beam epitaxy are presented. The influence of nanowires growth conditions on structural and optical properties is studied in detail. It is shown that by varying the growth parameters it is possible to form structures like quantum dots that emit in a wide wavelengths range. These quantum dots show sharp and intense emission lines when an optical signal is collected from a single nanowire. The technology proposed opens new possibilities for integration of direct-band A III B V materials on silicon platform.

General information
State: Published
Algal Biomass for Bioenergy and Bioproducts Production in Biorefinery Concepts

The fast population growth is increasing the demand for energy and resources. However, the reserves of oil are diminishing and greenhouse emissions associated to its combustion are affecting the global climate causing global warming. Therefore the need for alternative resources and processes is becoming imperative.

Macro- and microalgae have the ability to transform nutrients into valuable biomass. Being a good source of vitamins, minerals, lipids, proteins and pigments, they represent a promising source of various products. However these biomasses are still very little explored as biorefinery feedstocks.

Biorefinery represents an important tool towards the development of a sustainable economy. Within the biorefinery framework several bioproducts, such as food, feed and biofuels, can be produced from biomass. The specific composition of the biomass feedstock determines the potential final product that can be obtained.

In this thesis, micro- and macroalage were investigated as biorefinery feedstocks. The main aim of this work was developing different biorefinery strategies for the production of high value products, such as proteins or pigments, to be employed in the pharmaceutical or nutraceutical industry. The macroalgae used in this work were Laminaria digitata and Saccharina latissima, while the microalgae were Chlorella sorokiniana, Chlorella vulgaris and Chlorella protothecoides. Moreover, an evaluation of the effect of the harvesting season and location on the composition of high value products such as total phenolics and on the biogas potential for L. digitata and S. latissima was done. Both these factors had a significant impact on the accumulation of total phenolics in the algal biomass and on the biogas production. In particular, samples harvested in summer, because of the high content of sugars, showed to be the most promising feedstock in the development of biorefinery processes, containing 0.5 mgTPC gDM-1 and having a biomethane potential of 343.7 NmLCH4 g VS-1.

Moreover, proteins being an interesting valuable product to be used as food and feed supplement, diverse industrial methods to produce amino acids and proteins were analyzed. Innovative techniques to increase the protein content in the final biomass, such as microalgae or microorganisms to be used as single cell proteins (SCP), were also investigated. The combination of phototropic growth of C. sorokiniana with Methyllococcus capsulatus led to an innovative solution where two products rich in proteins (up to 43 %DM) were obtained.

Another strategy developed in this thesis work was based on the combination of micro- and macroalgae to enhance protein production. Indeed, the microalgae C. protothecoides was grown heterotrophically in the macroalgae L. digitata hydrolyzed. The final composition of the microalgal biomass showed that the protein content was increased from 0.07 ± 0.01 gProtein gDM-1 to 0.44 ± 0.04 gProtein DM-1. The results obtained show that this solution may represent an interesting strategy to be applied in a biorefinery approach.

Finally, a microalgae biorefinery strategy was developed. Lutein represents a very important pigment present in the macular region of the human eye. It is crucial in the protection against light-induced retinal damages and responsible for maintaining human bone health and preventing some diseases. Lutein and proteins were extracted by developing innovative methods specifically designed for microalgae species. From the initial algal biomass were extracted 0.8 ± 0.1 mg Lutein gDM-1 with a purity of 92.5 ± 1.2% and a calculated yield of 95%. Moreover, the final protein content in the fraction was 82.7 ± 3.1% w w-1 with a protein yield of 55%. Finally, from the residues of this extraction processes, 372.7 ± 19.0 NmLCH4 gVS-1 of biogas were produced.

The results obtained in this thesis work show that macro- and microalgae are promising biomasses for the development of the future biorefineries.
Algal toxicity of the alternative disinfectants performic acid (PFA), peracetic acid (PAA), chlorine dioxide (ClO₂) and their by-products hydrogen peroxide (H₂O₂) and chlorite (ClO₂⁻)

Environmental effect evaluation of disinfection of combined sewer overflow events with alternative chemical disinfectants requires that the environmental toxicity of the disinfectants and the main by-products of their use are known. Many disinfectants degrade quickly in water which should be included in the evaluation of both their toxicity as determined in standardized tests and their possible negative effect in the water environment. Here we evaluated according to the standardized ISO 8692 test the toxicity towards the green microalgae, Pseudokirchneriella subcapitata, of three disinfectants: performic acid (PFA), peracetic acid (PAA) and chlorine dioxide (ClO₂) as well as two by-products of their use: hydrogen peroxide (H₂O₂) and chlorite. All of the five chemicals investigated showed clear toxicity to the algae with well-defined dose response curves. The EC₅₀ values ranged from 0.16 to 2.9 mg/L based on nominal concentrations leading to the labeling of the chemicals as either toxic or very toxic. The five investigated chemicals decreased in toxicity in the order chlorine dioxide, performic acid, peracetic acid, chlorite and hydrogen peroxide. The stability of the chemicals increased in the same order as the toxicity decrease. This indicates that even though ClO₂ has the highest environmental hazard potential, it may still be suitable as an alternative disinfectant due to its rapid degradation in water.
Algorithms and Tools for Petri Nets - Proceedings of the Workshop AWPN 2017

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Software Engineering, University of Hagen
Authors: Kindler, E. (ed.) (Intern), Bergenthum, R. (ed.) (Ekstern)
Number of pages: 70
Publication date: 2017

Publication information
Publisher: DTU Compute
Original language: English

Volume: 06
ISSN: 1601-2321
Main Research Area: Technical/natural sciences
Electronic versions:
tr17_06_Kindler_E.pdf
Publication: Research - peer-review › Report – Annual report year: 2017

Algorithms for Zero-Dimensional Ideals Using Linear Recurrent Sequences
Inspired by Faugère and Mou’s sparse FGLM algorithm, we show how using linear recurrent multi-dimensional sequences can allow one to perform operations such as the primary decomposition of an ideal, by computing of the annihilator of one or several such sequences.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Mathematics, University of Waterloo
Authors: Neiger, V. (Intern), Rahkooy, H. (Ekstern), Schost, É. (Ekstern)
Pages: 313-328
Publication date: 2017

Host publication information
A life cycle assessment of poly-hydroxybutyrate extraction from microbial biomass using dimethyl carbonate

Poly-hydroxyalkanoates are an example of biodegradable and biocompatible polymers, produced from renewable raw materials. With respect to other bioplastics the market share of poly-hydroxyalkanoates is still limited because of their commercial costs. To develop more cost-effective processes, a multilevel approach is usually undertaken combining innovative, cheaper and more effective microbial cultivation with safe and cheap extraction and purification methodologies. This study assesses the potential life cycle environmental impacts related to a novel protocol poly-hydroxyalkanoates extraction based on dimethyl carbonate in comparison to the use of halogenated hydrocarbons (in particular 1,2 dichloroethane). Four scenarios are analysed for the dimethyl carbonate protocol considering: extraction from microbial slurry or from dried biomass, and recovery by solvent evaporation or polymer precipitation. The life cycle assessment demonstrates that the environmental performances of dimethyl carbonate-based protocols are far better than those of the most comparative process using the halogenated hydrocarbons. The scenario that foresees the extraction of dried biomass and recovers solvent by evaporation appears to be the most promising in terms of environmental sustainability performance.
We herein present broadly useful, readily available and nonintegral hydroxylamine linkers for the routine solid-phase synthesis of hydroxamic acids. The developed protocols enable the efficient synthesis and release of a wide range of hydroxamic acids from various resins, relying on high control and flexibility with respect to reagents and synthetic processes. A trityl-based hydroxylamine linker was used to synthesize a library of peptide hydroxamic acids. The inhibitory effects of the compounds were examined for seven HDAC enzyme subtypes using a chemiluminescence-based assay.
Alkaline membrane water electrolysis with non-noble catalysts

As renewable energy sources reach higher grid penetration, large scale energy storage solutions are becoming increasingly important. Hydrogen produced with renewable energy by water electrolysis is currently the only option to solve this challenge on a global scale, and green hydrogen is essential for the decarbonization of the transportation and industrial sector required to limit climate change.

Electrolysis done with an alkaline electrolyte is a cheap, proven, and commercially available technology, but the systems suffer from inefficiency and limited operating flexibility. The work herein seek to address these issues by introducing alkaline polymeric membranes and efficient electrodes based on novel materials.
Polymer electrolyte membranes with sufficient OH\(^{-}\) conductivity enable a drastic reduction of the electrode spacing, which lead to improved ohmic properties enabling operation at higher current density. This, combined with better gas separation properties and a higher operating flexibility, have the prospects of significantly reducing the capex and opex of electrolysis systems, and the cost of green hydrogen. Towards this goal, membranes based on poly(2,2’-(m phenylene)-5,5’-bibenzimidazole) (m-PBI) as well as poly(2,2’-(m-mesitylene)-5,5’-bibenzimidazole) (mes-PBI) were investigated as electrolyte for alkaline electrolysis cells.

PBI membranes were equilibrated with aqueous KOH and applied as separator, and polarization data from cells at 20-25 wt% KOH using these membranes showed improved ohmic behaviour over cells with conventional porous separators. This was strikingly clear when combined with active electrodes with Raney-nickel-based coatings. With thin 40 μm m-PBI membranes, Raney-nickel-molybdenum cathodes and nickel anodes, cells operated at 80 °C with 24 wt% KOH (aq) achieved 1000 mA cm\(^{-2}\) at 1.7 V and 2800 mA cm\(^{-2}\) at 2.0 V. Electrochemical impedance spectroscopy data showed a 6-fold reduction in ohmic cell resistance compared to conventional materials. Albeit good performance, ex-situ characterization and durability tests showed that polymer backbone and membrane stability remained a problem under conventional operating conditions.

To accompany novel membranes in alkaline electrolysis, electrodes can be employed in a zero-gap configuration. This enable different electrode concepts than used in commercial systems. Inspired by recent literature, nickel-iron based anodes, and nickel-tin as well as nickel-molybdenum cathodes were investigated in half cell tests. The materials were applied as coatings on nickel foam and showed improvements in the order of 150-300 mV over reference nickel materials at room temperature, depending on the specific electrode and electrolyte concentration used.

In a secondary approach, electrodes were prepared using powder and polymeric binders. Using nickel powder with m-PBI binder in a nickel foam as cathode, a reduction in cell overpotential of more than 200 mV was achieved compared against a pristine nickel foam cathode.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Proton conductors
Authors: Kraglund, M. R. (Intern), Christensen, E. (Intern)
Number of pages: 163
Publication date: 2017

Publication information
Place of publication: Kgs. Lyngby
Publisher: Department of Energy Conversion and Storage, Technical University of Denmark
ISBN (Print): 978-87-92986-65-8
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
PhD_Afhandling_Mikkel_Ryk_r_Kraglund_revised_October_2017.pdf

Relations
Projects:
Alkaline membrane water electrolysis with non-noble catalysts
Source: PublicationPreSubmission
Source-ID: 139163950
Publication: Research › Ph.D. thesis – Annual report year: 2017

Alkyl caffeates as antioxidants in O/W emulsions: Impact of emulsifier type and endogenous tocopherols
Antioxidant addition can be one strategy to limit lipid oxidation in emulsions. Research has proven that an important factor regarding the efficacy of antioxidants is their localization in the emulsion; however, other factors such as interactions with other components can also have an impact. Thus, the aim was to evaluate the impact of emulsifiers (Citrem and Tween80) and presence of endogenous tocopherols on the efficacies of caffeic acid and caffeates (C1–C20) as antioxidants in emulsions. Lipid oxidation was evaluated during storage and partitioning of caffeic acid and caffeates was estimated by measuring their concentrations in the aqueous phase. Partitioning of caffeic acid and caffeates was influenced by emulsifier type and the presence of endogenous tocopherols. Caffeic acid was the most efficient antioxidant in Citrem and Tween stabilized emulsions in the presence of endogenous tocopherol. In contrast, for Tween stabilized emulsions, caffeic acid acted as a prooxidant and the evaluated caffeates acted as strong antioxidants in the absence of endogenous tocopherol. Thus, when endogenous tocopherol was present lipophilization of caffeic acid did not increase its efficacy as an antioxidant. It is suggested that the differences observed in antioxidant efficiency with different emulsifiers and with and without endogenous tocopherols is due to emulsifier–antioxidant interactions and antioxidant–antioxidant interactions in the emulsions.

General information
State: Published
Organisations: National Food Institute, Research Group for Bioactives – Analysis and Application, CIRAD
Authors: Sørensen, A. M. (Intern), Villeneuve, P. (Ekstern), Jacobsen, C. (Intern)
Allergic contact dermatitis caused by cobalt in leather – clinical cases

In 2013, we raised suspicion that cobalt in leather could be responsible for hitherto unrecognized cases of allergic contact dermatitis. We saw a patient sensitized only to cobalt with clear long-term exposure to cobalt from a leather sofa, and observed resolution of dermatitis following avoidance [1]. In 2014, we performed a questionnaire study, which showed a positive and significant association between cobalt allergy and a history of dermatitis caused by non-occupational exposure to leather articles [2]. Recently, we published an article showing high amounts of cobalt in selected leather swatches from furniture [3]. Here, we report 2 additional cases of allergic cobalt dermatitis caused by consumer leather exposure, to increase awareness about this topic.

General information
State: Published
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, Copenhagen University Hospital, University of Copenhagen
Authors: Bregnbak, D. (Ekstern), Opstrup, M. S. (Ekstern), Jellesen, M. S. (Intern), Johansen, J. D. (Ekstern), Thyssen, J. P. (Ekstern)
Pages: 366-368
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Contact Dermatitis
Volume: 76
Issue number: 6
ISSN (Print): 0105-1873
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.47 SJR 0.829 SNIP 1.59
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1 SNIP 1.468 CiteScore 2.85
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.874 SNIP 1.677 CiteScore 2.02
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.796 SNIP 1.409 CiteScore 1.87
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.87 SNIP 1.361 CiteScore 1.98
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.03 SNIP 1.145 CiteScore 1.91
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Allergic Sensitization at School Age is a Systemic Low-grade Inflammatory Disorder

Background
Systemic low-grade inflammation has been demonstrated in a range of the frequent noncommunicable diseases (NCDs) proposing a shared mechanism, but is largely unexplored in relation to allergic sensitization. We therefore aimed to investigate the possible association with childhood allergic sensitization.

Methods
High-sensitivity C-reactive protein (hs-CRP), interleukin-1β (IL-1β), IL-6, tumor necrosis factor-α (TNF-α), and chemokine (C-X-C motif) ligand 8 (CXCL8) were measured in plasma at age 6 months (N = 214) and 7 years (N = 277) in children from the Copenhagen Prospective Studies on Asthma in Childhood2000 (COPSAC2000) birth cohort. Allergic sensitization against common inhalant and food allergens was determined longitudinally at ages ½, 1½, 4 and 6 years by specific IgE assessments and skin prick tests. Associations between inflammatory biomarkers and sensitization phenotypes were tested with logistic regression and principal component analyses (PCAs).

Results
Adjusted for gender, recent infections, and a CRP genetic risk score, hs-CRP at 7 years was associated with concurrent elevated specific IgE against any allergen [adjusted OR (aOR) = 1.40; 95% CI, 1.14–1.72; P = 0.001], aeroallergens (aOR, 1.43; 1.15–1.77; P = 0.001), food allergens (aOR, 1.31; 95% CI, 1.02–1.67; P = 0.04), sensitization without any clinical allergy symptoms (aOR = 1.40; 1.06–1.85; P = 0.02), and with similar findings for skin prick tests. The other inflammatory markers were not univariately associated with sensitization, but multiparametric PCA suggested a specific inflammatory response among sensitized children. Inflammatory markers at age 6 months were not associated with subsequent development of sensitization phenotypes.

Conclusions
Elevated hs-CRP is associated with allergic sensitization in school-aged children suggesting systemic low-grade inflammation as a phenotypic characteristic of this early-onset NCD.
Publication information
Journal: Allergy
Volume: 72
Issue number: 7
ISSN (Print): 0105-4538
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 6.23 SJR 2.724 SNIP 2.475
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 3.13 SNIP 2.127 CiteScore 5.73
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.464 SNIP 2.121 CiteScore 5.51
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.195 SNIP 1.902 CiteScore 4.91
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.008 SNIP 1.818 CiteScore 4.81
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.328 SNIP 1.781 CiteScore 4.89
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.826 SNIP 1.845
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.681 SNIP 0.958
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.433 SNIP 1.937
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.374 SNIP 1.862
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.523 SNIP 2.691
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.895 SNIP 1.651
Scopus rating (2004): SJR 0.771 SNIP 1.896
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.551 SNIP 1.107
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.672 SNIP 0.627
Scopus rating (2001): SJR 0.624 SNIP 0.489
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.714 SNIP 0.428
Scopus rating (1999): SJR 0.513 SNIP 0.28
Original language: English
Allergy, Children, High-sensitivity C-reactive protein, Pro-inflammatory cytokines
DOIs:
10.1111/all.13108
All-fiber photon-pair source at telecom wavelengths

Single photon sources are a key element for quantum computing, quantum key distribution (QKD) and quantum communications. In particular, producing single photons at telecommunications wavelengths is valuable for QKD protocols and would enable realizing the quantum internet. The preferred method for their generation has long been spontaneous down conversion in bulk crystals, which suffers from connection loss to fiber networks. In-fiber spontaneous four-wave mixing provides a viable alternative as a photon pair source due to being compatible with existing fiber networks. We present an all-fiber photon pair source based on degenerate four-wave mixing in a 400 m Highly-Nonlinear fiber, with signal and idler wavelengths generated at 1552.5 nm and 1557 nm respectively. The source consists of CW pump laser operating at 1554.75 nm, which is slightly detuned from the zero group velocity dispersion wavelength into the normal dispersion regime. After pair generation in the highly-nonlinear fiber, three arrayed waveguide gratings are employed to spatially separate signal and idler, and provides a 120 dB pump power reduction. Firstly the source is modelled and experimentally characterized in the well known classical regime of stimulated four-wave mixing. The effect of fiber cooling on spontaneous Raman scattering is modelled and characterized, and a 30% reduction in spontaneous emission is found when cooling the fiber to −77 C◦. In the low power regime the coincidence to accidental count ratio is simulated and measured. An increase in the coincidence to accidental count ratio is observed when cooling the fiber.

Allocation of synchronous condensers for restoration of system short-circuit power

Modern power systems, employing an increasing number of converter-based renewable energy sources (RES) and decreasing the usage of conventional power plants, are leading to lower levels of short-circuit power and rotational inertia. A solution to this is the employment of synchronous condensers in the grid, in order to provide sufficient short-circuit power. This results in the increase of the short-circuit ratio (SCR) at transmission system bus-bars serving as points of interconnection (POI) to renewable generation. Evaluation of the required capacity and grid-location of the synchronous condensers, is inherently a mixed integer non-linear optimization problem, which could not be done on manual basis considering each type of machine and all bus-bars. This study therefore proposes a method of optimal allocation of synchronous condensers in a hypothetic future scenario of a transmission system fed by renewable generation. Total cost of synchronous condenser installations in the system is minimized and the SCRs at the POIs of central renewable power
plants are strengthened. The method has potential for application on larger grids, aiding grid-integration of RES.
we develop a method for solving the inverse lattice problem, where, given a broad class of potential, we find the ground states for all possible values of the effective cluster interaction energies. To do so, we formulate the inverse problem in terms of energetically distinct configurations, using a constraint satisfaction model to identify constructible configurations, and show that a convex hull can be used to identify ground states. To demonstrate the approach, we solve for all ground states for a binary alloy in a 2D hexagonal lattice both with and without an interface, based on pairwise interactions.

**General information**

State: Published
Organisations: Department of Physics, Theoretical Atomic-scale Physics, Neutrons and X-rays for Materials Physics, Massachusetts Institute of Technology
Authors: Larsen, P. M. (Intern), Kalidindi, A. R. (Ekstern), Schmidt, S. (Intern), Schuh, C. A. (Ekstern)
Number of pages: 7
Pages: 254-260
Publication date: 2017
Main Research Area: Technical/natural sciences
All-Si photodetector for telecommunication wavelength based on subwavelength grating structure and critical coupling

We propose an efficient planar all-Si internal photoemission photodetector operating at the telecommunication wavelength of 1550 nm and numerically investigate its optical and electrical properties. The proposed polarization-sensitive detector is composed of an appropriately engineered subwavelength grating structure topped with a silicide layer of nanometers thickness as an absorbing material. It is shown that a nearly-perfect light absorption is possible for the thin silicide layer by its integration to the grating resonator. The absorption is shown to be maximized when the critical coupling condition is satisfied. Simulations show that the external quantum efficiency of the proposed photodetector with a 2-nm-thick PtSi absorbing layer at the center wavelength of 1550 nm can reach up to ~60%.

General information
State: Published
Organisations: Department of Photonics Engineering, Nanophotonics Theory and Signal Processing, Technical University of Denmark, Tarbiat Modares University
Authors: Taghizadeh, A. (Intern), Rasoulzadeh Zali, A. (Ekstern), Chung, I. (Intern), Kazem Moravvej-Farshi, M. (Ekstern)
Number of pages: 7
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: A I P Advances
Volume: 7
Article number: 095019
ISSN (Print): 2158-3226
Ratings:
Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 1.32 SJR 0.449 SNIP 0.612
Web of Science (2016): Indexed yes
Scopus rating (2015): SJR 0.457 SNIP 0.619 CiteScore 1.17
Web of Science (2015): Indexed yes
Scopus rating (2014): SJR 0.709 SNIP 0.788 CiteScore 1.38
Web of Science (2014): Indexed yes
Scopus rating (2013): SJR 0.769 SNIP 0.906 CiteScore 1.36
ISI indexed (2013): ISI indexed yes
Scopus rating (2012): SJR 0.822 SNIP 0.897 CiteScore 1.14
ISI indexed (2012): ISI indexed no
Web of Science (2011): Indexed yes
Original language: English
Electronic versions: 1.pdf
A local energy market for electricity and hydrogen
The proliferation of distributed energy resources entails efficient market mechanisms in distribution-level networks. This paper establishes a local energy market (LEM) framework in which electricity and hydrogen are traded. Players in the LEM consist of renewable distributed generators (DGs), loads, hydrogen vehicles (HVs), and a hydrogen storage system (HSS) operated by a HSS agent (HSSA). An iterative LEM clearing method is proposed based on the merit order principle. Players submit offers/bids with consideration of their own preferences and profiles according to the utility functions. The decentralized LEM clearing process not only avoids complex calculation induced by centralized decision process, but also preserves players’ privacy. Case studies are conducted that demonstrate that the LEM promotes local integration of renewable energy, reduces peak demand, and improves players’ utilities. Sensitivity analysis is then implemented to discuss the influences on the LEM clearing results of capacities of DGs, Loads, and the HSS, as well as price of hydrogen from the hydrogen station (HS).
A local freshwater impact – proposing a groundwater indicator AGWaRe

Currently there are several world maps showing the water stress in regions or nations. They give a good indication of water stress on a larger scale, but do not have information on a local scale that may assist a water utility in their prioritization of well fields to lower the overall pressure on the water resource. Furthermore a local water stress indicator is necessary for benchmarking regional water supplies against each other.

AWaRe is the freshwater impact recommended by the Lifecycle Initiative (developed by WULCA). It is defined as the inverse function of Availability Minus Demand (AMD) which is compared to the world average AMD. The AMD represents the water remaining after human consumption and environmental requirements. This is done for a grid of 50x50km worldwide, but it does not give sufficient information on a local scale. Therefore we modified the AWaRe indicator so that it can account for differences at the local scale and termed it AWaRe*. We have applied AWaRe* on four different demarcations for three public water supplies of the largest cities in Denmark.

The results of the local scales will be presented and compared with the results from the AWaRe found for non agricultural water use (found by WULCA). The AWaRe* differs between different demarcations. For the four locale scales water supply C ranks as the most water stressed. This fits well with the water stress experienced by the three water supplies. For two out of four demarcations, the ranking between the cases are the same. As expected for the local scales we see the highest impact factor for the smallest scale. For the water stress found by WULCA, the water stress is lowest for water supply C and case A and B have similar water stress, which is opposite of the ranking from the local scales. For the AWaRe scale, we obtain results that do not comply with the expected outcome from the water supply. Further work should be given to increase resolution of AWaRe data.

Not only is the applied method crucial to the outcome, but also the scale applied and the data used. The locale scale shows the highest water stress at water supply C, which is the city with most inhabitants and a water supply that experience water stress. AWaRe* on the locale scale represents the expected water stress for the water supplies.
A long look at MCG-5-23-16 with NuSTAR. I. relativistic reflection and coronal properties

MCG-5-23-16 was targeted in early 2015 with a half mega-second observing campaign using NuSTAR. Here we present the spectral analysis of these data sets along with an earlier observation and study the relativistic reflection and the primary coronal source. The data show strong reflection features in the form of both narrow and broad iron lines plus a Compton reflection hump. A cutoff energy is significantly detected in all exposures. The shape of the reflection spectrum does not change in the two years spanned by the observations, suggesting a stable geometry. A strong positive correlation is found between the cutoff energy and both the hard X-ray flux and spectral index. The measurements imply that the coronal plasma is not at the runaway electron-positron pair limit, and instead contains mostly electrons. The observed variability in the coronal properties is driven by a variable optical depth. A constant heating-to-cooling ratio is measured, implying that there is a feedback mechanism in which a significant fraction of the photons cooling the corona are due to reprocessed hard X-rays.

General information
State: Published
Organisations: National Space Institute, Astrophysics and Atmospheric Physics, Virginia Tech, University of Michigan, Università degli Studi Roma Tre, University of Cambridge, California Institute of Technology, Georgia Institute of Technology, ETH Zurich, University of California at Berkeley, Columbia University, NASA Goddard Space Flight Center
Authors: Zoghbi, A. (Ekstern), Matt, G. (Ekstern), Miller, J. M. (Ekstern), Lohfink, A. M. (Ekstern), Walton, D. J. (Ekstern), Ballantyne, D. R. (Ekstern), García, J. A. (Ekstern), Stern, D. (Ekstern), Koss, M. J. (Ekstern), Farrah, D. (Ekstern), Harrison, F. A. (Ekstern), Boggs, S. E. (Ekstern), Christensen, F. E. (Intern), Craig, W. (Ekstern), Hailey, C. J. (Ekstern), Zhang, W. W. (Ekstern)
Number of pages: 12
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Astrophysical Journal
Volume: 836
Issue number: 1
Article number: 2
ISSN (Print): 0004-637X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.26
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 4.8
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.57
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 4.85
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 5.51
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 5.46
ISI indexed (2011): ISI indexed yes
A low-spin Fe(III) complex with 100-ps ligand-to-metal charge transfer photoluminescence

Transition-metal complexes are used as photosensitizers(1), in light-emitting diodes, for biosensing and in photocatalysis(2). A key feature in these applications is excitation from the ground state to a charge-transfer state(3,4); the long charge-transfer-state lifetimes typical for complexes of ruthenium(5) and other precious metals are often essential to ensure high performance. There is much interest in replacing these scarce elements with Earth-abundant metals, with iron(6) and copper(7) being particularly attractive owing to their low cost and non-toxicity. But despite the exploration of innovative molecular designs(6,8-10), it remains a formidable scientific challenge(11) to access Earth-abundant transition-metal complexes with long-lived charge-transfer excited states. No known iron complexes are considered(12) photoluminescent at room temperature, and their rapid excited-state deactivation precludes their use as photosensitizers(13-15). Here we present the iron complex [Fe(btz)(3)](3+) (where btz is 3,3'-dimethyl-1,1'-bis(p-tolyl)-4,4'-bis(1,2,3-triazol-5-ylidene)), and show that the superior sigma-donor and pi-acceptor electron properties of the ligand stabilize the excited state sufficiently to realize a long charge-transfer lifetime of 100 picoseconds (ps) and room-temperature photoluminescence. This species is a low-spin Fe(III) d(5) complex, and emission occurs from a long-lived doublet ligand-to-metal charge-transfer ((LMCT)-L-2) state that is rarely seen for transition-metal complexes(4,16,17). The absence of intersystem crossing, which often gives rise to large excited-state energy losses in transition-metal complexes, enables the observation of spin-allowed emission directly to the ground state and could be exploited as an increased driving force in photochemical reactions on surfaces. These findings suggest that appropriate design strategies can deliver new iron-based materials for use as light emitters and photosensitizers.
Alterations in the brain's connectome during recovery from severe traumatic brain injury: Protocol for a longitudinal prospective study

Introduction Traumatic brain injury (TBI) is considered one of the most pervasive causes of disability in people under the age of 45. TBI often results in disorders of consciousness, and clinical assessment of the state of consciousness in these patients is challenging due to the lack of behavioural responsiveness. Functional neuroimaging offers a means to assess these patients without the need for behavioural signs, indicating that brain connectivity plays a major role in consciousness emergence and maintenance. However, little is known regarding how changes in connectivity during recovery from TBI accompany changes in the level of consciousness. Here, we aim to combine cutting-edge neuroimaging techniques to follow changes in brain connectivity in patients recovering from severe TBI. Methods and analysis A multimodal, longitudinal assessment of 30 patients in the subacute stage after severe TBI will be made comprising an MRI session combined with electroencephalography (EEG), a positron emission tomography session and a transcranial magnetic stimulation (TMS) combined with EEG (TMS/EEG) session. A group of 20 healthy participants will be included for comparison. Four sessions for patients and two sessions for healthy participants will be planned. Data analysis techniques will focus on whole-brain, both data-driven and hypothesis-driven, connectivity measures that will be specific to the...
imaging modality. Ethics and dissemination The project has received ethical approval by the local ethics committee of the Capital Region of Denmark and by the Danish Data Protection. Results will be published as original research articles in peer-reviewed journals and disseminated in international conferences. None of the measurements will have any direct clinical impact on the patients included in the study but may benefit future patients through a better understanding of the mechanisms underlying the recovery process after TBI. Trial registration number: NCT02424656; Pre-results.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Cognitive Systems, University of Copenhagen
Authors: Conde, V. (Ekstern), Andreasen, S. H. (Ekstern), Petersen, T. H. (Ekstern), Larsen, K. B. (Ekstern), Madsen, K. (Ekstern), Andersen, K. W. (Ekstern), Akopian, I. (Ekstern), Madsen, K. H. (Intern), Hansen, C. P. (Ekstern), Poulsen, I. (Ekstern), Kammersgaard, L. P. (Ekstern), Siebner, H. R. (Ekstern)
Number of pages: 10
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Open Journal of Ecology
Volume: 7
Issue number: 6
ISSN (Print): 2162-1985
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
ISI indexed (2012): ISI indexed no
Original language: English
Journal Article, Medicine (all), Brain connectivity, Disorders of Consciousness, Longitudinal study, Multimodal study, Neuroimaging, Traumatic Brain Injury
Electronic versions:
e016286.full.pdf
DOIs:
10.1136/bmjopen-2017-016286
Source: FindIt
Source-ID: 2371512648
Publication: Research - peer-review › Journal article – Annual report year: 2017

Alternative prophylaxis/disinfection in aquaculture - Adaptable stress induced by peracetic acid at low concentration and its application strategy in RAS
• Stress was monitored by measuring cortisol in water instead of in blood. • Fish adapted to regular prophylaxis/disinfection with peracetic acid by showing reduced stress. • A mathematic model was established to improve understanding of substance distribution in RAS.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Aquaculture, Leibniz Institute of Freshwater Ecology and Inland Fisheries, Agricultural Research Service
Authors: Liu, D. (Ekstern), Pedersen, L. (Intern), Straus, D. L. (Ekstern), Kloas, W. (Ekstern), Meinelt, T. (Ekstern)
Pages: 82-85
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Aquaculture
Volume: 474
ISSN (Print): 0044-8486
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.75 SJR 1.101 SNIP 1.524
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.103 SNIP 1.254 CiteScore 2.12
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.002 SNIP 1.34 CiteScore 2.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.136 SNIP 1.3 CiteScore 2.18
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.212 SNIP 1.487 CiteScore 2.32
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.294 SNIP 1.542 CiteScore 2.39
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.151 SNIP 1.394
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.941 SNIP 1.263
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.909 SNIP 1.173
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.019 SNIP 1.318
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.008 SNIP 1.689
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.915 SNIP 1.236
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.016 SNIP 1.627
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.121 SNIP 1.926
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.992 SNIP 1.418
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.049 SNIP 1.317
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.908 SNIP 1.113
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.049 SNIP 1.251

Original language: English
Water cortisol, Solid phase extraction, Stress, Mathematic model
DOIs:
10.1016/j.aquaculture.2017.03.027
Alzheimer's disease: How metal ions define β-amyloid function

Alzheimer's disease is increasingly recognized to be linked to the function and status of metal ions, and recently, the amyloid hypothesis has been strongly intertwined with the metal ion hypothesis; in fact, these two hypotheses fit well together and are not mutually contradictory. This review focuses on the essential coordination chemistry and biochemistry that relate transition metal ions iron, copper, and zinc to β-amyloid (Aβ) and most likely define the peptide's roles in neurons. The metal-Aβ interactions have elements of both gain of toxic function, as usually considered, but also loss of natural functions, as emphasized in this review. Both these aspects and their relationships are discussed and their implications for future therapeutic strategies are outlined.

General information
State: Published
Organisations: Department of Chemistry
Authors: Kepp, K. P. (Intern)
Pages: 127-159
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Coordination Chemistry Reviews
Volume: 351
ISSN (Print): 0010-8545
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 11.43 SJR 4.164 SNIP 3.021
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 3.957 SNIP 3.281 CiteScore 12.29
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 4.551 SNIP 3.444 CiteScore 11.85
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 4.366 SNIP 3.651 CiteScore 11.53
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 5.039 SNIP 3.782 CiteScore 11.6
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 4.525 SNIP 3.85 CiteScore 11.11
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 4.557 SNIP 3.467
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 5.104 SNIP 3.661
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2007): SJR 5.128 SNIP 3.909
Scopus rating (2006): SJR 4.118 SNIP 3.856
Scopus rating (2005): SJR 4.056 SNIP 3.379
Scopus rating (2004): SJR 2.988 SNIP 2.963
Scopus rating (2003): SJR 2.548 SNIP 3.087
A machine learning method for fast and accurate characterization of depth-of-interaction gamma cameras: Paper

Measuring the depth-of-interaction (DOI) of gamma photons enables increasing the resolution of emission imaging systems. Several design variants of DOI-sensitive detectors have been recently introduced to improve the performance of scanners for positron emission tomography (PET). However, the accurate characterization of the response of DOI detectors, necessary to accurately measure the DOI, remains an unsolved problem. Numerical simulations are, at the state of the art, imprecise, while measuring directly the characteristics of DOI detectors experimentally is hindered by the impossibility to impose the depth-of-interaction in an experimental set-up. In this article we introduce a machine learning approach for extracting accurate forward models of gamma imaging devices from simple pencil-beam measurements, using a nonlinear dimensionality reduction technique in combination with a finite mixture model. The method is purely data-driven, not requiring simulations, and is applicable to a wide range of detector types. The proposed method was evaluated both in a simulation study and with data acquired using a monolithic gamma camera designed for PET (the cMiCE detector), demonstrating the accurate recovery of the DOI characteristics. The combination of the proposed calibration technique with maximum-a-posteriori estimation of the coordinates of interaction provided a depth resolution of approximate to 1.14 mm for the simulated PET detector and approximate to 1.74 mm for the cMiCE detector. The software and experimental data are made available at http://occiput.mgh.harvard.edu/depthembedding/.

General information

State: Published
Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, Harvard Medical School, University of Washington
Authors: Pedemonte, S. (Ekstern), Pierce, L. (Ekstern), Van Leemput, K. (Intern)
Number of pages: 26
Pages: 8376-8401
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Physics in Medicine and Biology
Volume: 62
Issue number: 21
ISSN (Print): 0031-9155
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.08 SJR 1.315 SNIP 1.47
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.439 SNIP 1.764 CiteScore 3.31
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.489 SNIP 1.742 CiteScore 3.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.703 SNIP 1.783 CiteScore 3.4
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Amalgams and χ-Boundedness

A class of graphs is hereditary if it is closed under isomorphism and induced subgraphs. A class G of graphs is χ-bounded if there exists a function f : N → N such that for all graphs G ⊆ G, and all induced subgraphs H of G, we have that χ(H) ≤ f (ω(H)). We prove that proper homogeneous sets, clique-cutsets, and amalgams together preserve χ-boundedness. More precisely, we show that if G and G* are hereditary classes of graphs such that G is χ-bounded, and such that every graph in G* either belongs to G or admits a proper homogeneous set, a clique-cutset, or an amalgam, then the class G* is χ-bounded. This generalizes a result of [J Combin Theory Ser B 103(5) (2013), 567–586], which states that proper homogeneous sets and clique-cutsets together preserve χ-boundedness, as well as a result of [European J Combin 33(4) (2012), 679–683], which states that 1-joins preserve χ-boundedness. The house is the complement of the four-edge path. As an application of our result and of the decomposition theorem for “cap-free” graphs from [J Graph Theory 30(4) (1999), 289–308], we obtain that if G is a graph that does not contain any subdivision of the house as an induced subgraph, then χ(G) ≤ 3ω(G)−1.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic
Authors: Penev, I. (Intern)
Pages: 57–92
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Graph Theory
Volume: 84
Issue number: 1
A matheuristic for the Cargo Mix Problem with Block Stowage

The cargo-mix problem aims at selecting the amount of containers of a given type to load on a vessel. In this article we present an extended definition that includes the analysis of a circular route with draft restrictions, limitations on expected cargo and the use of a block stowage strategy. A compact formulation of the problem based on the state-of-the-art heuristic decomposition is shown not to be able to solve the extended problem, thus a matheuristic approach is presented that can achieve high quality results in a matter of seconds.
A Measure Based on Beamforming Power for Evaluation of Sound Field Reproduction Performance

This paper proposes a measure to evaluate sound field reproduction systems with an array of loudspeakers. The spatially-averaged squared error of the sound pressure between the desired and the reproduced field, namely the spatial error, has been widely used, which has considerable problems in two conditions. First, in non-anechoic conditions, room reflections substantially deteriorate the spatial error, although these room reflections affect human localization to a lesser degree. Second, for 2.5-dimensional reproduction of spherical waves, the spatial error increases consistently due to the difference in the amplitude decay rate, whereas the degradation of human localization performance is limited. The measure proposed in this study is based on the beamforming powers of the desired and the reproduced fields. Simulation and experimental results show that the proposed measure is less sensitive to room reflections and the amplitude decay than the spatial error, which is likely to agree better with the human perception of source localization.

General information
State: Published
A mechanistic model for spread of livestock-associated methicillin-resistant Staphylococcus aureus (LA-MRSA) within a pig herd
Before an efficient control strategy for livestock-associated methicillin resistant *Staphylococcus aureus* (LA-MRSA) in pigs can be decided upon, it is necessary to obtain a better understanding of how LA-MRSA spreads and persists within a pig herd, once it is introduced. We here present a mechanistic stochastic discrete-event simulation model for spread of LA-MRSA within a farrow-to-finish sow herd to aid in this. The model was individual-based and included three different disease compartments: susceptible, intermittent or persistent shedder of MRSA. The model was used for studying transmission dynamics and within-farm prevalence after different introductions of LA-MRSA into a farm. The spread of LA-MRSA throughout the farm mainly followed the movement of pigs. After spread of LA-MRSA had reached equilibrium, the prevalence of LA-MRSA shedders was predicted to be highest in the farrowing unit, independent of how LA-MRSA was introduced. LA-MRSA took longer to spread to the whole herd if introduced in the finisher stable, rather than by gilts in the mating stable. The more LA-MRSA positive animals introduced, the shorter time before the prevalence in the herd stabilised. Introduction of a low number of intermittently shedding pigs was predicted to frequently result in LA-MRSA fading out. The model is a potential decision support tool for assessments of short and long term consequences of proposed intervention strategies or surveillance options for LA-MRSA within pig herds.

**General information**

State: Published
Organisations: National Veterinary Institute, Epidemiology, Bacteriology & Parasitology, Statens Serum Institut
Authors: Sørensen, A. I. V. (Intern), Toft, N. (Intern), Boklund, A. (Intern), Espinosa-Gongora, C. (Intern), Græsbøll, K. (Intern), Larsen, J. (Ekstern), Hisham Beshara Halasa, T. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: P L o S One
Volume: 12
Issue number: 11
Article number: e0188429
ISSN (Print): 1932-6203
Ratings:
- BFI (2017): BFI-level 1
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 3.11 SJR 1.201 SNIP 1.092
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): SJR 1.414 SNIP 1.131 CiteScore 3.32
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 1
- Scopus rating (2014): SJR 1.545 SNIP 1.141 CiteScore 3.54
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 1.74 SNIP 1.147 CiteScore 3.94
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): SJR 1.945 SNIP 1.142 CiteScore 4.15
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): SJR 2.369 SNIP 1.23 CiteScore 4.58
- ISI indexed (2011): ISI indexed no
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 1
- Scopus rating (2010): SJR 2.631 SNIP 1.161
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 1
- Scopus rating (2009): SJR 2.473 SNIP 0.985
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 1
A meta-proteomics approach to study the interspecies interactions affecting microbial biofilm development in a model community

Microbial biofilms are omnipresent in nature and relevant to a broad spectrum of industries ranging from bioremediation and food production to biomedical applications. To date little is understood about how multi-species biofilm communities develop and function on a molecular level, due to the complexity of these biological systems. Here we apply a meta-proteomics approach to investigate the mechanisms influencing biofilm formation in a model consortium of four bacterial soil isolates; Stenotrophomonas rhizophila, Xanthomonas retroflexus, Microbacterium oxydans and Paenibacillus amylolyticus. Protein abundances in community and single species biofilms were compared to describe occurring interspecies interactions and the resulting changes in active metabolic pathways. To obtain full taxonomic resolution between closely related species and empower correct protein quantification, we developed a novel pipeline for generating reduced reference proteomes for spectral database searches. Meta-proteomics profiling indicated that community development is dependent on cooperative interactions between community members facilitating cross-feeding on specific amino acids. Opposite regulation patterns of fermentation and nitrogen pathways in Paenibacillus amylolyticus and Xanthomonas retroflexus may, however, indicate that competition for limited resources also affects community development. Overall our results demonstrate the multitude of pathways involved in biofilm formation in mixed communities.
A Meteorological Information Mining-Based Wind Speed Model for Adequacy Assessment of Power Systems With Wind Power

Accurate wind speed simulation is an essential prerequisite to analyze the power systems with wind power. A wind speed model considering meteorological conditions and seasonal variations is proposed in this paper. Firstly, using the path analysis method, the influence weights of meteorological factors are calculated. Secondly, the meteorological data are classified into several states using an improved Fuzzy C-means (FCM) algorithm. Then the Markov chain is used to model the chronological characteristics of meteorological states and wind speed. The proposed model was proved to be more accurate in capturing the characteristics of probability distribution, auto-correlation and seasonal variations of wind speed compared with the traditional Markov chain Monte Carlo (MCMC) and autoregressive moving average (ARMA) model. Furthermore, the proposed model was applied to adequacy assessment of generation systems with wind power. The assessment results of the modified IEEE-RTS79 and IEEE-RTS96 demonstrated the effectiveness and accuracy of the proposed model.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, Shandong University
Authors: Guo, Y. (Ekstern), Gao, H. (Ekstern), Wu, Q. (Intern)
Pages: 406-413
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Volume: 93
ISSN (Print): 0142-0615
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.3 SJR 1.562 SNIP 1.785
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.548 SNIP 2.052 CiteScore 3.97
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.436 SNIP 2.343 CiteScore 4.34
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.357 SNIP 2.754 CiteScore 4.54
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
A method for Effect Modifier Assessment in ergonomic intervention research – The EMA method

Purpose: Intervention research includes studies in which researchers arrange (or follow) changes in working conditions to determine the effects on risk factor, health and/or performance. Often this research takes place at workplaces and not in a controlled laboratory environment. Effects may thus be due to other factors in addition to the intervention – i.e. effect modifiers. These need to be identified and assessed in terms of potential impact on studied outcomes before proper inference can be drawn. We present a method to estimate potential effects of modifiers in intervention research.

Methodology: The EMA method is a type of group interview including 3-6 employees representing the occupational groups in the investigated organization. With reference to the investigated period they are asked to recall important changes/events in and around the organization; 1) in general, 2) in work processes and equipment and 3) regarding their work environment. In each step the participants write their individual answers on post-it notes which are then discussed in plenum, one at a time, and placed on a timeline. All identified events are assessed as due to the investigated intervention(s) or other causes (“effect modifiers”). Their impact on the outcomes is estimated by triangulation. Following the workshop, events are entered into a database and analyzed. Results: Preliminary evaluations of the method suggest that it offers a relevant overview of potential effect modifiers. Limitations: Further validation is needed. Implications: Using the EMA-method seems to facilitate proper inference regarding the impact of a workplace intervention. Originality: The EMA-method is a novel and systematic approach to estimate potential effect modifiers.

General information
State: Published
Organisations: Department of Management Engineering, Management Science, Implementation and Performance Management, University of Gothenburg
A Method for Ship Collision Damage and Energy Absorption Analysis and its Validation

For design evaluation, there is a need for a method which is fast, practical and yet accurate enough to determine the absorbed energy and collision damage extent in ship collision analysis. The most well-known simplified empirical approach to collision analysis was made probably by Minorsky, and its limitation is also well-recognised. The authors have previously developed simple expressions for the relation between the absorbed energy and the damaged material volume which take into account the structural arrangements, the material properties and the damage modes. The purpose of the present paper is to re-examine this method's validity and accuracy for ship collision damage analysis in ship design assessments by comprehensive validations with experimental results from the public domain. In total, 20 experimental tests have been selected, analysed and compared with the results calculated using the proposed method. It can be concluded that the proposed method has a good accuracy with the mean value of 0.988 and standard deviation of 0.042.
A Methodology for Anatomic Ultrasound Image Diagnostic Quality Assessment

This paper discusses methods for assessment of ultrasound image quality based on our experiences with evaluating new methods for anatomic imaging. It presents a methodology to ensure a fair assessment between competing imaging methods using clinically relevant evaluations. The methodology is valuable in the continuing process of method optimization and guided development of new imaging methods. It includes a three phased study plan covering from initial prototype development to clinical assessment. Recommendations to the clinical assessment protocol, software, and statistical analysis are presented. Earlier uses of the methodology has shown that it ensures validity of the assessment, as it separates the influences between developer, investigator, and assessor once a research protocol has been established. This separation reduces confounding influences on the result from the developer to properly reveal the clinical value. The paper exemplifies the methodology using recent studies of Synthetic Aperture Sequential Beamforming tissue harmonic imaging.

General information
State: Published
Organisations: Department of Electrical Engineering, Biomedical Engineering, Center for Fast Ultrasound Imaging, University of Copenhagen
Authors: Hemmsen, M. C. (Intern), Lange, T. (Ekstern), Brandt, A. H. (Ekstern), Nielsen, M. B. (Ekstern), Jensen, J. A. (Intern)
Number of pages: 12
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control
Volume: 64
Issue number: 1
ISSN (Print): 0885-3010
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.73 SJR 1.154 SNIP 1.473
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.82 SNIP 1.537 CiteScore 2.43
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.064 SNIP 1.624 CiteScore 2.18
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.84 SNIP 1.473 CiteScore 2.18
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.793 SNIP 1.461 CiteScore 1.87
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.738 SNIP 1.318 CiteScore 1.95
ISI indexed (2011): ISI indexed yes
A methodology for online visualization of the energy flow in a machine tool

The demand of energy efficient machine tools has increased recently due to the awareness for energyefficient production in precision manufacturing. A portion of the energy supplied to machine tools is transferred to thermal losses which influence also the thermal behavior of the precision related machine tools components. Machine cooling and process cooling can prevent thermal machine tool errors. However this further requires considerable amounts of energy. Hence there is a demand to monitor the electric, thermal, fluidic and mechanical energy flows in the machine tool in order to optimize the machining process and by this increasing its energy efficiency. This study intents to propose a method which has the capability of real-time monitoring of the entire energetic flows in a CNC machine tool including motors, pumps and cooling fluid. The structure of this approach is based on categorizing the machine into subsystems and measurements of the consumers (pump, motors, . . . ) power, temperature at the inlet and outlet of the pumps and current as well as the speed of the motors. The visualization is carried out by a 2D Sankey diagram, which makes it easy to understand the energetic flows in the machine tool. The methodology is verified by the rule of energy conversion which confirms the capability of this method on real-time energy monitoring of a machine tool.
A method to characterize the roughness of 2-D line features: recrystallization boundaries

A method is presented, which allows quantification of the roughness of nonplanar boundaries of objects for which the neutral plane is not known. The method provides quantitative descriptions of both the local and global characteristics. How the method can be used to estimate the sizes of rough features and local curvatures is also presented. The potential of the method is illustrated by quantification of the roughness of two recrystallization boundaries in a pure Al specimen characterized by scanning electron microscopy.

General information
State: Published
Organisations: Department of Wind Energy, Materials science and characterization, Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics
Pages: 313–321
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Microscopy
Volume: 265
Issue number: 3
ISSN (Print): 0022-2720
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.9 SJR 0.734 SNIP 0.852
A method to investigate the biomechanical alterations in Perthes' disease by hip joint contact modeling

Perthes' disease is a destructive hip joint disorder characterized by malformation of the femoral head in young children. While the morphological changes have been widely studied, the biomechanical effects of these changes still need to be further elucidated. The objective of this study was to develop a method to investigate the biomechanical alterations in Perthes' disease by finite element (FE) contact modeling using MRI. The MRI data of a unilateral Perthes' case was obtained to develop the three-dimensional FE model of the hip joint. The stress and contact pressure patterns in the unaffected hip were well distributed. Elevated concentrations of stress and contact pressure were found in the Perthes' hip. The highest femoral cartilage von Mises stress 3.9 MPa and contact pressure 5.3 MPa were found in the Perthes' hip, whereas 2.4 MPa and 4.9 MPa in the healthy hip, respectively. The healthy bone in the femoral head of the Perthes' hip carries additional loads as indicated by the increase of stress levels around the necrotic-healthy bone interface.
Identifying the biomechanical changes, such as the location of stress and contact pressure concentrations, is a prerequisite for the preoperative planning to obtain stress relief for the highly stressed areas in the malformed hip. This single-patient study demonstrated that the biomechanical alterations in Perthes’ disease can be evaluated individually by patient-specific finite element contact modeling using MRI. A multi-patient study is required to test the strength of the proposed method as a pre-surgery planning tool.

General information
State: Published
Organisations: Department of Electrical Engineering, Biomedical Engineering, Department of Wind Energy, Composites and Materials Mechanics, Hvidovre University Hospital
Authors: Salmingo, R. A. (Intern), Skytte, T. L. (Ekstern), Traberg, M. S. (Intern), Mikkelsen, L. P. (Intern), Henneberg, K. (Intern), Wong, C. (Ekstern)
Pages: 443–456
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Bio-Medical Materials and Engineering
Volume: 28
Issue number: 4
ISSN (Print): 0959-2989
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 0.81 SJR 0.254 SNIP 0.415
Scopus rating (2015): CiteScore 0.99 SJR 0.334 SNIP 0.754
Scopus rating (2014): CiteScore 0.94 SJR 0.284 SNIP 0.486
Scopus rating (2013): CiteScore 0.98 SJR 0.349 SNIP 0.55
Scopus rating (2012): CiteScore 1.4 SJR 0.434 SNIP 0.73
Scopus rating (2011): CiteScore 1.31 SJR 0.424 SNIP 0.584
Scopus rating (2010): SJR 0.403 SNIP 0.328
Scopus rating (2009): SJR 0.367 SNIP 0.434
Scopus rating (2008): SJR 0.428 SNIP 0.543
Scopus rating (2007): SJR 0.544 SNIP 0.534
Scopus rating (2006): SJR 0.405 SNIP 0.581
Scopus rating (2005): SJR 0.295 SNIP 0.511
Scopus rating (2004): SJR 0.354 SNIP 0.831
Scopus rating (2003): SJR 0.392 SNIP 0.523
Scopus rating (2002): SJR 0.461 SNIP 0.69
Scopus rating (2001): SJR 0.373 SNIP 0.623
Scopus rating (2000): SJR 0.215 SNIP 0.32
Scopus rating (1999): SJR 0.426 SNIP 0.661
Original language: English
Perthes, Hip joint contact modeling, Orthopaedic biomechanics
DOIs:
10.3233/BME-171685
Source: PublicationPreSubmission
Source-ID: 133955964
Publication: Research - peer-review › Journal article – Annual report year: 2017

A micro-opto-acousto-fluidic chip for single cell mechanics evaluation

General information
State: Published
Organisations: Department of Physics, Quantum Physics and Information Technology, Università di Pavia, CNR, University of Milan
Authors: Yang, T. (Ekstern), Vitali, V. (Ekstern), Bragheri, F. (Ekstern), Nava, G. (Ekstern), Chiodi, I. (Ekstern), Mondello, C. (Ekstern), Osellame, R. (Ekstern), Berg-Sørensen, K. (Intern), Cristiani, I. (Ekstern), Minzioni, P. (Ekstern)
Number of pages: 1
Publication date: 2017

Host publication information
A microwave window for K band electromagnetic systems

This article proposes a solution for microwave window at K band. Properties of the window such as performance (transparency) at microwave frequencies, dimensions, and mounting place are discussed. The dimensions of the window were optimized in a full-wave simulator. To verify the design and simulation results the prototype of the window is realized by implementing into transition section and tested experimentally. The microwave window provides low return loss $|S_{11}|$ below $-30$ dB, low insertion loss $|S_{21}|$ below $-0.5$ dB and can be used for electromagnetic systems where vacuum sealing is required. © 2017 Wiley Periodicals, Inc.
Amino acids production focusing on fermentation technologies – A review

Amino acids are attractive and promising biochemicals with market capacity requirements constantly increasing. Their applicability ranges from animal feed additives, flavour enhancers and ingredients in cosmetic to specialty nutrients in pharmaceutical and medical fields.

This review gives an overview of the processes applied for amino acids production and points out the main advantages and disadvantages of each.

Due to the advances made in the genetic engineering techniques, the biotechnological processes, and in particular the fermentation with the aid of strains such as Corynebacterium glutamicum or Escherichia coli, play a significant role in the industrial production of amino acids. Despite the numerous advantages of the fermentative amino acids production, the process still needs significant improvements leading to increased productivity and reduction of the production costs.

Although the production processes of amino acids have been extensively investigated in previous studies, a comprehensive overview of the developments in bioprocess technology has not been reported yet. This review states the importance of the fermentation process for industrial amino acids production, underlining the strengths and the weaknesses of the process. Moreover, the potential of innovative approaches utilizing macro and microalgae or bacteria are presented.

General information
State: Accepted/In press
Organisations: Department of Environmental Engineering, Residual Resource Engineering
Authors: D’Este, M. (Intern), Alvarado-Morales, M. (Intern), Angelidaki, I. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication Information
Journal: Biotechnology Advances
ISSN (Print): 0734-9750
Ratings:
BFI (2017): BFI-level 2
Ammonia production is imperative to providing food for a growing world population. However, the primary method of synthetic ammonia production, the Haber Bosch process, is resource demanding and unsustainable. Here we report a novel ammonia production strategy, exemplified in an electrochemical lithium cycling process, which provides a pathway to sustainable ammonia synthesis via the ability to directly couple to renewable sources of electricity and can facilitate localized production. Whereas traditional aqueous electrochemical approaches are typically dominated by the hydrogen evolution reaction (HER), we are able to circumvent the HER by using a stepwise approach which separates the reduction of N₂ from subsequent protonation to NH₃, thus our synthesis method is predominantly selective for ammonia production. Density functional theory calculations for thermodynamic and diffusion energy barrier insights suggest that Li-based materials are well suited to carry out this process, though other materials may also be useful. The three steps of the demonstrated process are LiOH electrolysis, direct nitridation of Li, and the exothermic release of ammonia from Li₃N.
which reproduces the LiOH, completing the cycle. The process uses N₂ and H₂O at atmospheric pressure and reasonable temperatures, and, while approaching industrial level electrolytic current densities, we report an initial current efficiency of 88.5% toward ammonia production.

**General information**

State: Published
Organisations: Department of Physics, Experimental Surface and Nanomaterials Physics, Stanford University
Authors: McEnaney, J. M. (Ekstern), Singh, A. R. (Ekstern), Schwalbe, J. A. (Ekstern), Kibsgaard, J. (Intern), Lin, J. C. (Ekstern), Cargnello, M. (Ekstern), Jaramillo, T. F. (Ekstern), Norskov, J. K. (Ekstern)
Number of pages: 10
Pages: 1621-1630
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Energy & Environmental Science
Volume: 10
Issue number: 7
ISSN (Print): 1754-5692
Ratings:
  - BFI (2017): BFI-level 2
  - Web of Science (2017): Indexed yes
  - BFI (2016): BFI-level 2
  - Web of Science (2016): Indexed yes
  - BFI (2015): BFI-level 2
  - Scopus rating (2015): SJR 10.027 SNIP 4.275 CiteScore 23.85
  - Web of Science (2015): Indexed yes
  - BFI (2014): BFI-level 2
  - Scopus rating (2014): SJR 7.792 SNIP 4.034 CiteScore 19.28
  - Web of Science (2014): Indexed yes
  - BFI (2013): BFI-level 1
  - Scopus rating (2013): SJR 6.02 SNIP 3.011 CiteScore 14.81
  - ISI indexed (2013): ISI indexed yes
  - Web of Science (2013): Indexed yes
  - BFI (2012): BFI-level 1
  - Scopus rating (2012): SJR 5.86 SNIP 2.594 CiteScore 11.84
  - ISI indexed (2012): ISI indexed yes
  - Web of Science (2012): Indexed yes
  - BFI (2011): BFI-level 1
  - Scopus rating (2011): SJR 3.743 SNIP 2.513 CiteScore 9.96
  - ISI indexed (2011): ISI indexed no
  - Web of Science (2011): Indexed yes
  - Scopus rating (2010): SJR 3.861 SNIP 2.41
  - Web of Science (2010): Indexed yes
  - Scopus rating (2009): SJR 2.045 SNIP 1.139
Original language: English
DOIs:
10.1039/c7ee01126a
Source: FindIt
Source-ID: 2372257989
Publication: Research - peer-review › Journal article – Annual report year: 2017

**Ammonia tolerant inocula provide a good base for anaerobic digestion of microalgae in third generation biogas process**

This study investigated the ability of an ammonia-acclimatized inoculum to digest efficiently protein-rich microalgae for continuous 3rd generation biogas production. Moreover, we investigated whether increased C/N ratio could alleviate ammonia toxicity. The biochemical methane potential (BMP) of five different algae (Chlorella vulgaris)/manure (cattle) mixtures showed that the mixture of 80/20 (on VS basis) resulted in the highest BMP value (431 mL CH₄ g VS⁻¹), while the BMP of microalgae alone (100/0) was 415 mL CH₄ g VS⁻¹. Subsequently, anaerobic digestion of those two substrates was tested in continuous stirred tank reactors (CSTR). Despite of the high ammonium levels (3.7-4.2 g NH₄⁺-N L⁻¹),
CSTR reactors using ammonia tolerant inoculum resulted in relatively high methane yields (i.e. 77.5% and 84% of the maximum expected, respectively) These results demonstrated that ammonia tolerant inocula could be a promising approach to successfully digest protein-rich microalgae and achieve a 3rd generation biogas production.

**General information**

State: Published  
Organisations: Department of Environmental Engineering, Residual Resource Engineering, Zagazig University, Technical University of Denmark, Environment and Technology (CIEMAT)  
Authors: Mahdy, A. (Ekstern), Fotidis, I. (Intern), Mancini, E. (Ekstern), Ballesteros, M. (Ekstern)  
Pages: 272-278  
Publication date: 2017  
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Bioresource Technology  
Volume: 225  
ISSN (Print): 0960-8524  
Ratings:  
BFI (2017): BFI-level 2  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 2  
Scopus rating (2016): CiteScore 5.94 SJR 2.191 SNIP 1.91  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 2  
Scopus rating (2015): SJR 2.255 SNIP 1.908 CiteScore 5.47  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 2  
Scopus rating (2014): SJR 2.41 SNIP 2.104 CiteScore 5.3  
Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 2  
Scopus rating (2013): SJR 2.412 SNIP 2.503 CiteScore 5.97  
ISI indexed (2013): ISI indexed yes  
Web of Science (2013): Indexed yes  
BFI (2012): BFI-level 2  
Scopus rating (2012): SJR 2.389 SNIP 2.465 CiteScore 5.25  
ISI indexed (2012): ISI indexed yes  
Web of Science (2012): Indexed yes  
BFI (2011): BFI-level 2  
Scopus rating (2011): SJR 2.314 SNIP 2.508 CiteScore 5.56  
ISI indexed (2011): ISI indexed yes  
Web of Science (2011): Indexed yes  
BFI (2010): BFI-level 2  
Scopus rating (2010): SJR 2.086 SNIP 2.355  
Web of Science (2010): Indexed yes  
BFI (2009): BFI-level 2  
Scopus rating (2009): SJR 1.912 SNIP 2.231  
Web of Science (2009): Indexed yes  
BFI (2008): BFI-level 2  
Scopus rating (2008): SJR 1.734 SNIP 2.732  
Web of Science (2008): Indexed yes  
Scopus rating (2007): SJR 1.529 SNIP 2.423  
Web of Science (2007): Indexed yes  
Scopus rating (2006): SJR 1.315 SNIP 1.98  
Web of Science (2006): Indexed yes  
Scopus rating (2005): SJR 1.269 SNIP 2.006  
Web of Science (2005): Indexed yes  
Scopus rating (2004): SJR 1.197 SNIP 1.659
A model-based approach to associate complexity and robustness in engineering systems

Ever increasing functionality and complexity of products and systems challenge development companies in achieving high and consistent quality. A model-based approach is used to investigate the relationship between system complexity and system robustness. The measure for complexity is based on the degree of functional coupling and the level of contradiction in the couplings. Whilst Suh’s independence axiom states that functional independence (uncoupled designs) produces more robust designs, this study proves this not to be the case for max-/min-is-best requirements, and only to be true in the general sense for nominal-is-best requirements. In specific cases, the independence axiom has exceptions as illustrated with a machining example, showing how a coupled solution is more robust than its uncoupled counterpart. This study also shows with statistical significance, that for max- and min-is-best requirements, the robustness is most affected by the level of contradiction between coupled functional requirements ($p = 1.4\times 10^{-36}$). In practice, the results imply that if the main influencing factors for each function in a system are known in the concept phase, an evaluation of the contradiction level can be used to evaluate concept robustness.

General information
State: Published
Organisations: Department of Mechanical Engineering, Engineering Design and Product Development, Massachusetts Institute of Technology
Authors: Göhler, S. M. (Intern), D. Frey, D. (Ekstern), Howard, T. J. (Intern)
Pages: 223–234
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Research in Engineering Design
Volume: 28
ISSN (Print): 0934-9839
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.78 SJR 1.224 SNIP 1.76
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.956 SNIP 1.827 CiteScore 1.61
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.259 SNIP 2.435 CiteScore 2.38
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.271 SNIP 2.588 CiteScore 2.48
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
A Model for Designing Adaptive Laboratory Evolution Experiments

The occurrence of mutations is a cornerstone of the evolutionary theory of adaptation, capitalizing on the rare chance that a mutation confers a fitness benefit. Natural selection is increasingly being leveraged in laboratory settings for industrial and basic science applications. Despite increasing deployment, there are no standardized procedures available for designing and performing adaptive laboratory evolution (ALE) experiments. Thus, there is a need to optimize the experimental design, specifically for determining when to consider an experiment complete and for balancing outcomes with available resources (i.e., laboratory supplies, personnel, and time). To design and to better understand ALE experiments, a simulator, ALEsim, was developed, validated, and applied to the optimization of ALE experiments. The effects of various passage sizes were experimentally determined and subsequently evaluated with ALEsim, to explain differences in experimental outcomes. Furthermore, a beneficial mutation rate of $10^{-6.9}$ to $10^{-8.4}$ mutations per cell division was derived. A retrospective analysis of ALE experiments revealed that passage sizes typically employed in serial passage batch culture ALE experiments led to inefficient production and fixation of beneficial mutations. ALEsim and the results described here will aid in the design of ALE experiments to fit the exact needs of a project while taking into account the resources required and will lower the barriers to entry for this experimental technique.

IMPORTANCE ALE is a widely used scientific technique to increase scientific understanding, as well as to create industrially relevant organisms. The manner in which ALE experiments are conducted is highly manual and uniform, with little optimization for efficiency. Such inefficiencies result in suboptimal experiments that can take multiple months to complete. With the availability of automation and computer simulations, we can now perform these experiments in an optimized fashion and can design experiments to generate greater fitness in an accelerated time frame, thereby pushing the limits of what adaptive laboratory evolution can achieve.
Main Research Area: Technical/natural sciences

Publication information
Journal: Applied and Environmental Microbiology
Volume: 83
Issue number: 8
Article number: e03115-16
ISSN (Print): 0099-2240
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.08
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.891 SNIP 1.308 CiteScore 4.14
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.857 SNIP 1.384 CiteScore 4.02
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.899 SNIP 1.414 CiteScore 4.25
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.975 SNIP 1.429 CiteScore 4.29
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.914 SNIP 1.455 CiteScore 4.12
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.887 SNIP 1.436
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.972 SNIP 1.528
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.156 SNIP 1.572
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.043 SNIP 1.647
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.054 SNIP 1.602
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.074 SNIP 1.653
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 2.108 SNIP 1.648
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 2.097 SNIP 1.821
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 2.046 SNIP 1.754
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.989 SNIP 1.736
Web of Science (2001): Indexed yes
A model library for simulation and benchmarking of integrated urban wastewater systems

This paper presents a freely distributed, open-source toolbox to predict the behaviour of urban wastewater systems (UWS). The proposed library is used to develop a system-wide Benchmark Simulation Model (BSM-UWS) for evaluating (local/global) control strategies in urban wastewater systems (UWS). The set of models describe the dynamics of flow rates and major pollutants (COD, TSS, N and P) within the catchment (CT), sewer network (SN), wastewater treatment plant (WWTP) and river water system (RW) for a hypothetical, though realistic, UWS. Evaluation criteria are developed to allow for direct assessment of the river water quality instead of the traditional emission based metrics (for sewer overflows and WWTP discharge). Three case studies are included to illustrate the applicability of the proposed toolbox and also demonstrate the potential benefits of implementing integrated control in the BSM-UWS platform. Simulation results show that the integrated control strategy developed to maximize the utilization of the WWTP's capacity represents a balanced choice in comparison to other options. It also improves the river water quality criteria for unionized ammonia and dissolved oxygen by 62% and 6%, respectively.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, CAPEC-PROCESS, Lund University, Aquafin NV
Authors: Saagi, R. (Ekstern), Flores Alsina, X. (Intern), Kroll, J. S. (Ekstern), Gernaey, K. (Intern), Jeppsson, U. (Ekstern)
Pages: 282-295
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Environmental Modelling & Software
Volume: 93
ISSN (Print): 1364-8152
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.8 SJR 1.936 SNIP 2.112
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.119 SNIP 2.172 CiteScore 4.67
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.065 SNIP 2.483 CiteScore 5.04
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.082 SNIP 2.458 CiteScore 4.8
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.829 SNIP 2.012 CiteScore 3.69
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.68 SNIP 2.096 CiteScore 3.52
ISI indexed (2011): ISI indexed yes
A Model of Electrically Stimulated Auditory Nerve Fiber Responses with Peripheral and Central Sites of Spike Generation

A computational model of cat auditory nerve fiber (ANF) responses to electrical stimulation is presented. The model assumes that (1) there exist at least two sites of spike generation along the ANF and (2) both an anodic (positive) and a cathodic (negative) charge in isolation can evoke a spike. A single ANF is modeled as a network of two exponential integrate-and-fire point-neuron models, referred to as peripheral and central axons of the ANF. The peripheral axon is excited by the cathodic charge, inhibited by the anodic charge, and exhibits longer spike latencies than the central axon; the central axon is excited by the anodic charge, inhibited by the cathodic charge, and exhibits shorter spike latencies than the peripheral axon. The model also includes subthreshold and suprathreshold adaptive feedback loops which continuously modify the membrane potential and can account for effects of facilitation, accommodation, refractoriness, and spike-rate adaptation in ANF. Although the model is parameterized using data for either single or paired pulse stimulation with monophasic rectangular pulses, it correctly predicts effects of various stimulus pulse shapes, stimulation pulse rates, and level on the neural response statistics. The model may serve as a framework to explore the effects of different stimulus parameters on psychophysical performance measured in cochlear implant listeners.

General information
State: Published
Organisations: Department of Electrical Engineering, Hearing Systems
Authors: Joshi, S. N. (Intern), Dau, T. (Intern), Epp, B. (Intern)
Number of pages: 20
Pages: 323-342
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: J A R O
Volume: 18
Issue number: 2
ISSN (Print): 1525-3961
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
A Modular High-Throughput In Vivo Screening Platform Based on Chimeric Bacterial Receptors

Multidrug resistance (MDR) is a globally relevant problem that requires novel approaches. Two-component systems are a promising, yet untapped target for novel antibacterials. They are prevalent in bacteria and absent in mammals, and their activity can be modulated upon perception of various stimuli. Screening pre-existing compound libraries could reveal small molecules that inhibit stimulus-perception by virulence-modulating receptors, reduce signal output from essential receptors or identify artificial stimulatory ligands for novel SHKs that are involved in virulence. Those small molecules could possess desirable therapeutic properties to combat MDR. We propose that a modular screening platform in which the periplasmic domain of the targeted receptors are fused to the cytoplasmic domain of a well-characterized receptor that governs fluorescence reporter genes could be employed to rapidly screen currently existing small molecule libraries. Here, we have examined two previously created Tar-EnvZ chimeras and a novel NarX-EnvZ chimera. We demonstrate that it is possible to couple periplasmic stimulus-perceiving domains to an invariant cytoplasmic domain that governs transcription of a dynamic fluorescent reporter system. Furthermore, we show that aromatic tuning, or repositioning the aromatic residues at the end of the second transmembrane helix (TM2), modulates baseline signal output from the tested chimeras and even restores output from a nonfunctional NarX-EnvZ chimera. Finally, we observe an inverse correlation between...
baseline signal output and the degree of response to cognate stimuli. In summary, we propose that the platform described here, a fluorescent Escherichia coli reporter strain with plasmid-based expression of the aromatically tuned chimeric receptors, represents a synthetic biology approach to rapidly screen pre-existing compound libraries for receptor-modulating activities.

**General information**

*State:* Published  
*Organisations:* Novo Nordisk Foundation Center for Biosustainability, Research Groups, Microbial Evolution and Synthetic Biology, Institute of Molecular Biology, Goethe-University Frankfurt, University of Portsmouth  
*Authors:* Lehning, C. E. (Intern), Heidelberger, J. B. (Ekstern), Reinhard, J. (Ekstern), Nørholm, M. H. H. (Intern), Draheim, R. R. (Ekstern)  
*Pages:* 1315-1326  
*Publication date:* 2017  
*Main Research Area:* Technical/natural sciences

**Publication information**  
*Journal:* A C S Synthetic Biology  
*Volume:* 6  
*Issue number:* 7  
*ISSN (Print):* 2161-5063  
*Ratings:*  
*Web of Science (2017):* Indexed yes  
*Scopus rating (2016):* CiteScore 4.7 SJR 2.736 SNIP 1.024  
*Web of Science (2016):* Indexed yes  
*Scopus rating (2015):* SJR 2.269 SNIP 1.049 CiteScore 4.41  
*Web of Science (2015):* Indexed yes  
*Scopus rating (2014):* SJR 3.783 SNIP 1.219 CiteScore 3.84  
*Web of Science (2014):* Indexed yes  
*Scopus rating (2013):* SJR 1.796 SNIP 0.859 CiteScore 3.42  
*ISI indexed (2013):* ISI indexed yes  
*ISI indexed (2012):* ISI indexed no  
*Original language:* English  
*Aromatic tuning, Biological platforms, Chimeric receptors, High-throughput screening, Receptor engineering  
*DOIs:* 10.1021/acssynbio.6b00288  
*Source:* Findit  
*Source-ID:* 2355974457  
*Publication: Research - peer-review › Journal article – Annual report year: 2017

**A modular interpretation of various cubic towers**

In this article we give a Drinfeld modular interpretation for various towers of function fields meeting Zink's bound.

**General information**

*State:* Published  
*Organisations:* Department of Applied Mathematics and Computer Science, Mathematics, Boğazici University  
*Authors:* Anbar Meidl, N. (Intern), Bassa, A. (Ekstern), Beelen, P. (Intern)  
*Pages:* 341-357  
*Publication date:* 2017  
*Main Research Area:* Technical/natural sciences

**Publication information**  
*Journal:* Journal of Number Theory  
*Volume:* 171  
*ISSN (Print):* 0022-314X  
*Ratings:*  
*BFI (2017):* BFI-level 1  
*Web of Science (2017):* Indexed yes  
*BFI (2016):* BFI-level 1  
*Scopus rating (2016):* CiteScore 0.7 SJR 1.007 SNIP 1.232  
*BFI (2015):* BFI-level 1  
*Scopus rating (2015):* SJR 0.868 SNIP 1.143 CiteScore 0.59
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.103 SNIP 1.325 CiteScore 0.68
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.69 SNIP 1.116 CiteScore 0.58
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.115 SNIP 1.199 CiteScore 0.57
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.006 SNIP 1.079 CiteScore 0.51
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.025 SNIP 1.23
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.985 SNIP 1.124
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.065 SNIP 1.202
Scopus rating (2007): SJR 0.724 SNIP 1.09
Scopus rating (2006): SJR 1.136 SNIP 1.194
Scopus rating (2005): SJR 0.926 SNIP 1.025
Scopus rating (2004): SJR 1.026 SNIP 0.935
Scopus rating (2003): SJR 1.015 SNIP 0.931
Scopus rating (2002): SJR 0.875 SNIP 1.128
Scopus rating (2001): SJR 1.073 SNIP 1.22
Scopus rating (2000): SJR 1.26 SNIP 1.09
Scopus rating (1999): SJR 1.283 SNIP 1.075

Original language: English
Drinfeld modules, Zink's bound, Towers of function fields
Electronic versions:
article.pdf
DOIs:
10.1016/j.jnt.2016.07.025

Bibliographical note
Source: PublicationPreSubmission
Source-ID: 123684760
Publication: Research - peer-review › Journal article – Annual report year: 2016

A modular metabolic engineering approach for the production of 1,2-propanediol from glycerol by Saccharomyces cerevisiae
Compared to sugars, a major advantage of using glycerol as a feedstock for industrial bioprocesses is the fact that this molecule is more reduced than sugars. A compound whose biotechnological production might greatly profit from the substrate's higher reducing power is 1,2-propanediol (1,2-PDO). Here we present a novel metabolic engineering approach to produce 1,2-PDO from glycerol in S. cerevisiae. Apart from implementing the heterologous methylglyoxal (MG) pathway for 1,2-PDO formation from dihydroxyacetone phosphate (DHAP) and expressing a heterologous glycerol facilitator, the employed genetic modifications included the replacement of the native FAD-dependent glycerol catabolic pathway by the 'DHA pathway' for delivery of cytosolic NADH and the reduction of triosephosphate isomerase (TPI) activity for increased precursor (DHAP) supply. The choice of the medium had a crucial impact on both the strength of the metabolic switch towards fermentation in general (as indicated by the production of ethanol and 1,2-PDO) and on the ratio at which these two fermentation products were formed. For example, virtually no 1,2-PDO but only ethanol was formed in synthetic glycerol medium with urea as the nitrogen source. When nutrient-limited complex YG medium was used, significant amounts of 1,2-PDO were formed and it became obvious that the concerted supply of NADH and DHAP are essential for boosting 1,2-PDO production. Additionally, optimizing the flux into the MG pathway improved 1,2-PDO formation at the expense of ethanol. Cultivation of the best-performing strain in YG medium and a controlled bioreactor set-up resulted in a maximum titer of > 4gL−1 1,2-PDO which, to the best of our knowledge, has been the highest titer of 1,2-PDO obtained in yeast so far. Surprisingly, significant 1,2-PDO production was also obtained in synthetic glycerol medium after changing
the nitrogen source towards ammonium sulfate and adding a buffer.

**General information**

State: Published
Organisations: Department of Biotechnology and Biomedicine, Regulatory Genomics, Jacobs University Bremen
Authors: Islam, Z. (Ekstern), Klein, M. (Ekstern), Aßkamp, M. R. (Ekstern), Ødum, A. S. R. (Intern), Nevoigt, E. (Ekstern)
Pages: 223-235
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Metabolic Engineering
Volume: 44
ISSN (Print): 1096-7176
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 8.33 SJR 3.54 SNIP 1.864
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.611 SNIP 1.822 CiteScore 8.2
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.381 SNIP 2.034 CiteScore 7.23
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 4.004 SNIP 2.185 CiteScore 8.43
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.032 SNIP 1.858 CiteScore 6.72
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 3.124 SNIP 2.144 CiteScore 6.75
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.373 SNIP 1.802
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.575 SNIP 1.421
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.757 SNIP 1.028
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.504 SNIP 1.184
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.269 SNIP 0.892
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.056 SNIP 1.065
Scopus rating (2004): SJR 1.657 SNIP 1.261
Scopus rating (2003): SJR 1.168 SNIP 0.884
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.182 SNIP 1.028
A molecular genetic toolbox for Yarrowia lipolytica

Background: Yarrowia lipolytica is an ascomycete yeast used in biotechnological research for its abilities to secrete high concentrations of proteins and accumulate lipids. Genetic tools have been made in a variety of backgrounds with varying similarity to a comprehensively sequenced strain. Results: We have developed a set of genetic and molecular tools in order to expand capabilities of Y. lipolytica for both biological research and industrial bioengineering applications. In this work, we generated a set of isogenic auxotrophic strains with decreased non-homologous end joining for targeted DNA incorporation. Genome sequencing, assembly, and annotation of this genetic background uncovers previously unidentified genes in Y. lipolytica. To complement these strains, we constructed plasmids with Y. lipolytica-optimized superfolder GFP for targeted overexpression and fluorescent tagging. We used these tools to build the “Yarrowia lipolytica Cell Atlas,” a collection of strains with endogenous fluorescently tagged organelles in the same genetic background, in order to define organelle morphology in live cells. Conclusions: These molecular and isogenic tools are useful for live assessment of organelle-specific protein expression, and for localization of lipid biosynthetic enzymes or other proteins in Y. lipolytica. This work provides the Yarrowia community with tools for cell biology and metabolism research in Y. lipolytica for further development of biofuels and natural products.
A Monte Carlo simulation of scattering reduction in spectral x-ray computed tomography

In X-ray computed tomography (CT), scattered radiation plays an important role in the accurate reconstruction of the inspected object, leading to a loss of contrast between the different materials in the reconstruction volume and cupping artifacts in the images. We present a Monte Carlo simulation tool for spectral X-ray CT to predict the scattered radiation generated by complex samples. An experimental setup is presented to isolate the energy distribution of scattered radiation. Spectral CT is a novel technique implementing photon-counting detectors able to discriminate the energy of incoming photons, enabling spectral analysis of X-ray images. This technique is useful to extract efficiently more information on energy dependent quantities (e.g. mass attenuation coefficients) and study matter interactions (e.g. X-ray scattering, photoelectric absorption, etc...). Having a good knowledge of the spectral distribution of the scattered X-rays is fundamental to establish methods attempting to correct for it. The simulations are validated by real measurements using a CdTe spectral resolving detector (Multix ME-100). We observed the effect of the scattered radiation on the image reconstruction, becoming relevant in the energy range where the Compton events are dominant (i.e. above 50keV).
Amplitude Noise Suppression and Orthogonal Multiplexing Using Injection-Locked Single-Mode VCSEL

We experimentally demonstrate BER reduction and orthogonal modulation using an injection locked single-mode VCSEL. It allows us suppressing an amplitude noise of optical signal and/or double the capacity of an information channel.

General information
State: Published
Organisations: Department of Photonics Engineering, Metro-Access and Short Range Systems, Networks Technology and Service Platforms, Technische Universität Darmstadt, University of Helsinki
Authors: Lyubopytov, V. (Intern), von Lerber, T. (Ekstern), Lassas, M. (Ekstern), Malekizandi, M. (Ekstern), Chipouline, A. (Ekstern), Küppers, F. (Ekstern)
Number of pages: 3
Publication date: 2017

Host publication information
Title of host publication: Optical Fiber Communication Conference 2017
Publisher: Optical Society of America (OSA)
Article number: Tu3C.3
ISBN (Print): 978-1-943580-23-1
Main Research Area: Technical/natural sciences
Conference: Optical Fiber Communication Conference 2017, Los Angeles, United States, 19/03/2017 - 19/03/2017
DOIs: 10.1364/OFC.2017.Tu3C.3

Bibliographical note
From the session: VCSELs (Tu3C)
Source: PublicationPreSubmission
Source-ID: 130857714
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

A multi-frequency fatigue testing method for wind turbine rotor blades

Rotor blades are among the most delicate components of modern wind turbines. Reliability is a crucial aspect, since blades shall ideally remain free of failure under ultra-high cycle loading conditions throughout their designated lifetime of 20–25 years. Full-scale blade tests are the most accurate means to experimentally simulate damage evolution under operating conditions, and are therefore used to demonstrate that a blade type fulfils the reliability requirements to an acceptable degree of confidence. The state-of-the-art testing method for rotor blades in industry is based on resonance excitation where typically a rotating mass excites the blade close to its first natural frequency. During operation the blade response due to external forcing is governed by a weighted combination of its eigenmodes. Current test methodologies which only utilise the lowest eigenfrequency induce a fictitious damage where additional tuning masses are required to recover the desired damage distribution. Even with the commonly adopted amplitude upscaling technique fatigue tests remain a time-consuming and costly endeavour. The application of tuning masses increases the complexity of the problem by lowering the natural frequency of the blade and therefore increasing the testing time. The novel method presented in this paper aims at shortening the duration of the state-of-the-art fatigue testing method by simultaneously exciting the blade with a combination of two or more eigenfrequencies. Taking advantage of the different shapes of the excited eigenmodes, the actual spatial damage distribution can be more realistically simulated in the tests by tuning the excitation force amplitudes rather than adding tuning masses. This implies that in portions of the blade the lowest mode is governing the damage whereas in others higher modes contribute more significantly due to their higher cycle count. A numerical feasibility study based on a publicly available large utility rotor blade is used to demonstrate the ability of the proposed approach to outperform the state-of-the-art testing method without compromising fatigue test requirements. It will be shown that the novel method shortens the testing time and renders the damage evolution with a higher degree of fidelity.

General information
State: Published
Authors: Eder, M. A. (Intern), Belloni, F. (Intern), Tesauro, A. (Ekstern), Hanis, T. (Intern)
Number of pages: 18
Pages: 123-140
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Sound and Vibration
Volume: 388
ISSN (Print): 0022-460x
Ratings:
Wind turbine rotor blade, Fatigue testing, Fatigue damage, Resonance testing, Multi-frequency approach, Exciter

DOIs: 10.1016/j.jsv.2016.10.032
A multifunctional nanocomplex for enhanced cell uptake, endosomal escape and improved cancer therapeutic effect

Aim: To evaluate the chemotherapeutic potential of a novel multifunctional nanocomposite encapsulating both porous silicon (PSi) and gold (Au) nanoparticles in a polymeric nanocomplex. Materials & methods: The nanocomposite was physicochemically characterized and evaluated in vitro for biocompatibility, cellular internalization, endosomolytic properties, cytoplasmatic drug delivery and chemotherapeutic efficacy. Results: The nanocomposites were successfully produced and exhibited adequate physicochemical properties and superior in vitro cyto- and hemocompatibilities. The encapsulation of PSi nanoparticles in the nanocomplexes significantly enhanced their cellular internalization and enabled their endosomal escape, resulting in the efficient cytoplasmic delivery of these nanosystems. Sorafenibloaded nanocomposites showed a potent in vitro antiproliferative effect on MDA-MB-231 breast cancer cells. Conclusion: The multifunctional nanocomposite herein presented exhibits great potential as a chemotherapeutic nanoplatform.
A multimedia streaming system for urban rail environments

Due to a large number of mostly stationary users inside a train and the availability of a radio connection to the outside world, urban rail environments serve as promising candidates for multimedia distribution systems deployment. This work proposes to offload the individual per-passenger cellular network connections by using the excessive Communications-Based Train Control (CBTC) radio link bandwidth to deliver multimedia streams to a train, where it is subsequently distributed to the passengers using peer-to-peer based data distribution. Connections among the train passengers are implemented using the Wi-Fi Direct connectivity and data exchange is coordinated by using the Peer-to-Peer Streaming Peer Protocol. This work presents the solution and evaluates it in the scope of urban rail deployment. Network emulation tests are used to analyze the factors impacting the number of concurrent users that can use the proposed system. This work also proposes future work lines that can be used to improve the system's design.

A multi-objective energy planning including system exergy efficiency and socio-economic costs

Exergy, Energy planning, Multi-objective optimization, Socio-economic costs, Zero carbon, Pareto frontier
A multiple ship routing and speed optimization problem under time, cost and environmental objectives

The purpose of this paper is to investigate a multiple ship routing and speed optimization problem under time, cost and environmental objectives. A branch and price algorithm as well as a constraint programming model are developed that consider (a) fuel consumption as a function of payload, (b) fuel price as an explicit input, (c) freight rate as an input, and (d) in-transit cargo inventory costs. The alternative objective functions are minimum total trip duration, minimum total cost and minimum emissions. Computational experience with the algorithm is reported on a variety of scenarios.
A multi-radio, multi-hop ad-hoc radio communication network for Communications-Based Train Control (CBTC)

Communications-Based Train Control (CBTC) is a modern signalling system that uses radio communication to transfer train control information between train and wayside. The trackside networks in these systems are mostly based on conventional infrastructure Wi-Fi (IEEE 802.11). It means a train has to continuously associate (i.e. perform handshake) with the trackside Wi-Fi Access Points (AP) as it moves, which incurs communication delays. Additionally, these APs are connected to the wayside infrastructure via optical fiber cables that incurs huge costs. This paper presents a novel design in which trackside nodes function in ad-hoc Wi-Fi mode, which means no association has to be performed with them prior to transmitting. A node upon receiving packets from a train forwards these packets to the next node, forming a chain of nodes. Following this chain, packets arrive at the destination. To make the design resilient against interference and failures, transmissions are separated on multiple frequencies and a node forwards packets to not only one but two of its neighbors. This paper investigates the resiliency, redundancy and scalability performance of this design and presents the results both from a field experiment involving prototype hardware and an extensive simulation study.

A multivariate dynamic linear model for early warnings of diarrhea and pen fouling in slaughter pigs

We present a method for providing early, but indiscriminant, predictions of diarrhea and pen fouling in grower/finisher pigs. We collected data on dispensed feed amount, water flow, drinking bouts frequency, temperature at two positions per pen, and section level humidity from 12 pens (6 double pens) over three full growth periods. The separate data series were co-modeled at pen level with time steps of one hour, using a multivariate dynamic linear model. The step-wise forecast errors of the model were unified using Cholesky decomposition. An alarm was raised if the unified error exceeded a set threshold a sufficient number of times, consecutively. Using this method with a 7 day prediction window, we achieved an area under the receiver operating characteristics curve of 0.84. Shorter prediction windows yielded lower performances, but longer prediction windows did not affect the performance.
An Acoustic Hypersingular Boundary Element Formulation Including Viscous and Thermal Losses

General information
State: Published
Organisations: Department of Electrical Engineering, Acoustic Technology, Department of Mechanical Engineering, Solid Mechanics, Technical University of Munich
Authors: Andersen, P. R. (Intern), Cutanda Henriquez, V. (Intern), Aage, N. (Intern), Marburg, S. (Ekstern)
Number of pages: 1
Event: Abstract from 13th International Conference on Theoretical and Computational Acoustics, Vienna, Austria.
Main Research Area: Technical/natural sciences

An adaptive, data driven sound field control strategy for outdoor concerts
One challenge of outdoor concerts is to ensure adequate levels for the audience while avoiding disturbance of the surroundings. We outline the initial concept of a sound field control (SFC) system for tackling this issue using sound-zoning. The system uses Bayesian inference to update a sound propagation model. We present a simulation in which SFC and propagation model work together.

General information
State: Published
Organisations: Department of Electrical Engineering, Acoustic Technology
Pages: 10
Publication date: 2017

An Adaptive Multialphabet Arithmetic Coding Based on Generalized Virtual Sliding Window
We propose a novel efficient multialphabet multiplication-free adaptive arithmetic coder. First, we generalize probability estimation via virtual sliding window for the multialphabet case and show that it does not require multiplications and provides a tradeoff between the probability adaptation speed and the precision of the probability estimation. Second, we show how the generalized virtual sliding window can be used to eliminate multiplications and divisions. Finally, we demonstrate that the proposed arithmetic coder provides better compression performance than existing implementations based on state-of-the-art multiplication-free binary arithmetic coders.

General information
State: Published
Organisations: Department of Photonics Engineering, Coding and Visual Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Xidian University
Authors: Belyaev, E. (Intern), Forchhammer, S. (Intern), Liu, K. (Ekstern)
Pages: 1034-1038
Publication date: 2017
Main Research Area: Technical/natural sciences
An Adaptive Nonlinear Basal-Bolus Calculator for Patients With Type 1 Diabetes

**Background:** Bolus calculators help patients with type 1 diabetes to mitigate the effect of meals on their blood glucose by administering a large amount of insulin at mealtime. Intraindividual changes in patients physiology and nonlinearity in insulin-glucose dynamics pose a challenge to the accuracy of such calculators.

**Method:** We propose a method based on a continuous-discrete unscented Kalman filter to continuously track the postprandial glucose dynamics and the insulin sensitivity. We augment the Medtronic Virtual Patient (MVP) model to simulate noise-corrupted data from a continuous glucose monitor (CGM). The basal rate is determined by calculating the steady state of the model and is adjusted once a day before breakfast. The bolus size is determined by optimizing the postprandial glucose values based on an estimate of the insulin sensitivity and states, as well as the announced meal size. Following meal announcements, the meal compartment and the meal time constant are estimated, otherwise insulin sensitivity is estimated.

**Results:** We compare the performance of a conventional linear bolus calculator with the proposed bolus calculator. The proposed basal-bolus calculator significantly improves the time spent in glucose target ($P < .01$) compared to the conventional bolus calculator.
Conclusion: An adaptive nonlinear basal-bolus calculator can efficiently compensate for physiological changes. Further clinical studies will be needed to validate the results.

An advanced structural trailing edge modelling method for wind turbine blades
This study demonstrates an advanced blade modelling approach based on a combination of shell and solid elements which can enhance the reliability of structural predictions for wind turbine blades. The advanced blade modelling approach is based on a shell element model where the adhesive bondline in the trailing edge region is discretised by means of solid brick elements which are connected via Multi-Point-Constraint to the shell elements. The new approach overcomes the drawbacks of pure shell element simulations and can reliably predict the response of wind turbine blade structures which
are exposed to ultimate loads. The prediction accuracy of the numerical simulations was compared to a certification load case and a full-scale ultimate limit state test of a 34 m wind turbine rotor blade. The displacements, stresses and strains show reasonably good agreement and demonstrate the capabilities of the advanced blade modelling approach.

**General information**

State: Published

Organisations: Department of Wind Energy, Wind Turbine Structures and Component Design

Authors: Haselbach, P. U. (Intern)

Pages: 521-530

Publication date: 2017

Main Research Area: Technical/natural sciences

**Publication information**

Journal: Composite Structures

Volume: 180

ISSN (Print): 0263-8223

Ratings:

BFI (2017): BFI-level 2

Web of Science (2017): Indexed Yes

BFI (2016): BFI-level 2

Scopus rating (2016): CiteScore 4.45 SJR 2.13 SNIP 2.033

Web of Science (2016): Indexed yes

BFI (2015): BFI-level 2

Scopus rating (2015): SJR 2.247 SNIP 2.236 CiteScore 4.25

Web of Science (2015): Indexed yes

BFI (2014): BFI-level 2

Scopus rating (2014): SJR 2.331 SNIP 2.524 CiteScore 4.03

Web of Science (2014): Indexed yes

BFI (2013): BFI-level 2

Scopus rating (2013): SJR 2.017 SNIP 2.937 CiteScore 3.7

ISI indexed (2013): ISI indexed yes

Web of Science (2013): Indexed yes

BFI (2012): BFI-level 2

Scopus rating (2012): SJR 1.867 SNIP 2.838 CiteScore 2.85

ISI indexed (2012): ISI indexed yes

Web of Science (2012): Indexed yes

BFI (2011): BFI-level 2

Scopus rating (2011): SJR 1.683 SNIP 2.581 CiteScore 2.68

ISI indexed (2011): ISI indexed yes

BFI (2010): BFI-level 2

Scopus rating (2010): SJR 1.583 SNIP 2.367

BFI (2009): BFI-level 2

Scopus rating (2009): SJR 1.652 SNIP 2.076

Web of Science (2009): Indexed yes

BFI (2008): BFI-level 1

Scopus rating (2008): SJR 1.447 SNIP 1.761

Web of Science (2008): Indexed yes

Scopus rating (2007): SJR 1.336 SNIP 2.006

Web of Science (2007): Indexed yes

Scopus rating (2006): SJR 1.08 SNIP 1.894

Web of Science (2006): Indexed yes

Scopus rating (2005): SJR 1.233 SNIP 1.647

Scopus rating (2004): SJR 1.022 SNIP 1.484

Scopus rating (2003): SJR 0.977 SNIP 1.101

Scopus rating (2002): SJR 1.347 SNIP 0.958

Web of Science (2002): Indexed yes
An Aerial Robot for Rice Farm Quality Inspection With Type-2 Fuzzy Neural Networks Tuned by Particle Swarm Optimization-Sliding Mode Control Hybrid Algorithm

Agricultural robots, or agrobots, have been increasingly adopted in every aspect of farming from surveillance to fruit harvesting in order to improve the overall productivity over the last few decades. Motivated by compelling growth of agricultural robots in modern farms, in this work, an autonomous quality inspection over rice farms is proposed by employing quadcopters. Real-time control of these vehicles, however, is still challenging as they exhibit highly nonlinear behavior especially for agile maneuvers. What is more, these vehicles have to operate under uncertain working conditions such as wind and gust disturbances as well as positioning errors caused by inertial measurement units and global positioning system. To handle these difficulties, as a model-free and learning control algorithm, type-2 fuzzy neural networks (T2-FNNs) are designed for the control of quadcopter. The novel particle swarm optimization-sliding mode control (PSO-SMC) theory-based hybrid algorithm is proposed for the training of T2-FNNs. In particular, continuous version of PSO is adopted for the identification of the antecedent part of T2-FNNs while SMC-based update rules are utilized for online learning of the consequent part during control. In the virtual environment, the quadcopter is expected to perform an autonomous flight including agile maneuvers such as steep turning and sudden altitude changes over a rice terrace farm in Longsheng, China. The simulation results for T2-FNNs are compared with the outcome of conventional proportional-derivative (PD) controllers for different case studies. The results show that our method decreases trajectory tracking integral squared error by %26 over PD controllers in the ideal case, while this ratio goes up to %95 under uncertain working conditions.

General information
State: Accepted/In press
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems, Nanyang Technological University
Authors: Camci, E. (Ekstern), Kripalan, D. R. (Ekstern), Ma, L. (Ekstern), Kayacan, E. (Ekstern), Ahmadieh Khanesar, M. (Intern)
Number of pages: 12
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Swarm and Evolutionary Computation
ISSN (Print): 2210-6502
Ratings:
Scopus rating (2016): CiteScore 5.54 SJR 1.411 SNIP 2.756
Scopus rating (2015): CiteScore 5.25 SNIP 2.91 SJR 1.834
Scopus rating (2014): CiteScore 9.83 SNIP 5.5 SJR 3.252
Scopus rating (2013): CiteScore 12.33 SNIP 8.598 SJR 4.451
Scopus rating (2012): CiteScore 9.05 SNIP 5.466 SJR 1.928
Original language: English
DOIs:
10.1016/j.swevo.2017.10.003
Source: PublicationPreSubmission
Source-ID: 140582385
Publication: Research - peer-review › Journal article – Annual report year: 2017

Anaerobic granular sludge for simultaneous biomethanation of synthetic wastewater and CO with focus on the identification of CO-converting microorganisms

CO is a main component of syngas, which can be produced from the gasification of organic wastes and biomass. CO can be converted to methane by anaerobic digestion (AD), however, it is still challenging due to its toxicity to microorganisms and limited knowledge about CO converting microorganisms. In the present study, anaerobic granular sludge (AGS) was used for the simultaneous biomethanation of wastewater and CO. Batch experiments showed that AGS tolerated CO
partial pressure as high as 0.5 atm without affecting its ability for synthetic wastewater degradation, which had higher
tolerance of CO compared to suspended sludge (less than 0.25 atm) as previously reported. Continuous experiments in
upflow anaerobic sludge blanket (UASB) reactors showed AGS could efficiently convert synthetic wastewater and CO into
methane by applying gas-recirculation. The addition of CO to UASB reactor enhanced the hydrogenotrophic CO-oxidizing
pathway, resulted in the increase of extracellular polymeric substances, changed the morphology of AGS and significantly
altered the microbial community compositions of AGS. The microbial species relating with CO conversion and their
functions were revealed by metagenomic analysis. It showed that 23 of the 70 reconstructed genome bins (GBs), most of
which were not previously characterized at genomic level, were enriched and contained genes involved in CO conversion
upon CO addition. CO-converting microorganisms might be taxonomically more diverse than previously known and have
multi-functions in the AD process. The reductive tricarboxylic acid (TCA) cycle in combination with the oxidation of the CO
was probably crucial for CO utilization by the majority of the GBs in the present study.

**General information**
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering, Fudan University, University of
Padua
Authors: Jing, Y. (Ekstern), Campanaro, S. (Ekstern), Kougias, P. (Intern), Treu, L. (Intern), Angelidaki, I. (Intern), Zhang,
S. (Ekstern), Luo, G. (Ekstern)
Pages: 19-28
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication Information**
Journal: Water Research
Volume: 126
ISSN (Print): 0043-1354
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.49 SJR 2.629 SNIP 2.558
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.689 SNIP 2.507 CiteScore 6.63
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.957 SNIP 2.727 CiteScore 6.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.956 SNIP 2.693 CiteScore 6.02
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.966 SNIP 2.456 CiteScore 5.15
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.867 SNIP 2.374 CiteScore 5.43
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.582 SNIP 2.196
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.319 SNIP 2.225
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.065 SNIP 2.19
An algorithm for gradient-based dynamic optimization of UV flash processes
This paper presents a novel single-shooting algorithm for gradient-based solution of optimal control problems with vapor-liquid equilibrium constraints. Such optimal control problems are important in several engineering applications, for instance in control of distillation columns, in certain two-phase flow problems, and in operation of oil reservoirs. The single-shooting algorithm uses an adjoint method for the computation of gradients. Furthermore, the algorithm uses either a simultaneous or a nested approach for the numerical solution of the dynamic vapor-liquid equilibrium model equations. Two numerical examples illustrate that the simultaneous approach is faster than the nested approach and that the efficiency of the underlying thermodynamic computations is important for the overall performance of the single-shooting algorithm. We compare the performance of different optimization software as well as the performance of different compilers in a Linux operating system. These tests indicate that real-time nonlinear model predictive control of UV flash processes is computationally feasible.

General information
State: Accepted/In press
Organisations: Center for Energy Resources Engineering, Department of Applied Mathematics and Computer Science, Scientific Computing
Authors: Ritschel, T. K. S. (Intern), Capolei, A. (Intern), Gaspar, J. (Intern), Jørgensen, J. B. (Intern)
Number of pages: 12
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication Information
Journal: Computers & Chemical Engineering
ISSN (Print): 0098-1354
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.39 SJR 1.008 SNIP 1.607
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.122 SNIP 1.724 CiteScore 3.04
Web of Science (2015): Indexed yes
Analyses of electron runaway in front of the negative streamer channel

X-and γ-ray emissions, observed in correlation with negative leaders of lightning and long sparks of high-voltage laboratory experiments, are conventionally connected with the bremsstrahlung of high-energy runaway electrons (REs). Here we extend a focusing mechanism, analyzed in our previous paper, which allows the electric field to reach magnitudes, required for a generation of significant RE fluxes and associated bremsstrahlung, when the ionization wave propagates in a narrow, ionized channel created by a previous streamer. Under such conditions we compute the production rate of REs per unit streamer length as a function of the streamer velocity and predict that, once a streamer is formed with the electric field capable of producing REs ahead of the streamer front, the ionization induced by the REs is capable of creating an ionized channel that allows for self-sustained propagation of the RE-emitting ionization wave independent of the initial electron concentration. Thus, the streamer coronas of the leaders are probable sources of REs producing the observed high-energy radiation. To prove these predictions, new simulations are planned, which would show explicitly that the pre-ionization in front of the channel via REs will lead to the ionization wave propagation self-
consistent with REs generation.

**General information**

State: Published
Organisations: National Space Institute, Astrophysics and Atmospheric Physics, Russian Federal Nuclear Center
Authors: Babich, L. P. (Ekstern), Bochkov, E. I. (Ekstern), Kutsyk, I. M. (Ekstern), Neubert, T. (Intern), Chanrion, O. (Intern)
Pages: 8974–8984
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Journal of Geophysical Research: Space Physics
Volume: 122
Issue number: 8
ISSN (Print): 0148-0227
Ratings:

<table>
<thead>
<tr>
<th>Year</th>
<th>BFI</th>
<th>Web of Science</th>
<th>Scopus rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.6</td>
</tr>
<tr>
<td>2016</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2015</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2014</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2013</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2012</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2011</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2010</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2009</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2008</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2007</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2006</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2005</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2004</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2003</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2002</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2001</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>2000</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1999</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1998</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1997</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1996</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1995</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1994</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1993</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1992</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1991</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
<tr>
<td>1990</td>
<td>2</td>
<td>Indexed yes</td>
<td>CiteScore 3.2</td>
</tr>
</tbody>
</table>

ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.449 SNIP 1.324
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.347 SNIP 1.359
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.101 SNIP 1.296
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.054 SNIP 1.26
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.166 SNIP 1.351
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.159 SNIP 1.228
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 2.232 SNIP 1.376
Analysing improvements to on-street public transport systems: a mesoscopic model approach

Light rail transit and bus rapid transit have shown to be efficient and cost-effective in improving public transport systems in cities around the world. As these systems comprise various elements, which can be tailored to any given setting, e.g. pre-board fare-collection, holding strategies and other advanced public transport systems (APTS), the attractiveness of such systems depends heavily on their implementation. In the early planning stage it is advantageous to deploy simple and transparent models to evaluate possible ways of implementation. For this purpose, the present study develops a mesoscopic model which makes it possible to evaluate public transport operations in details, including dwell times, intelligent traffic signal timings and holding strategies while modelling impacts from other traffic using statistical distributional data thereby ensuring simplicity in use and fast computational times. This makes it appropriate for analysing the impacts of improvements to public transport operations, individually or in combination, in early planning stages. The paper presents a joint measure of reliability for such evaluations based on passengers’ perceived travel time by considering headway time regularity and running time variability, i.e. taking into account waiting time and in-vehicle time. The approach was applied on a case study by assessing the effects of implementing segregated infrastructure and APTS elements, individually and in combination. The results showed that the reliability of on-street public transport operations mainly depends on APTS elements, and especially holding strategies, whereas pure infrastructure improvements induced travel time reductions. The results further suggested that synergy effects can be obtained by planning on-street public transport coherently in terms of reduced travel times and increased reliability.
Analysis and implementation of packet preemption for Time Sensitive Networks

A standard priority-queuing system is capable of arranging packets with different traffic classes to guarantee a relatively low latency for the high priority traffic. However, in practical cases, severe delay may be caused by starting a large, low-priority frame ahead of a time-critical frame. In this paper, interspersed express traffic is evaluated, which enables preemption of non-time-critical transmission, in particular, the preemptive queuing system allows the cut-through transmission for critical traffic and minimizes the jitter. We analyse the performance of packet preemption through a system level simulation in Riverbed Modeler. The simulation is complemented by numerical analysis which provides the average queuing delay for both types of traffic (preemptable and express). Furthermore, the paper describes an approach to implement the packet preemption solution on an FPGA in VHDL, which illustrates the complexity of hardware implementation.

Analysis and optimisation of coupled winding in magnetic resonant wireless power transfer systems with orthogonal experiment results

The coupled magnetic resonant unit (CMRU) has great effect on the transmitting power capability and efficiency of magnetic resonant wireless power transfer system. The key objective i.e. the efficiency coefficient kQ is introduced in the design of CMRU or the coupled windings based on the mutual inductance model. Then the design method with orthogonal experiments and finite element method simulation is proposed to maximize the kQ due to low precise analytical model of AC resistance and inductance for PCB windings at high-frequency. The method can reduce the design iterations and thereby can get more optimal design results. The experiments verified the design objective of kQ as well as the design method effectively. In the optimal PCB windings prototype at operating frequency of 4 MHz, the kQ and the maximum efficiency are increased by about 12% and 4% respectively.
Analysis and optimization of coupled windings in magnetic resonant wireless power transfer systems with orthogonal experiment method

The coupled magnetic resonant unit (CMRU) has great effect on the transmitting power capability and efficiency of magnetic resonant wireless power transfer system. The key objective i.e. the efficiency coefficient $k_Q$ is introduced in the design of CMRU or the coupled windings based on the mutual inductance model. Then the design method with orthogonal experiments and finite element method simulation is proposed to maximize the $k_Q$ due to low precise analytical model of AC resistance and inductance for PCB windings at high-frequency. The method can reduce the design iterations and thereby can get more optimal design results. The experiments verified the design objective of $k_Q$ as well as the design method effectively. In the optimal PCB windings prototype at operating frequency of 4 MHz, the $k_Q$ and the maximum efficiency are increased by about 12% and 4% respectively.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Electronics, Gutian River Hydropower Plant, Fuzhou University
Authors: Yudi, X. (Ekstern), Xingkui, M. (Ekstern), Mao, L. (Ekstern), Zhang, Z. (Intern), Andersen, M. A. E. (Intern)
Number of pages: 6
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Elektronika ir Elektrotechnika
ISSN (Print): 1392-1215
Ratings:
- Web of Science (2017): Indexed Yes
- Scopus rating (2016): CiteScore 0.85 SJR 0.321 SNIP 0.668
- Web of Science (2016): Indexed yes
- Scopus rating (2015): SJR 0.347 SNIP 0.599 CiteScore 0.71
- Scopus rating (2014): SJR 0.292 SNIP 0.653 CiteScore 0.66
- Web of Science (2014): Indexed yes
- Scopus rating (2013): SJR 0.252 SNIP 0.634 CiteScore 0.53
- ISI indexed (2013): ISI indexed yes
- Scopus rating (2012): SJR 0.226 SNIP 0.71 CiteScore 0.49
- ISI indexed (2012): ISI indexed yes
- Scopus rating (2011): SJR 0.203 SNIP 1.038 CiteScore 0.84
- ISI indexed (2011): ISI indexed no
- Scopus rating (2010): SJR 0.213 SNIP 0.3
- Web of Science (2010): Indexed yes
- Scopus rating (2009): SJR 0.19 SNIP 0.018
- Web of Science (2004): Indexed yes

Original language: English
Wireless power transfer, Magnetic resonant, Orthogonal experiments, Magnetic coupling structure optimization

Electronic versions:
3._Analysis_and_Optimization_with_Orthogonal_Experiments_Method_Final_002_.pdf
Source: PublicationPreSubmission
Source-ID: 139472625
Publication: Research - peer-review › Conference article – Annual report year: 2017
This paper presents the design, modeling, and control of an isolated dc-dc three-port converter (TPC) based on an interleaved-boost full-bridge converter with pulsewidth modulation (PWM) and phase-shift control for hybrid renewable energy systems. In the proposed topology, the switches are driven by phase-shifted PWM signals, where both phase angle and duty cycle are the controlled variables. The power flow between the two inputs is controlled through the duty cycle, whereas the output voltage can be regulated effectively through the phase shift. The primary-side MOSFETs can achieve zero-voltage-switching (ZVS) operation without additional circuitry. Additionally, due to the ac output inductor, the secondary-side diodes can operate under zero-current-switching (ZCS) conditions. In this study, the operation principles of the converter are analyzed and the critical design considerations are discussed. The dynamic behavior of the proposed ac-inductor-based TPC is investigated by performing state-space modeling. Moreover, the derived mathematical models are validated by simulation and measurements. In order to verify the validity of the theoretical analysis, design, and power decoupling control scheme, a prototype is constructed and tested under the various modes, depending on the availability of the renewable energy source and the load consumption. The experimental results show that the two decoupled control variables achieve effective regulation of the power flow among the three ports.
Analysis of 28 Arcobacter genomes belonging to different species

General information
State: Published
Organisations: National Food Institute, Research Group for Genomic Epidemiology, Rovira i Virgili University
Authors: Alba, P. (Ekstern), Leekitcharoenphon, P. (Intern), Hendriksen, R. S. (Intern), Aarestrup, F. M. (Intern), José, F. M. (Ekstern)
Pages: 213-213
Publication date: 2017

Host publication information
Title of host publication: 19th International Workshop on Campylobacter, Helicobacter and Related Organisms: CHRO 2017 - Abstract Book
Analysis of 62 hybrid assembled human Y chromosomes exposes rapid structural changes and high rates of gene conversion

The human Y-chromosome does not recombine across its male-specific part and is therefore an excellent marker of human migrations. It also plays an important role in male fertility. However, its evolution is difficult to fully understand because of repetitive sequences, inverted repeats and the potentially large role of gene conversion. Here we perform an evolutionary analysis of 62 Y-chromosomes of Danish descent sequenced using a wide range of library insert sizes and high coverage, thus allowing large regions of these chromosomes to be well assembled. These include 17 father-son pairs, which we use to validate variation calling. Using a recent method that can integrate variants based on both mapping and de novo assembly, we genotype 10898 SNVs and 2903 indels (max length of 27241 bp) in our sample and show by father-son concordance and experimental validation that the non-recurrent SNP and indel variation on the Y chromosome tree is called very accurately. This includes variation called in a 0.9 Mb centromeric heterochromatic region, which is by far the most variable in the Y chromosome. Among the variation is also longer sequence-stretches not present in the reference genome but shared with the chimpanzee Y chromosome. We analyzed 2.7 Mb of large inverted repeats (palindromes) for variation patterns among the two palindrome arms and identified 603 mutation and 416 gene conversion events. We find clear evidence for GC-biased gene conversion in the palindromes (and a balancing AT mutation bias), but irrespective of this, also a strong bias towards gene conversion towards the ancestral state, suggesting that palindromic gene conversion may alleviate Muller's ratchet. Finally, we also find a large number of large-scale gene duplications and deletions in the palindromic regions (at least 24) and find that such events can consist of complex combinations of simultaneous insertions and deletions of long stretches of the Y chromosome.
Analysis of aggregated functional data from mixed populations with application to energy consumption: Aggregated Functional Data

Understanding energy consumption patterns of different types of consumers is essential in any planning of energy distribution. However, obtaining individual-level consumption information is often either not possible or too expensive. Therefore, we consider data from aggregations of energy use, that is, from sums of individuals' energy use, where each individual falls into one of C consumer classes. Unfortunately, the exact number of individuals of each class may be unknown due to inaccuracies in consumer registration or irregularities in consumption patterns. We develop a methodology to estimate both the expected energy use of each class as a function of time and the true number of consumers in each class. To accomplish this, we use B-splines to model both the expected consumption and the individual-level random effects. We treat the reported numbers of consumers in each category as random variables with distribution depending on the true number of consumers in each class and on the probabilities of a consumer in one class reporting as another class. We obtain maximum likelihood estimates of all parameters via a maximization algorithm. We introduce a special numerical trick for calculating the maximum likelihood estimates of the true number of consumers in each class. We apply our method to a data set and study our method via simulation.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, University of British Columbia, State University of Campinas
Authors: Lenzi, A. (Intern), de Souza, C. P. E. (Ekstern), Dias, R. (Ekstern), Garcia, N. L. (Ekstern), Heckman, N. E. (Ekstern)
Analysis of Anholt offshore wind farm SCADA measurements
SCADA measurements from the Danish Anholt offshore wind farm (ANH) for a period of 2½ years have been qualified. ANH covers 12 km × 22 km and is located between Djursland and the island Anholt in Kattegat, Denmark. This qualification encompasses identification of curtailment and idling periods, start/stop events and a power curve control for each wind turbine in the wind farm. Data also include wind speed measurements from a nearby WindCube lidar and simulations from the WRF model for the same period as the SCADA. An equivalent wind speed (wsi) is derived from the combined power and pitch signals for each wind turbine. Furthermore, the local wind direction is derived for a number of wake-free turbine groups. By combining the wsi and wind direction, the undisturbed wind speed and direction inflow conditions of the wind farm (Upark and WDpark) are estimated for all 360 degrees.

The preliminary analysis reveals a significant wind gradient along the North-South direction for the western row of the wind farm – for westerly inflow, together with a distinct wind speed reduction caused by coastal effects. Figure 1 shows how the coast influences the wind speed gradient along the western row of turbines. Furthermore, a minor wind speed reduction is identified for easterly inflow, caused by the island Anholt. The internal wake effects are small, due to the large “variable” spacing based on the arch-based layout compared to other wind farms.

A comparison between simulated WRF and measured wind speeds shows good correlation. The power deficit along the rows of turbines demonstrates a significant difference between unstable and stable conditions.

Analysis of bearing steel exposed to rolling contact fatigue
The objective of this work is to characterize fatigue damage in roller bearings under conditions of high load and slippage. A test rig constructed for rolling contact fatigue tests of rings is described, and test results are presented for rings taken from two spherical roller bearings. The preparation of the rings and the loading situation are explained. Test conditions are chosen with the aim of achieving pitting formation at the contacting surfaces. During testing the contact pressure, torque and the rotational speed are monitored and recorded. After testing the tested rings have been characterized using X-ray tomography and scanning electron microscopy. The observations confirm that rolling contact fatigue testing at high loads leads to pitting failure at the contacting surfaces. The pitting mostly appears on one side of the contact, attributed to a non-uniform contact pressure in the axial direction.
The Internet of Things (IoT) revolution promises to make our lives easier by providing cheap and always connected smart embedded devices, which can interact on the Internet and create added values for human needs. But all that glitters is not gold. Indeed, the other side of the coin is that, from a security perspective, this IoT revolution represents a potential disaster. This plethora of IoT devices that flooded the market were very badly protected, thus an easy prey for several families of malwares that can enslave and incorporate them in very large botnets. This, eventually, brought back to the top Distributed Denial of Service (DDoS) attacks, making them more powerful and easier to achieve than ever. This paper aims at provide an up-to-date picture of DDoS attacks in the specific subject of the IoT, studying how these attacks work and considering the most common families in the IoT context, in terms of their nature and evolution through the years. It also explores the additional offensive capabilities that this arsenal of IoT malwares has available, to mine the security of Internet users and systems. We think that this up-to-date picture will be a valuable reference to the scientific community in order to take a first crucial step to tackle this urgent security issue.

Analysis of DDoS-capable IoT malwares
The Internet of Things (IoT) revolution promises to make our lives easier by providing cheap and always connected smart embedded devices, which can interact on the Internet and create added values for human needs. But all that glitters is not gold. Indeed, the other side of the coin is that, from a security perspective, this IoT revolution represents a potential disaster. This plethora of IoT devices that flooded the market were very badly protected, thus an easy prey for several families of malwares that can enslave and incorporate them in very large botnets. This, eventually, brought back to the top Distributed Denial of Service (DDoS) attacks, making them more powerful and easier to achieve than ever. This paper aims at provide an up-to-date picture of DDoS attacks in the specific subject of the IoT, studying how these attacks work and considering the most common families in the IoT context, in terms of their nature and evolution through the years. It also explores the additional offensive capabilities that this arsenal of IoT malwares has available, to mine the security of Internet users and systems. We think that this up-to-date picture will be a valuable reference to the scientific community in order to take a first crucial step to tackle this urgent security issue.
Analysis of electrical and thermal stress effects on PCBM:P3HT solar cells by photocurrent and impedance spectroscopy modeling

We investigated the effects of electrical stress and thermal storage by means of photocurrent, Impedance Spectroscopy and Open Circuit Voltage Decay models. The electrical stress damages only the active layer, by reducing the generation rate, the polaron separation probability and the carrier lifetime. The thermal stress also degrades the anode interface. This reflects on the appearance of an inflection in the I-V photocurrent shape close to the operative region.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Organic Energy Materials, University of Padova
Authors: Torto, L. (Ekstern), Rizzo, A. (Ekstern), Cester, A. (Ekstern), Wrackien, N. (Ekstern), Passarini, L. (Ekstern), Krebs, F. C. (Intern), Corazza, M. (Intern), Gevorgyan, S. A. (Intern)
Number of pages: 10
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the IEEE International Reliability Physics Symposium (IRPS 2017)
Publisher: IEEE
Article number: 2F-4
ISBN (Print): 978-1-5090-6640-7
Main Research Area: Technical/natural sciences
Conference: 2017 IEEE International Reliability Physics Symposium, Monterey, United States, 02/04/2017 - 02/04/2017
Organic solar cell reliability, Photocurrent models, Carrier lifetime
DOIs:
10.1109/IRPS.2017.7936274
Source: FindIt
Source-ID: 2371003466
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Analysis of Few-Mode Multi-Core Fiber Splice Behavior Using an Optical Vector Network Analyzer

The behavior of splices in a 3-mode 36-core fiber is analyzed using optical vector network analysis. Time-domain response analysis confirms splices may cause significant mode-mixing, while frequency-domain analysis shows splices may affect system level mode-dependent loss both positively and negatively.

General information
State: Published
Organisations: Department of Photonics Engineering, Metro-Access and Short Range Systems, Networks Technology and Service Platforms, National Institute of Information and Communications Technology
Authors: Rommel, S. (Intern), Mendinueta, J. M. D. (Ekstern), Klaus, W. (Ekstern), Sakaguchi, J. (Ekstern), Vegas Olmos, J. J. (Intern), Awaji, Y. (Ekstern), Tafur Monroy, I. (Intern), Wada, N. (Ekstern)
Number of pages: 3
Publication date: 2017

Host publication information
Title of host publication: Proceedings of 43rd European Conference on Optical Communication
Main Research Area: Technical/natural sciences
Conference: 43rd European Conference on Optical Communication, Gothenburg, Sweden, 17/09/2017 - 17/09/2017
Electronic versions:
ECOC_OVNA.pdf
Source: PublicationPreSubmission
Source-ID: 137102123
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Analysis of free text in electronic health records for identification of cancer patient trajectories

With an aging patient population and increasing complexity in patient disease trajectories, physicians are often met with complex patient histories from which clinical decisions must be made. Due to the increasing rate of adverse events and hospitals facing financial penalties for readmission, there has never been a greater need to enforce evidence-led medical decision-making using available health care data. In the present work, we studied a cohort of 7,741 patients, of whom 4,080 were diagnosed with cancer, surgically treated at a University Hospital in the years 2004-2012. We have developed a methodology that allows disease trajectories of the cancer patients to be estimated from free text in electronic health records (EHRs). By using these disease trajectories, we predict 80% of patient events ahead in time. By control of confounders from 8326 quantified events, we identified 557 events that constitute high subsequent risks (risk > 20%), including six events for cancer and seven events for metastasis. We believe that the presented methodology and findings could be used to improve clinical decision support and personalize trajectories, thereby decreasing adverse events and
optimizing cancer treatment.

General information
State: Published
Organisations: Department of Bio and Health Informatics, University Hospital of North Norway, Universidad Rey Juan Carlos, UiT The Arctic University of Norway, University of Warwick, Akershus University Hospital
Authors: Jensen, K. (Ekstern), Soguero-Ruiz, C. (Ekstern), Mikalsen, K. O. (Ekstern), Lindsetmo, R. (Ekstern), Kouskoumvekaki, E. (Intern), Girolami, M. A. (Ekstern), Skrovseth, S. O. (Ekstern), Augestad, K. M. (Ekstern)
Number of pages: 1
Publication date: 2017
Main Research Area: Technical/natural sciences

Analysis of Gas Leakage and Current Loss of Solid Oxide Fuel Cells by Screen Printing
Two types of anode supported solid oxide fuel cell (SOFC) NiO-YSZ/YSZ/GDC/LSCF with the same structure and different manufacturing process were tested. Gas leakage was suspected for cells manufactured with screen printing technique. Effective leak current densities for both types of cells were calculated. Their performances of electrochemical impedance spectroscopy (EIS) were compared and distribution function of relaxation times (DRT) technique was also used to find the clue of gas leakage. Finally, thinning and penetrating holes were observed in electrolyte layer, which confirmed the occurrence of gas leakage.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Mixed Conductors, Tsinghua University
Authors: Jia, C. (Ekstern), Han, M. (Ekstern), Chen, M. (Intern)
Pages: 1533-1540
Analysis of Gas Leakage and Current Loss of Solid Oxide Fuel Cells by Screen Printing

One of the biggest advantages of SOFC (solid oxide fuel cell) is the probable use of methane as fuel. However, when the actual SOFC stack is operating with CH$_4$ as fuel, due to the catalytic action of metal nickel, carbon will deposit on SOFC anode and nickel foam, which directly shorten the SOFC operating life and lead to performance degradation. The planar anode-supported Ni-YSZ|YSZ|LSCF SOFC was chosen as the research object, with the cell size of 12cm×12cm and the effective area of 100cm$^2$, and the holder is made of 99% purity of Al$_2$O$_3$ ceramic material, in order to eliminate the influence of Cr in stainless steel. The one-cell stack operated at 750°C, and the maximum power density was 0.35W/cm$^2$ when the fuel is 0.5slm/min pure hydrogen. The stability experiment was conducted first under pure H$_2$ for 100h, then fuel was switched into pure methane, and another 100h of voltage stability was tested. In this work, the temperature distribution of the stack was monitored, whose relationship with the weight gain and the micro-structure of the nickel foam was established, and a possible explanation of the carbon deposition distribution and process on the nickel foam was put forward.
Analysis of surface insulation resistance related failures in electronics by circuit simulation

Purpose-The purpose of this study is to show that the humidity levels for surface insulation resistance (SIR)-related failures are dependent on the type of activators used in no-clean flux systems and to demonstrate the possibility of simulating the effects of humidity and contamination on printed circuit board components and sensitive parts if typical SIR data connected to a particular climatic condition are available. This is shown on representative components and typical circuits. Design/methodology/approach-A range of SIR values obtained on SIR patterns with 1,476 squares was used as input data for the circuit analysis. The SIR data were compared to the surface resistance values observable on a real device printed circuit board assembly. SIR issues at the component and circuit levels were analysed on the basis of parasitic circuit effects owing to the formation of a water layer as an electrical conduction medium. Findings-This paper provides a summary of the effects of contamination with various weak organic acids representing the active components in no-clean solder flux residue, and demonstrates the effect of humidity and contamination on the possible malfunctions and errors in electronic circuits. The effect of contamination and humidity is expressed as drift from the nominal resistance values of the resistors, self-discharge of the capacitors and the errors in the circuits due to parasitic leakage currents (reduction of SIR). Practical/implications-The methodology of the analysis of the circuits using a range of empirical leakage resistance values combined with the knowledge of the humidity and contamination profile of the electronics can be used for the robust design of a device, which is also important for electronic products relying on low current consumption for long battery lifetime. Originality/value-Examples provide a basic link between the combined effect of humidity and contamination and the performance of electronic circuits. The methodology shown provides the possibility of addressing the climatic reliability of an electronic device at the early stage of device design by using typical SIR data representing the possible climate exposure.
Analysis of the equivalent indenter concept used to extract Young's modulus from a nano-indentation test: some new insights into the Oliver–Pharr method

In this paper a thorough analysis of the equivalent indenter concept applied to nano-indentation is carried out, motivated by the fact that previous works in the field have not considered the requirement of a consistent relation between contact depth and projected contact area. Dimensional analysis is initially used to prove that the shape of the axisymmetric equivalent indenter can be regarded as a material property, provided that size-effects are negligible. Subsequently, it is shown that such shape can effectively be employed to describe the nano-indentation unloading stage by means of Sneddon's elastic solution which is formally valid only for indentation into a flat surface. This allows for formulating the problem of extracting Young's modulus from the unloading curve as an optimization problem. However, it is proved that the latter does not have a unique solution, due to the particular mathematical structure of the underlying equations; hence, additional constraints are needed to set restrictions on the admissible equivalent indenter shapes. An example of such constraint is hidden in some apparent inconsistencies of the well-known Oliver–Pharr method, which is demonstrated to be based on an equivalent conical indenter whose semi-apical angle depends on the ratio between residual and total penetration. Specifically, this angle tends to 90° when the material exhibits extensive inelastic deformation, whereas it reduces to the one characteristic of the real indenter for a perfectly elastic material. This provides a new physical explanation for the relatively good accuracy of the method even in presence of a non-negligible residual contact impression on the sample.
Analysis of the production of salmon fillet - Prediction of production yield

The aim was to investigate the influence of raw material variation in Atlantic salmon from aquaculture on filleting yield, and to develop a decision tool for choosing the appropriate raw material for optimized yield. This was achieved by tracking salmon on an individual level (n = 60) through a primary production site. The majority of the salmon exhibited a heavier right fillet compared to the left fillet after filleting. No explicit explanation was found for this observation although the heading procedure was shown to have a large impact. A Partial Least Square model was built to predict the yield after filleting. The model was based on six pre-processing variables and allowed an acceptable prediction of the filleting yield with a root mean square error cross validation of 0.68. The presented model can estimate the slaughter yield for a certain batch before ordering from the slaughterhouse. This may facilitate optimal planning of the production of salmon fillets by ordering and assigning the right batch to the right product category to obtain an optimal yield and quality.

General information

State: Published
Organisations: National Food Institute, Research Group for Food Production Engineering, University of Iceland, Fast-Q
Authors: Johansson, G. Ø. (Intern), Guðjónsdóttir, M. (Ekstern), Nielsen, M. E. (Ekstern), Skytte, J. L. (Intern), Frosch, S. (Intern)
Number of pages: 8
Pages: 80-87
Publication date: 2017
Analysis of trait-based models in marine ecosystems.
The overarching theme for this thesis is spatial and temporal variations in ecosystems. The focus is on describing mechanisms that are responsible for generating the spatial and temporal patterns. The thesis contains two separate projects, each exploring a possible mechanism for pattern formation. In both projects, the model formulations result in partial integro-differential equations. The first project in the thesis considers temporal patterns in a size structured population. Size structure is relevant for species that go through significant changes through their lifetime. The population’s response to regular temporal variations in the environment is investigated by introducing a periodic forcing in the system. This can for instance represent seasonal changes. The effect of an imposed forcing is explored both when the underlying unforced system has a stable equilibrium and when it has stable oscillatory dynamics. The numerical solutions show regular cycles where the period is equal to, or an integer multiple of, the forcing period and where the population can have one or more pulses of reproduction in each cycle. Additionally, the numerical results indicate quasi-periodic or chaotic solutions, period doubling bifurcations and coexisting attractors. The bifurcation structure is similar to results for comparable unstructured population models in the literature. This indicates that size structure does not affect the response to periodic forcing. The next project in the thesis considers spatio-temporal pattern formation in a predator–prey system where animals move towards higher fitness. Reaction-diffusion systems have been used extensively to describe spatio-temporal patterns in a variety of systems. However, animals rarely move completely at random, as expressed by diffusion. This has lead to models with taxis terms, describing individuals moving in the direction of an attractant. An example is chemotaxis models, where bacteria are attracted to a chemical substance. From an evolutionary perspective, it is expected that animals act as to optimize their fitness. Based on this principle, a predator–prey system with fitness taxis and diffusion is proposed. Here, fitness taxis refer to animals moving towards higher values of fitness, and the specific growth rates of the populations are used as a measure of the fitness values. To determine the conditions for pattern formation, a linear stability analysis is conducted. The analysis reveals that the fitness taxis leads to mechanisms for pattern formation, which are based on the prey gathering together. It turns out, that in some cases the problem is not well-posed and an ultraviolet catastrophe occurs, i.e., perturbations with infinitely short wavelength grow infinitely fast. To prevent this, the population dynamics are revised with a spatial feeding kernel, that defines a spatial range wherein a predator consumes prey. A linear stability analysis for the revised system reveals the ultraviolet catastrophe is avoided and the basic mechanisms for pattern formation are unchanged. Numerical solutions to the revised system are computed to visualize the patterns. The solutions encompass stationary spatial patterns in addition to traveling waves, standing waves and irregular solutions that might be spatio-temporal chaos. The modeling approach of fitness taxis presents a general way to express movement and it is concluded that the model provides a useful framework for describing generic mechanisms for pattern formation.

General information
State: Published
Organisations: Dynamical Systems, Department of Applied Mathematics and Computer Science , National Institute of Aquatic Resources, Centre for Ocean Life, University of Rostock
Authors: Heilmann, I. L. T. (Intern), Sørensen, M. P. (Intern), Starke, J. (Ekstern), Thygesen, U. H. (Intern), Andersen, K. H. (Intern)
Number of pages: 95
Publication date: 2017

Publication information
Publisher: DTU Compute
Original language: English
Series: DTU Compute PHD-2017
Volume: 453
ISSN: 0909-3192
Main Research Area: Technical/natural sciences
Electronic versions: phd453_Heilmann_ILT.pdf

Relations
Projects:
Analysis of trait-based models in marine ecosystems.
Publication: Research › Ph.D. thesis – Annual report year: 2017

Analytical and numerical investigation of bolted steel ring flange connection for offshore wind monopile foundations
The monopile foundation is the dominant solution for support of wind turbines in offshore wind farms. It is normally grouted to the transition piece which connects the foundation to the turbine. Currently, the bolted steel ring flange connection is investigated as an alternative. The monopile–transition piece connection has specific problems, such as out-of-verticality and installation damage from driving the MP into the seabed and it is not fully known how to design for these. This paper presents the status of the ongoing development work and an estimate of what still needs to be covered in order to use the connection in practice. This involves presentation of an analytical and non-linear FE analysis procedure for the monopile-transition piece connection composed of two L flanges connected with preloaded bolts. The connection is verified for ultimate and fatigue limit states based on an integrated load simulation carried out by the turbine manufacturer.
Analytical Comparison of Dual-Input Isolated dc-dc Converter with an ac or dc Inductor for Renewable Energy Systems

This paper presents two configurations of dualinput (DI) or three-port (TPC) isolated dc-dc converters for hybrid renewable energy systems such as photovoltaics and batteries. These two converters are derived by integrating an interleaved boost converter and a single-active bridge converter with an ac inductor as a power interfacing element or phase-shift softswitching converter with an output dc inductor. Both converters are controlled by a pulse-width modulation and phase-shift hybrid modulation scheme. The two converter topologies are, even though quite similar from the topological and control perspective, distinct in operation principles, voltage/power transfer functions, loss distributions, soft-switching constraints, and power efficiency under the same operating conditions. Moreover, the inductor design differs greatly between these two cases. In this paper, a comprehensive comparison is given for the first time and thereby the corresponding design tradeoffs are discussed. Finally, a laboratory 1 kW prototype is constructed and tested to verify the theoretical analysis.
Analytical Profiling of Airplane Wastewater - a New Matrix for Mapping Worldwide Patterns of Drug Use and Abuse

There is limited knowledge on the global prescription and consumption patterns of therapeutic (TD) and illicit drugs (ID). Pooled urine analysis and wastewater-based epidemiology (WBE) has been used for local-based drug screening. It is, however, difficult to study the global epidemiology due to difficulties in obtaining samples. The aims of the study were to test the detectability of TD and ID in airplane wastewater samples categorized according to their geographical origin. Wastewater samples (n=17) were collected from long-distance flights and prepared with enzymatic conjugate cleaving followed by either precipitation or solid phase extraction. Aliquots were analysed on various liquid chromatography – mass spectrometers. TDs were grouped according to their Anatomical Therapeutic Chemical (ATC) codes. Identification confidence was assigned to three levels based on variables including detection on multiple instruments and number of targets per compound. A total of 424 compounds were identified across all samples, distributed on 87 unique TD and 2 ID. Two principal components in a principal component analysis separated three clusters of wastewater samples corresponding to geographical origin of the airplanes with therapeutic subgroup ATC codes as variables. Airplane wastewater analysis is useful for identifying targets for WBE and toxicological analysis and explore drug use and abuse patterns.

Analytical solutions for waves in spherically- and cylindrically-symmetric inhomogeneous media

We present the operator approach of finding material parameters of inhomogeneous bianisotropic media, the Maxwell equations in which have closed-form solutions. It is applicable to spherically- and cylindrically-symmetric media. Scattering theory for the inhomogeneous objects in question is developed.
Analytic approximations for the elastic moduli of two-phase materials

Based on the models of series and parallel connections of the two phases in a composite, analytic approximations are derived for the elastic constants (Young's modulus, shear modulus, and Poisson's ratio) of elastically isotropic two-phase composites containing second phases of various volume fractions, shapes, and regular distributions. Comparison with a plentitude of finite element simulations and numerous previous experimental investigations shows a large consistency between the results and the analytic expressions derived, confirming the adequacy of the present approach. Compared with previous classical models, the present model has several advantages, including its simplicity, accuracy of prediction, and universal applicability.

General information
State: Published
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, Chinese Academy of Sciences
Number of pages: 7
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Physical Review B
Volume: 95
Issue number: 13
Article number: 134107
ISSN (Print): 2469-9950
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.16
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.933 SNIP 0.94 CiteScore 2.8
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.667 SNIP 1.262 CiteScore 3.3
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.785 SNIP 1.339 CiteScore 3.55
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.206 SNIP 1.394 CiteScore 3.57
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.382 SNIP 1.438 CiteScore 3.61
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.417 SNIP 1.451
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.109 SNIP 1.474
Web of Science (2009): Indexed yes
Analyzing Activities of Lytic Polysaccharide Monooxygenases by Liquid Chromatography and Mass Spectrometry

Lytic polysaccharide monooxygenases perform oxidative cleavage of glycosidic bonds in various polysaccharides. The majority of LMPOs studied so far possess activity on either cellulose or chitin and analysis of these activities is therefore the main focus of this review. Notably, however, the number of LPMOs that are active on other polysaccharides is increasing. The products generated by LPMOs from cellulose are either oxidized in the downstream end (at C1) or upstream end (at C4), or at both ends. These modifications only result in small structural changes, which makes both chromatographic separation and product identification by mass spectrometry challenging. The changes in physicochemical properties that are associated with oxidation need to be considered when choosing analytical approaches. C1 oxidation leads to a sugar that is no longer reducing but instead has an acidic functionality, whereas C4 oxidation leads to products that are inherently labile at high and low pH and that exist in a keto-gemdiol equilibrium that is strongly shifted toward the gemdiolin aqueous solutions. Partial degradation of C4-oxidized products leads to the formation of native products, which could explain why some authors claim to have observed glycoside hydrolase activity for LPMOs. Notably, apparent glycoside hydrolase activity may also be due to small amounts of contaminating glycoside hydrolases since these normally have much higher catalytic rates than LPMOs. The low catalytic turnover rates of LPMOs necessitate the use of sensitive product detection methods, which limits the analytical possibilities considerably. Modern liquid chromatography and mass spectrometry have become essential tools for evaluating LPMO activity, and this chapter provides an overview of available methods together with a few novel tools. The methods described constitute a suite of techniques for analyzing oxidized carbohydrate products, which can be applied to LPMOs as well as other carbohydrate-active redox enzymes.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, Norwegian University of Life Sciences
Authors: Westereng, B. (Ekstern), Arntzen, M. Ø. (Ekstern), Wittrup Agger, J. (Intern), Vaaje-Kolstad, G. (Ekstern), Eijsink, V. G. H. (Ekstern)
Pages: 71-92
Publication date: 2017

Host publication information
Title of host publication: Protein-Carbohydrate Interactions: Methods and Protocols
Volume: 1588
Publisher: Springer
An Analysis of Natural T Cell Responses to Predicted Tumor Neoepitopes

Personalization of cancer immunotherapies such as therapeutic vaccines and adoptive T-cell therapy may benefit from efficient identification and targeting of patient-specific neoepitopes. However, current neoepitope prediction methods based on sequencing and predictions of epitope processing and presentation result in a low rate of validation, suggesting that the determinants of peptide immunogenicity are not well understood. We gathered published data on human neoepitopes originating from single amino acid substitutions for which T cell reactivity had been experimentally tested, including both immunogenic and non-immunogenic neoepitopes. Out of 1,948 neopeptide-HLA (human leukocyte antigen) combinations from 13 publications, 53 were reported to elicit a T cell response. From these data, we found an enrichment for responses among peptides of length 9. Even though the peptides had been pre-selected based on presumed likelihood of being immunogenic, we found using NetMHCpan-4.0 that immunogenic neopeptides were predicted to bind significantly more strongly to HLA compared to non-immunogenic peptides. Investigation of the HLA binding strength of the immunogenic peptides revealed that the vast majority (96%) shared very strong predicted binding to HLA and that the binding strength was comparable to that observed for pathogen-derived epitopes. Finally, we found that neopeptide dissimilarity to self is a predictor of immunogenicity in situations where neo- and normal peptides share comparable predicted binding strength. In conclusion, these results suggest new strategies for prioritization of mutated peptides, but new data will be needed to confirm their value.

General information
State: Published
Organisations: Department of Bio and Health Informatics, Cancer Genomics, Immunoinformatics and Machine Learning, T-cells & Cancer, National Veterinary Institute, Universidad Nacional de San Martin
Authors: Bjerregaard, A. (Intern), Nielsen, M. (Intern), Jurtz, V. I. (Intern), Barra, C. M. (Ekstern), Hadrup, S. R. (Intern), Szallasi, Z. I. (Intern), Eklund, A. C. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Frontiers in Immunology
Volume: 8
Article number: 1566
ISSN (Print): 1664-3224
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 5.37 SJR 2.963 SNIP 1.483
Web of Science (2016): Indexed yes
Scopus rating (2015): SJR 2.818 SNIP 1.29 CiteScore 5.09
Web of Science (2015): Indexed yes
Scopus rating (2014): SJR 2.382 SNIP 1.056 CiteScore 4.24
Web of Science (2014): Indexed yes
Scopus rating (2013): SJR 1.842 SNIP 0.837 CiteScore 3.55
ISI indexed (2013): ISI indexed no
Scopus rating (2012): SJR 0.785 SNIP 0.193 CiteScore 1.38
ISI indexed (2012): ISI indexed no
Scopus rating (2011): SJR 0.121
Web of Science (2011): Indexed yes
Original language: English
Neoepitopes, Neoantigens, Prediction, Immunogenicity, Mutations, MHC binding
Electronic versions:
An analytical model of flagellate hydrodynamics

Flagellates are unicellular microswimmers that propel themselves using one or several beating flagella. We consider a hydrodynamic model of flagellates and explore the effect of flagellar arrangement and beat pattern on swimming kinematics and near-cell flow. The model is based on the analytical solution by Oseen for the low Reynolds number flow due to a point force outside a no-slip sphere. The no-slip sphere represents the cell and the point force a single flagellum. By superposition we are able to model a freely swimming flagellate with several flagella. For biflagellates with left–right symmetric flagellar arrangements we determine the swimming velocity, and we show that transversal forces due to the periodic movements of the flagella can promote swimming. For a model flagellate with both a longitudinal and a transversal flagellum we determine radius and pitch of the helical swimming trajectory. We find that the longitudinal flagellum is responsible for the average translational motion whereas the transversal flagellum governs the rotational motion. Finally, we show that the transversal flagellum can lead to strong feeding currents to localized capture sites on the cell surface.

General information
State: Published
Organisations: Department of Physics, Biophysics and Fluids
Authors: Dölger, J. (Intern), Bohr, T. (Intern), Andersen, A. P. (Intern)
Number of pages: 9
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Physica Scripta
Volume: 92
Issue number: 4
Article number: 044003
ISSN (Print): 0031-8949
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.84
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.64
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.62
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.61
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.67
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0.85
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Indexed yes
An Approach for Hospital Planning with Multi-Agent Organizations

The background for this paper is a development that the Danish hospitals are undertaking which requires the establishment of a common emergency department. It is uncertain exactly what and how many resources the department needs and so resources are assigned dynamically as seen necessary by the staff. Such dynamic adjustments pose a challenge in predicting what consequences these adjustments may lead to. We propose an approach to deal with this challenge that applies simulation with intelligent agents and logics for organizational reasoning. We present some of the expected obstacles with this approach and potential ways to overcome them.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic
Authors: Larsen, J. B. (Intern), Villadsen, J. (Intern)
Pages: 454-465
Publication date: 2017

Host publication information
Title of host publication: Rough Sets
Volume: 10314
Publisher: Springer
ISBN (Print): 978-3-319-60839-6
Series: Lecture Notes in Computer Science
Volume: 10314
ISSN: 0302-9743
Main Research Area: Technical/natural sciences
Conference: International Joint Conference on Rough Sets, Olsztyn, Poland, 03/07/2017 - 03/07/2017
Computer Science, Artificial Intelligence (incl. Robotics), Database Management, Information Systems Applications (incl. Internet), Information Storage and Retrieval, Multi-agent organizations, Logic, Simulation, Soft computing, Process mining
Electronic versions:
approach_hospital_planning.pdf
DOIs:
10.1007/978-3-319-60840-2_33
Source: FindIt
Source-ID: 2372495948
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017
An approach to the modeling study and analysis of tool electrode wear mechanisms in micro electrical discharge milling

**General information**

State: Submitted  
Organisations: Department of Mechanical Engineering, Manufacturing Engineering  
Authors: Puthumana, G. (Intern)  
Number of pages: 11  
Publication date: 2017  
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Journal of Advanced Mechanical Engineering  
ISSN (Print): 2162-9870  
Original language: English  
Source: PublicationPreSubmission  
Source-ID: 127264150  
Publication: Research - peer-review › Journal article – Annual report year: 2017

An Assessment of Different Genomic Approaches for Inferring Phylogeny of Listeria monocytogenes

**Background/objectives:** Whole genome sequencing (WGS) has proven to be a powerful subtyping tool for foodborne pathogenic bacteria like L. monocytogenes. The interests of genome-scale analysis for national surveillance, outbreak detection or source tracking has been largely documented. The genomic data however can be exploited with many different bioinformatics methods like single nucleotide polymorphism (SNP), core-genome multi locus sequence typing (cgMLST), whole-genome multi locus sequence typing (wgMLST) or multi locus predicted protein sequence typing (MLPPST) on either core-genome (cgMLPPST) or pan genome (wgMLPPST). Currently, there are little comparisons studies of these different analytical approaches. Our objective was to assess and compare different genomic methods that can be implemented in order to cluster isolates of L monocytogenes.

**Methods:** The clustering methods were evaluated on a collection of 207 L. monocytogenes genomes of food origin representative of the genetic diversity of the Anses collection. The trees were then compared using robust statistical analyses.

**Results:** The backward comparability between conventional typing methods and genomic methods revealed a near-perfect concordance. The importance of selecting a proper reference when calling SNPs was highlighted, although distances between strains remained identical. The analysis also revealed that the topology of the phylogenetic trees between wgMLST and cgMLST were remarkably similar. The comparison between SNP and cgMLST or SNP and wgMLST approaches showed that the topologies of phylogenetic trees were statistically similar with an almost equivalent clustering.

**Conclusion:** Our study revealed high concordance between wgMLST, cgMLST, and SNP approaches which are all suitable for typing of L. monocytogenes. The comparable clustering is an important observation considering that the two approaches have been variously implemented among reference laboratories.

**General information**

State: Published  
Organisations: National Food Institute, Research Group for Genomic Epidemiology  
Authors: Henri, C. (Ekstern), Leekitcharoenphon, P. (Intern), Carleton, H. A. (Ekstern), Radomski, N. (Ekstern), Kaas, R. S. (Intern), Mariet, J. (Ekstern), Felten, A. (Ekstern), Aarestrup, F. M. (Intern), Smidt, P. G. (Ekstern), Roussel, S. (Ekstern), Guillier, L. (Ekstern), Mistou, M. (Ekstern), Hendriksen, R. S. (Intern)  
Number of pages: 13  
Publication date: 2017  
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Frontiers in Microbiology  
Volume: 8  
Article number: 2351  
ISSN (Print): 1664-302X  
Ratings:  
BFI (2017): BFI-level 1  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 1
An Assessment of State-of-the-Art Mean Sea Surface and Geoid Models of the Arctic Ocean: Implications for Sea Ice Freeboard Retrieval

State-of-the-art Arctic Ocean mean sea surface (MSS) models and global geoid models (GGMs) are used to support sea ice freeboard estimation from satellite altimeters, as well as in oceanographic studies such as mapping sea level anomalies and mean dynamic ocean topography. However, errors in a given model in the high frequency domain, primarily due to unresolved gravity features, can result in errors in the estimated along-track freeboard. These errors are exacerbated in areas with a sparse lead distribution in consolidated ice pack conditions. Additionally model errors can impact ocean geostrophic currents, derived from satellite altimeter data, while remaining biases in these models may impact longer-term, multi-sensor oceanographic time-series of sea level change in the Arctic. This study focuses on an assessment of five state-of-the-art Arctic MSS models (UCL13/04, DTU15/13/10) and a commonly used GGM (EGM2008). We describe errors due to unresolved gravity features, inter-satellite biases, and remaining satellite orbit errors, and their impact on the derivation of sea ice freeboard. The latest MSS models, incorporating CryoSat-2 sea surface height measurements, show improved definition of gravity features, such as the Gakkel Ridge. The standard deviation between models ranges 0.03-0.25 m. The impact of remaining MSS/GGM errors on freeboard retrieval can reach several decimeters in parts of the Arctic. While the maximum observed freeboard difference found in the central Arctic was 0.59 m (UCL13 MSS minus EGM2008 GGM), the standard deviation in freeboard differences is 0.03-0.06 m.

General information
State: Accepted/In press
Organisations: National Space Institute, Geodynamics, Geodesy, Alfred Wegener Institute, University of Maryland, University College London, York University
Number of pages: 32
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Geophysical Research: Oceans
ISSN (Print): 0148-0227
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
An assessment of the importance of exposure routes to the uptake and internal localisation of fluorescent nanoparticles in zebrafish (Danio rerio), using light sheet microscopy

A major challenge in nanoecotoxicology is finding suitable methods to determine the uptake and localisation of nanoparticles on a whole-organism level. Some uptake methods have been associated with artefacts induced by sample preparation, including staining for electron microscopy. This study used light sheet microscopy (LSM) to define the uptake and localisation of fluorescently labelled nanoparticles in living organisms with minimal sample preparation. Zebrafish (Danio rerio) were exposed to fluorescent gold nanoparticles (Au NPs) and fluorescent polystyrene NPs via aqueous or dietary exposure. The in vivo uptake and localisation of NPs was investigated using LSM at different time points (1, 3 and 7 days). A time-dependent increase in fluorescence was observed in the gut after dietary exposure to both Au NPs and polystyrene NPs. No fluorescence was observed within gut epithelia regardless of the NP exposure route indicating no or limited uptake via intestinal villi. Fish exposed to polystyrene NPs through the aqueous phase emitted fluorescence signals from the gills and intestine. Fluorescence was also detected in the head region of the fish after aqueous exposure to polystyrene NPs. This was not observed for Au NPs. Aqueous exposure to Au NPs resulted in increased relative swimming distance, while no effect was observed for other exposures. This study supports that the route of exposure is essential for the uptake and subsequent localisation of nanoparticles in zebrafish. Furthermore, it demonstrates that the localisation of NPs in whole living organisms can be visualised in real-time, using LSM.

General information
State: Published
Organisations: Department of Environmental Engineering, Environmental Chemistry, Department of Micro- and Nanotechnology, Colloids and Biological Interfaces, University of Gothenburg, Roskilde Universitet
Authors: Skjolding, L. M. (Intern), Ašmonaitė, G. (Ekstern), Jølck, R. I. (Intern), Andresen, T. L. (Intern), Selck, H. (Ekstern), Baun, A. (Intern), Sturve, J. (Ekstern)
Pages: 351-359
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Nanotoxicology
Volume: 11
Issue number: 3
ISSN (Print): 1743-5390
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.8
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 7.14
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 5.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 6.39
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 6.49
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 4.77
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
Web of Science (2007): Indexed yes
A Natural Logic for Natural-language Knowledge Bases
We describe a natural logic for computational reasoning with a regimented fragment of natural language. The natural logic comes with intuitive inference rules enabling deductions and with an internal graph representation facilitating conceptual path finding between pairs of terms as an approach to semantic querying. Our core natural logic proposal covers formal ontologies and generative extensions thereof. It further provides means of expressing general relationships between classes in an application. We discuss extensions of the core natural logic with various conservative as well as non-conservative constructs in order to approach scientific use of natural language. Finally, we outline a prototype system addressing life science for the natural logic knowledge base setup being under continuous development.

Ancient genomes show social and reproductive behavior of early Upper Paleolithic foragers
Present-day hunter-gatherers (HGs) live in multilevel social groups essential to sustain a population structure characterized by limited levels of within-band relatedness and inbreeding. When these wider social networks evolved among HGs is unknown. Here, we investigate whether the contemporary HG strategy was already present in the Upper Paleolithic (UP), using complete genome sequences from Sunghir, a site dated to ~34 thousand years BP (kya) containing multiple anatomically modern human (AMH) individuals. We demonstrate that individuals at Sunghir derive from a population of small effective size, with limited kinship and levels of inbreeding similar to HG populations. Our findings suggest that UP social organization was similar to that of living HGs, with limited relatedness within residential groups embedded in a larger mating network.
An effect-directed strategy for characterizing emerging chemicals in food contact materials made from paper and board

Food contact materials (FCM) are any type of item intended to come into contact with foods and thus represent a potential source for human exposure to chemicals. Regarding FCMs made of paper and board, information pertaining to their chemical constituents and the potential impacts on human health remains scarce, which hampers safety evaluation. We describe an effect-directed strategy to identify and characterize emerging chemicals in paper and board FCMs. Twenty FCMs were tested in eight reporter gene assays, including assays for the AR, ER, AhR, PPARγ, Nrf2 and p53, as well as mutagenicity. All FCMs exhibited activities in at least one assay. As proof-of-principle, FCM samples obtained from a sandwich wrapper and a pizza box were carried through a complete step-by-step multi-tiered approach. The pizza box exhibited ER activity, likely caused by the presence of bisphenol A, dibutyl phthalate, and benzylbutyl phthalate. The sandwich wrapper exhibited AR antagonism, likely caused by abietic acid and dehydroabietic acid. Migration studies confirmed that the active chemicals can transfer from FCMs to food simulants. In conclusion, we report an effect-directed strategy that can identify hazards posed by FCMs made from paper and board, including the identification of the chemical(s) responsible for the observed activity.

General information
State: Published
Pages: 250-259
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Food and Chemical Toxicology
Volume: 106
Issue number: Part A
ISSN (Print): 0278-6915
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.96 SJR 1.322 SNIP 1.589
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.213 SNIP 1.426 CiteScore 3.44
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.042 SNIP 1.381 CiteScore 3.12
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.013 SNIP 1.52 CiteScore 3.26
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.135 SNIP 1.745 CiteScore 3.52
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.12 SNIP 1.593 CiteScore 3.36
ISI indexed (2011): ISI indexed yes
An effective low Pd-loading catalyst for hydrogen generation from formic acid

As an interesting hydrogen carrier, formic acid is bio-renewable, non-toxic and available in the liquid state at room temperature. The development of active and low-cost catalyst is of significance for hydrogen generation from formic acid. In this study, both a relatively cheap metal (Ag) and a functional support (nitrogen modified reduced graphene oxide, N-rGO) were applied to prepare Pd catalyst. It was found that the Ag atoms facilitated the formation of Pd-rich surface in the preparation strategy, in which the reductive N-rGO and a two-step feeding process of metal precursors played important roles. In addition, Ag additive was found to benefit catalyst stability. Most interestingly, the obtained low Pd-loading Pd1Ag6/N-rGO catalyst showed a specific Pd loading turnover frequency of 171 mol Pd−1 h−1 and a specific metal cost turnover frequency of 64.2 $−1 h−1, which were predominant among currently available Pd-based catalysts towards formic acid decomposition without any additive under room temperature.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Proton conductors, China University of Geosciences
Authors: Huang, Y. (Ekstern), Xu, J. (Ekstern), Ma, X. (Ekstern), Huang, Y. (Ekstern), Li, Q. (Intern), Qiu, H. (Ekstern)
Pages: 18375-18382
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Volume: 42
Issue number: 29
ISSN (Print): 0360-3199
An efficient and rigorous thermodynamic library and optimal-control of a cryogenic air separation unit

Cryogenic air separation (CAS) is the leading technology for large scale production of pure N2, O2 and Ar. This process is very electric-energy intensive; thus it is a likely candidate for load balancing of power stations in a smart grid. This type of intermittent operation of CAS, requires a non-linear model based control to achieve optimal techno-economic performance. Accordingly, this work presents a computationally efficient and novel approach for solving a tray-by-tray equilibrium model and its implementation for open-loop optimal-control of a cryogenic distillation column. Here, the optimisation objective is to reduce the cost of compression in a volatile electricity market while meeting the production requirements, i.e. product flow rate and purity. This model is implemented in Matlab and uses the ThermoLib rigorous thermodynamic library. The present work represents a first step towards plant-wide dynamic modelling and smart control of a cryogenic distillation plant.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Scientific Computing, Center for Energy Resources Engineering
Authors: Gaspar, J. (Intern), Ritschel, T. K. S. (Intern), Jørgensen, J. B. (Intern)
Pages: 1543-1548
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 27th European Symposium on Computer Aided Process Engineering – ESCAPE 27
Volume: 40
Publisher: Elsevier Science

Series: Computer - Aided Chemical Engineering
Volume: 40
ISSN: 1570-7946
Main Research Area: Technical/natural sciences
Conference: 27th European Symposium on Computer Aided Process Engineering – ESCAPE 27, Barcelona, Spain, 01/10/2017 - 01/10/2017
Cryogenic air separation, Load balancing, Distillation column, Dynamic modeling, Optimal-control
DOI: 10.1016/B978-0-444-63965-3.50259-2
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

An Efficient Robust Solution to the Two-Stage Stochastic Unit Commitment Problem

This paper proposes a reformulation of the scenario-based two-stage unit commitment problem under uncertainty that allows finding unit-commitment plans that perform reasonably well both in expectation and for the worst case realization of the uncertainties. The proposed reformulation is based on partitioning the sample space of the uncertain factors by clustering the scenarios that approximate their probability distributions. It is, furthermore, very amenable to decomposition and parallelization using a column-and-constraint generation procedure.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems, Centre for IT-Intelligent Energy Systems in Cities
Authors: Blanco, I. (Intern), Morales González, J. M. (Intern)
Number of pages: 11
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Transactions on Power Systems
Volume: 32
Issue number: 6
ISSN (Print): 0885-8950
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 8.17 SJR 3.757 SNIP 3.624
Web of Science (2016): Indexed yes
An efficient synthesis of linear β-(1→6)-galactan oligosaccharides related to plant cell wall glycans

Galactans are linear structures mainly found in arabinogalactan glycans and RG-I side chains. As a follow-up to our work on both β-(1→3)-linked and β-(1→4)-linked galactans, we herein report a convergent synthesis of β-(1→6)-galactan using...
our previously synthesized 4,6-benzylidene protected disaccharide as a key building block. However, the regioselective reductive opening of the 4,6-benzylidene protected disaccharide turned out to become more challenging as the length of the oligosaccharide increased and a second differential protected disaccharide building block carrying a chloroacetyl group on the 6-position was used to elongate the chain in a more efficient way.

**General information**

State: Published
Organisations: Department of Chemistry, Organic Chemistry
Authors: Andersen, M. C. F. (Intern), Arentoft, C. A. S. (Intern), Boos, I. (Intern), Kinnaert, C. (Intern), Awan, S. I. (Intern), Clausen, M. H. (Intern)
Pages: 27-37
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Trends in Carbohydrate Research
Volume: 9
Issue number: 2
ISSN (Print): 0975-0304
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): SJR 0.15 SNIP 0.057
Scopus rating (2015): SJR 0.124 SNIP 0.067
Scopus rating (2014): SJR 0.157 SNIP 0.164
Scopus rating (2013): SJR 0.139 SNIP 0.136
Scopus rating (2012): SJR 0.145 SNIP 0.203
Scopus rating (2011): SJR 0.121 SNIP 0.081
Scopus rating (2010): SJR 0.189 SNIP 0.13
Original language: English

**Plant cell wall oligosaccharides, Arabinogalactans, RG-I, β-(1→6)-D-galactans**

An electron microscopy study of microstructural evolution during in-situ annealing of heavily deformed nickel

The microstructure of heavily deformed pure nickel processed by accumulative roll bonding to a von Mises strain of 6.4 has been investigated using both transmission electron microscopy and transmission Kikuchi diffraction in a scanning electron microscope. By monitoring the microstructure in one region during in-situ annealing in a transmission electron microscope, it is found that 9% of all triple junctions present in this region have migrated over more than 40 nm. Junctions formed by three high angle boundaries are observed to be more prone to motion during recovery than any other junctions. The extent of triple junction motion in the Ni sample is compared to that in heavily deformed aluminum.

**General information**

State: Published
Organisations: Department of Wind Energy, Materials science and characterization
Authors: Zhang, Y. (Intern), Yu, T. (Intern), Mishin, O. (Intern)
Number of pages: 3
Pages: 102-104
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Materials Letters
Volume: 186
ISSN (Print): 0167-577x
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.51 SJR 0.757 SNIP 0.935
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.792 SNIP 1.021 CiteScore 2.5
Web of Science (2015): Indexed yes
An Empirical Comparison of Algorithms to Find Communities in Directed Graphs and Their Application in Web Data Analytics

Detecting communities in graphs is a fundamental tool to understand the structure of Web-based systems and predict their evolution. Many community detection algorithms are designed to process undirected graphs (i.e., graphs with bidirectional edges) but many graphs on the Web—e.g., microblogging Web sites, trust networks or the Web graph itself—are often directed. Few community detection algorithms deal with directed graphs but we lack their experimental comparison. In this paper we evaluated some community detection algorithms across accuracy and scalability. A first group of algorithms (Label Propagation and Infomap) are explicitly designed to manage directed graphs while a second group (e.g., WalkTrap) simply ignores edge directionality; finally, a third group of algorithms (e.g., Eigenvector) maps input graphs onto undirected ones and extracts communities from the symmetrized version of the input graph. We ran our tests on both artificial and real graphs and, on artificial graphs, WalkTrap achieved the highest accuracy, closely followed by other algorithms; Label Propagation has outstanding performance in scalability on both artificial and real graphs. The Infomap algorithm showcased the best trade-off between accuracy and computational performance and, therefore, it has to be considered as a promising tool for Web Data Analytics purposes.

General information
An Empirical Model for Carbon Recovery in a Rotating Belt Filter and Its Application in the Frame of Plantwide Evaluation

The rotating belt filter (RBF) is an emerging and enabling technology for carbon recovery and also an alternative to the primary clarifier (PC), sludge thickening and dewatering. A recent study indicates that the RBF has the potential to reduce capital cost, footprint and improve energy and nutrient recovery in comparison to a conventional PC. Moreover, it is also believed that the RBF can fractionate carbon (enrichment of cellulose, namely toilet paper) based on particulate size, more efficiently than a PC. It is, therefore, necessary to understand and quantify the uniqueness of the RBF performance to maximize plant-wide benefits when retrofitted in existing wastewater treatment plants (WWTPs). Thus, a rigorous plant-wide study is required to interpret the deeper influence of an RBF on the major downstream units (such as activated sludge tanks, sludge digester, etc.). This study emphasizes the development of a simplified empirical model for describing carbon recovery in an RBF and the impact of the RBF implementation on plant-wide evaluation.

An Error Analysis of Structured Light Scanning of Biological Tissue

This paper presents an error analysis and correction model for four structured light methods applied to three common types of biological tissue; skin, fat and muscle. Despite its many advantages, structured light is based on the assumption of direct reflection at the object surface only. This assumption is violated by most biological material e.g. human skin, which exhibits subsurface scattering. In this study, we find that in general, structured light scans of biological tissue deviate significantly from the ground truth. We show that a large portion of this error can be predicted with a simple, statistical linear model based on the scan geometry. As such, scans can be corrected without introducing any specially designed pattern strategy or hardware. We can effectively reduce the error in a structured light scanner applied to biological tissue by as much as factor of two or three.
An evaluation of interferences in heat production from low enthalpy geothermal doublets systems

Required distance between doublet systems in low enthalpy geothermal heat exploitation is often not fully elucidated. The required distance aims to prevent negative interference influencing the utilisation efficiency of doublet systems. Currently production licence areas are often issued based on the expected extent of the reinjected cold water plume on the moment of thermal breakthrough. The production temperature, however, may not immediately drop to non-economic values after this moment. Consequently, heat production could continue increasing the extent of the cold water plume. Furthermore, the area influenced by pressure because of injection and production spreads beyond the cold water plume extent, influencing not only the productivity of adjacent doublet systems but also the shape of cold water plumes. This affects doublet life time, especially if adjacent doublets have different production rates. In this modelling based study a multi parameter analysis is carried out to derive dimensionless relations between basic doublet design parameters and required doublet distance. These parameters include the spacing between injector and producer of the same doublet, different production rates, aquifer thickness and minimal required production temperature. The results of this study can be used to minimize negative interference or optimise positive interference aiming at improving geothermal doublet deployment efficiency. (C) 2017 The Authors. Published by Elsevier Ltd.
A New Compton-thick AGN in Our Cosmic Backyard: Unveiling the Buried Nucleus in NGC 1448 with NuSTAR

NGC 1448 is one of the nearest luminous galaxies (L_{8-1000\mu m} \approx 10^{11} L_{\odot}) to ours (z = 0.00390), and yet the active galactic nucleus (AGN) it hosts was only recently discovered, in 2009. In this paper, we present an analysis of the nuclear source across three wavebands: mid-infrared (MIR) continuum, optical, and X-rays. We observed the source with the Nuclear Spectroscopic Telescope Array (NuSTAR), and combined these data with archival Chandra data to perform broadband X-ray spectral fitting (≈0.5-40 keV) of the AGN for the first time. Our X-ray spectral analysis reveals that the AGN is buried under a Compton-thick (CT) column of obscuring gas along our line of sight, with a column density of \( N_H (\text{los}) \geq 2.5 \times 10^{24} \text{ cm}^{-2} \). The best-fitting torus models measured an intrinsic 2-10 keV luminosity of \( L_{2-10\text{ keV}} \approx 3.5-7.6 \times 10^{39} \text{ erg s}^{-1} \), making NGC 1448 one of the lowest luminosity CTAGNs known. In addition to the NuSTAR observation, we also
performed optical spectroscopy for the nucleus in this edge-on galaxy using the European Southern Observatory New Technology Telescope. We re-classify the optical nuclear spectrum as a Seyfert on the basis of the Baldwin-Philips-Terlevich diagnostic diagrams, thus identifying the AGN at optical wavelengths for the first time. We also present high spatial resolution MIR observations of NGC 1448 with Gemini/T-ReCS, in which a compact nucleus is clearly detected. The absorption-corrected 2-10 keV luminosity measured from our X-ray spectral analysis agrees with that predicted from the optical [O iii]λ5007 Å emission line and the MIR 12 μm continuum, further supporting the CT nature of the AGN.
A New Functional Classification of Glucuronoyl Esterases by Peptide Pattern Recognition

Glucuronoyl esterases are a novel type of enzymes believed to catalyze the hydrolysis of ester linkages between lignin and glucuronoxylan in lignocellulosic biomass, linkages known as lignin carbohydrate complexes. These complexes contribute to the recalcitrance of lignocellulose. Glucuronoyl esterases are a part of the microbial machinery for lignocellulose degradation and coupling their role to the occurrence of lignin carbohydrate complexes in biomass is a desired research goal. Glucuronoyl esterases have been assigned to CAZymes family 15 of carbohydrate esterases, but only few examples of characterized enzymes exist and the exact activity is still uncertain. Here peptide pattern recognition is used as a bioinformatic tool to identify and group new CE15 proteins that are likely to have glucuronoyl esterase activity. 1024 CE15-like sequences were drawn from GenBank and grouped into 24 groups. Phylogenetic analysis of these groups made it possible to pinpoint groups of putative fungal and bacterial glucuronoyl esterases and their sequence variation. Moreover, a number of groups included previously undescribed CE15-like sequences that are distinct from the glucuronoyl esterases and may possibly have different esterase activity. Hence, the CE15 family is likely to comprise other enzyme functions than glucuronoyl esterase alone. Gene annotation in a variety of fungal and bacterial microorganisms showed that coprophilic fungi are rich and diverse sources of CE15 proteins. Combined with the lifestyle and habitat of coprophilic fungi, they are predicted to be excellent candidates for finding new glucuronoyl esterase genes.
A new k-epsilon model consistent with Monin-Obukhov similarity theory

A new k-* model is introduced that is consistent with Monin–Obukhov similarity theory (MOST). The proposed k-* model is compared with another k-* model that was developed in an attempt to maintain inlet profiles compatible with MOST. It is shown that the previous k-* model is not consistent with MOST for unstable conditions, while the proposed k-* model can maintain MOST inlet profiles over distances of 50 km.

General information

State: Published
Organisations: Department of Wind Energy, Aerodynamic design, Resource Assessment Modelling
Authors: van der Laan, P. (Intern), Kelly, M. C. (Intern), Sørensen, N. N. (Intern)
Number of pages: 11
Pages: 479–489
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Wind Energy
Volume: 20
Issue number: 3
ISSN (Print): 1095-4244
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.37 SJR 1.104 SNIP 2.306
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.196 SNIP 2.086 CiteScore 3.06
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.272 SNIP 3.75 CiteScore 3.42
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.275 SNIP 2.464 CiteScore 2.75
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
A new method to measure mechanics and dynamic assembly of branched actin networks

We measured mechanical properties and dynamic assembly of actin networks with a new method based on magnetic microscopic cylinders. Dense actin networks are grown from the cylinders’ surfaces using the biochemical Arp2/3-machinery at play in the lamellipodium extension and other force-generating processes in the cell. Under a homogenous magnetic field the magnetic cylinders self-assemble into chains in which forces are attractive and depend on the intensity of the magnetic field. We show that these forces, from piconewtons to nanonewtons, are large enough to slow down the assembly of dense actin networks and controlled enough to access to their nonlinear mechanical responses. Deformations are measured with nanometer-resolution, well below the optical resolution. Self-assembly of the magnetic particles into chains simplifies experiments and allows for parallel measurements. The combination of accuracy and good throughput of measurements results in a method with high potential for cell and cytoskeleton mechanics. Using this method, we observed in particular a strong nonlinear mechanical behavior of dense branched actin networks at low forces that has not been reported previously.

General information
A new phase in the production of quality-controlled sea level data

Sea level is an essential climate variable (ECV) that has a direct effect on many people through inundations of coastal areas, and it is also a clear indicator of climate changes due to external forcing factors and internal climate variability. Regional patterns of sea level change inform us on ocean circulation variations in response to natural climate modes such as El Niño and the Pacific Decadal Oscillation, and anthropogenic forcing. Comparing numerical climate models to a consistent set of observations enables us to assess the performance of these models and help us to understand and predict these phenomena, and thereby alleviate some of the environmental conditions associated with them. All such studies rely on the existence of long-term consistent high-accuracy datasets of sea level. The Climate Change Initiative (CCI) of the European Space Agency was established in 2010 to provide improved time series of some ECVs, including sea level, with the purpose of providing such data openly to all to enable the widest possible utilisation of such data. Now in its second phase, the Sea Level CCI project (SL-cci) merges data from nine different altimeter missions in a clear, consistent and well-documented manner, selecting the most appropriate satellite orbits and geophysical corrections in order to further reduce the error budget. This paper summarises the corrections required, the provenance of corrections and the evaluation of options that have been adopted for the recently released v2.0 dataset (https://doi.org/10.5270/esa-sea-level-cci-1993-2015-v-2.0-201612). This information enables scientists and other users to clearly understand which corrections have been applied and their effects on the sea level dataset. The overall result of these changes is that the rate of rise of global mean sea level (GMSL) still equates to ∼3.2mm/yr⁻¹ during 1992-2015, but there is now greater...
confidence in this result as the errors associated with several of the corrections have been reduced. Compared with v1.1 of the SL-cci dataset, the new rate of Sea level is an essential climate variable (ECV) that has a direct effect on many people through inundations of coastal areas, and it is also a clear indicator of climate changes due to external forcing factors and internal climate variability. Regional patterns of sea level change inform us on ocean circulation variations in response to natural climate modes such as El Niño and the Pacific Decadal Oscillation, and anthropogenic forcing. Comparing numerical climate models to a consistent set of observations enables us to assess the performance of these models and help us to understand and predict these phenomena, and thereby alleviate some of the environmental conditions associated with them. All such studies rely on the existence of long-term consistent high-accuracy datasets of sea level. The Climate Change Initiative (CCI) of the European Space Agency was established in 2010 to provide improved time series of some ECVs, including sea level, with the purpose of providing such data openly to all to enable the widest possible utilisation of such data. Now in its second phase, the Sea Level CCI project (SL-cci) merges data from nine different altimeter missions in a clear, consistent and well-documented manner, selecting the most appropriate satellite orbits and geophysical corrections in order to further reduce the error budget. This paper summarises the corrections required, the provenance of corrections and the evaluation of options that have been adopted for the recently released v2.0 dataset (https://doi.org/10.5270/esa-sea-level-cci-1993-2015-v-2.0-201612). This information enables scientists and other users to clearly understand which corrections have been applied and their effects on the sea level dataset. The overall result of these changes is that the rate of rise of global mean sea level (GMSL) still equates to \(~3.2\text{mm yr}^{-1}\) during 1992-2015, but there is now greater confidence in this result as the errors associated with several of the corrections have been reduced. Compared with v1.1 of the SL-cci dataset, the new rate of Sea level is an essential climate variable (ECV) that has a direct effect on many people through inundations of coastal areas, and it is also a clear indicator of climate changes due to external forcing factors and internal climate variability. Regional patterns of sea level change inform us on ocean circulation variations in response to natural climate modes such as El Niño and the Pacific Decadal Oscillation, and anthropogenic forcing. Comparing numerical climate models to a consistent set of observations enables us to assess the performance of these models and help us to understand and predict these phenomena, and thereby alleviate some of the environmental conditions associated with them. All such studies rely on the existence of long-term consistent high-accuracy datasets of sea level. The Climate Change Initiative (CCI) of the European Space Agency was established in 2010 to provide improved time series of some ECVs, including sea level, with the purpose of providing such data openly to all to enable the widest possible utilisation of such data. Now in its second phase, the Sea Level CCI project (SL-cci) merges data from nine different altimeter missions in a clear, consistent and well-documented manner, selecting the most appropriate satellite orbits and geophysical corrections in order to further reduce the error budget. This paper summarises the corrections required, the provenance of corrections and the evaluation of options that have been adopted for the recently released v2.0 dataset (https://doi.org/10.5270/esa-sea-level-cci-1993-2015-v-2.0-201612). This information enables scientists and other users to clearly understand which corrections have been applied and their effects on the sea level dataset. The overall result of these changes is that the rate of rise of global mean sea level (GMSL) still equates to \(~3.2\text{mm yr}^{-1}\) during 1992-2015, but there is now greater confidence in this result as the errors associated with several of the corrections have been reduced. Compared with v1.1 of the SL-cci dataset, the new rate of change is \(0.2\text{mm yr}^{-1}\) less during 1993 to 2001 and \(0.2\text{mm yr}^{-1}\) higher during 2002 to 2014. Application of new correction models brought a reduction of altimeter crossover variances for most corrections.

**General information**

**State:** Published

**Organisations:** National Space Institute, Geodesy, Plymouth Marine Laboratory, Universidade do Porto, Technische Universität Munchen, National Oceanography Centre, ISSI, European Space Agency - ESA, Collecte Localisation Satellites, IsardSAT, CGI

**Authors:** Quartly, G. D. (Ekstern), Legeais, J. F. (Ekstern), Ablain, M. (Ekstern), Zawadzki, L. (Ekstern), Joana Fernandes, M. (Ekstern), Rudenko, S. (Ekstern), Carrère, L. (Ekstern), Nilo García, P. (Ekstern), Cipollini, P. (Ekstern), Andersen, O. B. (Intern), Poisson, J. C. (Ekstern), Mbajon Njiche, S. (Ekstern), Cazenave, A. (Ekstern), Benveniste, J. (Ekstern)

**Pages:** 557-572

**Publication date:** 2017

**Main Research Area:** Technical/natural sciences

**Journal:** Earth System Science Data

**Volume:** 9

**Issue number:** 2

**ISSN (Print):** 1866-3508

**Ratings:**

- Web of Science (2017): Indexed yes
- Scopus rating (2016): CiteScore 7.28 SJR 4.647 SNIP 2.504
- Web of Science (2016): Indexed yes
- Scopus rating (2015): SJR 5.282 SNIP 2.822 CiteScore 7.07
- Web of Science (2015): Indexed yes
- Scopus rating (2014): SJR 4.471 SNIP 2.559 CiteScore 6.19
- ISI indexed (2013): ISI indexed no
A new player in the biorefineries field: phasin PhaP enhances tolerance to solvents and boosts ethanol and 1,3-propanediol synthesis in Escherichia coli

The microbial production of biofuels and other added-value chemicals is often limited by the intrinsic toxicity of these compounds. Phasin PhaP from the soil bacterium Azotobacter sp. strain FA8 is a polyhydroxyalkanoate granule-associated protein that protects recombinant Escherichia coli against several kinds of stress. PhaP enhances growth and poly(3-hydroxybutyrate) synthesis in polymer-producing recombinant strains and reduces the formation of inclusion bodies during overproduction of heterologous proteins. In this work, the heterologous expression of this phasin in E. coli was used as a strategy to increase tolerance to several biotechnologically relevant chemicals. PhaP was observed to enhance bacterial fitness in the presence of biofuels, such as ethanol and butanol, and to other chemicals, such as 1,3-propanediol. The effect of PhaP was also studied in a groELS mutant strain, in which both GroELS and PhaP were observed to exert a beneficial effect that varied depending on the chemical tested. Lastly, the potential of PhaP and GroEL to enhance the accumulation of ethanol or 1,3-propanediol was analyzed in recombinant E. coli Strains that overexpressed either groEL or phaP had increased growth, reflected in a higher final biomass and product titer compared to the control strain. Taken together, these results add a novel application to the already multifaceted phasin protein group, suggesting that expression of these proteins or other chaperones can be used to improve biofuels and chemicals production.

Importance. This work has both basic and applied aspects. Our results demonstrate that a phasin with chaperone-like properties can increase bacterial tolerance to several biochemicals, providing further evidence of the diverse properties of these proteins. Additionally, both the PhaP phasin and the well-known chaperone GroEL were used to increase the biosynthesis of the biotechnologically-relevant compounds ethanol and 1,3-propanediol in recombinant E. coli These findings open the road for the use of these proteins for the manipulation of bacterial strains to optimize the synthesis of diverse bioproducts from renewable carbon sources.
A new scenario-based approach to damage detection using operational modal parameter estimates

In this paper a vibration-based damage localization and quantification method, based on natural frequencies and mode shapes, is presented. The proposed technique is inspired by a damage assessment methodology based solely on the
sensitivity of mass-normalized experimental determined mode shapes. The present method differs by being based on modal data extracted by means of Operational Modal Analysis (OMA) combined with a reasonable Finite Element (FE) representation of the test structure and implemented in a scenario-based framework. Besides a review of the basic methodology this paper addresses fundamental theoretical as well as practical considerations which are crucial to the applicability of a given vibration-based damage assessment configuration. Lastly, the technique is demonstrated on an experimental test case using automated OMA. Both the numerical study as well as the experimental test case presented in this paper are restricted to perturbations concerning mass change.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Structural Engineering, Aarhus University, Universidad de Oviedo
Authors: Hansen, J. (Ekstern), Brincker, R. (Intern), López-Aenlle, M. (Ekstern), Overgaard, C. (Ekstern), Kloborg, K. (Ekstern)
Pages: 359-373
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Mechanical Systems and Signal Processing
Volume: 94
ISSN (Print): 0888-3270
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 2.067 SNIP 3.023 CiteScore 4.84
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.792 SNIP 2.993 CiteScore 4.14
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.001 SNIP 3.522 CiteScore 3.76
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.676 SNIP 3.781 CiteScore 3.77
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.686 SNIP 4.081 CiteScore 3.26
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.677 SNIP 3.683 CiteScore 3.17
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.542 SNIP 3.109
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.046 SNIP 3.716
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.306 SNIP 2.733
Scopus rating (2007): SJR 1.384 SNIP 2.752
Scopus rating (2006): SJR 1.068 SNIP 2.02
Scopus rating (2005): SJR 0.991 SNIP 2.01
Scopus rating (2004): SJR 0.956 SNIP 1.432
Scopus rating (2003): SJR 1.062 SNIP 1.63
Scopus rating (2002): SJR 0.722 SNIP 1.187
Scopus rating (2001): SJR 0.91 SNIP 1.893
Scopus rating (2000): SJR 0.665 SNIP 1.363
A new tower with good p-rank meeting Zink’s bound

In this article we investigate the asymptotic p-rank of a new tower of function fields defined over cubic finite fields. Its limit meets Zink’s bound, but the new feature of this tower is that its asymptotic p-rank for small cubic finite fields is much smaller than that of other cubic towers for which the asymptotic p-rank is known. This is of independent interest, but also makes this new tower more interesting for theoretical applications in cryptography.
A New Wavelet-Based ECG Delineator for the Evaluation of the Ventricular Innervation

T-wave amplitude (TWA) has been proposed as a marker of the innervation of the myocardium. Until now, TWA has been calculated manually or with poor algorithms, thus making its use not efficient in a clinical environment. We introduce a new wavelet-based algorithm for the delineation QRS complexes and T-waves, and the automatic calculation of TWA. When validated in the MIT/BIH Arrhythmia database, the QRS detector achieved sensitivity and positive predictive value of 99.84% and 99.87%, respectively. The algorithm was validated also on the QT database and it achieved sensitivity of 99.50% for T-peak detection. In addition, the algorithm achieved delineation accuracy that is similar to the differences in delineation between expert cardiologists. We applied the algorithm for the evaluation of the influence in TWA of anticholinergic and antiadrenergic drugs (i.e., atropine and metoprolol) for healthy subjects. We found that the TWA decreased significantly with atropine and that metoprolol caused a significant increase in TWA, thus confirming the clinical hypothesis that the TWA is a marker of the innervation of the myocardium. The results of this paper show that the proposed algorithm can be used as a useful and efficient tool in clinical practice for the automatic calculation of TWA and its interpretation as a non-invasive marker of the autonomic ventricular innervation.

An experimental analysis of flow boiling and pressure drop in a brazed plate heat exchanger for organic Rankine cycle power systems

Organic Rankine cycle power systems for low quality waste heat recovery applications can play a major role in achieving targets of increasing industrial processes efficiency and thus reducing the emissions of greenhouse gases. Low capacity organic Rankine cycle systems are equipped with brazed plate heat exchangers which allows for efficient heat transfer.
with a compact design. Accurate heat transfer correlations characterizing these devices are required from the design phase to the development of model-based control strategies. In this paper, the experimental heat transfer coefficient and pressure drop during vaporization at typical temperatures for low quality waste heat recovery organic Rankine cycle systems are presented for the working fluids HFC-245fa and HFO-1233zd. The experiments were carried out at saturation temperatures of 100°C, 115°C and 130°C and inlet and outlet qualities ranging between 0.1–0.4 and 0.5–1 respectively. The experimental heat transfer coefficients and frictional pressure drop were compared with well-known correlations and new ones are developed. The results indicated weak sensitivity of the heat transfer coefficients to the saturation temperature and were characterized by similar values for the two fluids. The frictional pressure drop showed a linear dependence with mean quality and increased as the saturation temperature decreased.
An experimental and computational investigation of high-accuracy calibration techniques for gain reference antennas

We present a comparative investigation of the pattern integration technique and the two-antenna technique for calibration of standard gain horns; the investigation involves high-accuracy spherical near-field antenna measurements as well as high-accuracy integral equation / method of moments simulations. The experimental results are thus supported by computational results, and the agreement between these demonstrates the high accuracy of both. For the pattern integration technique the computational and experimental directivities are within 0.01 dB. For the two-antenna technique the proximity effect and the mutual reflections are clearly observed, and it is demonstrated that the use of the phase centers separation in Friis’ transmission formula significantly reduces the necessary distance between antennas for a required accuracy.

An experimental investigation of heat transfer enhancement in minichannel: Combination of nanofluid and micro fin structure techniques

This work experimentally studied the single-phase heat transfer and pressure drop characteristics by using two heat transfer enhancement techniques (micro fin structure and nanofluids) in multiport minichannel flat tube (MMFT). MMFT consisted of numerous parallel rectangular minichannels and is widely used in industry as the heat transfer unit of a heat exchanger. Firstly, the enhanced heat transfer performances by individually using one enhancement technique were investigated by testing Nusselt number, friction factor and performance evaluation criterion (PEC). In this section, five MMFTs with different micro fin numbers (N = 0, 1, 2, 3 and 4) and nanofluids with three volume concentrations (φ = 0.005%, 0.01% and 0.1%) were used as test sections and working fluids respectively. Secondly, the experiments using two combined enhancement technique were performed. By using conjunctively two enhancement techniques, Nusselt number increases by up to 158% at about Re = 3600 and the maximum PEC value can reach 2.0 at Re = 5150. Finally, an optimal heat transfer scheme was proposed based on test data.
An experimentally validated simulation model for a four-stage spray dryer

In this paper, we develop a dynamic model of an industrial type medium size four-stage spray dryer. The purpose of the model is to enable simulations of the spray dryer at different operating points, such that the model facilitates development
and comparison of control strategies. The dryer is divided into four consecutive stages: a primary spray drying stage, two heated fluid bed stages, and a cooling fluid bed stage. Each of these stages in the model is assumed ideally mixed and the dynamics are described by mass- and energy balances. These balance equations are coupled with constitutive equations such as a thermodynamic model, the water evaporation rate, the heat transfer rates, and an equation for the stickiness of the powder (glass transition temperature). Laboratory data is used to model the equilibrium moisture content and the glass transition temperature of the powder. The resulting mathematical model is an index-1 differential algebraic equation (DAE) model with 12 states, 9 inputs, 8 disturbances, and 30 parameters. The parameters in the model are identified from well-excited experimental data obtained from the industrial type spray dryer. The simulated outputs of the model are validated using independent well-excited experimental data from the same spray dryer. The simulated temperatures, humidities, and residual moistures in the spray dryer compare well to the validation data. The model also provides the profit of operation, the production rate, the energy consumption, and the energy efficiency. In addition, it computes stickiness of the powder in different stages of the spray dryer. These facilities make the model well suited as a simulation model for comparison of the process economics associated to different control strategies.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems, Department of Electrical Engineering, Automation and Control, Scientific Computing, GEA Process Engineering A/S
Authors: Petersen, L. N. (Intern), Poulsen, N. K. (Intern), Niemann, H. H. (Intern), Utzen, C. (Ekstern), Jørgensen, J. B. (Intern)
Pages: 50–65
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Process Control
Volume: 57
ISSN (Print): 0959-1524
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.41 SJR 1.21 SNIP 2.241
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.338 SNIP 2.028 CiteScore 3.35
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.521 SNIP 2.735 CiteScore 3.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.507 SNIP 2.607 CiteScore 3.47
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.563 SNIP 2.954 CiteScore 3.39
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.316 SNIP 2.59 CiteScore 2.9
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.305 SNIP 2.203
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.282 SNIP 2.772
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.458 SNIP 2.698
An exploration of the potential for re-distributed manufacturing to contribute to a sustainable, resilient city

Re-distributed manufacturing (RDM), broadly described as manufacturing done at a smaller-scale and locally, could be beneficial to business and urban society through creating jobs, reducing the environmental impacts of production, and improving resilience to future disturbances. Consideration of RDM within a city-region requires the consideration of a wide range of issues—societal, technical, economic and environmental. This paper presents the results of a study into the potential for RDM to contribute to a sustainable, resilient city in the face of a range of expected future disturbances on the city and on manufacturing sectors. The study took an integrated assessment approach which incorporated the development of a conceptual framework; a ‘strawman’ causal loop diagram which was reviewed by participants in a workshop; and a stock and flow system dynamics model that represents our understanding about the structure and behaviour of urban manufacturing. Several key themes emerged: similarities between RDM and traditional manufacturing, availability of physical space for RDM to be done, achieving urban resilience through RDM by enabling responsiveness to disturbances, changes in environmental impacts from production, additions or losses in jobs, the competitiveness of local manufacturing, and skills and innovation for RDM technologies. Further work is recommended.
An expression tag toolbox for microbial production of membrane bound plant cytochromes P450

Membrane-associated Cytochromes P450 (P450s) are one of the most important enzyme families for biosynthesis of plant-derived medicinal compounds. However, the hydrophobic nature of P450s makes their use in robust cell factories a challenge. Here we explore a small library of N-terminal expression tag chimeras of the model plant P450 CYP79A1 in different Escherichia coli strains. Using a high-throughput screening platform based on C-terminal GFP fusions, we identify several highly expressing and robustly performing chimeric designs. Analysis of long-term cultures by flow cytometry showed homogeneous populations for some of the conditions. Three chimeric designs were chosen for a more complex combinatorial assembly of a multigene pathway consisting of two P450s and a redox partner. Cells expressing these recombinant enzymes catalysed the conversion of the substrate to highly different ratios of the intermediate and the final product of the pathway. Finally, the effect of a robustly performing expression tag was explored with a library of 49 different P450s from medicinal plants and nearly half of these were improved in expression by more than 2-fold. The developed toolbox serves as platform to tune P450 performance in microbial cells, thereby facilitating recombinant production of complex plant P450-derived biochemicals.
An expression tag toolbox for microbial production of membrane bound plant cytochromes P450

Of the few predicted extracellular glycan-active enzymes, glycoside hydrolase family 13 subfamily 14 (GH13_14) pullulanases are the most common in human gut lactobacilli. These enzymes share a unique modular organization, not observed in other bacteria, featuring a catalytic module, two starch binding modules, a domain of unknown function, and a C-terminal surface layer association protein (SLAP) domain. Here we explore the specificity of a representative of this group of pullulanases, LaPul13_14 and its role in branched α-glucans metabolism in the well characterized Lactobacillus acidophilus NCFM that is widely used as a probiotic. Growth experiments of L. acidophilus NCFM on starch-derived branched substrates revealed preference for α-glucans with short branches of about two to three glucosyl moieties over amylopectin with longer branches. Cell-attached debranching activity was measurable in the presence of α-glucans but was repressed by glucose. The debranching activity is conferred exclusively by LaPul13_14 and is abolished in a mutant strain lacking a functional LaPul13_14 gene. Hydrolysis kinetics of recombinant LaPul13_14 confirmed the preference for short branched α-glucan oligomers consistent with the growth data. Curiously, this enzyme displayed the highest catalytic efficiency and the lowest Km reported for a pullulanase. Inhibition kinetics revealed mixed inhibition by β-cyclodextrin suggesting the presence of additional glucan binding sites besides the active site of the enzyme, which may contribute to the unprecedented substrate affinity. The enzyme also displays high thermostability and higher activity in the acidic pH range reflecting adaptation to the physiologically challenging conditions in the human gut.IMPORTANCE Starch is one of the most abundant glycans in human diet. Branched α-1,6-glucans in dietary starch and glycogen are non-degradable by human enzymes and constitute a metabolic resource for the gut microbiota. The role of health-beneficial lactobacilli
prevalent in the human small intestine in starch metabolism remains unexplored in contrast to colonic bacterial residents. This study highlights the pivotal role of debranching enzymes in the break-down of starchy branched α-glucan oligomers (α-limit dextrins) by human gut lactobacilli exemplified by Lactobacillus acidophilus NCFM, which is one of the best characterized strains used as probiotics. Our data bring novel insight into the metabolic preference of L. acidophilus for α-glucans with short α-1,6-branches. The unprecedented affinity of the debranching enzyme that confers growth on these substrates reflects its adaptation to the nutrient-competitive gut ecological niche and constitutes a potential advantage in cross-feeding from human and bacterial dietary starch metabolism.

**General information**

State: Published
Organisations: Department of Biotechnology and Biomedicine, Enzyme and Protein Chemistry, Department of Systems Biology, Protein Glycoscience and Biotechnology, Technical University of Denmark, North Carolina State University
Number of pages: 35
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Applied and Environmental Microbiology
Volume: 83
Issue number: 10
Article number: AEM.00402-17
ISSN (Print): 0099-2240
Ratings:
- BFI (2017): BFI-level 2
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 4.08
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 1.891 SNIP 1.308 CiteScore 4.14
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 1.857 SNIP 1.384 CiteScore 4.02
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 2
- Scopus rating (2013): SJR 1.899 SNIP 1.414 CiteScore 4.25
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 1.975 SNIP 1.429 CiteScore 4.29
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 1.914 SNIP 1.455 CiteScore 4.12
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 1.887 SNIP 1.436
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 1.972 SNIP 1.528
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 2
- Scopus rating (2008): SJR 2.156 SNIP 1.572
- Web of Science (2008): Indexed yes
- Scopus rating (2007): SJR 2.043 SNIP 1.647
Anger expression among Danish cyclists and drivers: A comparison based on mode specific anger expression inventories

Based on the short form of the driving anger expression inventory (DAX-short, 15-item), the present study developed an adapted version of the DAX for cyclists (CAX, 14 items). The data basis was an online survey of 2000 inhabitants of Denmark. A principle component analysis on the translated DAX-short confirmed the 4-factor solution of the original study differentiating between (1) personal physical aggressive expression, (2) use of a vehicle to express anger, (3) verbal aggressive expression and (4) adaptive/constructive expression. In case of cycling, the factor "use of a vehicle to express anger" only included one item and was left out. Based on the results, reliable subscales were developed. Drivers scored higher in verbal aggressive expression than cyclists, while there was no significant difference in constructive expression. The subscales for drivers and cyclists showed significant relations to age, gender, self-reported aggressive behaviours and traffic fines: Women scored for instance lower in physical expression, while older people scored higher in constructive expression. The effect of age and gender on anger expression among drivers and cyclists remained significant when controlling for exposure and other factors in linear regression analyses. These analyses also showed a relationship between a positive attitude towards driving and higher levels of anger expression among drivers, while this was not the case for cyclists.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Transport DTU
Authors: Møller, M. (Intern), Haustein, S. (Intern)
Pages: 354-360
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Accident Analysis and Prevention
Volume: 108
ISSN (Print): 0001-4575
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.24 SJR 1.49 SNIP 1.97
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Recreational fisheries surveys are limited in time and place in many countries. This lack of data limits scientific understanding and sustainable management. Smartphone applications (apps) allow anglers to record the details of their fishing trips and catches. In this study, we describe the opportunities and challenges associated with angler apps as a source of recreational fisheries data, and propose minimum standards for data collection via angler apps. Angler apps are a potentially valuable source of conventional and novel data that are both frequent and extensive, and an opportunity to engage anglers through data sharing and citizen science. Realizing this potential requires that we address significant challenges related to angler recruitment and retention, data quality and bias, and integration with existing fisheries.
programmes. We propose solutions to each of these challenges. Given that the angler app market is diverse, competitive and unpredictable, we emphasize minimum standards for data collection as a way to ensure large and reliable data sets that can be compared and integrated across apps. These standards relate to trips and catches, and angler demographics and behaviour, and should be supported through consultation and research. Angler apps have the potential to fundamentally change how anglers interact with the resource and with management.

**General information**

State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, University of Minnesota, Cefas
Authors: Venturelli, P. A. (Ekstern), Hyder, K. (Ekstern), Skov, C. (Intern)
Pages: 578-595
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Fish and Fisheries
Volume: 18
Issue number: 3
ISSN (Print): 1467-2960
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.7 SJR 3.606 SNIP 3.245
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.668 SNIP 3.034 CiteScore 7.05
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.462 SNIP 3.327 CiteScore 7.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.488 SNIP 3.12 CiteScore 6.19
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.565 SNIP 2.852 CiteScore 6.14
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 4.025 SNIP 2.854 CiteScore 6.2
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.456 SNIP 2.434
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.617 SNIP 2.61
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.714 SNIP 2.712
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.887 SNIP 2.786
Scopus rating (2006): SJR 2.869 SNIP 3.161
Scopus rating (2005): SJR 2.394 SNIP 2.519
Scopus rating (2004): SJR 1.883 SNIP 1.483
Scopus rating (2003): SJR 1.33 SNIP 1.463
Scopus rating (2002): SJR 0.776 SNIP 0.821
Web of Science (2002): Indexed yes
Web of Science (2001): Indexed yes
Anholt offshore wind farm winds investigated from satellite images

The Anholt offshore wind farm in the Kattegat Strait has its centre position around 56.6°N and 11.2°E. The Sentinel-1 satellite carries a C-band Synthetic Aperture Radar (SAR). A SAR-based instantaneous wind speed map from May 5th, 2015 at 17:01 UTC is shown below (See1). The wind speed is low at this particular moment and the backscatter from the wind turbines is much higher than that from the sea. Therefore the wind turbines are contrasted clearly as yellow/orange dots at the Anholt wind farm. Along the Swedish coast several ships (red dots) are visible. The SAR-based wind speeds can be trusted at around 1 km distance from any coastline except in grid cells with wind turbines, ships and other hard targets. The grid resolution is 1 km by 1 km. The wind direction is from the south west.

The satellite SAR analysis is based on ~1,000 SAR images from Envisat ASAR recorded from August 2002 to April 2012, i.e. before the wind farm was constructed. Based on these data the wind resource is estimated. Concurrent Sentinel-1 SAR data and available SCADA and lidar data, kindly provided by DONG Energy and partners, for the period January 2013 to June 2015 account for ~70 images, while ~300 images are available for Sentinel-1 from July 2015 to February 2017. The Sentinel-1 wind maps are investigated for wind farm wake effects. Furthermore the results on wind resources and wakes are compared to the SCADA and model results from WRF, Park, Fuga and RANS models.

General information
State: Published
Organisations: Department of Wind Energy, Meteorology & Remote Sensing, Resource Assessment Modelling, Fluid Mechanics, Aerodynamic design
Authors: Hasager, C. B. (Intern), Badger, M. (Intern), Volker, P. (Intern), Hansen, K. S. (Intern), Pena Diaz, A. (Intern), van der Laan, P. (Intern)
Publication date: 2017

An image-based method for objectively assessing injection moulded plastic quality

In high volume productions based on casting processes, like high-pressure die casting (HPDC) or injection moulding, there is a wide range of variables that affect the end quality of produced parts. These variables include production parameters (temperature, pressure, mixture), and external factors (humidity, temperature, etc.). With this many variables it is a challenge to maintain a stable output quality, wherefore massive amounts of resources are spent on quality assurance (QA) of produced parts. Currently, this QA is done manually through visual inspection. We demonstrate how a multispectral imaging system can be used to automatically rate the quality of a produced part using an autocorrelation and a Fourier-based method. These methods are compared with human rankings and achieve good correlations on a variety of samples.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, Budapest University of Technology and Economics
Authors: Hannemose, M. (Intern), Nielsen, J. B. (Intern), Zsiros, L. (Ekstern), Aanæs, H. (Intern)
Pages: 426-437
Publication date: 2017

Host publication information
Title of host publication: SCIA 2017
Publisher: Springer
ISBN (Print): 978-3-319-59128-5

Series: Lecture Notes in Computer Science
Volume: 10270
ISSN: 0302-9743
Main Research Area: Technical/natural sciences
Conference: 20th Scandinavian Conference on Image Analysis, Tromsø, Norway, 12/06/2017 - 12/06/2017
Quality inspection, Plastics, Injection moulding, Maximum autocorrelation factor, Multispectral, Fourier transform
Animal models for evaluation of oral delivery of biopharmaceuticals

Biopharmaceuticals are increasingly important for patients and the pharmaceutical industry due to their ability to treat and, in some cases, even cure chronic and potentially life-threatening diseases. Most biopharmaceuticals are administered by injection, but intensive focus on development of systems for oral delivery of biopharmaceuticals may result in new treatment modalities to increase the patient compliance and reduce product cost. In the preclinical development phase, use of experimental animal models is essential for evaluation of new formulation designs. In general, the limited oral bioavailability of biopharmaceuticals, of just a few percent, is expected, and therefore, the animal models and the experimental settings must be chosen with utmost care. More knowledge and focus on this topic is highly needed, despite experience from the numerous studies evaluating animal models for oral drug delivery of small molecule drugs. This review highlights and discusses pros and cons of the most currently used animal models and settings. Additionally, it also looks into the influence of anesthetics and sampling methods for evaluation of drug delivery systems for oral delivery of biopharmaceuticals primarily with examples on insulin.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Nanoprobes, University of Copenhagen
Authors: Harloff-Helleberg, S. (Ekstern), Nielsen, L. H. (Intern), Nielsen, H. M. (Ekstern)
Number of pages: 15
Pages: 57-71
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Controlled Release
Volume: 268
ISSN (Print): 0168-3659
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.56 SJR 2.393 SNIP 1.84
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.725 SNIP 2.08 CiteScore 8.11
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.416 SNIP 2.092 CiteScore 6.86
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.416 SNIP 2.044 CiteScore 6.31
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.417 SNIP 2.061 CiteScore 5.84
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.745 SNIP 2.098 CiteScore 6.33
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.194 SNIP 2.306
Animal prevalence of livestock-associated methicillin-resistant Staphylococcus aureus in five Danish mink farms

General information
State: Published
Organisations: National Veterinary Institute, Bacteriology & Parasitology, Diagnostic & Development
Authors: Fertner, M. E. (Intern), Pedersen, K. (Intern), Hansen, J. E. (Intern), Larsen, G. (Intern), Chriél, M. (Intern)
Number of pages: 1
Publication date: 2017
Main Research Area: Technical/natural sciences
Electronic versions:
Poster_ECVPH_2017.pdf
Publication: Research - peer-review › Poster – Annual report year: 2017

Animal prevalence of livestock-associated methicillin-resistant Staphylococcus aureus in five Danish mink (Neovison vison) farms

Background. Livestock-associated methicillin-resistant Staphylococcus aureus (LA-MRSA) was for the first time isolated from Danish mink in 2013. Subsequent testing of all mink submitted for clinical diagnosis in Denmark, found 34 % (20/58) mink positive for LA-MRSA. In addition, 40 % (20/50) of screened healthy Danish mink farms were found positive. LA-MRSA in mink is believed to originate from contaminated slaughter-offal in the mink feed. Objective. The objective of the present study was to identify the animal-prevalence of LA-MRSA in five Danish mink farms. Materials and Methods. We collected 1,500 mink carcasses from five Danish mink farms. Farmers were asked to collect 100 mink for each of the three consecutive months following the whelping period (May-July 2017). From each carcass, the right forepaw and a pharyngeal-swab was collected for investigation of MRSA by enrichment, followed by screening on selective agar. Results. By July 1st 2017, 20 mink (5 adult, 15 mink kits) from one farm, were all tested negative. Results from the remaining mink will be presented at the conference. Discussion and Conclusion. In the preliminary results of this study, all mink tested negative. This finding may be explained by an overall low animal-prevalence in the farm. Another explanation could be the high proportion of young mink kits (15/20) tested. All mink kits were <5 weeks of age and had therefore not yet started feeding, which may reduce the likelihood of MRSA carriage. Perspectives. The anatomical location of LA-MRSA on mink (pharynx and paws) poses a human health hazard to farmers, who handle the animals and are at risk of bites and scratches from infected sites. To what extent LA-MRSA has dispersed in the environment of LA-MRSA positive mink farms remains for investigation.

General information
State: Published
Organisations: National Veterinary Institute, Bacteriology & Parasitology, Diagnostic & Development
An Improved Direction of Gradient-type Method for Large Scale Unconstrained Optimization

In this paper, a new modification of diagonal-gradient-type method for large scale unconstrained optimization is proposed. We utilize information from the proceeding iteration and consider some corrections for the difference of iterates to improve the current Hessian approximation in diagonal form. Also, the global convergence, under mild conditions is established. Finally, we report some numerical results to show the efficiency of our proposed method.

An improved electrokinetic method to consolidate porous materials

Consolidation is considered one of the major restoration treatments applied on cultural heritage. This kind of treatment is focused on to preserve the external weathered layers of stone reducing their degradation caused by external alteration agents (mainly water and soluble salts). However the consolidation using commercial products have some limitations, such as: (1) low penetrability; (2) no chemical and mineralogical affinity with the material to treat and (3) release of toxic compounds (VOCs), during the solvent evaporation. In the last years, a new consolidation method based on electrokinetic techniques was developed. This method allows filling some pores by the precipitation of an inorganic compound. As a result the method allows increasing the penetration depth of current consolidation treatments. However, this method needs to be improved since: (1) no special care is taking in controlling the pH of the solutions in contact with the porous material, which can damage it and (2) it is difficult to determine in which area the consolidation takes place. In this study an electrokinetic consolidation method, which has two steps between which the current is reversed, is proposed to solve all of these problems. The results show that the proposed treatment achieves better results in terms of penetrability and durability of current consolidation treatments, and moreover prevent that the treated material to be exposed to extreme pH values.
An Improved On-line Contingency Screening for Power System Transient Stability Assessment

This paper presents a contingency screening method and a framework for its on-line implementation. The proposed method carries out contingency screening and on-line stability assessment with respect to first-swing transient stability.
For that purpose, it utilizes the single machine equivalent method and aims at improving the prior developed contingency screening approaches. In order to determine vulnerability of the system with respect to a particular contingency, only one time-domain simulation needs to be performed. An early stop criteria is proposed so that in a majority of the cases the simulation can be terminated after a few hundred milliseconds of simulated system response. The method's outcome is an assessment of the system's stability and a classification of each considered contingency. The contingencies are categorized by exploiting parameters of an equivalent one machine infinite bus system. A novel island detection approach, appropriate for an on-line application since it utilizes efficient algorithms from graph theory and enables stability assessment of individual islands, is also introduced. The New England and New York system as well as the large-scale model of the Continental-European interconnected system are used to test the proposed method with respect to assessment accuracy and computation time.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems , University of Liege
Authors: Weckesser, J. T. G. (Intern), Jóhannsson, H. (Intern), Glavic, M. (Ekstern), Østergaard, J. (Intern)
Number of pages: 12
Pages: 852-863
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Electric Power Components and Systems
Volume: 45
Issue number: 8
ISSN (Print): 1532-5008
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.53 SJR 0.405 SNIP 0.761
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.362 SNIP 0.709 CiteScore 1.27
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.586 SNIP 1.237 CiteScore 2.15
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.433 SNIP 0.854 CiteScore 1.07
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.375 SNIP 0.857 CiteScore 1.04
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.369 SNIP 0.83 CiteScore 1.09
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.311 SNIP 0.436
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.364 SNIP 0.592
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.369 SNIP 0.586
Scopus rating (2007): SJR 0.244 SNIP 0.524
Scopus rating (2006): SJR 0.248 SNIP 0.542
Scopus rating (2005): SJR 0.334 SNIP 0.494
Scopus rating (2004): SJR 0.219 SNIP 0.396
Scopus rating (2003): SJR 0.36 SNIP 0.483
Scopus rating (2002): SJR 0.389 SNIP 0.45
An incremental flow theory for crystal plasticity incorporating strain gradient effects

The present work investigates a new approach to formulating a rate-independent strain gradient theory for crystal plasticity. The approach takes as input recent discussions published in the literature for isotropic plasticity, and a key ingredient of the present work is the manner in which a gradient enhanced effective slip measure governs hardening evolution. The effect of both plastic strains and plastic strain gradients are combined into this scalar effective slip quantity, the energy associated with plastic strain is dissipative (unrecoverable), while the energy from plastic strain gradients is recoverable (free). The framework developed forms the basis of a finite element implementation and is demonstrated on benchmark problems designed to bring out effects such as strengthening and hardening. Monotonic loading and plane strain deformation is assumed throughout, but despite this, non-proportional straining is predicted in the plastic regime even under pure shear conditions. Results of single slip and symmetric double slip reveal that strengthening and hardening are governed by the slip system orientation and the material length parameter only.

General information

State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics
Authors: Nellemann, C. (Intern), Niordson, C. F. (Intern), Nielsen, K. L. (Intern)
Pages: 239–250
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: International Journal of Solids and Structures
Volume: 110-111
ISSN (Print): 0020-7683
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.8 SJR 1.501 SNIP 1.713
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.502 SNIP 1.917 CiteScore 2.66
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.643 SNIP 2.048 CiteScore 2.72
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.587 SNIP 2.148 CiteScore 2.6
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.584 SNIP 2.262 CiteScore 2.33
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.668 SNIP 1.911 CiteScore 2.11
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
An Influence of Parameters of Micro-Electrical Discharge Machining On Wear of Tool Electrode

To achieve better precision of features generated using the micro-electrical discharging machining (micro-EDM), there is a necessity to minimize the wear of the tool electrode, because a change in the dimensions of the electrode is reflected directly or indirectly on the feature. This paper presents a novel modeling and analysis approach of the tool wear in micro-EDM using a systematic statistical method exemplifying the influences of capacitance, feed rate and voltage on the tool wear ratio. The association between tool wear ratio and the input factors is comprehended by using main effect plots, interaction effects and regression analysis. A maximum variation of four-fold in the tool wear ratio have been observed which indicated that the tool wear ratio varies significantly over the trials. As the capacitance increases from 1 to 10 nF, the increase in tool wear ratio is by 33%. An increase in voltage as well as capacitance would lead to an increase in the number of charged particles, the number of collisions among them, which further enhances the transfer of the proportion of heat energy to the tool surface. Furthermore, to model the tool wear phenomenon, a regression relationship between tool wear ratio and the process inputs has been developed.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering
Authors: Puthumana, G. (Intern)
Pages: 149-164
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Archive of Mechanical Engineering
Volume: LXIV
Issue number: 2
ISSN (Print): 2300-1895
An influence of the different incoming wake-like flows on the rotor vibrations: Paper
The aim of the current investigation is the rotor vibrations generated by the disturbances caused the different types of incoming wake-like flows. Those wakes arriving at the tested rotor were created by two ways: a passive wake generator (immobile disk) and an upstream rotating rotor as an active wake generator. The influence of both wakes on the tested rotor was studied in a water flume. A model of the tested three-bladed rotor designed using Glauert's optimum theory at an optimal tip speed ratio λ = 5 was placed in both "passive" and "active" wakes to recognize dissimilarities on the vibrations of the tested rotor. The distance from the wake generators to the tested rotor was varied from 4 to 8 rotor diameters. Also, the shift between the rotor axis and axis of the incoming wakes was changed to 0, 0.5 and 1 rotor diameters. The flow condition before rotor was measured with high temporal accuracy using LDA. The turbulent intensity of the incoming wake flows changed from 3 to 16% due to the types of the wake generators. Power and thrust characteristics and their pulsations of the tested rotor were measured by strain gauges. The dependences of power coefficients from tip speed ratios and positions of the wake generators were documented. The present study showed a strong influence of the initial flow from the two different wake generators on the rotor vibrations.

General information
State: Published
Organisations: Department of Wind Energy, Fluid Mechanics, Kutateladze Institute of Thermophysics SB RAS
Authors: Naumov, I. V. (Ekstern), Kabardin, I. K. (Ekstern), Mikkelsen, R. F. (Intern), Okulov, V. (Intern), Sørensen, J. N. (Intern)
Number of pages: 9
Publication date: 2017

Host publication information
Title of host publication: Wake Conference 2017
Volume: 854
Article number: 012034
Series: Journal of Physics: Conference Series
ISSN: 1742-6596
Main Research Area: Technical/natural sciences
Conference: Wake Conference 2017, Visby, Sweden, 30/05/2017 - 30/05/2017
Electronic versions:
DOIs:
10.1088/1742-6596/854/1/012034
Source: FindIt
Source-ID: 2371467285
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

An instrument for the measurement of road surface reflection properties
Road surface reflection data in the form of standard r-tables serve as input for design calculations of road lighting installations on traffic roads. However, in several countries the use of the standard r-tables has not been verified by measurement in a long period of time, while the types of road surfaces in use have changed - for instance to road surface types with less noise from wheel passages. Because of this, a co-operation between the road administrations of the Nordic countries (abbreviated NMF) decided to construct a portable instrument to be used on selections of traffic roads within these countries in order to provide updated knowledge. This article describes the principles behind this instrument

General information
State: Published
Organisations: Department of Photonics Engineering, Diode Lasers and LED Systems, Johnsen Consult
Authors: Corell, D. D. (Intern), Sørensen, K. (Ekstern)
Number of pages: 10
Publication date: 2017

Host publication information
An Integrated Framework for Life Cycle Engineering

Life Cycle Engineering (LCE) was introduced as a concept more than 24 years ago in order to address emerging concerns about environmental sustainability in engineering. A number of methods and tools have been introduced to operationalise the LCE concept, but since then, the scope of sustainability has broadened, and as a result, LCE has evolved in parallel with other disciplines with similar aims. Currently, in addition to LCE, there exist a number of concepts such as Industrial Ecology, Cleaner Production, Life Cycle Management (LCM), Industrial Symbiosis, and Circular Economy. As a result, orientation becomes challenging and a framework to integrate them is required. The paper aims to introduce an integrated framework for LCE defining the concept and its boundaries, and it argues for the need to reorientate LCE towards the environmental dimension of sustainability. Through an integrated top-down and bottom-up approach, the framework establishes a relationship between LCE and the other concepts and positions them relative to the planetary boundaries and the concept of absolute environmental sustainability. (C) 2017 The Authors. Published by Elsevier B.V.

General information
State: Published
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, Technische Universität Braunschweig, University of New South Wales
Authors: Hauschild, M. Z. (Intern), Herrmann, C. (Ekstern), Kara, S. (Ekstern)
Number of pages: 8
Pages: 2-9
Publication date: 2017
Conference: 24th CIRP Conference on Life Cycle Engineering, Kamakura, Japan, 08/03/2017 - 08/03/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Procedia C I R P
Volume: 61
ISSN (Print): 2212-8271
Ratings:
Scopus rating (2016): CiteScore 1.6 SNIP 1.297
Scopus rating (2015): SJR 0.572 SNIP 1.012
Scopus rating (2014): SJR 0.736 SNIP 1.419
Scopus rating (2013): SJR 0.515 SNIP 1.163
ISI indexed (2013): ISI indexed no
Original language: English
Life Cycle Engineering, Absolute sustainability, Planetary boundaries, Integrated framework
Electronic versions:
1_s2.0_S2212827116314329_main.pdf
DOIs:
10.1016/j.procir.2016.11.257

Bibliographical note
© 2017 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). Peer-review under responsibility of the scientific committee of the 24th CIRP Conference on Life Cycle Engineering
Source: FindIt
Source-ID: 2357820189
Publication: Research - peer-review › Journal article – Annual report year: 2017

An Integrated Research Infrastructure for Validating Cyber-Physical Energy Systems

Renewables are key enablers in the plight to reduce greenhouse gas emissions and cope with anthropogenic global warming. The intermittent nature and limited storage capabilities of renewables culminate in new challenges that power system operators have to deal with in order to regulate power quality and ensure security of supply. At the same time, the increased availability of advanced automation and communication technologies provides new opportunities for the derivation of intelligent solutions to tackle the challenges. Previous work has shown various new methods of operating highly interconnected power grids, and their corresponding components, in a more effective way. As a consequence of these developments, the traditional power system is being transformed into a cyber-physical energy system, a smart grid. Previous and ongoing research have tended to mainly focus on how specific aspects of smart grids can be validated, but
An integrated workflow for stress and flow modelling using outcrop-derived discrete fracture networks

Fluid flow in naturally fractured reservoirs is often controlled by subseismic-scale fracture networks. Although the fracture network can be partly sampled in the direct vicinity of wells, the inter-well scale network is poorly constrained in fractured reservoir models. Outcrop analogues can provide data for populating domains of the reservoir model where no direct measurements are available. However, extracting relevant statistics from large outcrops representative of inter-well scale fracture networks remains challenging. Recent advances in outcrop imaging provide high-resolution datasets that can cover areas of several hundred by several hundred meters, i.e. the domain between adjacent wells, but even then, data from the high-resolution models is often upscaled to reservoir flow grids, resulting in loss of accuracy. We present a workflow that uses photorealistic georeferenced outcrop models to construct geomechanical and fluid flow models containing thousands of discrete fractures covering sufficiently large areas, that does not require upscaling to model permeability. This workflow seamlessly integrates geomechanical Finite Element models with flow models that take into account stress-sensitive fracture permeability and matrix flow to determine the full permeability tensor. The applicability of this workflow is illustrated using an outcropping carbonate pavement in the Potiguar basin in Brazil, from which 1082 fractures are digitised. The permeability tensor for a range of matrix permeabilities shows that conventional upscaling to effective grid properties leads to potential underestimation of the true permeability and the orientation of principal permeabilities. The presented workflow yields the full permeability tensor model of discrete fracture networks with stress-induced apertures, instead of relying on effective properties as most conventional flow models do.
Permeability tensor, Discrete fracture matrix, Aperture, Fracture permeability, Fracture networks, Fracture mechanics, Outcrop analogue modelling, Brazil

DOIs:
10.1016/j.cageo.2017.02.019

Source: FindIt
An Interaction of impacting droplets with superhydrophobic coatings

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Polymer Micro & Nano Engineering, Department of Mechanical Engineering, Fluid Mechanics
Authors: Okulova, N. (Intern), Okulov, V. (Intern), Taboryski, R. J. (Intern)
Publication date: 2017
Event: Abstract from 12th International Conference on Two-Phase Systems for Space and Ground Applications, Novosibirsk, Russian Federation.
Main Research Area: Technical/natural sciences
Electronic versions:
Untitled.pdf
Source: PublicationPreSubmission
Source-ID: 138355021
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

An intercomparison of mesoscale models at simple sites for wind energy applications
Understanding uncertainties in wind resource assessment associated with the use of the output from numerical weather prediction (NWP) models is important for wind energy applications. A better understanding of the sources of error reduces risk and lowers costs. Here, an intercomparison of the output from 25 NWP models is presented for three sites in northern Europe characterized by simple terrain. The models are evaluated sing a number of statistical properties relevant to wind energy and verified with observations. On average the models have small wind speed biases offshore and aloft ( < 4 %) and larger biases closer to the surface over land (> 7 %). A similar pattern is detected for the inter-model spread. Strongly stable and strongly unstable atmospheric stability conditions are associated with larger wind speed errors. Strong indications are found that using a grid spacing larger than 3 km decreases the accuracy of the models, but we found no evidence that using a grid spacing smaller than 3 km is necessary for these simple sites. Applying the models to a simple wind energy offshore wind farm highlights the importance of capturing the correct distributions of wind speed and direction.

General information
State: Published
Organisations: Department of Wind Energy, Resource Assessment Modelling, Meteorology & Remote Sensing
Authors: Olsen, B. T. (Intern), Hahmann, A. N. (Intern), Sempreviva, A. M. (Intern), Badger, J. (Intern), Jørgensen, H. E. (Intern)
Pages: 211-228
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Wind Energy Science
Volume: 2
Issue number: 1
ISSN (Print): 2366-7443
Original language: English
Electronic versions:
 Olsenetal2017.pdf
DOIs:
10.5194/wes-2-211-2017
Source: FindIt
Source-ID: 235833326
Publication: Research - peer-review › Journal article – Annual report year: 2017

An introduction to Deep learning on biological sequence data - Examples and solutions
Deep neural network architectures such as convolutional and long short-term memory networks have become increasingly popular as machine learning tools during the recent years. The availability of greater computational resources, more data, new algorithms for training deep models and easy to use libraries for implementation and training of neural networks are the drivers of this development. The use of deep learning has been especially successful in image recognition; and the development of tools, applications and code examples are in most cases centered within this field rather than within biology. Here, we aim to further the development of deep learning methods within biology by providing application examples and ready to apply and adapt code templates. Given such examples, we illustrate how architectures consisting of convolutional and long short-term memory neural networks can relatively easily be designed and trained to state-of-the-
Art performance on three biological sequence problems: prediction of subcellular localization, protein secondary structure and the binding of peptides to MHC Class II molecules. All implementations and datasets are available online to the scientific community at https://github.com/vanessajurtz/lasagne4bio. Supplementary data are available at Bioinformatics online.

General information
State: Published
Organisations: Department of Bio and Health Informatics, Immunoinformatics and Machine Learning, Department of Applied Mathematics and Computer Science, Department of Electrical Engineering, Disease Intelligence and Molecular Evolution, Copenhagen Center for Health Technology, Cognitive Systems, University of Copenhagen
Pages: 3685-3690
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Bioinformatics
Volume: 33
Issue number: 22
ISSN (Print): 1367-4803
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.42
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 6.06
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 5.5
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 5.78
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 6.73
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 5.61
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Web of Science (2003): Indexed yes
Web of Science (2002): Indexed yes
An Introduction to Malware
These notes, intended for use in DTU course 02233 on Network Security, give a short introduction to the topic of malware. The most important types of malware are described, together with their basic principles of operation and dissemination, and defenses against malware are discussed.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Embedded Systems Engineering
Authors: Sharp, R. (Intern)
Number of pages: 35
Publication date: 2017

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Malware, Network security
Electronic versions:
malware.pdf
Publication: Education › Compendium/lecture notes – Annual report year: 2017

An Investigation of Methods for CT Synthesis in MR-only Radiotherapy
In recent years, the interest in using magnetic resonance (MR) imaging in radiotherapy (RT) has increased. This is because MR has a superior soft tissue contrast compared to computed tomography (CT), which makes it a better modality for delineating the target volume (tumor) and possible organs at risk (OARs). In an MR/CT work-flow, independent MR and CT scans are acquired. The target and possible OARs are delineated on the MR and then transferred to CT by aligning the data using a registration. This introduces the risk of systematic registration errors especially in non-rigid body structures, the consequence being a systematic miss of target or increased dose to healthy tissue.

Radiotherapy based on MR as the only modality removes this uncertainty and simplifies the clinical work-flow. However, the information on electron density which is usually contained in the CT must now be derived from the MR. A way to achieve this is to computationally estimate a so-called synthetic CT (sCT) from the MR data, which can then act as a substitute for the CT. This is a challenging task, since no unique relationship between MR and electron density exists.

The goal of this thesis is to develop and investigate the right combination of MR acquisition protocols and computational models for accurate MR-based CT synthesis for use in RT. We investigate different categories of methods for CT synthesis and validate them using clinically relevant quality measures. Specifically, we implement a patch-based multi-atlas method in the brain, which compares favorably to state-of-the-art methods. In our next effort, we substantially improve the speed of the method and apply it in the pelvis, again with promising results. Our final contribution is a voxel-based method, which is developed to be registration-free and broadly applicable. In initial results, the performance of this method is close to the patch-based.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics
Authors: Andreasen, D. (Intern), Van Leemput, K. (Intern)
Number of pages: 72
Publication date: 2017

Publication information
Place of publication: Kgs. Lyngby
Publisher: Technical University of Denmark (DTU)
Original language: English
Series: DTU Compute PHD-2016
Number: 428
Anionic Extraction for Efficient Recovery of Biobased 2,3-Butanediol-A Platform for Bulk and Fine Chemicals

2,3-Butanediol (BDO) presents a promising platform molecule for the synthesis of basic and fine chemicals. Biotechnological production of BDO from renewable resources with living microbes enables high concentrations in the fermentation broth. The recovery of high-boiling BDO from an aqueous fermentation broth presents a subsequent challenge. A method is proposed for BDO isolation based on reversible complexation with phenylboronate in an anionic complex. BDO can be recovered by back-extraction into an acidic solution. The composition of the extracted species was determined by NMR spectroscopy, MS, and GC-MS methods. The conditions of extraction and back-extraction were optimized by using commercial BDO and finally applied to different fermentation broths. Up to 72-93% BDO can be extracted and up to 80-90% can be back-extracted under the optimized conditions. Purified bio-BDO was used in the presence of sulfuric acid for the synthesis of methyl ethyl ketone, an established organic solvent and discussed tailor-made biofuel.
Anisotropic Concrete Compressive Strength

When the load carrying capacity of existing concrete structures is (re-)assessed it is often based on compressive strength of cores drilled out from the structure. Existing studies show that the core compressive strength is anisotropic; i.e. it depends on whether the cores are drilled parallel or perpendicular to the casting direction. Engineers may therefore misjudge the load carrying capacity. Thus structures may be strengthened or rebuilt unnecessarily or left in service with high failure probability. This paper presents a literature review and an experimental study on the anisotropy and its correlation to the curing time. The experiments show no correlation between the anisotropy and the curing time and a small strength difference between the two drilling directions. The literature shows variations on which drilling direction that is strongest. Based on a Monto Carlo simulation of the expected variation it is argued that the variation of the anisotropy may be statistically coincidences.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Structural Engineering, University of Southern Denmark
Authors: Gustenhoff Hansen, S. (Ekstern), Jørgensen, H. B. (Ekstern), Hoang, L. C. (Intern)
Number of pages: 8
Publication date: 2017

Anisotropic enhancement of Yb3+ luminescence by disordered plasmonic networks self-assembled on RbTiOPO4 ferroelectric crystals

Increasing Yb3+ absorption efficiency is currently desired in a number of applications including bio-imaging, photovoltaics, near infrared driven photocatalysis or ultra-short pulsed solid-state lasers. In this work, silver nanoparticles, which are connected forming disordered networks, have been self-assembled on Yb3+ doped RbTiOPO4 crystals to produce a remarkable enhancement of Yb3+ absorption, and hence in the photoluminescence of this ion. The results are interpreted taking into account the near-field response of the plasmonic networks, which display strong amplification of the electric field at the maximum of Yb3+ excitation at around 900 nm, together with the anisotropic character of the Yb3+ transitions in RbTiOPO4. We show that in the near field regime, the scattering of the plasmonic networks produces additional polarization field components to those of the incident field, which allows access to the largest transition dipolar moment of Yb3+ ions in RbTiOPO4. As a result, a much more efficient route for Yb3+ excitation takes place at the immediacy of the plasmonic networks. This work provides fundamental insights for improving the optical properties of rare earth ions by the suitable design of metallic nanoparticle arrangements, and constitutes a promising step towards the development of new multifunctional solid-state lasers.
Anisotropic Proton and Oxygen Ion Conductivity in Epitaxial $\text{Ba}_2\text{In}_2\text{O}_5$ Thin Films

Solid oxide ion and proton conductors are a highly important class of materials for renewable energy conversion devices like solid oxide fuel cells. $\text{Ba}_2\text{In}_2\text{O}_5$ (BIO) exhibits both oxygen ion and proton conduction, in a dry and humid environment, respectively. In a dry environment, the brownmillerite crystal structure of BIO exhibits an ordered oxygen ion sublattice, which has been speculated to result in anisotropic oxygen ion conduction. The hydrated structure of BIO, however, resembles a perovskite and the protons in it were predicted to be ordered in layers. To complement the significant theoretical and experimental efforts recently reported on the potentially anisotropic conductive properties in BIO, we measure here both the proton and oxygen ion conductivity along different crystallographic directions. Using epitaxial thin films with different crystallographic orientations, the charge transport for both charge carriers is shown to be anisotropic. The anisotropy of the oxygen ion conduction can indeed be explained by the layered structure of the oxygen sublattice of BIO. The anisotropic proton conduction, however, further supports the suggested ordering of the protonic defects in the material. The differences in proton conduction along different crystallographic directions attributed to proton ordering in BIO are of a similar extent as those observed along different crystallographic directions in materials where proton ordering is not present but where protons find preferential conduction pathways through chainlike or layered
structures.

**General information**
State: Published
Organisations: Department of Energy Conversion and Storage, Department of Physics, Atomic scale modelling and materials, Paul Scherrer Institute, Chalmers University of Technology, University of Göttingen, University of Verona
Authors: Fluri, A. (Ekstern), Gilardi, E. (Ekstern), Karlsson, M. (Ekstern), Roddatis, V. (Ekstern), Bettinelli, M. (Ekstern), Castelli, I. E. (Intern), Lippert, T. (Ekstern), Pergolesi, D. (Ekstern)
Pages: 21797–21805
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**
Volume: 121
Issue number: 40
ISSN (Print): 1932-7447
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.48 SJR 1.948 SNIP 1.181
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.917 SNIP 1.268 CiteScore 4.68
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.027 SNIP 1.448 CiteScore 5.08
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.134 SNIP 1.439 CiteScore 5.14
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.514 SNIP 1.46 CiteScore 4.98
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.32 SNIP 1.457 CiteScore 4.92
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.438 SNIP 1.356
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.128 SNIP 1.417
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.856 SNIP 1.033
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Web of Science (2003): Indexed yes
Web of Science (2002): Indexed yes
Web of Science (2001): Indexed yes
An MFA-based optimization model for increased resource efficiency: Phosphorus flows in Denmark

Phosphorus (P) is present in large amounts in agricultural residues and organic wastes from human consumption, from which it can be recovered as fertiliser, reducing dependence on primary P. Crucial for a secondary resource is its ability to fulfil the functions of the resource intended to be substituted. This quality of secondary resources is not captured well by material flow analysis (MFA). A static MFA of the Danish anthropogenic P cycle was adapted for optimization via linear programming to minimize primary P imports. The MFA system was adapted to reflect typical nutrient availability from various secondary-P fertilisers, to allow for exchange of secondary-P fertilisers between regions (sewage sludge incineration ash and composted organic household waste), and to reflect the system's development over 3 annual time steps. Since P accumulating in agricultural soil gradually becomes available for plants over time, the outcome showed both a gradual decline of mineral P fertiliser inputs and net additions to soil P stocks stabilising at distinctly lower levels than evident from the static MFA. The optimization model's outcome, accounting for the dynamic aspects of transport and P availability to crops over time, suggests a substitution potential of over 80% (9.8 Gg primary P) by P recovered from sewage sludge and household biowaste, compared to 35% in the static MFA.
Annealing and etching effects on strain and stress sensitivity of polymer optical fibre Bragg grating sensors

Thermal annealing and chemical etching effects on the strain and stress sensitivity of polymer optical fibre based sensors are investigated. Bragg grating sensors have been photo-inscribed in PMMA optical fibre and their strain and stress sensitivity has been characterised before and after any annealing or etching process. The annealing and etching processes have been tried in different sequence in order to investigate their impact on the sensor's performance. Results show with high confidence that fibre annealing can improve both strain and stress sensitivities. The fibre etching can also provide stress sensitivity enhancement, however the strain sensitivity changes seems to be random.

General information
State: Published
Annual measured and simulated thermal performance analysis of a hybrid solar district heating plant with flat plate collectors and parabolic trough collectors in series

Flat plate collectors have relatively low efficiency at the typical supply temperatures of district heating networks (70–95 °C). Parabolic trough collectors retain their high efficiency at these temperatures. To maximize the advantages of flat plate collectors and parabolic trough collectors in large solar heating plants for a district heating network, a hybrid solar collector field with 5960 m² flat plate collectors and 4039 m² parabolic trough collectors in series was constructed in Taars, Denmark. The design principle is that the flat plate collectors preheat the return water from the district heating network to about 70 °C and then the parabolic trough collectors would heat the preheated water to the required supply temperature of the district heating network. Annual measured and simulated thermal performances of both the parabolic trough collector field and the flat plate collector field are presented in this paper. The thermal performance of both collector fields with weather data of a Design Reference Year was simulated to have a whole understanding of the application of both collectors under Danish climate conditions as well. These results not only can provide a design basis for this type of hybrid solar district heating plants with flat plate collectors and parabolic trough collectors in the Nordic region, but also introduce a novel design concept of solar district heating plants to other high solar radiation areas.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Building Energy
Authors: Tian, Z. (Intern), Perers, B. (Intern), Furbo, S. (Intern), Fan, J. (Intern)
Pages: 417-427
Publication date: 2017
Main Research Area: Technical/natural sciences
Annual Report on Zoonoses in Denmark 2016

General information
State: Published
Organisations: National Food Institute, Division of Risk Assessment and Nutrition, Statens Serum Institut
Authors: Helwigh, B. (Intern), Christensen, J. (Intern), Müller, L. (Ekstern)
Number of pages: 59
Publication date: 2017

Publication information
Place of publication: Søborg
Publisher: National Food Institute, Technical University of Denmark
Original language: English

Series: Annual Report on Zoonoses in Denmark
ISSN: 1600-3837
Main Research Area: Technical/natural sciences
Electronic versions:
Annual_Report_2016_FINAL.pdf

Relations
Activities:
Annual variations in GPS-measured vertical displacements near Upernavik Isstrøm (Greenland) and contributions from surface mass loading: Annual GPS Verticals in Greenland

In response to present-day ice mass loss on and near the Greenland Ice Sheet, steady crustal uplifts have been observed from the network of Global Positioning System (GPS) stations mounted on bedrock. In addition to the secular uplift trends, the GPS time series also show prominent annual variability. Here we examine the annual changes of the vertical displacements measured at two GPS stations (SRMP and UPVK) near Upernavik Isstrøm in western Greenland. We model elastic loading displacements due to various surface mass loading including three non-ice components: atmospheric pressure, ocean bottom pressure, continental water storage, and one ice component, i.e., surface mass balance (SMB). We find that the contribution from atmospheric pressure changes can explain 46% and 78% of the annual amplitude observed in the GPS verticals at SRMP and UPVK, respectively. We also show that removing the predicted loading displacements due to SMB adversely increases the annual variance of the GPS residuals. However, using the GPS data alone, we cannot identify the exact cause(s) of this discrepancy because the annual loading displacements are sensitive to the SMB changes from over 85% of the ice sheet area. Alternatively, by differencing vertical displacements between the two stations, we find a good agreement between the modeled differential SMB loading displacements and the GPS residuals after removing non-ice components. Our study highlights the necessity of correcting for non-ice loading contributions in the GPS measurements of crustal deformation to infer ice mass changes in Greenland at annual periods.

General information
State: Published
Organisations: National Space Institute, Geodesy, Chinese University of Hong Kong, University of Luxembourg, Ohio State University
Authors: Liu, L. (Ekstern), Khan, S. A. (Intern), van Dam, T. (Ekstern), Ma, J. H. Y. (Ekstern), Bevis, M. (Ekstern)
Pages: 677–691
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Geophysical Research
Volume: 122
Issue number: 1
ISSN (Print): 0148-0227
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.36 SJR 1.996 SNIP 1.313
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.288 SNIP 1.362 CiteScore 3.39
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.324 SNIP 1.349 CiteScore 3.27
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.357 SNIP 1.44 CiteScore 3.38
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.365 SNIP 1.35 CiteScore 2.93
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.239 SNIP 1.301 CiteScore 3.03
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
A Nonlinear Transmission Line Model of the Cochlea With Temporal IntegrationAccounts for Duration Effects in Threshold Fine Structure

For normal-hearing listeners, auditory pure-tone thresholds in quiet often show quasi periodic fluctuations when measured with a high frequency resolution, referred to as threshold fine structure. Threshold fine structure is dependent on the stimulus duration, with smaller fluctuations for short than for long signals. The present study demonstrates how this effect can be captured by a nonlinear and active model of the cochlea in combination with a temporal integration stage. Since this cochlear model also accounts for fine structure and connected level dependent effects, it is superior to filter-based approaches and hence allows the investigation of the contributions of cochlear- and retro-cochlear processing on behavioural data, including stimulus-duration dependent effects of threshold fine structure.
An optical flow-based state-space model of the vocal folds

High-speed movies of the vocal fold vibration are valuable data to reveal vocal fold features for voice pathology diagnosis. This work presents a suitable Bayesian model and a purely theoretical discussion for further development of a framework for continuum biomechanical features estimation. A linear and Gaussian nonstationary state-space model is proposed and thoroughly discussed. The evolution model is based on a self-sustained three-dimensional finite element model of the vocal folds, and the observation model involves a dense optical flow algorithm. The results show that the method is able to capture different deformation patterns between the computed optical flow and the finite element deformation, controlled by the choice of the model tissue parameters.

General information
State: Published
Organisations: Department of Electrical Engineering, Acoustic Technology
Authors: Granados, A. (Intern), Brunskog, J. (Intern)
Pages: EL543-8
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of the Acoustical Society of America
Volume: 141
Issue number: 6
ISSN (Print): 0001-4966
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.83 SJR 0.749 SNIP 1.27
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.802 SNIP 1.437 CiteScore 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.788 SNIP 1.423 CiteScore 1.8
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.705 SNIP 1.966 CiteScore 2
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.763 SNIP 1.622 CiteScore 1.75
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.695 SNIP 1.642 CiteScore 1.68
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.754 SNIP 1.528
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.783 SNIP 1.717
A Note on a Tower by Bassa, Garcia and Stichtenoth

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Mathematics
Authors: Anbar Meidl, N. (Intern), Beelen, P. (Intern)
Number of pages: 13
Pages: 47-60
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Functiones et Approximatio Commentarii Mathematici
Volume: 57
Issue number: 1
ISSN (Print): 0208-6573
Ratings:
Scopus rating (2016): CiteScore 0.24 SJR 0.332 SNIP 0.323
Web of Science (2016): Indexed yes
Scopus rating (2015): SJR 0.161 SNIP 0.252 CiteScore 0.21
Scopus rating (2014): SJR 0.161 SNIP 0.111 CiteScore 0.06
Scopus rating (2013): SJR 0.162 SNIP 0.247
Scopus rating (2012): SJR 0.102 SNIP 0.053
Scopus rating (2011): SJR 0.162 SNIP 0.143
Scopus rating (2010): SJR 0.174 SNIP 0.255
Scopus rating (2009): SJR 0.144 SNIP 0.193
Scopus rating (2008): SJR 0.136 SNIP 0.051
Scopus rating (2007): SJR 0.214 SNIP 0.014
Original language: English
A note on circulatory systems: Old and new results: Circulatory systems

It is astonishing that after more than half a century intensive research in the area of non-conservative systems of second order differential equations still new interesting results appear, see [4]. In that paper an old stability criterion by Metelitsyn [6] and Frik [9] was reinvented. We shortly repeat this result in order to emphasize that the criterion is sufficient but not necessary for stability. Afterwards we concentrate on circulatory systems with purely imaginary eigenvalues and investigate the influence of indefinite damping. Finally the possibility of stabilizing circulatory systems by gyroscopic forces will be commented. Examples will demonstrate the developed theory.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science
Authors: Kliem, W. (Intern), Pommer, C. (Intern)
Pages: 92–97
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Zeitschrift fuer Angewandte Mathematik und Mechanik
Volume: 97
Issue number: 1
ISSN (Print): 0044-2267
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.23 SJR 0.558 SNIP 0.911
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.586 SNIP 1.147 CiteScore 1.06
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.597 SNIP 1.167 CiteScore 1.01
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.618 SNIP 1.158 CiteScore 1
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.681 SNIP 0.998 CiteScore 0.91
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.531 SNIP 0.966 CiteScore 0.84
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.43 SNIP 0.813
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.643 SNIP 1.177
ISI indexed (2009): ISI indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.501 SNIP 0.867
Scopus rating (2007): SJR 0.452 SNIP 0.832
Scopus rating (2006): SJR 0.429 SNIP 0.638
Scopus rating (2005): SJR 0.404 SNIP 0.624
Scopus rating (2004): SJR 0.467 SNIP 0.636
Web of Science (2004): Indexed yes
A note on identification in discrete choice models with partial observability

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis, Transport DTU
Authors: Ranjan, A. (Intern), Fosgerau, M. (Intern)
Number of pages: 11
Publication date: 2017

Publication information
Electronic versions:
ARUM_ID_1.pdf
Links:
https://www.researchgate.net/publication/313656112
Main Research Area: Technical/natural sciences
Source: PublicationPreSubmission
Source-ID: 130448874
Publication: Research › Working paper – Annual report year: 2017

Another paradigm lost? Autumn downstream migration of juvenile brown trout: Evidence for a presmolt migration

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, Danish Center for Wild Salmon
Authors: Aarestrup, K. (Intern), Birnie-Gauvin, K. (Intern), Larsen, M. H. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Ecology of Freshwater Fish
ISSN (Print): 0906-6691
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.66 SJR 0.804 SNIP 0.885
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.022 SNIP 1.192 CiteScore 1.92
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.866 SNIP 0.994 CiteScore 1.58
A novel 3D skin explant model to study anaerobic bacterial infection

Skin infection studies are often limited by financial and ethical constraints, and alternatives, such as monolayer cell culture, do not reflect many cellular processes limiting their application. For a more functional replacement, 3D skin culture models offer many advantages such as the maintenance of the tissue structure and the cell types present in the host environment. A 3D skin culture model can be set up using tissues acquired from surgical procedures or post slaughter, making it a cost effective and attractive alternative to animal experimentation. The majority of 3D culture models have been established for aerobic pathogens, but currently there are no models for anaerobic skin infections. Footrot is an anaerobic bacterial infection which affects the ovine interdigital skin causing a substantial animal welfare and financial impact worldwide. *Dichelobacter nodosus* is a Gram-negative anaerobic bacterium and the causative agent of footrot. The mechanism of infection and host immune response to *D. nodosus* is poorly understood. Here we present a novel 3D skin ex vivo model to study anaerobic bacterial infections using ovine skin explants infected with *D. nodosus*. Our results demonstrate that *D. nodosus* can invade the skin explant, and that altered expression of key inflammatory markers could
be quantified in the culture media. The viability of explants was assessed by tissue integrity (histopathological features) and cell death (DNA fragmentation) over 76 h showing the model was stable for 28 h. D. nodosus was quantified in all infected skin explants by qPCR and the bacterium was visualized invading the epidermis by Fluorescent in situ Hybridization. Measurement of pro-inflammatory cytokines/chemokines in the culture media revealed that the explants released IL1β in response to bacteria. In contrast, levels of CXCL8 production were no different to mock-infected explants. The 3D skin model realistically simulates the interdigital skin and has demonstrated that D. nodosus invades the skin and triggered an early cellular inflammatory response to this bacterium. This novel model is the first of its kind for investigating an anaerobic bacterial infection.

General information
State: Published
Organisations: National Veterinary Institute, Pathology, University of Nottingham, Moredun Research Institute
Authors: Maboni, G. (Ekstern), Davenport, R. (Ekstern), Sessford, K. (Ekstern), Baiker, K. (Ekstern), Jensen, T. K. (Intern), Blanchard, A. M. (Ekstern), Wattegedera, S. (Ekstern), Entrican, G. (Ekstern), Tötemeyer, S. (Ekstern)
Publication date: 2017
Main Research Area: Technical/natural sciences

A Novel Algorithm for Lifetime Extrapolation, Prediction, and Estimation of Emerging PV Technologies
Accurate determination of the lifetime of novel hybrid and organic solar cells is often rather challenging due to the very dynamic behavior of such cells over time and ageing curves with shapes of varying nature. Therefore, in order to accurately and reproducibly determine the lifetime of photovoltaic devices with such a behavior, a novel elaboration algorithm is developed, which enables automatic smoothing, filtering, and extrapolation of the real lifetime data and reproducible determination of the lifetime parameters defined in the International Summit on OPV Stability guiding standards. The algorithm is also capable of predicting the lifetime of devices, not tested until the end of sample life, given that there is sufficient number of measured data points to perform reliable extrapolation of ageing curves (to a limited time frame). The algorithm is discussed in detail and a range of examples for different lifetime data are presented.

General information
State: Accepted/In press
Organisations: Department of Energy Conversion and Storage, Organic Energy Materials, University of Padova
Authors: Rizzo, A. (Ekstern), Cester, A. (Ekstern), Madsen, M. V. (Intern), Krebs, F. C. (Intern), Gevorgyan, S. A. (Intern)
Number of pages: 9
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Small Methods
Article number: 1700285
A Novel Approach for Risk Minimization in Life-Cycle Oil Production Optimization

The oil research community has invested much effort into computer aided optimization to enhance oil recovery. While simulation studies have demonstrated the potential of model-based technology to improve industrial standards, the largely unknown geology of subsurface reservoirs limits applications to commercial oil fields. In particular, uncertain model descriptions lead to risks of profit loss. To address the challenges of geological uncertainty, this paper proposes offset risk minimization. As opposed to existing methodologies of the oil literature, the offset approach minimizes risk of profit loss relative to industrial standards. A numerical case study compares the offset approach to a representative selection of current state-of-the-art methodologies. The results show that the offset approach offers the overall lowest risk of profit loss relative to industrial best practices. This suggests that it may be more relevant to consider offset risk minimization than conventional ensemble-based methods for the purpose of life-cycle production optimization.

A novel archaeal species belonging to Methanoculleus genus identified via de-novo assembly and metagenomic binning process in biogas reactors

Recently, a first comprehensive catalogue of microbial genomes populating biogas reactors treating manure and agricultural residues was determined by sequencing samples collected from 22 biogas reactors including laboratory and full scale. Among the archaeal community, one of the most abundant methanogens belongs to Methanoculleus genus and for this reason it was provisionally named Methanoculleus sp. DTU006. Its full length 16S rRNA sequence is 97% similar to Methanoculleus marisnigri JR1 and to Methanoculleus palmolei DSM 4273. Despite the high similarity of the 16S gene sequence, Average Nucleotide Identity calculation (ANI) calculated on all protein encoding genes indicated that the two most similar species, Methanoculleus bourgensis MS2T and Methanoculleus sp. MAB1, are divergent enough to define Methanoculleus sp. DTU006 as new archaeal species. Its genome (2.15 Mbp) has an estimated completeness around 93%. Analysis of the metabolic pathways using KEGG confirmed that it is a hydrogenotrophic methanogen and therefore it is proposed the Candidatus status by naming it as "Candidatus Methanoculleus thermohydrogenotrophicum".
A novel back-up control structure to manage nonroutine steam upsets in industrial methanol distillation columns

Industrial methanol production plants have extensive heat integration to achieve energy efficient operations where steam generated from these heat integration operations are used to provide reboiler duty for methanol distillation columns that purify crude methanol produced into industrial AA grade methanol at a relatively high rate of product recovery. As such, fluctuation in steam supply due to non-routine process changes can lead to result in off specification distillation operations which results insignificant economic losses. This work has investigated and identified the causes and consequences of these steam flow disturbances and developed two backup control structures to operate the distillation columns within specification during steam flow disturbances. One of the new control structures is based on model predictive control (MPC), while the other is a PID-based control structure with a novel supervisory layer to control the column during these non-routine process upsets. These control schemes were tested against realistic reboiler duty disturbances that can occur in an industrial process. The tests revealed that both the MPC and supervisory systems control structures are able to
regulate the process, even during sudden drops in reboiler duty. However, the cost of implementation and the relative simplicity will likely favour the implementation of the supervisory control structure in an industrial environment.

A novel biomarker of laminin turnover is associated with mortality and disease progression in chronic kidney disease

INTRODUCTION AND AIMS: Patients with chronic kidney disease (CKD) have increased risk of progressing to end-stage renal disease (ESRD) and a high mortality rate. One of the major underlying causes of progression of renal failure is renal fibrosis, which is caused by dysregulated extracellular matrix (ECM) remodeling. The laminin γ1 (LAMC1) chain is a constituent of the laminin types present in the glomerular basement membrane (GBM), and its turnover may be altered in CKD. Fragments of LAMC1 could quantify GBM turnover in human CKD and reflect pathological tissue changes. We developed an immunoassay targeting LG1M, a neo-epitope of LAMC1 generated by matrix metalloproteinases (MMPs). We then measured LG1M levels in serum and urine from a large prospective cohort of patients with high-risk CKD.

A novel biomarker of laminin turnover is associated with mortality and disease progression in chronic kidney disease

INTRODUCTION AND AIMS: Patients with chronic kidney disease (CKD) have increased risk of progressing to end-stage renal disease (ESRD) and a high mortality rate. One of the major underlying causes of progression of renal failure is renal fibrosis, which is caused by dysregulated extracellular matrix (ECM) remodeling. The laminin γ1 (LAMC1) chain is a constituent of the laminin types present in the glomerular basement membrane (GBM), and its turnover may be altered in CKD. Fragments of LAMC1 could quantify GBM turnover in human CKD and reflect pathological tissue changes. We developed an immunoassay targeting LG1M, a neo-epitope of LAMC1 generated by matrix metalloproteinases (MMPs). We then measured LG1M levels in serum and urine from a large prospective cohort of patients with high-risk CKD.

A novel biomarker of laminin turnover is associated with mortality and disease progression in chronic kidney disease

INTRODUCTION AND AIMS: Patients with chronic kidney disease (CKD) have increased risk of progressing to end-stage renal disease (ESRD) and a high mortality rate. One of the major underlying causes of progression of renal failure is renal fibrosis, which is caused by dysregulated extracellular matrix (ECM) remodeling. The laminin γ1 (LAMC1) chain is a constituent of the laminin types present in the glomerular basement membrane (GBM), and its turnover may be altered in CKD. Fragments of LAMC1 could quantify GBM turnover in human CKD and reflect pathological tissue changes. We developed an immunoassay targeting LG1M, a neo-epitope of LAMC1 generated by matrix metalloproteinases (MMPs). We then measured LG1M levels in serum and urine from a large prospective cohort of patients with high-risk CKD.
A novel Dual Amylin and Calcitonin Receptor Agonist (DACRA), KBP-089, induces weight loss through a reduction in fat, but not lean mass, while improving food preference

Background and Purpose
Obesity and associated co-morbidities, such as type 2 diabetes and non-alcoholic fatty liver disease, are major health challenges – hence, development of weight loss therapies with the ability to reduce the co-morbidities is key.

Experimental Approach
The effect of the dual amylin and calcitonin receptor agonist (DACRA), KBP-089, on bodyweight, glucose homeostasis, and fatty acid accumulation in liver and muscle tissue, food preference was investigated. Further, we elucidate weight-independent effects of KBP-089 using a weight-matched group.

Key Results
High fat diet fed rats were treated with KBP-089 s.c., at 0.625, 1.25, 2.5 µg·kg⁻¹ and vehicle resulting in a dose-dependent and sustained ~17% weight loss by the 2.5 µg·kg⁻¹ (p<0.001). Moreover, KBP-089 reduced fat depot size and reduced lipid accumulation in muscle and liver.
In Zucker Diabetic Fatty rats, KBP-089 improved glucose homeostasis through improved insulin action. To obtain a weight-matched group, significantly less food was offered (9% less than in the KBP-089 group). Weight-matching led to improved glucose homeostasis through lowered plasma insulin; however, these were inferior to the effect of KBP-089.
In the food preference test, normal diet rats obtained 74% of their calories from chocolate. KBP-089 administration reduced total caloric intake, and induced a relative increase in chow consumption while drastically lowering the chocolate compared to vehicle.

Conclusion
The novel DACRA, KBP-089 induces a sustained weight loss, leading to improved metabolic parameters including food
preference, and these are beyond those observed simply by diet-induced weight loss.

**General information**

State: Published

Organisations: Systems Metabolic Lipidology, Department of Biotechnology and Biomedicine, Nordic Bioscience A/S

Authors: Gydesen, S. (Intern), Hjuler, S. T. (Ekstern), Freving, Z. (Ekstern), Andreassen, K. V. (Ekstern), Sonne, N. (Ekstern), Hellgren, L. (Intern), Karsdal, M. A. (Ekstern), Henriksen, K. (Ekstern)

Pages: 591-602

Publication date: 2017

Main Research Area: Technical/natural sciences

**Publication information**

Journal: British Journal of Pharmacology

Volume: 174

ISSN (Print): 0007-1188

Ratings:

BFI (2017): BFI-level 2

Web of Science (2017): Indexed yes

BFI (2016): BFI-level 2

Scopus rating (2016): CiteScore 5.11 SJR 2.604 SNIP 1.408

BFI (2015): BFI-level 2

Scopus rating (2015): SJR 2.371 SNIP 1.378 CiteScore 4.93

BFI (2014): BFI-level 2

Scopus rating (2014): SJR 2.189 SNIP 1.39 CiteScore 4.68

BFI (2013): BFI-level 2

Scopus rating (2013): SJR 2.255 SNIP 1.418 CiteScore 4.95

ISI indexed (2013): ISI indexed yes

BFI (2012): BFI-level 2

Scopus rating (2012): SJR 1.792 SNIP 1.378 CiteScore 4.38

ISI indexed (2012): ISI indexed yes

BFI (2011): BFI-level 2

Scopus rating (2011): SJR 1.849 SNIP 1.314 CiteScore 4.33

ISI indexed (2011): ISI indexed yes

BFI (2010): BFI-level 2

Scopus rating (2010): SJR 1.933 SNIP 1.346

BFI (2009): BFI-level 2

Scopus rating (2009): SJR 2.087 SNIP 1.306

BFI (2008): BFI-level 2

Scopus rating (2008): SJR 1.818 SNIP 1.198

Scopus rating (2007): SJR 1.705 SNIP 1.182

Scopus rating (2006): SJR 1.569 SNIP 1.111

Web of Science (2006): Indexed yes

Scopus rating (2005): SJR 1.525 SNIP 1.014

Scopus rating (2004): SJR 1.437 SNIP 1.021

Scopus rating (2003): SJR 1.46 SNIP 1.104

Scopus rating (2002): SJR 1.486 SNIP 1.072

Scopus rating (2001): SJR 1.547 SNIP 1.12

Scopus rating (2000): SJR 1.457 SNIP 1.108

Scopus rating (1999): SJR 1.543 SNIP 1.181

Original language: English

Amylin, DACRA, Obesity, Adiposity, Body composition, Insulin sensitivity

DOIs:

10.1111/bph.13723

Source: FindIt

Source-ID: 2351358471

Publication: Research - peer-review › Journal article – Annual report year: 2017
A novel fuzzy-logic control strategy minimizing N₂O emissions

A novel control strategy for achieving low N₂O emissions and low effluent NH₄⁺ concentration is here proposed. The control strategy uses the measurements of ammonium and nitrate concentrations in inlet and outlet of the aerobic zone of a wastewater treatment plant to calculate a ratio indicating the balance among the microbial groups. More specifically, the ratio will indicate if there is a complete nitrification. In case nitrification is not complete, the controller will adjust the aeration level of the plant in order to inhibit the production of N₂O from AOB and HB denitrification. The controller was implemented using the fuzzy logic approach. It was comprehensively tested for different model structures and different sets of model parameters with regards to its ability of mitigating N₂O emissions for future applications in real wastewater treatment plants. It is concluded that the control strategy is useful for those plants having AOB denitrification as the main N₂O producing process. However, in treatment plants having incomplete NH₂OH oxidation as the main N₂O producing pathway, a cascade controller configuration adapting the oxygen supply to respect only the effluent ammonium concentration limits was found to be more effective to ensure low N₂O emissions.
A novel genetic tool for metabolic optimization of Corynebacterium glutamicum: efficient and repetitive chromosomal integration of synthetic promoter-driven expression libraries

Fine-tuning the expression level of multiple genes is usually pivotal for metabolic optimization. We have developed a tool for this purpose for the important industrial workhorse Corynebacterium glutamicum that allows for the introduction of synthetic promoter-driven expression libraries of arbitrary genes. We first devised a method for introducing genetic elements into the chromosome repeatedly, relying on site-specific recombinases and the vector pJS31 serving as the carrier. The pJS31 vector contains a synthetic cassette including a phage attachment site attP for integration, a bacterial attachment site attB for subsequent integration, a multiple cloning site, and two modified loxP sites to facilitate easy removal of undesirable vector elements. Meanwhile, we constructed a derivative of the wild-type strain ATCC 13032 carrying an attB site in its chromosome (JS34) and demonstrated that pJS31 readily could integrate into the attB site in this strain providing expression of the corresponding integrase. Subsequent expression of the Cre recombinase promoted recombination between the modified loxP sites, resulting in a strain only retaining the target insertions and an attB site. To simplify the procedure, non-replicating circular expression units for the phage integrase and the Cre recombinase were used. As a showcase, we used the tool to construct a battery of strains simultaneously expressing the two reporter genes, lacZ (encoding β-galactosidase) and gusA (encoding β-glucuronidase), to arbitrary levels. In principle, an unlimited number of genes, whether native, heterologous, or synthetic, can be introduced using the developed approach, and this should greatly facilitate metabolic optimization of this important platform organism.

General information

State: Published
Organisations: National Food Institute, Research Group for Microbial Biotechnology and Biorefining
Authors: Shen, J. (Intern), Chen, J. (Intern), Jensen, P. R. (Intern), Solem, C. (Intern)
Pages: 4737-4746
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Applied Microbiology and Biotechnology
Volume: 101
Issue number: 11
ISSN (Print): 0175-7598
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Corynebacterium glutamicum, Metabolic optimization, Site-specific integration, Synthetic promoter

DOIs: 10.1007/s00253-017-8222-8

Source: FindIt
Source-ID: 2355882308
Publication: Research - peer-review › Journal article – Annual report year: 2017
A novel in situ measurement method of bubble sizes in bioreactors using a high speed camera

Mass transfer of oxygen from the gas phase to the liquid phase is the rate limiting phenomenon in many industrial aerobic fermentation processes. This phenomenon is often described by the rate constant $k_{La}$, which remains a key performance indicator for scale up and general operation of fermentation processes. The attributing variables to the rate constant, the mass transfer resistance $kL$ and interfacial surface area $a$, are however very rarely individually identifiable from standard experimental analysis. This co-dependency of the variables on the rate constant limits the understanding of how process conditions affect the mass transfer rate, and hence a tool for identifying them individually is required. Available correlations for these variables are predominantly system dependent and therefore not necessarily valid in the process of interest. Currently available measurement techniques to identify bubble size require knowledge or assumptions regarding the gas flow direction to deduce the bubble size.

An optical method for determining the interfacial surface area, based on bubble size identification has been developed using a high speed camera and an endoscope. This novel method has been applied to bioreactors at different conditions in terms of power input, gas flow rate and viscosity. This in situ measurement illustrates the effect of process conditions on the size of the bubbles. The information on bubble sizes at different conditions is a valuable input to mechanistic models regarding gas-liquid mass transfer, for example computational fluid dynamics (CFD) models, in which the bubble size is a key input parameter.

A Novel Integrated Approach for Analysis and Evaluation of Control Factor Effects on Volumetric Tool Wear Rate (Vtwr) in Micro-EDM

A Novel Method for Detecting and Computing Univolatility Curves in Ternary Mixtures

Residue curve maps (RCMs) and univolatility curves are crucial tools for analysis and design of distillation processes. Even in the case of ternary mixtures, the topology of these maps is highly non-trivial. We propose a novel method allowing detection and computation of univolatility curves in homogeneous ternary mixtures independently of the presence of azeotropes, which is particularly important in the case of zeotropic mixtures. The method is based on the analysis of the geometry of the boiling temperature surface constrained by the univolatility condition. The introduced concepts of the generalized univolatility and unidistribution curves in the three dimensional composition – temperature state space lead to a simple and efficient algorithm of computation of the univolatility curves. Two peculiar ternary systems, namely diethylamine – chloroform – methanol and hexane – benzene – hexafluorobenzene are used for illustration. When varying pressure, tangential azeotropy, bi-ternary azeotropy, saddle-node ternary azeotrope, and bi-binary azeotropy are identified. Moreover, rare univolatility curves starting and ending on the same binary side are found. In both examples, a
distinctive crossing shape of the univolatility curve appears as a consequence of the existence of a common tangent point between the three dimensional univolatility hypersurface and the boiling temperature surface.
A novel model-based control strategy for aerobic filamentous fungal fed-batch fermentation processes

A novel model-based control strategy has been developed for filamentous fungal fed-batch fermentation processes. The system of interest is a pilot scale (550 L) filamentous fungus process operating at Novozymes A/S. In such processes, it is desirable to maximize the total product achieved in a batch in a defined process time. In order to achieve this goal, it is important to maximize both the product concentration, and also the total final mass in the fed-batch system. To this end, we describe the development of a control strategy which aims to achieve maximum tank fill, while avoiding oxygen limited conditions. This requires a two stage approach: (i) calculation of the tank start fill; and (ii) on-line control in order to maximize fill subject to oxygen transfer limitations. First, a mechanistic model was applied off-line in order to determine the appropriate start fill for processes with four different sets of process operating conditions for the stirrer speed, headspace pressure, and aeration rate. The start fills were tested with eight pilot scale experiments using a reference process operation. An on-line control strategy was then developed, utilizing the mechanistic model which is recursively updated using on-line measurements. The model was applied in order to predict the current system states, including the biomass concentration, and to simulate the expected future trajectory of the system until a specified end time. In this way, the desired feed rate is updated along the progress of the batch taking into account the oxygen mass transfer conditions and the expected future trajectory of the mass. The final results show that the target fill was achieved to within 5% under the maximum fill when tested using eight pilot scale batches, and over filling was avoided. The results were reproducible, unlike the reference experiments which show over 10% variation in the final tank fill, and this also includes over filling. The variance of the final tank fill is reduced by over 74%, meaning that it is possible to target the final maximum fill reproducibly. The product concentration achieved at a given set of process conditions was unaffected by the control strategy. Biotechnol. Bioeng. 2017;9999: 1–10. © 2017 Wiley Periodicals, Inc.
A Novel Model on DST-Induced Transplantation Tolerance by the Transfer of Self-Specific Donor tTregs to a Haplotype-Matched Organ Recipient

Donor-specific blood transfusion (DST) can lead to significant prolongation of allograft survival in experimental animal models and sometimes human recipients of solid organs. The mechanisms responsible for the beneficial effect on graft survival have been a topic of research and debate for decades and are not yet fully elucidated. Once we discover how the details of the mechanisms involved are linked, we could be within reach of a procedure making it possible to establish donor-specific tolerance with minimal or no immunosuppressive medication. Today, it is well established that CD4+Foxp3+...
regulatory T cells (Tregs) are indispensable for maintaining immunological self-tolerance. A large number of animal studies have also shown that Tregs are essential for establishing and maintaining transplantation tolerance. In this paper, we present a hypothesis of one H2-haplotype-matched DST-induced transplantation tolerance (in mice). The formulated hypothesis is based on a re-interpretation of data from an immunogenetic experiment published by Niimi and colleagues in 2000. It is of importance that the naive recipient mice in this study were never immunosuppressed and were therefore fully immune competent during the course of tolerance induction. Based on the immunological status of the recipients, we suggest that one H2-haplotype-matched self-specific Tregs derived from the transfusion blood can be activated and multiply in the host by binding to antigen-presenting cells presenting allopeptides in their major histocompatibility complex (MHC) class II (MHC-II). We also suggest that the endothelial and epithelial cells within the solid organ allograft upregulate the expression of MHC-II and attract the expanded Treg population to suppress inflammation within the graft. We further suggest that this biological process, here termed MHC-II recruitment, is a vital survival mechanism for organs (or the organism in general) when attacked by an immune system.

**General information**

State: Published
Organisations: Department of Chemistry, University of Copenhagen
Authors: Gregoriussen, A. M. M. (Ekstern), Bohr, H. G. (Intern)
Pages: 1-9
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Frontiers in Immunology
Volume: 8
ISSN (Print): 1664-3224
Ratings:
- Web of Science (2017): Indexed yes
- Scopus rating (2016): CiteScore 5.37 SJR 2.963 SNIP 1.483
- Web of Science (2016): Indexed yes
- Scopus rating (2015): SJR 2.818 SNIP 1.29 CiteScore 5.09
- Web of Science (2015): Indexed yes
- Scopus rating (2014): SJR 2.382 SNIP 1.056 CiteScore 4.24
- Web of Science (2014): Indexed yes
- Scopus rating (2013): SJR 1.842 SNIP 0.837 CiteScore 3.55
- ISI indexed (2013): ISI indexed no
- Scopus rating (2012): SJR 0.785 SNIP 0.193 CiteScore 1.38
- ISI indexed (2012): ISI indexed no
- Scopus rating (2011): SJR 0.121
- Web of Science (2011): Indexed yes
Original language: English
Tregs, indirect alloantigen presentation, direct alloantigen presentation, MHC-II recruitment, DST, transplantation tolerance, haplotype-matched, self-tolerance

**Electronic versions:**

fimmu_08_00009.pdf
DOI:
10.3389/fimmu.2017.00009
Source: FindIt
Source-ID: 2355443822
Publication: Research - peer-review › Journal article – Annual report year: 2017

**A novel numerical framework for self-similarity in plasticity: Wedge indentation in single crystals**

A novel numerical framework for analyzing self-similar problems in plasticity is developed and demonstrated. Self-similar problems of this kind include processes such as stationary cracks, void growth, indentation etc. The proposed technique offers a simple and efficient method for handling this class of complex problems by avoiding issues related to traditional Lagrangian procedures. Moreover, the proposed technique allows for focusing the mesh in the region of interest. In the present paper, the technique is exploited to analyze the well-known wedge indentation problem of an elastic-viscoplastic single crystal. However, the framework may be readily adapted to any constitutive law of interest. The main focus herein is the development of the self-similar framework, while the indentation study serves primarily as verification of the technique by comparing to existing numerical and analytical studies. In this study, the three most common metal crystal structures will be investigated, namely the face-centered cubic (FCC), body-centered cubic (BCC), and hexagonal close packed (HCP) crystal structures, where the stress and slip rate fields around the moving contact point singularity are presented.
A novel porcine model of implant associated osteomyelitis: a comprehensive analysis of local, regional and systemic response

Pigs are favorable experimental animals for infectious diseases in humans. However, implant associated osteomyelitis (IAO) models in pigs have only been evaluated using high-inoculum infection (>10⁸ CFU) models in 1975 and 1993. Therefore, the aim of this paper was to present a new low inoculum porcine model of human IAO based on 42 experimental pigs. The model was created by drilling an implant cavity in the tibial bone followed by insertion of a small steel implant and simultaneous inoculation of Staphylococcus aureus bacteria (n=32) or saline (n=10). The infected pigs were either inoculated with 10⁴ CFU (n=26) or 10² and 10³ CFU (n=6). All animals were euthanized five days after insertion of implants. Pigs receiving the high-inoculum infections showed a significantly higher volume of bone lesion, number of neutrophils around the implant, concentrations of acute phase proteins in serum and enlargement of regional lymph nodes. A positive correlation was present between a high number of surrounding neutrophils and high values of all other parameters. Furthermore, a threshold of 40 neutrophils per 10 high power fields for the histopathological diagnosis of high grade IAO was defined. In conclusion: this paper describes a novel low-inoculum S. aureus porcine model of IAO which was demonstrated to be reliable, reproducible and discriminative to human IAO, and represents a requested and valuable tool in orthopedic research. This article is protected by copyright. All rights reserved
A Novel Smart Meter Controlling System with Dynamic IP Addresses

Smart meters are the electronic devices for measuring energy consumption in real time. Usually, static public IP addresses are allocated to realize the point-to-point (P2P) communication and remote controlling for smart metering systems. This, however, restricts the wide deployment of smart meters, due to the deficiency of public IP resources. This paper proposes a novel subscription-based communication architecture for the support of dynamic IP addresses and group controlling of smart meters. The paper evaluates the proposed architecture by comparing the traditional P2P architecture, and validate its effectiveness to interact with smart meters.

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis, Sam Ratulangi University, De La Salle University-Manila
Authors: Manembu, P. (Ekstern), Welang, B. (Ekstern), Kalua Lapu, A. (Ekstern), Kewo, A. (Intern), Nielsen, P. S. (Intern), Liu, X. (Intern)
Pages: 1465-1470
Publication date: 2017

Host publication information
Title of host publication: Proceeding of The 26th IEEE International Symposium on Industrial Electronics
Main Research Area: Technical/natural sciences
Conference: 26th IEEE International Symposium on Industrial Electronics (ISIE), Edingburg, United Kingdom, 19/06/2017 - 19/06/2017
Source: PublicationPreSubmission
Source-ID: 133670308
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

A Novel SOFC/SOEC Sealing Glass with a Low SiO₂ Content and a High Thermal Expansion Coefficient

Solid oxide cells require seals that can function in harsh, elevated temperature environments. In addition, a low Si content can be advantageous, since Si impurities from the glass sealant can be transported to the active fuel electrode and poison the Ni-YSZ triple phase boundaries. To reduce the amount of Si emission, a low Si containing sealing glass (chemical composition: 50 mol% CaO, 20 mol% ZnO, 20 mol% B2O3 and 10 mol% SiO2) was developed at DTU. In this work, the results from thermal characterization, the crystallization behavior of the glass and the long-term stability and adhesion behavior of the glass were studied under SOFC and SOEC relevant conditions. The glass-ceramic sealant performed well over 400 h, and no cell degradation or leakage related to the seal was found, indicating that the developed glass system is applicable for the use in SOFC/SOEC stacks.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Mixed Conductors
Authors: Kiebach, W. (Intern), Agersted, K. (Ekstern), Zielke, P. (Intern), Ritucci, I. (Intern), Brock, M. B. (Intern), Hendriksen, P. V. (Intern)
A Novel SOFC/SOEC Sealing Glass with a Low SiO₂ Content and a High Thermal Expansion Coefficient

Solid oxide cells require seals that can function in harsh, elevated temperature environments. In the case of solid oxide electrolysis (SOEC), also a low Si content is desired, since Si impurities from the glass sealing can be transported to the active fuel electrode and poison the Ni-YSZ triple phase boundaries.

To reduce the amount of Si emission, a low Si containing sealing glass (chemical composition: 48 mol% CaO, 19 mol% ZnO, 21 mol% B₂O₃ and 12 mol% SiO₂) was developed at DTU. In this presentation, the results from thermal characterization, like thermal expansion coefficient, glass transition temperature, crystallization temperature, etc., of the glass will be presented. Additionally, the crystallization behavior of the glass was analyzed by in-situ X-ray diffraction, recording temperature resolved XRD spectra from 30 °C up to 900 °C.

Furthermore, the long-term stability and the adhesion behavior of the glass were studied under relevant SOFC and SOEC conditions. The stability of sealed Crofer/Glass/NiO-YSZ assemblies in reducing atmosphere and in air was investigated for over 500 h at temperatures between 750 °C and 850 °C. Additionally, a cell component test was performed to investigate the durability of the glass seal when exposed to dual atmosphere environments. The seals performed well over 400 h under fuel cell and electrolysis operation conditions, and no cell degradation or leakage related to the sealing was found, indicating that the developed glass system is applicable for the use in SOFC/SOEC stacks.
A novel synthetic biology platform technology: PROMYS – Programming synthetic networks for bio-based production of value chemicals – FP7 project

Professor Morten Sommer from the Novo Nordisk Foundation Center for Biosustainability at the Technical University of Denmark discusses the latest work of the PROMYS (Programming synthetic networks for bio-based production of value chemicals) consortium developing a new technology platform that can be broadly applied to metabolic engineering.

A novel urinary biomarker of type VI collagen formation and endotrophin is associated with loss of kidney function in patients with diabetic nephropathy

INTRODUCTION AND AIMS: Diabetic nephropathy (DN) is the leading cause of CKD in the Western world. Around 50 percent of patients who have had diabetes for more than 20 years develop CKD. Glomerulosclerosis and tubulointerstitial fibrosis are histological features as DN progresses towards end-stage renal disease. Fibrosis is characterized by a dysregulated remodeling of the extracellular matrix (ECM). Collagen type VI (COL VI) is a crucial ECM molecule for the control of tissue organization. It is present at the interface of the glomerular basement membrane and interstitial matrix and its levels have been reported elevated in glomeruli of patients with glomerular diseases and in the mesangium of diabetic patients. During deposition of COL VI, a fragment is released, namely endotrophin (ETP). Endotrophin (ETP), has shown pro-fibrotic potential. We investigated the prognostic potential of COL VI formation and ETP for CKD prog.
An overview of electron acceptors in microbial fuel cells

Microbial fuel cells (MFC) have recently received increasing attention due to their promising potential in sustainable wastewater treatment and contaminant removal. In general, contaminants can be removed either as an electron donor via microbial catalyzed oxidation at the anode or removed at the cathode as electron acceptors through reduction. Some contaminants can also function as electron mediators at the anode or cathode. While previous studies have done a thorough assessment of electron donors, cathodic electron acceptors and mediators have not been as well described. Oxygen is widely used as an electron acceptor due to its high oxidation potential and ready availability. Recent studies, however, have begun to assess the use of different electron acceptors because of the (1) diversity of redox potential, (2) needs of alternative and more efficient cathode reaction, and (3) expanding of MFC based technologies in different areas. The aim of this review was to evaluate the performance and applicability of various electron acceptors and mediators used in MFCs. This review also evaluated the corresponding performance, advantages and disadvantages, and future potential applications of select electron acceptors (e.g., nitrate, iron, copper, perchlorate) and mediators.

General information
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering, Harran University
Authors: Ucar, D. (Ekstern), Zhang, Y. (Intern), Angelidaki, I. (Intern)
Number of pages: 14
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Frontiers in Microbiology
Volume: 8
Article number: 643
ISSN (Print): 1664-302X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.16 SJR 1.731 SNIP 1.172
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.878 SNIP 1.208 CiteScore 4.15
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.861 SNIP 1.16 CiteScore 3.76
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.751 SNIP 0.951 CiteScore 3.56
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.415 SNIP 0.725 CiteScore 2.78
ISI indexed (2012): ISI indexed no
Scopus rating (2011): SJR 0.626 SNIP 0.187
Web of Science (2011): Indexed yes
Original language: English
Electronic versions:
fmicb_08_00643.pdf
DOIs:
10.3389/fmicb.2017.00643
Source: PublicationPreSubmission
Source-ID: 130823862
Publication: Research - peer-review › Review – Annual report year: 2017

Antenna misalignment effects in 100 Gbit/s D-band wireless transmissions

We report an operational photonics-enabled 100 Gbit/s D-band antenna polarization multiplexing system (2 x 2 MIMO) with a carrier frequency of 141 GHz, and experimentally explores antenna misalignment effects on the signal performance in terms of bit error rate. Misalignments from 210 to 10 degrees were evaluated for both the E-and H-plane, highlighting the strict requirements needed to maintain a signal performance below forward-error correction codes thresholds. Our
findings indicate tolerable misalignments are below 1 degree, hinting beam steering as a must for future D-band communication links. (C) 2017 Wiley Periodicals, Inc.
Anthelmintic effects of forage chicory (Cichorium intybus) against free-living and parasitic stages of Cooperia oncophora

Chicory shows great promise as an anthelmintic forage for grazing ruminants that can reduce reliance on anti-parasitic drugs. Recently, we reported potent anthelmintic effects of chicory-based diets in infected cattle with significant reductions in worm burdens of the abomasal nematode Ostertagia ostertagi, whilst no apparent activity was observed against the small intestinal parasite Cooperia oncophora. To explore this discrepancy, we investigated direct anthelmintic effects of forage chicory against C. oncophora in vitro. Chicory leaves (cultivar ‘Spadona’) were extracted with methanol in a Soxhlet apparatus and the resulting extract was purified by solid-phase extraction to concentrate bioactive phytochemicals such as sesquiterpene lactones. C. oncophora eggs and adult worms from mono-infected donor calves were exposed to decreasing concentrations of the chicory extract. In an egg hatch assay, the chicory extract induced a marked and dose-dependent inhibition of egg hatching, with 95% inhibition at 2500 μg extract/mL (EC50 = 619 [95% CI: 530–722] μg extract/mL). In the adult motility inhibition assays, the chicory extract induced a potent and dose-dependent worm paralysis. At 12 h of incubation, worms exposed to chicory showed a total paralysis at ≥500 μg extract/mL, while after 48 h of incubation a complete inhibition of worm motility was observed at ≥250 μg extract/mL (EC50 = 80 [95% CI: 67–95] μg extract/mL). We have demonstrated that forage chicory can induce potent inhibitory effects on the egg hatching and exert direct anthelmintic activity against parasitic stages of C. oncophora. These results suggest that the previously reported absence of in vivo effects of chicory towards C. oncophora in infected animals may be related with host-mediated factors and/or inhibitory digestive conditions, rather than an inherent inactivity of chicory and its bioactive phytochemicals.

General information
State: Published
Organisations: National Veterinary Institute, Department of Biotechnology and Biomedicine, Photosynthetic Cell Factories, University of Copenhagen, Norwegian Veterinary Institute
Authors: Pena-Espinoza, M. A. (Intern), Williams, A. R. (Ekstern), Thamsborg, S. M. (Ekstern), Simonsen, H. T. (Intern), Enemark, H. L. (Ekstern)
Pages: 204-207
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Veterinary Parasitology
Volume: 243
ISSN (Print): 0304-4017
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.49 SJR 1.173 SNIP 1.228
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.21 SNIP 1.339 CiteScore 2.46
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.316 SNIP 1.421 CiteScore 2.53
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.251 SNIP 1.45 CiteScore 2.63
Anthropogenic $^{236}$U in Danish Seawater: Global Fallout versus Reprocessing Discharge

This work focuses on the occurrence of $^{236}$U in seawater along Danish coasts, which is the sole water-exchange region between the North Sea-Atlantic Ocean and the Baltic Sea. Seawater collected in 2013 and 2014 were analyzed for $^{236}$U (as well as $^{238}$U and $^{137}$Cs). Our results indicate that $^{236}$U concentrations in Danish seawater are distributed within a relatively narrow range of $(3.6-8.2) \times 10^7$ atom/L and, to a certain extent, independent of salinity. $^{236}$U/238U atomic ratios in Danish seawater are more than 4 times higher than the estimated global fallout value of $1 \times 10^{-9}$. The levels of $^{236}$U/238U atomic ratios obtained are comparable to those reported for the open North Sea and much higher than several other open oceans worldwide. This indicates that besides the global fallout input, the discharges from the two major European nuclear reprocessing plants are dominating sources of $^{236}$U in Danish seawater. However, unexpectedly high $^{236}$U/238U ratios as well as high $^{236}$U concentrations were observed at low-salinity locations of the Baltic Sea. While this feature might be interpreted as a clue for another significant $^{236}$U input in the Baltic Sea, it may also be caused by the complexity of water currents or slow turnover rate.

General information

State: Published
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, University of Vienna
Authors: Qiao, J. (Intern), Steier, P. (Ekstern), Nielsen, S. P. (Intern), Hou, X. (Intern), Roos, P. (Intern), Golser, R. (Ekstern)
Anthropometry, DXA and leptin reflect subcutaneous but not visceral abdominal adipose tissue by MRI in 197 healthy adolescents

Background Abdominal fat distribution is associated with the development of cardio-metabolic disease independently of body mass index (BMI). We assessed anthropometry, serum adipokines, and DXA as markers of abdominal subcutaneous adipose tissue (SAT) and visceral adipose tissue (VAT) using magnetic resonance imaging (MRI).

Methods We performed a cross-sectional study that included 197 healthy adolescents (114 boys) aged 10–15 years nested within a longitudinal population-based cohort. Clinical examination, blood sampling, DXA, and abdominal MRI were performed. SAT% and VAT% were adjusted to total abdominal volume. Results Girls had a higher SAT% than did boys in early and late puberty (16 vs. 13%, P<0.01 and 20 vs. 15%, P=0.001, respectively), whereas VAT% was comparable (7% in both genders, independently of puberty). DXA android fat% (standard deviation score (SDS)), suprailiac skinfold thickness (SDS), leptin, BMI (SDS), waist-to-height ratio (WHtR), and waist circumference (SDS) correlated strongly with SAT% (descending order: r=0.90–0.55, all P<0.001) but weakly with VAT% (r=0.49–0.06). Suprailiac skinfold was the best anthropometric marker of SAT% (girls: R²=48.6%, boys: R²=65%, P=0.001) and VAT% in boys (R²=16.4%, P<0.001). WHtR was the best marker of VAT% in girls (R²=7.6%, P=0.007). Conclusions Healthy girls have a higher SAT% than do boys, whereas VAT% is comparable, independently of puberty. Anthropometry and circulating leptin are valid markers of SAT%, but not of VAT%.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, University of Copenhagen
Authors: Tinggaard, J. (Ekstern), Hagen, C. P. (Ekstern), Christensen, A. N. (Intern), Mouritsen, A. (Ekstern), Mieritz, M. G. (Ekstern), Wohlfahrt-Veje, C. (Ekstern), Helge, J. W. (Ekstern), Beck, T. N. (Ekstern), Fallentin, E. (Ekstern), Larsen, R. (Intern), Jensen, R. B. (Ekstern), Juul, A. C. (Ekstern), Main, K. M. (Ekstern)
Pages: 620-628
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Pediatric Research
Volume: 82
ISSN (Print): 0031-3998
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.88 SJR 1.398 SNIP 1.062
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.338 SNIP 1.011 CiteScore 2.76
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.405 SNIP 1.048 CiteScore 2.69
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.289 SNIP 1.038 CiteScore 2.87
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.325 SNIP 1.142 CiteScore 3.05
Anti-Bacterial Activity of Phenolic Compounds against *Streptococcus pyogenes*

**Background:** Worldwide, *Streptococcus pyogenes* is the leading cause of bacterial pharyngitis. To reduce the use of antibiotics, antimicrobial phytochemical-containing remedies, which have long been in use in traditional medicine, may provide new approaches for management of streptococcal pharyngitis. The objective of this study was to assess the inhibitory activities of 25 natural phenolic compounds against three strains of *S. pyogenes*. 

**Methods:** After an initial screening, the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of the nine most effective phenolic compounds were determined. The effect of four compounds with the lowest MIC and MBC on streptococcal growth and biofilm formation was also studied. Results: 1,2-Naphthoquinone and 5-hydroxy-1,4-naphthoquinone elicited the greatest anti-*S. pyogenes* activities with MICs ranging from 0.39 to 6.25 µg mL−1 and MBCs of 100 µg mL−1. Both naphthoquinones inhibited the biofilm formation at concentrations ranging from 12.5 to 50 µg mL−1. Biofilm reduction and altered bacterial cell structures were visible in scanning electron microscopy images of naphthoquinone-treated cells. 

**Conclusion:** In conclusion, 1,2-naphthoquinone and 5-hydroxy-1,4-naphthoquinone inhibit *S. pyogenes* and should be further investigated as candidates for the management of streptococcal pharyngitis.

**General information**

State: Published
Organisations: National Food Institute, Research Group for Analytical and Predictive Microbiology, Dalhousie University
Authors: Macé, S. (Ekstern), Hansen, L. T. (Intern), P. Vasantha Rupasinghe, H. (Ekstern)
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Medicines
Volume: 4
Issue number: 2
ISSN (Print): 2305-6320
Original language: English

pharyngitis, strep throat, biofilm, naphthoquinone, infection, disease, polyphenols, Medicine
Antibiotic Resistance Genes and Correlations with Microbial Community and Metal Resistance Genes in Full-Scale Biogas Reactors As Revealed by Metagenomic Analysis

Digested residues from biogas plants are often used as biofertilizers for agricultural crops cultivation. The antibiotic resistance genes (ARGs) in digested residues pose a high risk to public health due to their potential spread to the disease-causing microorganisms and thus reduce the susceptibility of disease-causing microorganisms to antibiotics in medical treatment. A high-throughput sequencing (HTS)-based metagenomic approach was used in the present study to investigate the variations of ARGs in full-scale biogas reactors and the correlations of ARGs with microbial communities and metal resistance genes (MRGs). The total abundance of ARGs in all the samples varied from $7 \times 10^{-3}$ to $1.08 \times 10^{-1}$ copy of ARG/copy of 16S-rRNA gene, and the samples obtained from thermophilic biogas reactors had a lower total abundance of ARGs, indicating the superiority of thermophilic anaerobic digestion for ARGs removal. ARGs in all the samples were composed of 175 ARG subtypes; however, only 7 ARG subtypes were shared by all the samples. Principal component analysis and canonical correspondence analysis clustered the samples into three groups (samples from manure-based mesophilic reactors, manure-based thermophilic reactors, and sludge-based mesophilic reactors), and substrate, temperature, and hydraulic retention time (HRT) as well as volatile fatty acids (VFAs) were identified as crucial environmental variables affecting the ARGs compositions. Procrustes analysis revealed microbial community composition was the determinant of ARGs composition in biogas reactors, and there was also a significant correlation between ARGs composition and MRGs composition. Network analysis further revealed the co-occurrence of ARGs with specific microorganisms and MRGs.

General information
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering, Tsinghua University, University of Hong Kong, Hong Kong Baptist University
Authors: Luo, G. (Intern), Li, B. (Ekstern), Li, L. (Ekstern), Zhang, T. (Ekstern), Angelidaki, I. (Intern)
Pages: 4069-4080
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Environmental Science and Technology
Volume: 51
Issue number: 7
ISSN (Print): 0013-936X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.26 SJR 2.538 SNIP 1.889
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.584 SNIP 1.828 CiteScore 5.61
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.777 SNIP 2.017 CiteScore 5.5
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.956 SNIP 2.103 CiteScore 5.52
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.146 SNIP 2.056 CiteScore 5.17
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Antibiotic resistance genes in municipal wastewater treatment systems and receiving waters in Arctic Canada

Domestic wastewater discharges may adversely impact arctic ecosystems and local indigenous people, who rely on being able to hunt and harvest food from their local environment. Therefore, there is a need to develop efficient wastewater treatment plants (WWTPs), which can be operated in remote communities under extreme climatic conditions. WWTPs have been identified as reservoirs of antibiotic resistance genes (ARGs). The objective of this work was to quantify the presence of nine different ARG markers (int1, sul1, sul2, tet(O), erm(B), mecA, blaCTX-M, blaTEM, and qnr(S)) in two passive systems (waste stabilization ponds [WSPs]) and one mechanical filtration plant operating in two smaller and one large community, respectively, in Nunavut, Canada. Measurement of water quality parameters (carbonaceous oxygen demand, ammonia, total suspended solids, Escherichia coli and total coliforms) showed that the WWTPs provided only primary treatment. Low levels of the ARGs (2 log copies/mL) were observed in the effluent, demonstrating that bacteria residing in three northern WWTPs harbour ARGs conferring resistance to multiple clinically-relevant classes of antibiotics. Our results indicate that long-term storage in WSPs benefitted removal of organic material and some ARGs. However, one WSP system showed evidence of the enrichment of sul1, sul2, mecA, tet(O) and qnr(S). Further research is needed to fully understand if these ARG releases pose a risk to human health, especially in the context of traditional hunting and fishing activities.

General information

State: Published
Organisations: National Food Institute, Research Group for Analytical and Predictive Microbiology, Dalhousie University, University of Regina
Authors: Neudorf, K. D. (Ekstern), Huang, Y. N. (Ekstern), Ragush, C. M. (Ekstern), Yost, C. K. (Ekstern), Jamieson, R. C. (Ekstern), Hansen, L. T. (Intern)
Antimicrobial peptide CAP18 and its effect on Yersinia ruckeri infections in rainbow trout Oncorhynchus mykiss (Walbaum): comparing administration by injection and oral routes

The antimicrobial peptide CAP18 has been demonstrated to have a strong in vitro bactericidal effect on Yersinia ruckeri, but its activity in vivo has not been described. In this work, we investigated whether CAP18 protects rainbow trout Oncorhynchus mykiss (Walbaum) against enteric red mouth disease caused by this pathogen either following i.p. injection or by oral administration (in feed). It was found that injection of CAP18 into juvenile rainbow trout before exposure to Y. ruckeri was associated with lowered mortality compared to non-medicated fish although it was less effective than the conventional antibiotic oxolinic acid. Oral administration of CAP18 to trout did not prevent infection. The proteolytic effect of secretions on the peptide CAP18 in the fish gastrointestinal tract is suggested to account for the inferior effect of oral administration.

General information
State: Published
Organisations: National Food Institute, Research Group for Gut Microbiology and Immunology, Research Group for Genomic Epidemiology, National Veterinary Institute, Section for Bacteriology, Pathology and Parasitology, University of Copenhagen, Aalborg University, BioMar A/S
Authors: Chettri, J. K. (Intern), Mehrdana, F. (Ekstern), Hansen, E. B. (Intern), Ebbensgaard, A. E. (Intern), Overgaard, M. T. (Ekstern), Lauritsen, A. H. (Ekstern), Dalsgaard, I. (Intern), Buchmann, K. (Ekstern)
Pages: 97-104
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication Information
Journal: Journal of Fish Diseases
Volume: 40
Issue number: 1
ISSN (Print): 0140-7775
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.12
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.71
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.99
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.74
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Antimicrobial reduction measures applied in Danish pig herds following the introduction of the “Yellow Card” antimicrobial scheme

Following introduction of the antimicrobial restrictive “Yellow Card Scheme” in summer 2010, a rapid decrease in the Danish national pig antimicrobial consumption was observed. The aims of this study were to (i) investigate which measures had been implemented to reduce the antimicrobial consumption according to farmers and veterinarians and (ii) where possible, investigate if said measures were reflected in the herds’ antimicrobial purchase data. Based on national register data from VetStat and the Central Husbandry Register, the study population was selected among Danish pig herds which had decreased their annual antimicrobial consumption with ≥10% following the introduction of the Yellow Card Scheme comparing June 1, 2009–May 31, 2010 to June 1, 2010–May 31, 2011. Subsequently, questionnaire surveys of both farmers and veterinarians were carried out, resulting in responses from 179 farmers accounting for 202 herds (response ratio: 83%) and 58 veterinarians accounting for 140 herds. Prior to the introduction of the Yellow Card Scheme, 24% of the participating herds had an antimicrobial consumption for one or more age groups which exceeded the Yellow Card Scheme threshold values on antimicrobial consumption, while 50% of the herds had an antimicrobial consumption below the national average. The measures most frequently stated as having contributed to the antimicrobial reduction were increased use of vaccines (52% of farmers; 35% of the veterinarians), less use of group medication (44% of the farmers; 58% of the veterinarians) and staff education (22% of the farmers; 26% of the veterinarians). Reduced usage of antimicrobials for oral use accounted for 89% of the total reduction in antimicrobial use. Among the farmers, 13% also stated that change in choice of product had contributed to reducing their antimicrobial consumption. However, when analyzing purchase data, no general trend was seen towards a larger purchase of products with a higher registered dosage per kg animal compared to similar products. The findings of this study indicate that implementation of antimicrobial restrictive legislation at herd-level may lead to a variety of antimicrobial reducing initiatives in both herds with a high- and herds with a low previous level of antimicrobial consumption.

General information
State: Published
Organisations: National Veterinary Institute, Bacteriology & Parasitology, SEGES, Danish Agriculture & Food Council,, University of Copenhagen
Authors: Dupont, N. (Ekstern), Diness, L. H. (Ekstern), Fertner, M. E. (Intern), Kristensen, C. S. (Ekstern), Stege, H. (Ekstern)
Pages: 9-16
Antimicrobial resistance among pathogenic bacteria from mink (Neovison vison) in Denmark

Background: For proper treatment of bacterial infections in mink, knowledge of the causative agents and their antimicrobial susceptibility patterns is crucial. The used antimicrobials are in general not registered for mink, i.e. most usage is "off-label". In this study, we report the patterns of antimicrobial resistance among pathogenic bacteria isolated from Danish mink during the period 2014-2016. The aim of this investigation was to provide data on antimicrobial resistance and consumption, to serve as background knowledge for new veterinary guidelines for prudent and optimal antimicrobial usage in mink. Results: A total number of 308 Escherichia coli isolates, 41 Pseudomonas aeruginosa, 36 Streptococcus canis, 30 Streptococcus dysgalactiae, 55 Staphylococcus delphini, 9 Staphylococcus aureus, and 20 Staphylococcus schleiferi were included in this study. Among E. coli, resistance was observed more frequently among the hemolytic isolates than among the non-hemolytic ones. The highest frequency of resistance was found to ampicillin, 82.3% and 48.0% of the hemolytic of the non-hemolytic isolates, respectively. The majority of the P. aeruginosa isolates were only sensitive to ciprofloxacin and gentamicin. Among the Staphylococcus spp., the highest occurrence of resistance was found for tetracycline. Regarding the nine S. aureus, one isolate was resistant to cefoxitin indicating it was a methicillin-resistant Staphylococcus aureus. Both β-hemolytic Streptococcus species showed high levels of resistance to tetracycline and erythromycin. The antimicrobial consumption increased significantly during 2007-2012, and fluctuated at a high level during 2012-2016, except for a temporary drop in 2013-2014. The majority of the prescribed antimicrobials were aminopenicillins followed by tetracyclines and macrolides. Conclusions: The study showed that antimicrobial resistance was common in most pathogenic bacteria from mink, in particular hemolytic E. coli. There is a need of guidelines for prudent use of antimicrobials for mink.

General information
State: Published
Organisations: National Veterinary Institute, Bacteriology & Parasitology, Diagnostic & Development, Epidemiology, Technical University of Denmark
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Acta Veterinaria Scandinavica
Volume: 59
Issue number: 1
Article number: 60
ISSN (Print): 0044-605X
Ratings:
Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 1.01
Scopus rating (2015): CiteScore 0.98
Scopus rating (2014): CiteScore 1.54
Scopus rating (2013): CiteScore 1.41
Scopus rating (2012): CiteScore 1.26
Web of Science (2012): Indexed yes
Scopus rating (2011): CiteScore 1.42
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Antioxidant effect of water and acetone extracts of Fucus vesiculosus on oxidative stability of skin care emulsions

A water and an acetone extract of the Icelandic brown algae Fucus vesiculosus were evaluated as potential natural sources of antioxidant compounds in skin care emulsions. To assess their efficacy in inhibiting lipid oxidation caused by photo- or thermoxidation, they were stored in darkness and room temperature as control conditions, and compared to samples stored under accelerated conditions (light and room temperature, or darkness and 40°C). The presence of extracts in the skin care emulsions induced remarkable colour changes when the emulsions were exposed to light, and more extensively under high temperature. High temperature also caused greater increments in the droplet size of the emulsions. The analysis of the tocopherol content, peroxide value and volatile compounds during the storage revealed that, whereas both water and acetone extracts showed (at 2mg/g of emulsion) protective effect against thermooxidation, only the water extract showed antioxidant activity against photooxidation.
Brown algae, Cosmetic emulsion, Lipid oxidation, Skin care emulsion

Antioxidant Efficacies of Rutin and Rutin Esters in Bulk Oil and Oil-in-Water Emulsion

The use of flavonoids as antioxidants in food formulations is limited due to their solubility and thereby their localization in the food products. However, enzymatic alkylation of flavonoids with lipophilic moieties alters their lipophilicity and thereby partitioning within different phases in a food product. This study aimed to evaluate the antioxidative efficiency of two derivatives of rutin, namely rutin laurate (C12:0) and rutin palmitate (C16:0) compared with their parent compound rutin and with butylated hydroxytoluene (BHT). Their efficiency as antioxidants at two different concentrations (25 and 200 µM) was assessed in bulk oil and in an o/w emulsion system without and with iron addition. All evaluated compounds revealed antioxidant effects. However, rutin and BHT were the most efficient antioxidants in bulk oil followed by rutin palmitate, whereas rutin laurate acted as either an antioxidant or a prooxidant at low and high concentrations (25 and 200 µM), respectively. In emulsions, rutin and BHT in high concentration (200 µM) were more efficient than rutin esters. Thus, alkylation of rutin with medium chain fatty acids did not improve the antioxidant ability, neither in bulk oil nor in o/w emulsion. Interestingly, rutin had stronger antioxidative effect than BHT upon iron addition to the emulsion.

Practical application: According to the antioxidant hypothesis the polar paradox more amphiphilic antioxidants should perform as better antioxidants in emulsions than more polar antioxidants. The finding in this study revealed that lipophilization of rutin did not improve its antioxidant capacity in emulsions compared to untreated rutin. This stresses the importance of evaluating the antioxidant in each emulsion systems before selecting appropriate antioxidants for optimal protection against lipid oxidation.
Antioxidant treatment attenuates lactate production in diabetic nephropathy

The early progression of diabetic nephropathy is notoriously difficult to detect and quantify before the occurrence of substantial histological damage. Recently, hyperpolarized [1-13C]pyruvate has demonstrated increased lactate production in the kidney early after the onset of diabetes, implying increased lactate dehydrogenase activity as a consequence of increased nicotinamide adenine dinucleotide substrate availability due to upregulation of the polyol pathway, i.e., pseudohypoxia. In this study, we investigated the role of oxidative stress in mediating these metabolic alterations using state-of-the-art hyperpolarized magnetic resonance (MR) imaging. Ten-week-old female Wistar rats were randomly divided into three groups: healthy controls, untreated diabetic (streptozotocin treatment to induce insulinopenic diabetes), and diabetic, receiving chronic antioxidant treatment with TEMPOL (4-hydroxy-2,2,6,6-tetramethylpiperidin-1-oxyl) via the drinking water. Examinations were performed 2, 3, and 4 wk after the induction of diabetes by using a 3T Clinical MR system equipped with a dual tuned13C/1H-volume rat coil. The rats received intravenous hyperpolarized [1-13C]pyruvate and were imaged using a slice-selective13C-IDEAL spiral sequence. Untreated diabetic rats showed increased renal lactate production compared with that shown by the controls. However, chronic TEMPOL treatment significantly attenuated diabetes-induced lactate production. No significant effects of diabetes or TEMPOL were observed on [13C]alanine levels, indicating an intact glucose-alanine cycle, or [13C]bicarbonate, indicating normal flux through the Krebs cycle. In conclusion, this study demonstrates that diabetes-induced pseudohypoxia, as indicated by an increased lactate-to-pyruvate ratio, is significantly attenuated by antioxidant treatment. This demonstrates a pivotal role of oxidative stress in renal metabolic alterations occurring in early diabetes.

General information

State: Published
Organisations: Department of Automation, Center for Hyperpolarization in Magnetic Resonance, Department of Electrical Engineering, Center for Magnetic Resonance, Aarhus University, Danish Diabetes Academy Membership, Uppsala University
Pages: F192-F199
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: American Journal of Physiology - Renal Physiology
Volume: 312
Issue number: 1
ISSN (Print): 1931-857X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 1.649 SNIP 0.968 CiteScore 3.07
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.9 SNIP 1.09 CiteScore 3.32
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.798 SNIP 1.029 CiteScore 3.27
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.049 SNIP 1.206 CiteScore 3.88
antiSMASH 4.0—improvements in chemistry prediction and gene cluster boundary identification

Many antibiotics, chemotherapeutics, crop protection agents and food preservatives originate from molecules produced by bacteria, fungi or plants. In recent years, genome mining methodologies have been widely adopted to identify and characterize the biosynthetic gene clusters encoding the production of such compounds. Since 2011, the ‘antibiotics and secondary metabolite analysis shell-antiSMASH’ has assisted researchers in efficiently performing this, both as a web server and a standalone tool. Here, we present the thoroughly updated antiSMASH version 4, which adds several novel features, including prediction of gene cluster boundaries using the ClusterFinder method or the newly integrated CASSIS algorithm, improved substrate specificity prediction for non-ribosomal peptide synthetase adenylation domains based on the new SANDPUMA algorithm, improved predictions for terpene and ribosomally synthesized and post-translationally modified peptides cluster products, reporting of sequence similarity to proteins encoded in experimentally characterized gene clusters on a per-protein basis and a domain-level alignment tool for comparative analysis of trans-AT polyketide synthase assembly line architectures. Additionally, several usability features have been updated and improved. Together, these improvements make antiSMASH up-to-date with the latest developments in natural product research and will further facilitate computational genome mining for the discovery of novel bioactive molecules.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds, Hans Knöll Institute, University of Wisconsin-Madison, Wageningen University, University of Illinois at Urbana-Champaign, University of Warwick, University of Lisbon, University of Bonn, University of Manchester
A Numerical Approach for Hybrid Simulation of Power System Dynamics Considering Extreme Icing Events

The global climate change leads to more extreme meteorological conditions such as icing weather, which have caused great losses to power systems. Comprehensive simulation tools are required to enhance the capability of power system risk assessment under extreme weather conditions. A hybrid numerical simulation scheme integrating icing weather events with power system dynamics is proposed to extend power system numerical simulation. A technique is developed to efficiently simulate the interaction of slow dynamics of weather events and fast dynamics of power systems. An extended package for PSS/E enabling hybrid simulation of icing event and power system disturbance is developed, based on which a hybrid simulation platform is established. Numerical studies show that the functionality of power system simulation is greatly extended by taking into account the icing weather events.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, Shandong University
Authors: Chen, L. (Ekstern), Zhang, H. (Ekstern), Wu, Q. (Intern), Terzija, V. (Ekstern)
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Transactions on Smart Grid
ISSN (Print): 1949-3053
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 7.73 SJR 2.851 SNIP 2.58
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 3.785 SNIP 3.424 CiteScore 8.48
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 3.105 SNIP 3.799 CiteScore 7.77
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 3.175 SNIP 4.831 CiteScore 9.88
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 2.023 SNIP 6.821 CiteScore 13.33
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 0.902 SNIP 6.022 CiteScore 11.78
A Numerical Framework for Self-Similar Problems in Plasticity: Indentation in Single Crystals

A new numerical framework specialized for analyzing self-similar problems in plasticity is developed. Self-similarity in plasticity is encountered in a number of different problems such as stationary cracks, void growth, indentation etc. To date, such problems are handled by traditional Lagrangian procedures that may be associated with severe numerical difficulties relating to sufficient discretization, moving contact points, etc. In the present work, self-similarity is exploited to construct the numerical framework that offers a simple and efficient method to handle self-similar problems in history dependent materials. The procedure allows for focusing the mesh only in regions of interest giving highly detailed results in fractions of the time compared to traditional frameworks. The framework is not limited to a specific constitutive law and may be applied to a wide range of material models. The technique is here applied to wedge indentation in elastic-viscoplastic single crystals.

The three most common metal structures are investigated, namely the FCC, BCC, and HCP crystal structures, where the slip rate fields and stress fields will be compared to analytical predictions [1][2] and traditional numerical simulations [3] when possible. To mimic the condition for the analytical predictions, the wedge indenter is considered nearly flat and the material is perfectly plastic with a very low yield strain. Under these conditions, [1][2] proved analytically the existence of discontinuities in the slip rate field. The numerical simulations reveal a striking match to the analytical prediction showing the expected discontinuities in the slip rate field. In addition, the current results provide much more detailed views of the stress and slip rate fields than previously obtained. The results are all obtained without encountering many of the issues related to the traditional procedures and guarantees that it is indeed the self-similar solution that has been found.

A Numerical Framework for Sobolev Metrics on the Space of Curves

Statistical shape analysis can be done in a Riemannian framework by endowing the set of shapes with a Riemannian metric. Sobolev metrics of order two and higher on shape spaces of parametrized or unparametrized curves have several desirable properties not present in lower order metrics, but their discretization is still largely missing. In this paper, we present algorithms to numerically solve the geodesic initial and boundary value problems for these metrics. The combination of these algorithms enables one to compute Karcher means in a Riemannian gradient-based optimization scheme and perform principal component analysis and clustering. Our framework is sufficiently general to be applicable to a wide class of metrics. We demonstrate the effectiveness of our approach by analyzing a collection of shapes representing HeLa cell nuclei.
This study presents a numerical model to evaluate the flow distribution in a large solar collector field, with solar collectors connected both in series and in parallel. The boundary conditions of the systems, such as flow rate, temperature, fluid type and layout of the collector field can be easily changed in the model. The model was developed in Matlab and the calculated pressure drop and flow distribution were compared with measurements from a solar collector field. A good
agreement between model and measurements was found. The model was then used to study the flow distribution in different conditions. Balancing valves proved to be an effective way to achieve uniform flow distribution also in conditions different from those for which the valves were regulated. For small solar collector fields with limited number of collector rows connected in parallel, balancing valves are not strictly necessary if the pressure drop across the collector rows is much higher than the pressure drop along the longest distribution pipe.

**General information**

State: Published  
Organisations: Department of Civil Engineering, Section for Building Energy  
Authors: Bava, F. (Intern), Dragsted, J. (Intern), Furbo, S. (Intern)  
Number of pages: 12  
Pages: 31-42  
Publication date: 2017  
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Solar Energy  
Volume: 143  
ISSN (Print): 0038-092X  
Ratings:  
BFI (2017): BFI-level 1  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 1  
Scopus rating (2016): CiteScore 4.52 SJR 1.547 SNIP 1.748  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 1  
Scopus rating (2015): SJR 1.974 SNIP 2.143 CiteScore 4.61  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 1  
Scopus rating (2014): SJR 2.014 SNIP 2.704 CiteScore 4.77  
Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 1  
Scopus rating (2013): SJR 2.058 SNIP 2.92 CiteScore 4.44  
ISI indexed (2013): ISI indexed yes  
Web of Science (2013): Indexed yes  
BFI (2012): BFI-level 1  
Scopus rating (2012): SJR 1.655 SNIP 2.55 CiteScore 3.65  
ISI indexed (2012): ISI indexed yes  
Web of Science (2012): Indexed yes  
BFI (2011): BFI-level 1  
Scopus rating (2011): SJR 1.326 SNIP 2.223 CiteScore 3.19  
ISI indexed (2011): ISI indexed yes  
Web of Science (2011): Indexed yes  
BFI (2010): BFI-level 1  
Scopus rating (2010): SJR 1.419 SNIP 2.161  
Web of Science (2010): Indexed yes  
BFI (2009): BFI-level 1  
Scopus rating (2009): SJR 1.301 SNIP 2.158  
Web of Science (2009): Indexed yes  
BFI (2008): BFI-level 1  
Scopus rating (2008): SJR 1.693 SNIP 2.007  
Web of Science (2008): Indexed yes  
Scopus rating (2007): SJR 1.708 SNIP 2.101  
Web of Science (2007): Indexed yes  
Scopus rating (2006): SJR 1.645 SNIP 2.278  
Web of Science (2006): Indexed yes  
Scopus rating (2005): SJR 1.27 SNIP 1.577
An X-band Schottky diode mixer in SiGe technology with tunable Marchand balun

In this paper, we propose a double balanced mixer with a tunable Marchand balun. The circuit is designed in a SiGe BiCMOS process using Schottky diodes. The tunability of the Marchand balun is used to enhance critical parameters for double balanced mixers. The local oscillator-IF isolation can be changed from –51 to –60.5 dB by tuning. Similarly, the IIP2 can be improved from 41.3 to 48.7 dBm at 11 GHz, while the input referred 1-dB compression point is kept constant at 8 dBm. The tuning have no influence on conversion loss, which remains at 8.8 dB at a LO power level of 11 dBm at the center frequency of 11 GHz. The mixer has a 3 dB bandwidth from 8 to 13 GHz, covering the entire X-band. The full mixer has a size of 2050 μm × 1000 μm.

General information

State: Published
Organisations: Department of Electrical Engineering, Electromagnetic Systems, Department of Electromagnetic Systems, Center for Magnetic Resonance, Weibel Scientific A/S
Authors: Michaelsen, R. S. (Intern), Johansen, T. K. (Intern), Tamborg, K. M. (Ekstern), Zhurbenko, V. (Intern), Yan, L. (Intern)
Pages: 965-976
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: International Journal of Microwave and Wireless Technologies
Volume: 9
Issue number: 5
ISSN (Print): 1759-0787
Ratings:
Web of Science (2017): Indexed Yes
Scopus rating (2016): SJR 0.234 SNIP 0.481 CiteScore 0.65
Web of Science (2016): Indexed yes
Scopus rating (2015): SJR 0.209 SNIP 0.472 CiteScore 0.53
Scopus rating (2014): SJR 0.216 SNIP 0.37 CiteScore 0.55
Web of Science (2014): Indexed yes
Scopus rating (2013): SJR 0.269 SNIP 0.692 CiteScore 0.81
ISI indexed (2013): ISI indexed yes
Scopus rating (2012): SJR 0.286 SNIP 0.579 CiteScore 0.77
ISI indexed (2012): ISI indexed no
Scopus rating (2011): SJR 0.2 SNIP 0.509 CiteScore 0.62
ISI indexed (2011): ISI indexed no
Scopus rating (2010): SJR 0.165 SNIP 0.312
Original language: English
Electrical and Electronic Engineering, Circuit design and applications, Si-based devices and IC technologies, Integrated circuit manufacture, Phase comparators, Reconfigurable hardware, Schottky barrier diodes, Semiconducting silicon, Silicon alloys, Tuning, 1dB compression point, Center frequency, Double balanced mixers, IC technology, Local oscillators, Schottky diode mixers, Sige bicmos process, Mixers (machinery)
Aortic valve stenosis alters blood flow in the ascending aorta. Using intra-operative vector flow imaging on the ascending aorta, secondary helical flow during peak systole and diastole, as well as flow complexity of primary flow during systole, were investigated in patients with normal, stenotic and replaced aortic valves. Peak systolic helical flow, diastolic helical flow and flow complexity during systole differed between the groups (p < 0.0001), and correlated to peak systolic velocity (R² 0.94, 0.87 and 0.88, respectively). The study indicates that aortic valve stenosis increases helical flow and flow complexity, which are measurable with vector flow imaging. For assessment of aortic stenosis and optimization of valve surgery, vector flow imaging may be useful.
A Padawan Programmer's Guide to Developing Software Libraries

With the rapid adoption of computational tools in the life sciences, scientists are taking on the challenge of developing their own software libraries and releasing them for public use. This trend is being accelerated by popular technologies and platforms, such as GitHub, Jupyter, R/Shiny, that make it easier to develop scientific software and by open-source licenses that make it easier to release software. But how do you build a software library that people will use? And what characteristics do the best libraries have that make them enduringly popular? Here, we provide a reference guide, based on our own experiences, for developing software libraries along with real-world examples to help provide context for scientists who are learning about these concepts for the first time. While we can only scratch the surface of these topics, we hope that this article will act as a guide for scientists who want to write great software that is built to last.

**General information**

State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Big Data 2 Knowledge, Network Reconstruction in Silico Biology, University of California at San Diego, The Ohio State University, University of Tubingen
Authors: Yurkovich, J. T. (Ekstern), Yurkovich, B. J. (Ekstern), Dräger, A. (Ekstern), Palsson, B. O. (Intern), King, Z. A. (Ekstern)
Pages: 431-437
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication Information**

Journal: Cell Systems
Volume: 5
Issue number: 5
ISSN (Print): 2405-4712
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 4.31
Original language: English
DOIs:
10.1016/j.cels.2017.08.003
Source: FindIt
Source-ID: 2391697216
Publication: Research - peer-review › Journal article – Annual report year: 2017
A pathology atlas of the human cancer transcriptome
Cancer is one of the leading causes of death, and there is great interest in understanding the underlying molecular mechanisms involved in the pathogenesis and progression of individual tumors. We used systems-level approaches to analyze the genome-wide transcriptome of the protein-coding genes of 17 major cancer types with respect to clinical outcome. A general pattern emerged: Shorter patient survival was associated with up-regulation of genes involved in cell growth and with down-regulation of genes involved in cellular differentiation. Using genome-scale metabolic models, we show that cancer patients have widespread metabolic heterogeneity, highlighting the need for precise and personalized medicine for cancer treatment. All data are presented in an interactive open-access database (www.proteinatlas.org/pathology) to allow genome-wide exploration of the impact of individual proteins on clinical outcomes.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, High Throughput Molecular Bioscience, KTH - Royal Institute of Technology, Uppsala University, Lund University
Pages: 660-+
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Science
Volume: 357
Issue number: 6352
ISSN (Print): 0036-8075
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 12.012 SNIP 8.269 CiteScore 12.68
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 12.305 SNIP 7.87 CiteScore 12.43
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 13.159 SNIP 8.124 CiteScore 12.39
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 14.049 SNIP 8.309 CiteScore 11.97
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 13.216 SNIP 7.791
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
A Pd-Catalyzed in situ domino process for mild and quantitative production of 2,5-dimethylfuran directly from carbohydrates

An in situ domino process has been developed to be highly efficient for direct and mild conversion of various hexose sugars to the biofuel 2,5-dimethylfuran in almost quantitative yields, without separation of unstable intermediates at 120 °C in n-butanol, by using polymethylhydrosiloxane and hydrophobic Pd/C as a H-donor and a bifunctional catalyst, respectively. Among the cascade reactions, the hydrosilylation process was confirmed by deuterium-labeling and kinetic studies to be favorable for sugar dehydration and exclusively acts on deoxygenation of in situ formed intermediates including furanic alcohols and aldehydes to DMF via a hydride transfer process that was facilitated by an alcoholic solvent. The catalytic system is more selective than the H₂-participated counterpart, and could be scaled up with only 0.04 mol% catalyst loading, giving DMF in a comparable yield of 85%. Moreover, Pd(0) was demonstrated to be the active species for deoxygenation, and the heterogeneous catalyst exhibited good recyclability with little elemental leaching.
A Personalized Rolling Optimal Charging Schedule for Plug-In Hybrid Electric Vehicle Based on Statistical Energy Demand Analysis and Heuristic Algorithm

To alleviate the emission of greenhouse gas and the dependence on fossil fuel, Plug-in Hybrid Electrical Vehicles (PHEVs) have gained an increasing popularity in current decades. Due to the fluctuating electricity prices in the power market, a charging schedule is very influential to driving cost. Although the next-day electricity prices can be obtained in a day-ahead power market, a driving plan is not easily made in advance. Although PHEV owners can input a next-day plan into a charging system, e.g., aggregators, day-ahead, it is a very trivial task to do everyday. Moreover, the driving plan may not be very accurate. To address this problem, in this paper, we analyze energy demands according to a PHEV owner's historical driving records and build a personalized statistic driving model. Based on the model and the electricity
spot prices, a rolling optimization strategy is proposed to help make a charging decision in the current time slot. On one hand, by employing a heuristic algorithm, the schedule is made according to the situations in the following time slots. On the other hand, however, after the current time slot, the schedule will be remade according to the next tens of time slots. Hence, the schedule is made by a dynamic rolling optimization, but it only decides the charging decision in the current time slot. In this way, the fluctuation of electricity prices and driving routine are both involved in the scheduling. Moreover, it is not necessary for PHEV owners to input a day-ahead driving plan. By the optimization simulation, the results demonstrate that the proposed method is feasible to help owners save charging costs and also meet requirements for driving.

General information
State: Published
Organisations: Center for Electric Power and Energy, Department of Electrical Engineering, Shanghai Development Center of Computer Software Technology, Tongji University
Authors: Kong, F. (Ekstern), Jiang, J. (Ekstern), Ding, Z. (Ekstern), Hu, J. (Intern), Guo, W. (Ekstern), Wang, L. (Ekstern)
Number of pages: 18
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Energies
Volume: 10
Issue number: 9
Article number: 1333
ISSN (Print): 1996-1073
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.5 SJR 0.691 SNIP 1.053
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.804 SNIP 1.416 CiteScore 2.87
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.87 SNIP 1.601 CiteScore 2.66
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.632 SNIP 1.345 CiteScore 2.29
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.874 SNIP 1.54 CiteScore 2.46
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.659 SNIP 1.439 CiteScore 2.24
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.303 SNIP 0.76
Original language: English
Plug-in hybrid electrical vehicle, Personalized statistic driving model, Heuristic algorithm, Rolling optimization
Electronic versions:
energies_10_01333_v2.pdf
DOIs:
10.3390/en10091333

Bibliographical note
© 2017 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).
Source: FindIt
A Physically-Based Equivalent Circuit Model for the Impedance of a LiFePO4/Graphite 26650 Cylindrical Cell

In this work an Equivalent Circuit Model (ECM) is developed and used to model impedance spectra measured on a commercial 26650 LiFePO4/Graphite cylindrical cell. The ECM is based on measurements and modeling of impedance spectra recorded separately on cathode (LiFePO4) and anode (Graphite) samples, harvested from the commercial cell. Modeling of the single-electrode impedance spectra provided information about the electronic and ionic resistance in the porous composite electrodes, as well as the solid state diffusion. Focused Ion Beam (FIB)/Scanning Electron Microscopy (SEM) of anode and cathode samples was used to make 3-D maps of the electrode microstructures and to obtain microstructural data for the ECM. The complementary analysis was crucial for the resolution of the single electrode impedance parameters and the proposal and validation of a new equivalent circuit used to model the full commercial battery impedance.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Applied Electrochemistry, Imaging and Structural Analysis
Authors: Scipioni, R. (Intern), Jørgensen, P. S. (Intern), Graves, C. R. (Intern), Hjelm, J. (Intern), Jensen, S. H. (Intern)
Pages: A2017-A2030
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Electrochemical Society. Journal
Volume: 164
Issue number: 9
ISSN (Print): 0013-4651

Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.97 SJR 1.134 SNIP 0.867
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.037 SNIP 1 CiteScore 3.17
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.147 SNIP 1.206 CiteScore 3.36
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.151 SNIP 1.299 CiteScore 2.92
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.329 SNIP 1.296 CiteScore 2.61
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.33 SNIP 1.345 CiteScore 2.74
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.417 SNIP 1.312
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.45 SNIP 1.267
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
A Pilot Study of Multiple Password Interference Between Text and Map-Based Passwords

Today’s computer users have to remember several passwords for each of their accounts. It is easily noticed that people may have difficulty in remembering multiple passwords, which result in a weak password selection. Previous studies have shown that recall success rates are not statistically dissimilar between textual passwords and graphical passwords. With the advent of map-based graphical passwords, this paper focuses on multiple password interference and presents a pilot study consisting of 60 participants to study the recall of multiple passwords between text passwords and map-based passwords under various account scenarios. Each participant has to create six distinct passwords for different account scenarios. It is found that participants in the map-based graphical password scheme could perform better than the textual password scheme in both short-term (one-hour session) and long term (after two weeks) password memorability tests (i.e., they made higher success rates). Our effort attempts to complement existing studies and stimulate more research on this issue.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Cyber Security, Singapore University of Technology and Design, City University of Hong Kong, Institute for Infocomm Research
Pages: 145-162
Publication date: 2017

Host publication information
Title of host publication: Applied Cryptography and Network Security
Volume: 10355
Publisher: Springer
ISBN (Print): 9783319612034
Series: Lecture Notes in Computer Science
Volume: 10355
ISSN: 0302-9743
A Pole Pair Segment of a 2-MW High-Temperature Superconducting Wind Turbine Generator

A 2-MW high-temperature superconducting (HTS) generator with 24 pole pairs has been designed for the wind turbine application. In order to identify potential challenges and obtain practical knowledge prior to production, a full-size stationary experimental setup, which is one pole pair segment of the full generator, has been built and tested. The experimental setup comprises a consequent-pole HTS rotor and a conventional three-phase copper stator. This paper first presents the electromagnetic designs of the full generator and the setup, then it goes to compare the performance of the full generator and the setup in terms of the flux density, the operating condition of the HTS winding, and the force-generation capability. Finite element (FE) software MagNet is used to carry out numerical simulations. The findings show that the HTS winding in the setup is a good surrogate for those that would be used in the full generator. The FE simulations also tell that the maximum tangential force generated in the setup is 3.77% lower than that in the full generator. Good agreement between the values of interest in the setup and those projected in the full generator has revealed a cost-effective prototyping methodology for developing HTS machines.

General information
State: Published
Authors: Song, X. (Intern), Mijatovic, N. (Intern), Kellers, J. (Ekstern), Bührer, C. (Ekstern), Rebsdorf, A. V. (Ekstern), Hansen, J. (Ekstern), Christensen, M. (Ekstern), Krause, J. (Ekstern), Pütz, H. (Ekstern), Wiezoreck, J. (Ekstern), Holbøll, J. (Intern)
Number of pages: 5
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Transactions on applied superconductivity
Volume: 27
Issue number: 4
Article number: 5201205
ISSN (Print): 1051-8223
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.42 SJR 0.395 SNIP 1.031
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.35 SNIP 0.935 CiteScore 1.27
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.47 SNIP 1.113 CiteScore 0.83
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.431 SNIP 1.171 CiteScore 1.32
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.575 SNIP 1.27 CiteScore 1.11
ISI indexed (2012): ISI indexed yes
Apolipoprotein E deficiency increases remnant lipoproteins and accelerates progressive atherosclerosis, but not xanthoma formation, in gene modified minipigs

Summary: Deficiency of apolipoprotein E (APOE) causes familial dysbetalipoproteinemia in humans resulting in a higher risk of atherosclerotic disease. In mice, APOE deficiency results in a severe atherosclerosis phenotype, but it is unknown to what extent this is unique to mice. In this study, APOE was targeted in Yucatan minipigs. APOE<sup>−/−</sup> minipigs displayed increased plasma cholesterol and accumulation of apolipoprotein B-48-containing chylomicron remnants on low-fat diet, which was significantly accentuated upon feeding a high-fat, high-cholesterol diet. APOE<sup>−/−</sup> minipigs displayed accelerated progressive atherosclerosis but not xanthoma formation. This indicates that remnant lipoproteinemia does not induce early lesions but is atherogenic in pre-existing atherosclerosis.

General information
State: Published
Organisations: National Veterinary Institute, Innate Immunology, Aarhus University, Rigshospitalet, University of Copenhagen
Authors: Shim, J. (Ekstern), Poulsen, C. B. (Ekstern), Hagenesen, M. K. (Ekstern), Larsen, T. (Ekstern), Heegaard, P. M. H. (Intern), Christoffersen, C. (Ekstern), Bolund, L. (Ekstern), Schmidt, M. (Ekstern), Liu, Y. (Ekstern), Li, J. (Ekstern), Li, R. (Ekstern), Callesen, H. (Ekstern), Bentzon, J. F. (Ekstern), Sørensen, C. B. (Ekstern)
Pages: 591-600
Publication date: 2017
Main Research Area: Technical/natural sciences
A polyphenol-enriched diet and Ascaris suum infection modulate mucosal immune responses and gut microbiota composition in pigs

Polyphenols are a class of bioactive plant secondary metabolites that are thought to have beneficial effects on gut health, such as modulation of mucosal immune and inflammatory responses and regulation of parasite burdens. Here, we examined the interactions between a polyphenol-rich diet supplement and infection with the enteric nematode Ascaris suum in pigs. Pigs were fed either a basal diet or the same diet supplemented with grape pomace (GP), an industrial by-product rich in polyphenols such as oligomeric proanthocyanidins. Half of the animals in each group were then inoculated with A. suum for 14 days to assess parasite establishment, acquisition of local and systemic immune responses and effects on the gut microbiome. Despite in vitro anthelmintic activity of GP-extracts, numbers of parasite larvae in the intestine were not altered by GP-supplementation. However, the bioactive diet significantly increased numbers of eosinophils induced by A. suum infection in the duodenum, jejunum and ileum, and modulated gene expression in the jejunal mucosa of infected pigs. Both GP-supplementation and A. suum infection induced significant and apparently similar changes in the composition of the prokaryotic gut microbiota, and both also decreased concentrations of isobutyric and isovaleric acid (branched-chain short chain fatty acids) in the colon. Our results demonstrate that while a polyphenol-enriched diet in pigs may not directly influence A. suum establishment, it significantly modulates the subsequent host response to helminth infection. Our results suggest an influence of diet on immune function which may potentially be exploited to enhance immunity to helminths.

General information
State: Published
Organisations: National Veterinary Institute, Innate Immunology, University of Copenhagen, University Malaysia Pahang, Aarhus University
Authors: Williams, A. R. (Ekstern), Krych, L. (Ekstern), Ahmad, H. F. (Ekstern), Nejsum, P. (Ekstern), Skovgaard, K. (Intern), Nielsen, D. S. (Ekstern), Thamsborg, S. M. (Ekstern)
Number of pages: 21
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: P L o S One
Volume: 12
Issue number: 10
Article number: e0186546
ISSN (Print): 1932-6203
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.11 SJR 1.201 SNIP 1.092
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.414 SNIP 1.131 CiteScore 3.32
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.545 SNIP 1.141 CiteScore 3.54
Application of a Crossover Equation of State to Describe Phase Equilibrium and Critical Properties of n-Alkanes and Methane/n-Alkane Mixtures

Crossover equations of state (EOSs) are models that incorporate density fluctuations into mean-field thermodynamic models, changing their behavior close to the critical point. In this way, they are capable of describing the analytical behavior of fluids far from the critical region and the asymptotic one near the critical point. Although several crossover EOSs have been developed in the last decades their use in modeling industrial processes is rather limited. In this work, we use the crossover Soave–Redlich–Kwong (CSRK) to describe phase equilibrium and critical properties of pure n-alkanes and methane/n-alkane binary mixtures and compare the results to two other modeling approaches of the SRK EOS. In the case of the pure fluids, CSRK gives an accurate overall description of the phase equilibrium and critical properties; nevertheless, a minor increase in the deviation of the saturation pressure and other properties is observed when compared to that of the mean-field model. For the binary mixtures, an improvement in the description of the critical volumes is seen, while, for the other properties, similar results are obtained.

General information
State: Accepted/In press
Organisations: Department of Chemical and Biochemical Engineering, CERE – Center for Energy Resources Engineering, Department of Chemistry, KT Consortium
Authors: P. C. M. Vinhal, A. (Intern), Yan, W. (Intern), Kontogeorgis, G. M. (Intern)
Number of pages: 13
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Chemical and Engineering Data
ISSN (Print): 0021-9568
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.29 SJR 0.88 SNIP 1.097
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.868 SNIP 0.966 CiteScore 1.96
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.021 SNIP 1.208 CiteScore 2.22
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.135 SNIP 1.199 CiteScore 2.17
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.141 SNIP 1.103 CiteScore 2.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.862 SNIP 0.988 CiteScore 1.8
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.054 SNIP 1.299
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.313 SNIP 1.037
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.505 SNIP 1.186
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.263 SNIP 1.254
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.146 SNIP 1.33
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.155 SNIP 1.342
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.897 SNIP 1.205
Scopus rating (2003): SJR 1.054 SNIP 1.157
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.661 SNIP 1.062
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.978 SNIP 1.234
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.735 SNIP 1.16
Scopus rating (1999): SJR 0.891 SNIP 1.249
Original language: English
DOIs:
10.1021/acs.jced.7b00779
Source: Findit
Source-ID: 2392995607
Publication: Research - peer-review › Journal article – Annual report year: 2017
Application of aluminum diffusion coatings to mitigate the KCl-induced high-temperature corrosion

Pack cementation was used to produce $\text{Fe}_{1-x}\text{Al}$ and $\text{Fe}_2\text{Al}_5$ diffusion coatings on ferritic-martensitic steel P91 and a $\text{Ni}_2\text{Al}_3$ diffusion coating on pure nickel. The performance of diffusion coatings against high-temperature corrosion induced by potassium chloride (KCl) was evaluated by exposing the samples at 600°C for 168h in static lab air under KCl deposit. In addition, a salt-free experiment was performed for comparison. Microstructure, chemical and phase composition of the samples were analyzed with scanning electron microscopy (SEM), energy dispersive X-ray spectroscopy (EDS) and X-ray diffractometry (XRD) before and after the exposures. It was found that all the diffusion coatings formed protective oxides under salt-free exposure in air. Under the salt deposit, $\text{Fe}_{1-x}\text{Al}$ showed local failure while on large parts of the sample a protective layer had formed. $\text{Fe}_2\text{Al}_5$ was attacked over the entire surface and the dominant mode of attack was selective aluminum removal. $\text{Ni}_2\text{Al}_3$ showed excellent performance and no sign of attack was observed anywhere on the sample.

General information
State: Published
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, FORCE Technology
Authors: Kiamehr, S. (Intern), Lomholt, T. N. (Ekstern), Dahl, K. V. (Intern), Christiansen, T. L. (Intern), Somers, M. A. J. (Intern)
Number of pages: 13
Pages: 82–94
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials and Corrosion
Volume: 68
Issue number: 1
ISSN (Print): 0947-5117
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.21 SJR 0.526 SNIP 0.741
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.668 SNIP 1.033 CiteScore 1.53
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.76 SNIP 1.196 CiteScore 1.36
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.824 SNIP 1.434 CiteScore 1.44
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.669 SNIP 1.126 CiteScore 1.25
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.606 SNIP 1.124 CiteScore 1.13
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.572 SNIP 0.909
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.51 SNIP 0.681
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.633 SNIP 0.877
Application of a Mechanistic Model as a Tool for On-line Monitoring of Pilot Scale Filamentous Fungal Fermentation Processes - The Importance of Evaporation Effects: Mechanistic model for pilot scale monitoring

A mechanistic model-based soft sensor is developed and validated for 550L filamentous fungus fermentations operated at Novozymes A/S. The soft sensor is comprised of a parameter estimation block based on a stoichiometric balance, coupled to a dynamic process model. The on-line parameter estimation block models the changing rates of formation of product, biomass, and water, and the rate of consumption of feed using standard, available on-line measurements. This parameter estimation block is coupled to a mechanistic process model, which solves the current states of biomass, product, substrate, dissolved oxygen and mass, as well as other process parameters including kLa, viscosity and partial pressure of CO2. State estimation at this scale requires a robust mass model including evaporation, which is a factor not often considered at smaller scales of operation. The model is developed using a historical dataset of eleven batches from the fermentation pilot plant (550L) at Novozymes A/S. The model is then implemented on-line in 550L fermentation processes operated at Novozymes A/S in order to validate the state estimator model on fourteen new batches utilizing a new strain. The product concentration in the validation batches was predicted with an average root mean sum of squared error (RMSSE) of 16.6%. In addition, calculation of the Janus coefficient for the validation batches shows a suitably calibrated model. The robustness of the model prediction is assessed with respect to the accuracy of the input data. Parameter estimation uncertainty is also carried out. The application of this on-line state estimator allows for on-line monitoring of pilot scale batches, including real-time estimates of multiple parameters which are not able to be monitored on-line. With successful application of a soft sensor at this scale, this allows for improved process monitoring, as well as opening up further possibilities for on-line control algorithms, utilizing these on-line model outputs. This article is protected by copyright. All rights reserved
Fermentation, Modelling, Monitoring, Pilot scale, Filamentous fungus, Soft sensor

Electronic versions:


DOIs:

10.1002/bit.26187
Application of amodal-driven damage assessment framework for ice localization and quantification on wind turbine blades

Operating wind turbines in northern and/or mountainous regions create the demand for effective ice detection and ice removal systems. Ice accretion on the rotor blades of a wind turbine leads, among other things, to added loads, safety issues and diminished aerodynamic performance of the airfoil. Presently, the capabilities of existing ice detection techniques are limited to determining whether or not ice is present on the blades. This paper presents a feasibility investigation of the implementation of a recent scenario-based modal-driven damage detection, localization and quantification technique for ice detection on a wind turbine blade. The investigation is experimentally founded and consists of a series of full-scale modal tests on a modern wind turbine blade mounted in a fixed test rig. Throughout the test campaign the modal parameters are extracted by means of an automated Operational Modal Analysis algorithm. The vibrational data are extracted in the original state of the blade as well as various ice build-up scenario states. In the perturbation tests sand bags are used to simulate the presence of ice. The output of the detection algorithm is an estimate of location, within 4 discrete areas on the blade, along with an estimate of the size of the additional mass.

Application of an Acyl-CoA Ligase from Streptomyces aizunensis for Lactam Biosynthesis

ε-Caprolactam and δ-valerolactam are important commodity chemicals used in the manufacture of nylons, with millions of tons produced annually. Biological production of these highly valued chemicals has been limited due to a lack of enzymes that cyclize ω-amino fatty acid precursors to corresponding lactams under ambient conditions. In this study, we demonstrated production of these chemicals using ORF26, an acyl-CoA ligase involved in the biosynthesis of ECO-02301 in Streptomyces aizunensis. This enzyme has a broad substrate spectrum and can cyclize 4-aminobutyric acid into γ-butyrolactam, 5-aminovaleric acid into δ-valerolactam and 6-aminocaproic acid into ε-caprolactam. Recombinant E. coli expressing ORF26 produced valerolactam and caprolactam when 5-aminovaleric acid and 6-aminocaproic acid were added to the culture medium. Upon coexpressing ORF26 with a metabolic pathway that produced 5-aminovaleric acid from lysine, we were able to demonstrate production of δ-valerolactam from lysine.
Application of a new point measurement to estimate groundwater-surface water exchange

The StreamBed Point Velocity Probe (SBPVP), a new point measurement device, measures in situ groundwater velocities at the groundwater-surface water interface (GWSWI, based on a mini-tracer test on the probe surface. This device yields velocities without reliance on estimations of hydraulic conductivity (K), porosity (n), or hydraulic gradients. The SBPVP was applied to a meander of the Grindsted stream (Denmark) to determine patterns of groundwater-surface water exchange (GWSWE). Analysis of the spatial distribution of velocity values suggests the sediments in the Grindsted streambed are highly heterogeneous. Calculated discharges were combined with geochemical data to determine the mass discharge of specific solutes (PCE, TCE, cis-DCE, and VC). Total mass discharge of the contaminants was found to be concentrated in several "hot spots" that occurred in locations determined by both magnitudes of concentrations and velocities. Given these localized hot spots, detailed information about flow at the GWSWI could be vital to understanding solute, and, by extension, nutrient, movement in ecosystems affected by exchange. Such information could be crucial to effective remediation design.

Application of CRISPR/Cas9 Genome Editing to Improve Recombinant Protein Production in CHO Cells

Genome editing has become an increasingly important aspect of Chinese Hamster Ovary (CHO) cell line engineering for improving production of recombinant protein therapeutics. Currently, the focus is directed toward expanding the product diversity, controlling and improving product quality and yields. In this chapter, we present our protocol on how to use the genome editing tool Clustered Regularly Interspaced Short Palindromic Repeat (CRISPR)/CRISPR-associated protein 9 (Cas9) to knockout engineering target genes in CHO cells. As an example, we refer to the glutamine synthetase (GS)-encoding gene as the knockout target gene, a knockout that increases the selection efficiency of the GS-mediated gene amplification system.

Application of CryoSat-2 altimetry data for river analysis and modelling

Availability of in situ river monitoring data, especially of data shared across boundaries, is decreasing, despite growing challenges for water resource management across the entire globe. This is especially valid for the case study of this work, the Brahmaputra Basin in South Asia. Commonly, satellite altimeters are used in various ways to provide information about such river basins. Most missions provide virtual station time series of water levels at locations where their repeat orbits cross rivers. CryoSat-2 is equipped with a new type of altimeter, providing estimates of the actual ground location seen in the reflected signal. It also uses a drifting orbit, challenging conventional ways of processing altimetry data to river water levels and their incorporation in hydrologic–hydrodynamic models. However, CryoSat-2 altimetry data provides an unprecedentedly high spatial resolution. This paper suggests a procedure to (i) filter CryoSat-2 observations over rivers to extract water-level profiles along the river, and (ii) use this information in combination with a hydrologic–hydrodynamic model to fit the simulated water levels with an accuracy that cannot be reached using information from globally available digital elevation models (DEMs) such as from the Shuttle Radar Topography Mission (SRTM) only. The filtering was done based on dynamic river masks extracted from Landsat imagery, providing spatial and temporal resolutions high enough to map the braided river channels and their dynamic morphology. This allowed extraction of river water levels over previously unmonitored narrow stretches of the river. In the Assam Valley section of the Brahmaputra River, CryoSat-2 data and Envisat virtual station data were combined to calibrate cross sections in a 1-D hydrodynamic model of the river. The hydrologic–hydrodynamic model setup and calibration are almost exclusively based on openly available remote sensing data and other global data sources, ensuring transferability of the developed methods. They provide an opportunity to achieve forecasts of both discharge and water levels in a poorly gauged river system.
Application of integrative genomics and systems biology to conventional and in vitro reproductive traits in cattle

Assisted reproductive technologies (ARTs) have a strong impact on breeding especially when coupled with genomic selection (GS). The routine implementation of in vitro production (IVP) and GS of embryos before embryo transfer (ET) in breeding companies is not yet possible. Improvement of oocyte donor and embryo recipient quality is needed to make realistic a commercialization of these procedures in the near future. A better understanding of both biological mechanisms and molecular markers associated to IVPET related traits is necessary to improve the prediction of donor and recipient cow quality for IVP procedures. The huge amount of data generated from high throughput technologies has a tremendous impact in the search for biomarkers of complex traits. This paper reviews integrative genomics and systems biology approaches as applied to both Bos indicus and Bos taurus cattle reproduction by both conventional and ARTs such as OPU-IVP. The integration of systems biology information across different biological layers generates a complete view of the different molecular networks that control complex traits and can provide a strong contribution to the understanding of traits related to ARTs.

General information

State: Published
Organisations: Department of Bio and Health Informatics, Administration, University of Copenhagen, Aarhus University, University of São Paulo, Sao Paulo State University
Application of Iterative Robust Model-based Optimal Experimental Design for the Calibration of Biocatalytic Models

The aim of model calibration is to estimate unique parameter values from available experimental data, here applied to a biocatalytic process. The traditional approach of first gathering data followed by performing a model calibration is inefficient, since the information gathered during experimentation is not actively used to optimise the experimental design. By applying an iterative robust model-based optimal experimental design, the limited amount of data collected is used to design additional informative experiments. The algorithm is used here to calibrate the initial reaction rate of an ω-transaminase catalysed reaction in a more accurate way. The parameter confidence region estimated from the Fisher Information Matrix is compared with the likelihood confidence region, which is a more accurate, but also a computationally more expensive method. As a result, an important deviation between both approaches is found, confirming that linearisation methods should be applied with care for nonlinear models. This article is protected by copyright. All rights reserved.
The repeat acquisition of high-resolution snow depth measurements has important research and civil applications in the Arctic. Currently the surveying methods for capturing the high spatial and temporal variability of the snowpack are expensive, in particular for small areal extents. An alternative methodology based on Unmanned Aerial Systems (UASs) and digital photogrammetry was tested over varying surveying conditions in the Arctic employing two diverse and low-cost UAS-camera combinations (500 and 1700 USD, respectively). Six areas, two in Svalbard and four in Greenland, were mapped covering from 1386 to 38,410 m². The sites presented diverse snow surface types, underlying topography and light conditions in order to test the method under potentially limiting conditions. The resulting snow depth maps achieved spatial resolutions between 0.06 and 0.09 m. The average difference between UAS-estimated and measured snow depth, checked with conventional snow probing, ranged from 0.015 to 0.16 m. The impact of image pre-processing was explored, improving point cloud density and accuracy for different image qualities and snow/light conditions. Our UAS photogrammetry results are expected to be scalable to larger areal extents. While further validation is needed, with the inclusion of extra validation points, the study showcases the potential of this cost-effective methodology for high-resolution monitoring of snow dynamics in the Arctic and beyond.
Application of numerical inverse method in calculation of composition-dependent interdiffusion coefficients in finite diffusion couples

The previously developed numerical inverse method was applied to determine the composition-dependent interdiffusion coefficients in single-phase finite diffusion couples. The numerical inverse method was first validated in a fictitious binary finite diffusion couple by pre-assuming four standard sets of interdiffusion coefficients. After that, the numerical inverse method was then adopted in a ternary Al-Cu-Ni finite diffusion couple. Based on the measured composition profiles, the ternary interdiffusion coefficients along the entire diffusion path of the target ternary diffusion couple were obtained by using the numerical inverse approach. The comprehensive comparisons between the computations and the experiments indicate that the numerical inverse method is also applicable to high-throughput determination of the composition-dependent interdiffusion coefficients in finite diffusion couples.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Mixed Conductors, Central South University
Pages: 197-211
Publication date: 2017
Main Research Area: Technical/natural sciences
Application of Photocurrent Model on Polymer Solar Cells Under Forward Bias Stress

We performed a constant current stress at forward bias on organic heterojunction solar cells. We measured current voltage curves in both dark and light at each stress step to calculate the photocurrent. An existing model applied to photocurrent experimental data allows the estimation of several parameters such as generation, recombination, dissociation rate, and nearly zero field voltage within the active layer as a function of the stress time. The analysis of extrapolated parameters shows that the stress mainly affects the recombination rate of the polaron charge transfer states.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Organic Energy Materials, University of Padova
Authors: Rizzo, A. (Ekstern), Torto, L. (Ekstern), Wrachien, N. (Ekstern), Corazza, M. (Intern), Krebs, F. C. (Intern), Gevorgyan, S. (Intern), Cester, A. (Ekstern)
Pages: 1542-1548
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Journal of Photovoltaics
Volume: 6
Issue number: 6
ISSN (Print): 2156-3381
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.14 SJR 1.512 SNIP 1.58
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.909 SNIP 1.966 CiteScore 4.42
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.212 SNIP 1.888 CiteScore 3.87
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.357 SNIP 3.532 CiteScore 3.84
Scopus rating (2012): SJR 0.863 SNIP 2.774 CiteScore 2.2
Original language: English
Annealing, Current, Heterojunctions, Organic semiconductors, Photovoltaic cells, Roll-to-roll, Solar energy, Stress
DOI: 10.1109/JPHOTOV.2016.2603841
Publication: Research - peer-review › Journal article – Annual report year: 2017

Application of Probabilistic Modeling to Quantify the Reduction Levels of Hepatocellular Carcinoma Risk Attributable to Chronic Aflatoxins Exposure

Epidemiological studies show a definite connection between areas of high aflatoxin content and a high occurrence of human hepatocellular carcinoma (HCC). Hepatitis B virus in individuals further increases the risk of HCC. The two risk factors are prevalent in rural Kenya and continuously predispose the rural populations to HCC. A quantitative cancer risk assessment therefore quantified the levels at which potential pre- and postharvest interventions reduce the HCC risk attributable to consumption of contaminated maize and groundnuts. The assessment applied a probabilistic model to derive probability distributions of HCC cases and percentage reductions levels of the risk from secondary data. Contaminated maize and groundnuts contributed to 1,847 +/- 514 and 158 +/- 52 HCC cases per annum, respectively. The total contribution of both foods to the risk was additive as it resulted in 2,000 +/- 518 cases per annum. Consumption and contamination levels contributed significantly to the risk whereby lower age groups were most affected. Nonetheless,
pre- and postharvest interventions might reduce the risk by 23.0-83.4% and 4.8-95.1%, respectively. Therefore, chronic exposure to aflatoxins increases the HCC risk in rural Kenya, but a significant reduction of the risk can be achieved by applying specific pre- and postharvest interventions.

**General information**

State: Published
Organisations: National Food Institute, Research Group for Genomic Epidemiology, University of Nairobi, Kenya Nutritionists and Dieticians Institute
Authors: Wambui, J. M. (Ekstern), Karuri, E. G. (Ekstern), Ojiambo, J. A. (Ekstern), Njage, P. M. K. (Intern)
Number of pages: 13
Pages: 1-13
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Nutrition and Cancer-an International Journal
Volume: 69
Issue number: 1
ISSN (Print): 0163-5581
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.895 SNIP 0.841 CiteScore 2.5
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.967 SNIP 0.823 CiteScore 2.36
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.915 SNIP 0.809 CiteScore 2.5
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.057 SNIP 0.841 CiteScore 3.07
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.1 SNIP 0.94 CiteScore 3.2
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.901 SNIP 0.891 CiteScore 2.83
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.838 SNIP 0.818
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.938 SNIP 0.885
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.918 SNIP 0.747
Scopus rating (2007): SJR 1.147 SNIP 0.945
Scopus rating (2006): SJR 0.972 SNIP 0.811
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.884 SNIP 0.851
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.938 SNIP 0.876
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.879 SNIP 0.858
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.001 SNIP 0.815
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.873 SNIP 0.946
Application of silicone based elastomers for manufacturing of Green Fiber Bottle

Due to ever-increasing demand of sustainable products, eco-friendly packaging solutions are finding their importance in the paper packaging industry [1]. Green Fiber Bottle (GFB) is an alternative to plastic, glass and metal based packaging for beverages. The manufacturing of paper bottle is a two-stage process, where the wood fibers are first thermoformed in the desired shape followed by drying of the formed geometry [2]. To ensure the robustness of the bottle and to avoid shrinkage of cellulose fibers, the wet-formed bottle is pressurized using a silicone core. The core is inserted inside the drying tool and inflated. This keeps the wet bottle under pressure thereby enhancing formation of good hydrogen bonds, and hence providing good strength. The feasibility of the tool design concept is supported with Finite Element Model. The hyperelastic behavior of silicone is defined by the deformation energy function (W). To simulate the inflation action of the core, Yeoh’s model is used for modeling of W. The strength of the GFB is correlated with the pressure the bottle can hold and the cut off burst pressure from experiments is also reported in this work.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering
Authors: Saxena, P. (Intern), Bissacco, G. (Intern)
Number of pages: 1
Publication date: 2017

Host publication information
Title of host publication: Book of Abstracts
Publisher: Department of Chemical and Biochemical Engineering
Article number: P17
Main Research Area: Technical/natural sciences
Conference: 11th International Workshop on Silicone Polymers 2017 (ISPO 2017), Snekkersten, Denmark, 02/07/2017 - 02/07/2017
Electronic versions:
Poster_Saxena_and_Bissacco.pdf
Publication: Research - peer-review › Poster – Annual report year: 2017

Application of simulated lidar scanning patterns to constrained Gaussian turbulence fields for load validation

We demonstrate a method for incorporating wind velocity measurements from multiple-point scanning lidars into threedimensional wind turbulence time series serving as input to wind turbine load simulations. Simulated lidar scanning

Electronic versions:
Poster_Saxena_and_Bissacco.pdf
Publication: Research - peer-review › Poster – Annual report year: 2017
patterns are implemented by imposing constraints on randomly generated Gaussian turbulence fields in compliance with the Mann model for neutral stability. The expected efficiency of various scanning patterns is estimated by means of the explained variance associated with the constrained field. A numerical study is made using the HAWC2 aeroelastic software, whereby the constrained turbulence wind time series serves as input to load simulations on a 10 MW wind turbine model using scanning patterns simulating different lidar technologies—pulsed lidar with one or multiple beams—and continuous wave lidars scanning in three different revolving patterns. Based on the results of this study, we assess the influence of the proposed method on the statistical uncertainty in wind turbine extreme and fatigue loads. The main conclusion is that introducing lidar measurements as turbulence constraints in load simulations may bring significant reduction in load and energy production uncertainty, not accounting for any additional uncertainty from real measurements. The constrained turbulence method is most efficient for prediction of energy production and loads governed by the turbulence intensity and the thrust force, while for other load components such as tower base side-to-side moment, the achieved reduction in uncertainty is minimal.

General information
State: Published
Organisations: Department of Wind Energy, Wind Turbine Structures and Component Design
Authors: Dimitrov, N. K. (Intern), Natarajan, A. (Intern)
Number of pages: 17
Pages: 79–95
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Wind Energy
Volume: 20
Issue number: 1
ISSN (Print): 1095-4244
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.37 SJR 1.104 SNIP 2.306
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.196 SNIP 2.086 CiteScore 3.06
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.272 SNIP 3.75 CiteScore 3.42
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.275 SNIP 2.464 CiteScore 2.75
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.126 SNIP 2.39 CiteScore 2.36
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.024 SNIP 2.718 CiteScore 2.49
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.487 SNIP 2.013
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.124 SNIP 1.448
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.826 SNIP 1.559
Application of the thermostable β-galactosidase, BgaB, from Geobacillus stearothermophilus as a versatile reporter under anaerobic and aerobic conditions

Use of thermophilic organisms has a range of advantages, but the significant lack of engineering tools limits their applications. Here we show that β-galactosidase from Geobacillus stearothermophilus (BgaB) can be applicable in a range of conditions, including different temperatures and oxygen concentrations. This protein functions both as a marker, promoting colony color development in the presence of a lactose analogue S-gal, and as a reporter enabling quantitative measurement by a simple colorimetric assay. Optimal performance was observed at 70 °C and pH 6.4. The gene was introduced into G. thermoglucosidans. The combination of BgaB expressed from promoters of varying strength with S-gal produced distinct black colonies in aerobic and anaerobic conditions at temperatures ranging from 37 to 60 °C. It showed an important advantage over the conventional β-galactosidase (LacZ) and substrate X-gal, which were inactive at high temperature and under anaerobic conditions. To demonstrate the versatility of the reporter, a promoter library was constructed by randomizing sequences around −35 and −10 regions in a wild type groES promoter from Geobacillus sp. GHH01. The library contained 28 promoter variants and encompassed fivefold variation. The experimental pipeline allowed construction and measurement of expression levels of the library in just 4 days. This β-galactosidase provides a promising tool for engineering of aerobic, anaerobic, and thermophilic production organisms such as Geobacillus species.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization, Department of Biotechnology and Biomedicine, Bacterial Synthetic Biology, Research Groups
Authors: Jensen, T. Ø. (Intern), Pogrebnyakov, I. (Intern), Falkenberg, K. B. (Intern), Redl, S. M. A. (Intern), Nielsen, A. T. (Intern)
Number of pages: 10
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: A M B Express
Volume: 7
Issue number: 1
Article number: 169
ISSN (Print): 2191-0855
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.15 SJR 0.65 SNIP 0.799
Application of visual servoing for grasping and placing operation in slaughterhouse

In food industry due to the high variety of the object including the shape, size and structure the involvement of real time robotic system is limited compared to the applications of robotic systems in automotive industry. For completing operations within food industry it is generally necessary to contain dynamical adjustment to each target in the control loop. This work focuses on using visual feedback to capture information of each piece of work for robotic control. A grasping and placing operation is selected as a case study of using visual servoing in slaughterhouse. For detecting the location of the target the color information provided by a visual sensor is utilized. The control command for the robot is generated based on the real time visual feedback. An industrial robot arm UR10 is applied to complete the operation. A lab-scale experimental setup is constructed for system validation. The experimental results show that the proposed visual servoing system works well for the grasping and placing task in slaughterhouse. The system is implemented in ROS and can be easily extended to similar operation tasks using different hardware.

General information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control
Authors: Wu, H. (Intern), Andersen, T. T. (Intern), Andersen, N. A. (Intern), Ravn, O. (Intern)
Pages: 457-462
Publication date: 2017

Host publication information
Title of host publication: 2017 3rd International Conference on Control, Automation and Robotics, ICCAR 2017
Publisher: IEEE
Article number: 7942738
ISBN (Electronic): 9781509060870
Main Research Area: Technical/natural sciences
Conference: 3rd International Conference on Control, Automation and Robotics, ICCAR 2017, Nagoya, Japan, 22/04/2017 - 22/04/2017
DOIs: 10.1109/ICCAR.2017.7942738
Source: Scopus
Source-ID: 85022334049
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Applications and Optimization of Optical Time Lenses based on Four-Wave Mixing in Highly Nonlinear Fibre

Optical Fourier transformations enabled by the versatile time lens (quadratic phase modulator), have been demonstrated for numerous optical signal processing applications. Applications include ultrafast optical oscilloscopes, high resolution spectral analysers, and the processing of ultrahigh-speed communication signals, to enable e.g. such varied applications as phase regeneration for wavelength-division multiplexing (WDM) signals, conversion between spectrally efficient formats and receivers with reduced complexity for advanced optical multiplexing formats. Four-wave mixing (FWM) is showing promise as a method to implement time lenses, for its ability to impart a parabolic phase profile with high fidelity, and to
transparently process and preserve arbitrary amplitude and phase information at ultrahigh data rates. Many time lens demonstrations have been based on FWM with linearly chirped pump pulses in highly nonlinear fibre (HNLF), due to the low fibre losses and high attainable efficiency. However, HNLF tend to exhibit random dispersion fluctuations which can reduce the FWM efficiency severely, and no two HNLFs are exactly alike. So far, no simple and generic method for systematic performance characterization of HNLF for FWM with chirped pump pulses have been proposed. Hence, time lenses have been optimized using complex systems on an ad-hoc basis. Such optimizations are non-generic and time consuming, and have to be repeated for every new experiment. The work presented in this thesis concerns the optimization, characterization and demonstration of FWM-based time lenses in HNLF for broadband processing of highspeed communication signals. The first part of the work involves detailed FWM characterizations of different HNLF variations for continuous-wave (CW) and pulsed pumps, which leads to recommendations of HNLF for different applications, and to a novel generic method based on only two tunable CW lasers, which allows for accurate prediction of the FWM performance in HNLF with chirped pump pulses. Then, a composite dispersion-flattened HNLF (DF-HNLF) is proposed and assembled to mitigate the effects of dispersion fluctuations on the FWM performance, with the aim of enabling broadband and efficient time lens operation. The fibre is demonstrated for time lens processing of all 32 channels in a 1.6 THz input WDM superchannel with uniform efficiency. The last part of the thesis begins with a detailed numerical investigation and experimental demonstration of a novel all-optical orthogonal frequency-division multiplexing (OFDM) receiver based on spectral magnification, which allows for direct bandpass filtering of the OFDM subcarriers, in a manner similar to standard WDM receivers. Finally, a matchedpair of composite DF-HNLF are used for the first demonstration of time lenses for advanced optical modulation formats. In this demonstration we perform 4-spectral magnification for quadrature amplitude modulation (QAM) signals up to 16-QAM, with >18 nm operational bandwidth observed. The bit-error rate measurements indicate that cascaded time lenses based on FWM may be suitable for higher order modulation formats.
Applications of Fiber-Reinforced Polymers in Additive Manufacturing

Additive manufacturing technologies are these years entering the market of functional final parts. Initial research has been performed targeting the integration of fibers into additive manufactured plastic composites. Major advantages, among others, are for example increased tensile strength and Young's modulus. Key challenges in the field, as of now, are proper fiber placement, fiber seizing, an increased knowledge in the used materials and how they are applied into engineering solutions through proper control of the additive manufacturing process. The aim of this research is the improved understanding of fiber-reinforcement in additive manufacturing in terms of production and application. Vat polymerization and material extrusion techniques for composite additive manufacturing were investigated with respect of increasing adhesion between the matrix material and the fibers. Process optimization was performed in order to avoid matrix cracks and delamination.
This book provides a timely and thorough snapshot into the emerging and fast evolving area of applied genomics of foodborne pathogens. Driven by the drastic advance of whole genome shot gun sequencing (WGS) technologies, genomics applications are becoming increasingly valuable and even essential in studying, surveying and controlling foodborne microbial pathogens. The vast opportunities brought by this trend are often at odds with the lack of bioinformatics know-how among food safety and public health professionals, since such expertise is not part of a typical food microbiology curriculum and skill set. Further complicating the challenge is the large and ever evolving body of bioinformatics tools that can obfuscate newcomers to this area. Although reviews, tutorials and books are not in short supply in the fields of bioinformatics and genomics, until now there has not been a comprehensive and customized source of information designed for and accessible to microbiologists interested in applying cutting-edge genomics in food safety and public health research. This book fills this void with a well-selected collection of topics, case studies, and bioinformatics tools contributed by experts at the forefront of foodborne pathogen genomics research.
Applying a new ensemble approach to estimating stock status of marine fisheries around the world: Estimating global fisheries status

The exploitation status of marine fisheries stocks worldwide is of critical importance for food security, ecosystem conservation, and fishery sustainability. Applying a suite of data-limited methods to global catch data, combined through an ensemble modeling approach, we provide quantitative estimates of exploitation status for 785 fish stocks. Fifty-six percent (439 stocks) are below BMSY and of these, 261 are estimated to be below 80% of the BMSY level. While the 178 stocks above 80% of BMSY are conventionally considered "fully exploited," stocks staying at this level for many years, forego substantial yield. Our results enable managers to consider more detailed information than simply a categorization of stocks as "fully" or "over" exploited. Our approach is reproducible, allows consistent application to a broad range of stocks, and can be easily updated as new data become available. Applied on an ongoing basis, this approach can provide critical, more detailed information for resource management for more exploited fish stocks than currently available.

General information

State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Center for Science and Democracy, Union of Concerned Scientists, Environmental Defense Fund, University of California, Santa Barbara, University of Washington, International Council for the Exploration of the Sea, Simon Fraser University, NOAA, CSIRO, FAO, European Commission - Joint Research Center, Rutgers University, Institute of Marine Research, Marine Stewardship Council, University of Sao Paolo, Galway - Mayo Institute of Technology, University of California, Conservation International
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Conservation Letters
ISSN (Print): 1755-263X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 5.14 SJR 2.936 SNIP 1.818
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 3.513 SNIP 2.009 CiteScore 5.62
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 3.183 SNIP 1.893 CiteScore 4.99
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.756 SNIP 1.671 CiteScore 4.47
ISI indexed (2013): ISI indexed yes
Scopus rating (2012): SJR 2.716 SNIP 1.611 CiteScore 4.24
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 2.817 SNIP 1.424 CiteScore 3.46
ISI indexed (2011): ISI indexed no
Scopus rating (2010): SJR 2.513 SNIP 2.611
Scopus rating (2009): SJR 1.332 SNIP 2.087
Web of Science (2009): Indexed yes
Original language: English
Electronic versions:
Publishers version
DOIs:
10.1111/conl.12363
Source: FindIt
Source-ID: 2357364822
Publication: Research - peer-review › Journal article – Annual report year: 2017
Applying boundary objects to create coherence between management decisions regarding prevention of Musculoskeletal Disorders and implemented changes

Purpose. This study aims to support social healthcare workplaces with methods to establish coherence between management decisions regarding prevention of Musculoskeletal Disorders (MSD) and the work related preventive changes implemented in the organization. The study builds on the known risk factors for developing MSD in combination with the theory of explication of tacit knowledge by the use of boundary objects (Carlile, 2002). Design/Methodology. Searching the literature of visual knowledge generating methods, we selected those who focus on the work process and relate to one or more of the risk factors of MSD. The search resulted in the following methods: Workbooks, Photo-Safari, Layout Games, Employee Exchange, Videos and the Fishbone workshop. Three Occupational Health and Safety Departments in municipalities and one hospital tested the methods, which several public workplaces will apply starting January 2017. Results. The identified visualization methods each addresses specific risk factors of MSD but when combined, they provide a holistic insight in to the work-related causes to MSD at the workplace. The new knowledge forms the basis for focused work-related preventive changes. The test participants found the methods applicable in relation to create coherence between strategy and practice. Research implications: Our preliminary results imply that visualization methods can generate new knowledge about work-related causes to MSD, identification of new preventive changes and how they link to the preventive MSD strategy. Originality/Value. The study investigates the application of boundary objects in the identification of causes and implementation of a preventive MSD strategy and work-related changes.

General information
State: Published
Organisations: Department of Management Engineering, Management Science, Implementation and Performance Management
Authors: Ipsen, C. (Intern), Edwards, K. (Intern), Poulsen, S. (Intern), Seim, R. (Intern)
Publication date: 2017
Event: Abstract from European Association of Work and Organizational Psychology, Dublin, Ireland.
Main Research Area: Technical/natural sciences
Electronic versions:
EAWOP_abstract_final_27.09.16_DTU.pdf
Source: PublicationPreSubmission
Source-ID: 132361670
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Applying fluorescence correlation spectroscopy to investigate peptide-induced membrane disruption

There is considerable interest in understanding the interactions of antimicrobial peptides with phospholipid membranes. Fluorescence correlation spectroscopy (FCS) is a powerful experimental technique that can be used to gain insight into these interactions. Specifically, FCS can be used to quantify leakage of fluorescent molecules of different sizes from large unilamellar lipid vesicles, thereby providing a tool for estimating the size of peptide-induced membrane disruptions. If fluorescently labeled lipids are incorporated into the membranes of the vesicles, FCS can also be used to obtain information about whether leakage occurs due to localized membrane perturbations or global membrane destabilization. Here, we outline a detailed step-by-step protocol on how to optimally implement an FCS-based leakage assay. To make the protocol easily accessible to other researchers, it has been supplemented with a number of practical tips and tricks.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Colloids and Biological Interfaces, Center for Nanomedicine and Theranostics, Department of Chemistry
Authors: Kristensen, K. (Intern), Henriksen, J. R. (Intern), Andresen, T. L. (Intern)
Number of pages: 22
Pages: 159-180
Publication date: 2017

Host publication information
Title of host publication: Antimicrobial Peptides : Methods and Protocols
Publisher: Springer
Editor: Hansen, P. R.
ISBN (Print): 978-1-4939-6735-3
ISBN (Electronic): 978-1-4939-6737-7
Series: Methods in Molecular Biology
Volume: 1548
ISSN: 1064-3745
Main Research Area: Technical/natural sciences
Molecular Biology, Genetics, Antimicrobial peptides, Fluorescence correlation spectroscopy (FCS), Lipid vesicles, Membrane disruption, Membrane-active peptides, Peptide-lipid membrane interactions, Pore formation, Vesicle leakage
Applying lean thinking to risk management in product development

This paper re-conceptualizes risk management (RM) in product development (PD) through a lean thinking perspective. Arguably, risk management in PD projects became a victim of its own success. It is often implemented as a highly formalized, compliance driven activity, ending up disconnected from the actual value creation of the engineering task. Cost overrun, delay and low quality decision making is common in product development processes even if RM processes are in place. Product development is about reaching project objectives by gradually reducing uncertainty, but often fail to do so without delay or cost overrun. This paper explores the relationship between product development and risk management and proposes to make RM an integrated value adding part of PD. Through a literature review we identify the potential of re-conceptualizing RM through lean thinking. We then conceptualize an outline of how one could apply lean thinking to RM to create a simple, value focused and consensus forming perspective on how to make RM a meaningful part of PD.

Applying Multi-Class Support Vector Machines for performance assessment of shipping operations: The case of tanker vessels

Energy efficient operations are a key competitive advantage for modern shipping companies. During the operation of the vessel, improvements in energy use can be achieved by not only by technical upgrades, but also through behavioural changes in the way the crew on board is operating the vessels. Identifying the potential of behavioural savings can be challenging, due to the inherent difficulty in analysing the data and operationalizing energy efficiency within the dynamic operating environment of the vessels. This article proposes a supervised learning model for identifying the presence of energy efficient operations. Positive and negative patterns of energy efficient operations were identified and verified through discussions with senior officers and technical superintendents. Based on this data, the high dimensional parameter space that describes vessel operations was first reduced by means of feature selection algorithms. Afterwards, a model based on Multi-Class Support Vector Machines (SVM) was constructed and the efficacy of the approach is shown through the application of a test set. The results demonstrate the importance and benefits of machine learning algorithms in driving energy efficiency on board, as well as the impact of power management on energy costs throughout the life cycle of the ships.
Approaching target: A service for nationwide deformation monitoring in Denmark using Sentinel-1

General information

State: Published
Organisations: National Space Institute, Geodesy, Danish Ministry of Energy, Utilities and Climate
Authors: F. Levinsen, J. (Ekstern), Sørensen, C. S. (Intern), Broge, N. (Ekstern)

DOIs:
10.1016/j.oceaneng.2017.05.001
Publication: Research - peer-review › Journal article – Annual report year: 2017
Approaching target: A service for nationwide deformation monitoring in Denmark using Sentinel-1

Building upon decades of experience with deformation monitoring from repeated precision leveling and GNSS measurements as well as more recent time series analyses of ERS, Envisat, and Sentinel-1 imagery, we are now working towards a nationwide mapping using Sentinel-1 Interferometric Wide Swath (IWS) mode data. The mission's high spatio-temporal resolution yields multiple new potentials, one of which is the focus of this work: The establishment of an operational service for a nationwide monitoring of vertical land deformations in Denmark.

We present deformation rates over selected test sites, obtained by applying Persistent Scatterer Interferometry to nearly two years of Sentinel-1 IWS data. They clearly demonstrate the potential in using such observations to identify areas undergoing rapid changes, so-called hotspots. Close collaborations with end-users show that the high-resolution information is relevant for, e.g., climate change adaptation and for optimizing renovation works of subsurface pipelines. Other relevant end-users represent road authorities, insurance companies, local authorities, etc. A nationwide mapping therefore is associated with great potentials for optimizing processes in both the public and private sectors. This will inevitably lead to significant economic savings.

The test study makes up part of the foundation for establishing a nationwide service. As such, the results over the test sites will be presented to a broad range of end-users to identify their needs for the full-scale, technical solution.

Furthermore, we investigate how to optimally exploit our network of in-situ measurements as well as a national uplift model to generate absolute deformation rates with a mm-accuracy. Combined with the close involvement of end-users, we focus on developing a service tailored to specific needs, which increases the probability of its implementation in both the public and private sectors.

Presenting the results obtained on the road to setting up a nationwide deformation monitoring will clearly demonstrate the potentials arising with the continuous stream of Sentinel-1 IWS data.

A predation cost to bold fish in the wild

Studies of predator-mediated selection on behaviour are critical for our understanding of the evolution and maintenance of behavioural diversity in natural populations. Consistent individual differences in prey behaviour, especially in the propensity to take risks (“boldness”), are widespread in the animal kingdom. Theory predicts that individual behavioural types differ in a cost-benefit trade-off where bolder individuals benefit from greater access to resources while paying higher predation-risk costs. However, explicitly linking predation events to individual behaviour under natural conditions is challenging and there is currently little data from the wild. We assayed individual behaviour and electronically tagged hundreds of fish (roach, Rutilus rutilus) before releasing them into their lake of origin, thereby exposing them to predation risk from avian apex predators (cormorants, Phalacrocorax carbo). Scanning for regurgitated tags at the cormorant roosting site provided data on individual predation events. We found that fish with higher boldness have a greater susceptibility to cormorant predation compared to relatively shy, risk-averse individuals. Our findings hereby provide unique and direct evidence of behavioural type-dependent predation vulnerability in the wild, i.e. that there is a predation cost to boldness, which is critical for our understanding of the evolution and maintenance of behavioural diversity in natural populations.
A predator-2 prey fast-slow dynamical system for rapid predator evolution

We consider adaptive change of diet of a predator population that switches its feeding between two prey populations. We develop a novel 1 fast-3 slow dynamical system to describe the dynamics of the three populations amidst continuous but rapid evolution of the predator's diet choice. The two extremes at which the predator's diet is composed solely of one prey correspond to two branches of the three-branch critical manifold of the fast slow system. By calculating the points at which there is a fast transition between these two feeding choices (i.e., branches of the critical manifold), we prove that the system has a two-parameter family of periodic orbits for sufficiently large separation of the time scales between the evolutionary and ecological dynamics. Using numerical simulations, we show that these periodic orbits exist, and that their phase difference and oscillation patterns persist, when ecological and evolutionary interactions occur on comparable time scales. Our model also exhibits periodic orbits that agree qualitatively with oscillation patterns observed in experimental studies of the coupling between rapid evolution and ecological interactions.
Publication information
Journal: SIAM Journal on Applied Dynamical Systems
Volume: 16
Issue number: 1
ISSN (Print): 1536-0040
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.88 SJR 1.256 SNIP 1.297
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.358 SNIP 1.389 CiteScore 1.89
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.167 SNIP 1.217 CiteScore 1.67
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.306 SNIP 1.34 CiteScore 1.85
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.221 SNIP 1.486 CiteScore 1.77
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.494 SNIP 1.41 CiteScore 1.91
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.204 SNIP 1.187
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.299 SNIP 1.613
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.276 SNIP 1.508
Scopus rating (2007): SJR 1.55 SNIP 1.472
Scopus rating (2006): SJR 1.781 SNIP 1.465
Scopus rating (2005): SJR 1.227 SNIP 1.899
Scopus rating (2004): SJR 1.107 SNIP 2.233
Scopus rating (2003): SJR 0.536 SNIP 0.702
DOI:
10.1137/16M1068426
Source: FindIt
Source-ID: 2350730002
Publication: Research - peer-review › Journal article – Annual report year: 2017

Authors: Piltz, S. H. (Intern), Veerman, F. (Ekstern), Maini, P. K. (Ekstern), Porter, M. A. (Ekstern)
Pages: 54-90
Publication date: 2017
Main Research Area: Technical/natural sciences
A prism based magnifying hyperlens with broad-band imaging

Magnification in metamaterial hyperlenses has been demonstrated using curved geometries or tapered devices, at frequencies ranging from the microwave to the ultraviolet spectrum. One of the main issues of such hyperlenses is the difficulty in manufacturing. In this letter, we numerically and experimentally study a wire medium prism as an imaging device at THz frequencies. We characterize the transmission of the image of two sub-wavelength apertures, observing that our device is capable of resolving the apertures and producing a two-fold magnified image at the output. The hyperlens shows strong frequency dependent artefacts, a priori limiting the use of the device for broad-band imaging. We identify the main source of image aberration as the reflections supported by the wire medium and also show that even the weaker reflections severely affect the imaging quality. In order to correct for the reflections, we devise a filtering technique equivalent to spatially variable time gating so that ultra-broad band imaging is achieved.

General information
State: Published
Organisations: Department of Photonics Engineering, Fiber Sensors and Supercontinuum Generation, University of Sydney
Authors: Habib, M. S. (Ekstern), Stefani, A. (Intern), Atakaramians, S. (Ekstern), Fleming, S. C. (Ekstern), Argyros, A. (Ekstern), Kuhlmey, B. T. (Ekstern)
Number of pages: 5
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Volume: 110
Article number: 101106
ISSN (Print): 0003-6951
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.67 SJR 1.132 SNIP 0.996
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.085 SNIP 0.983 CiteScore 2.47
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.799 SNIP 1.462 CiteScore 3.25
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.149 SNIP 1.652 CiteScore 3.77
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.554 SNIP 1.754 CiteScore 3.76
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.805 SNIP 1.94 CiteScore 4.04
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.926 SNIP 1.789
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.857 SNIP 1.848
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
A Privacy-Preserving Framework for Collaborative Intrusion Detection Networks Through Fog Computing

Nowadays, cyber threats (e.g., intrusions) are distributed across various networks with the dispersed networking resources. Intrusion detection systems (IDSs) have already become an essential solution to defend against a large amount of attacks. With the development of cloud computing, a modern IDS is able to implement more complicated detection algorithms by offloading the expensive operations such as the process of signature matching to the cloud (i.e., utilizing computing resources from the cloud). However, during the detection process, no party wants to disclose their own data especially sensitive information to others for privacy concerns, even to the cloud side. For this sake, privacy-preserving technology has been applied to IDSs, while it still lacks of proper solutions for a collaborative intrusion detection network (CIDN) due to geographical distribution. A CIDN enables a set of dispersed IDS nodes to exchange required information. With the advent of fog computing, in this paper, we propose a privacy-preserving framework for collaborative networks based on fog devices. Our study shows that the proposed framework can help reduce the workload on cloud’s side.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Cyber Security, Guangzhou University, City University of Hong Kong, Technical University of Denmark
Authors: Wang, Y. (Ekstern), Xie, L. (Ekstern), Li, W. (Ekstern), Meng, W. (Intern), Li, J. (Ekstern)
Pages: 267-279
Publication date: 2017

Host publication information
Title of host publication: Cyberspace Safety and Security : 9th International Symposium, CSS 2017, Xi’an China, October 23–25, 2017, Proceedings
Volume: 10581
Publisher: Springer
Edition: 1
ISBN (Print): 978-3-319-69470-2
ISBN (Electronic): 978-3-319-69471-9

Series: Lecture Notes in Computer Science
ISSN: 0302-9743
Main Research Area: Technical/natural sciences
Conference: 9th International Symposium on Cyberspace Safety and Security, Xi’an, China, 23/10/2017 - 23/10/2017
Collaborate network, Privacy preserving, Intrusion detection, Cloud environment, Fog computing

A probabilistic approach to urban flooding from sea surges in Copenhagen

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Department of Environmental Engineering, Urban Water Systems
Authors: Georgiadis, S. (Intern), Sørup, H. J. D. (Intern), Nielsen, B. F. (Intern), Arnbjerg-Nielsen, K. (Intern)
Pages: 658-662
Publication date: 2017

Host publication information
Title of host publication: Proceedings of 14th IWA/IAHR International Conference on Urban Drainage 2017
Main Research Area: Technical/natural sciences
Conference: 14th IWA/IAHR International Conference on Urban Drainage 2017, Prague, Czech Republic, 10/09/2017 - 10/09/2017
Source: PublicationPreSubmission
Source-ID: 137138916
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

A Probabilistic Framework for Curve Evolution
In this work, we propose a nonparametric probabilistic framework for image segmentation using deformable models. We estimate an underlying probability distributions of image features from regions defined by a deformable curve. We then evolve the curve such that the distance between the distributions is increasing. The resulting active contour resembles a well studied piecewise constant Mumford-Shah model, but in a probabilistic setting. An important property of our framework is that it does not require a particular type of distributions in different image regions. Additional advantages of our approach include ability to handle textured images, simple generalization to multiple regions, and efficiency in computation. We test our probabilistic framework in combination with parametric (snakes) and geometric (level-sets) curves. The experimental results on composed and natural images demonstrate excellent properties of our framework.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Image Analysis & Computer Graphics
Authors: Dahl, V. A. (Intern), Dahl, A. B. (ed.) (Intern)
Pages: 421-32
Publication date: 2017

Host publication information
Title of host publication: Scale Space and Variational Methods in Computer Vision
Publisher: Springer
ISBN (Print): 9783319587707
Series: Lecture Notes in Computer Science
Volume: 10302
ISSN: 0302-9743
Main Research Area: Technical/natural sciences
Conference: Sixth International Conference on Scale Space and Variational Methods in Computer Vision, Kolding, Denmark, 04/06/2017 - 04/06/2017
DOIs:
10.1007/978-3-319-58771-4_34
Source: FindIt
Source-ID: 2371235678
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017
A procedure for grouping food consumption data for use in food allergen risk assessment

Food allergic subjects need to avoid the allergenic food that triggers their allergy. However, foods can also contain unintended allergens. Food manufacturers or authorities need to perform a risk assessment to be able to decide if unintended allergen presence constitutes a risk to food allergic consumers. One of the input parameters in risk assessment is the amount of a given food consumed in a meal. There has been little emphasis on how food consumption data can be used in food allergen risk assessment. The aim of the study was to organize the complex datasets from National Food Consumption Surveys from different countries (France, Netherlands and Denmark) to be manageable in food allergen risk assessment. To do this, a two-step method was developed. First, based on initial groups of similar food items, the homogeneity of consumption was evaluated using a customized clustering method. Then, the risk was calculated for each initial food group and its subgroups to verify if it also represents a relevant difference in risk. Forty-eight food groups were designated in Denmark (53 in the Netherlands, 54 in France). Finally, summary statistics and names for each food group for the Danish data illustrate the results when applying the procedure.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, National Food Institute, Research Group for Gut Microbiology and Immunology, Division of Risk Assessment and Nutrition, The Netherlands Organization for Applied Scientific Research, ANSES - French Agency for Food, Environmental and Occupational Health & Safety
Authors: Birot, S. (Intern), Madsen, C. B. (Intern), Kruizinga, A. G. (Ekstern), Christensen, T. (Intern), Crépet, A. (Ekstern), Brockhoff, P. B. (Intern)
Pages: 111-123
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Food Composition and Analysis
Volume: 59
ISSN (Print): 0889-1575
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.15 SJR 1.093 SNIP 1.482
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.141 SNIP 1.645 CiteScore 2.99
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.185 SNIP 1.764 CiteScore 2.71
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.242 SNIP 1.702 CiteScore 2.8
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.129 SNIP 1.563 CiteScore 2.44
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.304 SNIP 1.643 CiteScore 2.72
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.209 SNIP 1.473
ISI indexed (2010): ISI indexed yes
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.419 SNIP 1.754
ISI indexed (2009): ISI indexed yes
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.298 SNIP 1.492
Scopus rating (2007): SJR 1.053 SNIP 1.616
Web of Science (2007): Indexed yes
A proof of the Barát-Thomassen conjecture

The Barát-Thomassen conjecture asserts that for every tree T on m edges, there exists a constant kT such that every kT-edge-connected graph with size divisible by m can be edge-decomposed into copies of T. So far this conjecture has only been verified when T is a path or when T has diameter at most 4. Here we prove the full statement of the conjecture.

General information

State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic, Université Toulouse III - Paul Sabatier, École Normale Supérieure de Lyon
Authors: Bensmail, J. (Intern), Harutyunyan, A. (Ekstern), Le, T. N. (Ekstern), Merker, M. (Intern), Thomassé, S. (Ekstern)
Pages: 39-55
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Journal of Combinatorial Theory. Series B
Volume: 124
ISSN (Print): 0095-8956
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.13 SJR 1.965 SNIP 1.959
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.235 SNIP 2.057 CiteScore 1.29
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.211 SNIP 2.018 CiteScore 1.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.124 SNIP 1.956 CiteScore 1.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.31 SNIP 2.153 CiteScore 1.2
ISI indexed (2012): ISI indexed yes
A prospective observational longitudinal study of new-onset seizures and newly diagnosed epilepsy in dogs

Seizures are common in dogs and can be caused by non-epileptic conditions or epilepsy. The clinical course of newly diagnosed epilepsy is sparsely documented. The objective of this study was to prospectively investigate causes for seizures (epileptic and non-epileptic) in a cohort of dogs with new-onset untreated seizures, and for those dogs with newly diagnosed epilepsy to investigate epilepsy type, seizure type and the course of disease over time, including the risk of seizure recurrence. Untreated client-owned dogs experiencing new-onset seizures were prospectively enrolled in a longitudinal observational study including clinical investigations and long-term monitoring at the Copenhagen University Hospital for Companion Animals. A baseline clinical assessment was followed by investigator/owner contact every eight weeks from inclusion to death or end of study. Inclusion of dogs was conducted from November 2010 to September 2012, and the study terminated in June 2014. One hundred and six dogs were included in the study. Seventy-nine dogs (74.5%) were diagnosed with epilepsy: 61 dogs (77.2%) with idiopathic epilepsy, 13 dogs (16.5%) with structural epilepsy and five dogs (6.3%) with suspected structural epilepsy. A non-epileptic cause for seizures was identified in 13 dogs and suspected in 10 dogs. Four dogs in which no cause for seizures was identified experienced only one seizure during the study. In dogs with idiopathic epilepsy 60% had their second epileptic seizure within three months of seizure onset. Twenty-six dogs with idiopathic epilepsy (43%) completed the study without receiving antiepileptic treatment. The natural course of idiopathic epilepsy (uninfluenced by drugs) was illustrated by highly individual and fluctuating seizure patterns, including long periods of remission. Cluster seizures motivated early treatment. In a few dogs with a high seizure frequency owners declined treatment against the investigators advice. Epilepsy is the most likely diagnosis in dogs presenting with new-onset seizures. The course of idiopathic epilepsy is highly individual and might not necessarily require long-term treatment. This must be considered when advising owners about what to expect with regard to treatment and prognosis.
Canine epilepsy, Epilepsy remission, Epileptic seizure recurrence, Idiopathic epilepsy, Non-epileptic seizures
A pseudo-Voigt component model for high-resolution recovery of constituent spectra in Raman spectroscopy

Raman spectroscopy is a well-known analytical technique for identifying and analyzing chemical species. Since Raman scattering is a weak effect, surface-enhanced Raman spectroscopy (SERS) is often employed to amplify the signal. SERS signal surface mapping is a common method for detecting trace amounts of target molecules. Since the method produces large amounts of data and, in the case of very low concentrations, low signal-to-noise (SNR) ratio, ability to extract relevant spectral features is crucial. We propose a pseudo-Voigt model as a constrained source separation model, that is able to directly and reliably identify the Raman modes, with overall performance similar to the state of the art non-negative matrix factorization approach. However, the model provides better interpretation and is a step towards enabling the use of SERS in detection of trace amounts of molecules in real-life settings.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Cognitive Systems, Department of Micro- and Nanotechnology, Nanoprobes, Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics
Authors: Alstrøm, T. S. (Intern), Schmidt, M. N. (Intern), Rindzevicius, T. (Intern), Boisen, A. (Intern), Larsen, J. (Intern)
Pages: 2317-21
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 42nd IEEE International Conference on Acoustics, Speech and Signal Processing
Publisher: IEEE
ISBN (Print): 9781509041169
Main Research Area: Technical/natural sciences
Conference: 42nd IEEE International Conference on Acoustics, Speech and Signal Processing, New Orleans, United States, 05/03/2017 - 05/03/2017
Electronic versions:
Untitled.pdf
DOIs: 10.1109/ICASSP.2017.7952570
Source: PublicationPreSubmission
Source-ID: 128987321
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Aqualase, a yeast-based in-feed probiotic, modulates intestinal microbiota, immunity and growth of rainbow trout Oncorhynchus mykiss

Yeast probiotics have great promise, yet they received little attention in fish. This study investigated the influence of Aqualase, a yeast-based commercial probiotic composed of Saccharomyces cerevisiae and Saccharomyces elipsoedas, on health and performance of rainbow trout (Oncorhynchus mykiss). Probiotics were incorporated in the diets at three different inclusion levels (1%, 1.5% and 2%) and administered to the fish for a period of 8 weeks. After the feeding trial, intestinal total viable aerobic bacterial count was significantly higher in fish group that received 2% in-feed probiotics.

In addition, a significant increase in at least 11% in intestinal lactic acid bacteria population was observed in all probiotic-fed groups. Total protein level and lysozyme activity in skin mucus were significantly elevated following probiotic feeding. Inhibitory potential of skin mucus against fish pathogens was significantly enhanced by at least 50% in probiotic-fed groups. Humoral and cellular immune parameters were influenced by probiotic feeding and the effects were dependent on inclusion level. Digestive physiology was affected by infeed probiotics through improvement of intestinal enzyme activities. All growth performance parameters were significantly improved following probiotic administration specifically at inclusion rate 1.5% and above. Taken together, the results revealed that Aqualase is a promising yeast-based probiotic for rainbow trout with the capability of modulating the intestinal microbiota, immunity and growth.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Aquaculture, Sari University of Agricultural Sciences and Natural Resources, Iranian Fisheries Science Research Institute (IFSR)
Authors: Adel, M. (Ekstern), Lazado, C. C. (Intern), Safari, R. (Ekstern), Yeganehe, S. (Ekstern), Zorriezhahra, M. J. (Ekstern)
Pages: 1815-1826
Publication date: 2017
Main Research Area: Technical/natural sciences
Aquaporin based biomimetic membrane in forward osmosis: Chemical cleaning resistance and practical operation

Aquaporin plays a promising role in fabricating high performance biomimetic forward osmosis (FO) membranes. However, aquaporin as a protein also has a risk of denaturation caused, by various chemicals, resulting in a possible decay of membrane performance. The present study tested a novel aquaporin based biomimetic membrane in simulated membrane cleaning processes. The effects of cleaning agents on water flux and salt rejection were evaluated. The membrane showed a good resistance to the chemical agents. The water flux after chemical cleaning showed significant increases, particularly after cleaning with NaOCl and Alconox. Changes in the membrane structure and increased hydrophilicity in the surrounding areas of the aquaporin may be accountable for the increase in water permeability. The membrane shows stable salt rejection up to 99% after all cleaning agents were tested. A 15-day experiment with secondary wastewater effluent as the feed solution and seawater as the draw solution showed a stable flux and high salt rejection. The average rejection of the dissolved organic carbon from wastewater after the 15-day test was 90%. The results demonstrated that the aquaporin based biomimetic FO membrane exhibits chemical resistance for most agents used in membrane cleaning procedures, maintaining a stable flux and high salt rejection.

General information
State: Published
Organisations: Department of Environmental Engineering, Water Technologies, Northwest Agriculture and Forestry University, King Abdullah University of Science and Technology, Clemson University
Authors: Li, Z. (Ekstern), Linares, R. V. (Ekstern), Bucs, S. (Ekstern), Fortunato, L. (Ekstern), Hélix-Nielsen, C. (Intern), Vrouwenvelder, J. S. (Ekstern), Ghaffour, N. (Ekstern), Leiknes, T. (Ekstern), Amy, G. (Ekstern)
Number of pages: 8
Pages: 208-215
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Desalination
Volume: 420
ISSN (Print): 0011-9164
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 5.82 SJR 1.808 SNIP 1.911
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.522 SNIP 1.868 CiteScore 4.83
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.86 SNIP 2.257 CiteScore 4.65
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.733 SNIP 2.17 CiteScore 4.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.517 SNIP 1.506 CiteScore 2.97
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.109 SNIP 1.276 CiteScore 2.93
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.897 SNIP 1.076
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.883 SNIP 1.043
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Aquatic Ecotoxicity of Microplastics and Nanoplastics: Lessons Learned from Engineered Nanomaterials

The widespread occurrence of microplastics in the aquatic environment is well documented through international surveys and scientific studies. Further degradation and fragmentation, resulting in the formation of nanosized plastic particles - nanoplastics - has been highlighted as a potentially important issue. In the environment, both microplastics and nanoplastics may have direct ecotoxicological effects, as well as vector effects through the adsorption of co-contaminants. Plastic additives and monomers may also be released from the polymer matrix and cause adverse effects on aquatic organisms. Although limited information regarding the ecotoxicological effects of nano- and microplastics is available at present, their small size gives rise to concern with respect to the adverse effects and dislocation of these particles inside organisms - similar to issues often discussed for engineered nanomaterials. In the same way, transport of co-contaminants and leaching of soluble substances are much debated issues with respect to the ecotoxicology of nanomaterials.

General information
State: Published
Organisations: Department of Environmental Engineering, Environmental Chemistry
Authors: Rist, S. (Intern), Hartmann, N. B. (Ekstern)
Number of pages: 25
Pages: 25-49
Publication date: 2017

Host publication information
Title of host publication: Freshwater Microplastics - Emerging Environmental Contaminants?
Publisher: Springer
Editors: Wagner, M., Lambert, S.
ISBN (Electronic): 978-3-319-61615-5

Series: The Handbook of Environmental Chemistry
Volume: 58
Main Research Area: Technical/natural sciences
Environment, Environmental Chemistry, Water Quality/Water Pollution, Geochemistry, Analytical Chemistry, Marine & Freshwater Sciences, Biological effects, Nanoparticles, Nanotoxicology, Test methods, Vector effects

Electronic versions:
filestore.pdf
DOIs:
10.1007/978-3-319-61615-5_2
Source: FindIt
Source-ID: 2393555348
Publication: Research - peer-review › Book chapter – Annual report year: 2017
Aquatic toxicity testing of liquid hydrophobic chemicals – Passive dosing exactly at the saturation limit

The aims of the present study were (1) to develop a passive dosing approach for aquatic toxicity testing of liquid substances with very high Kow values and (2) to apply this approach to the model substance dodecybenzene (DDB, Log Kow = 8.65). The first step was to design a new passive dosing format for testing DDB exactly at its saturation limit. Silicone O-rings were saturated by direct immersion in pure liquid DDB, which resulted in swelling of >14%. These saturated O-rings were used to establish and maintain DDB exposure exactly at the saturation limit throughout 72-h algal growth inhibition tests with green algae Raphidocelis subcapitata. Growth rate inhibition at DDB solubility was 13 ± 5% (95% CI) in a first and 8 ± 3% (95% CI) in a repeated test, which demonstrated that improved exposure control can lead to good precision and repeatability of toxicity tests. This moderate toxicity at chemical activity of unity was higher than expected relative to a reported hydrophobicity cut-off in toxicity, but lower than expected relative to a reported chemical activity range for baseline toxicity. The present study introduces a new effective approach for toxicity testing of an important group of challenging chemicals, while providing a basis for investigating toxicity cut-off theories.

General information
State: Published
Organisations: Department of Environmental Engineering, Environmental Chemistry, RWTH Aachen University, Technical University of Denmark
Authors: Stibany, F. (Ekstern), Nørgaard Schmidt, S. (Intern), Schäffer, A. (Ekstern), Mayer, P. (Intern)
Pages: 551–558
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Chemosphere
Volume: 167
ISSN (Print): 0045-6535
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.39 SJR 1.417 SNIP 1.606
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.51 SNIP 1.57 CiteScore 4.04
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.593 SNIP 1.651 CiteScore 3.76
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.724 SNIP 1.767 CiteScore 3.92
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.818 SNIP 1.623 CiteScore 3.5
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.961 SNIP 1.515 CiteScore 3.61
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.867 SNIP 1.421
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.836 SNIP 1.573
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Highly hydrophobic liquids, Saturation limit, Silicone swelling, Passive dosing, Algal growth inhibition, Hydrophobicity cut-off

DOIs: 10.1016/j.chemosphere.2016.10.014
Source: FindIt
Source-ID: 2347676321
Publication: Research - peer-review › Journal article – Annual report year: 2017

Aqueous Lubrication with Polyelectrolytes: Toward Engineering Applications

General information
State: Published
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering
Authors: Lee, S. (Intern)
Pages: 39–60
Publication date: 2017

Host publication information
Title of host publication: Surfactants in Tribology
Volume: 5
Publisher: Taylor & Francis
Editors: Biresaw, G., Mittal, K. L.
ISBN (Print): 978-1-4987-3479-0
ISBN (Electronic): 978-1-4987-3480-6
Main Research Area: Technical/natural sciences
DOIs: 10.1201/9781315120829-5
Source: PublicationPreSubmission
Source-ID: 138457197
Publication: Research - peer-review › Book chapter – Annual report year: 2017

Aqueous metal–organic solutions for YSZ thin film inkjet deposition
Inkjet printing of 8% Y2O3-stabilized ZrO2 (YSZ) thin films is achieved by designing a novel water-based reactive ink for Drop-on-Demand (DoD) inkjet printing. The ink formulation is based on a novel chemical strategy that consists of a combination of metal oxide precursors (zirconium alkoxide and yttrium salt), water and a nucleophilic agent, i.e. n-methyldiethanolamine (MDEA). This chemistry leads to metal–organic complexes with long term ink stability and high precision printability. Ink rheology and chemical reactivity are analyzed and controlled in terms of metal–organic interactions in the solutions. Thin dense nanocrystalline YSZ films below 150 nm are obtained by low temperature calcination treatments (400–500 °C), making the deposition suitable for a large variety of substrates, including silicon, glass and metals. Thin films and printed patterns achieve full densification with no lateral shrinkage and high ionic conductivity.
Aqueous two-phase systems for extractive enzymatic hydrolysis of biomass

Sugars derived from lignocellulosic materials are the main carbon sources in bio-based processes aiming to produce renewable fuels and chemicals. One of the major drawbacks during enzymatic hydrolysis of lignocellulosic materials to obtain sugars is the inhibition of enzymes by reaction products (cellulbiose and glucose). This effect is even more pronounced in hydrolysis containing high solid content (15-20% or higher water-insoluble solids – WIS), which is desired in order to obtain hydrolysates containing high total reducing sugar concentration and reduced water usage1. The aim of this project is to develop a new process for sugarcane bagasse hydrolysis using aqueous two-phase system. This system will be applied as in situ extraction aiming to remove the reaction products as they are released. As a consequence of product removal, enzymes tend to maintain their maximum activity2. The phase-components of the systems will be chosen taking into account their costs, viscosity, capacity of regeneration, melting point, solubility and partition of sugars and proteins. The pre-selected components will be studied and tested in high-throughput experiments3, in order to determine their partition coefficients of sugars and enzymes, phase diagrams and volumetric ratios. The results of this project will make it possible to design a process that enables high sugar concentration during the hydrolysis reaction, overcoming one of the biggest drawbacks regarding the production of second-generation ethanol: the enzymatic inhibition. The achievement of the project’s goal can lead to, but not limited to, three consequences: enhancement of sugarcane mills productivity; reduction of fossil fuels usage, which can accelerate the energetic independence in many countries; and contribution to a more sustainable economy. This paper will present optimal aqueous two-phase systems for the separation of sugars and enzymes, which allow the development of an improved second-generation ethanol process.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Biomass Conversion and Bioprocess Technology, Delft University of Technology, University of Campinas
Authors: Bussamra, B. C. (Ekstern), Azzoni, S. F. (Ekstern), Mussatto, S. I. (Intern), da Costa, A. C. (Ekstern), van der Wielen, L. A. M. (Ekstern), Ottens, M. (Ekstern)
Number of pages: 1
Arcanobacterium phocae infection in mink (Neovison vison), seals (Phoca vitulina, Halichoerus grypus) and otters (Lutra lutra)

Infectious skin disorders are not uncommon in mink. Such disorders are important as they have a negative impact on animal health and welfare as well as on the quality and value of the fur. This study presents the isolation of Arcanobacterium phocae from mink with severe skin lesions and other pathological conditions, and from wild seals and otters. In 2015, A. phocae was isolated for the first time in Denmark from outbreaks of dermatitis in mink farms. The outbreaks affected at least 12 farms. Originating from these 12 farms, 23 animals cultured positive for A. phocae. The main clinical findings were necrotizing pododermatitis or dermatitis located to other body sites, such as the lumbar and cervical regions. A. phocae could be isolated from skin lesions and in nine animals also from liver, spleen and lung, indicating a systemic spread. The bacterium was also, for the first time in Denmark, detected in dead seals (n = 9) (lungs, throat or wounds) and otters (n = 2) (throat and foot). An infectious skin disorder in mink associated with A. phocae has started to occur in Danish farmed mink. The origin of the infection has not been identified and it is still not clear what the pathogenesis or the port of entry for A. phocae infections are.
Architecturally Significant Requirements Identification, Classification and Change Management for Multi-tenant Cloud-Based Systems

Involvement of numerous stakeholders in cloud-based systems’ design and usage with varying degrees of nonfunctional requirements makes Architecturally Significant Requirements (ASRs) identification and management a challenge undertaking. The aim of the research presented in this chapter is to identify different types of design-time and run-time ASRs of the cloud-based systems, provide an ASRs classification scheme and present a framework to manage the requirements’ variability during life cycle of the cloud-based systems. We have used a multifaceted research approach to address the ASRs identification, classification, and change management challenges. We have explored findings from systematic as well as structured reviews of the literature on quality requirements of the cloud-based systems including but not limited to security, availability, scalability, privacy, and multi-tenancy. We have presented a framework for requirements classification and change management focusing on distributed Platform as a Service (PaaS) and Software as a Service (SaaS) systems as well as complex software ecosystems that are built using PaaS and SaaS, such as Tools as a Service (TaaS). We have demonstrated applicability of the framework on a selected set of the requirements for the cloud-based systems. The results of the research presented in this chapter show that key quality requirements of the cloud-based systems, for example, multi-tenancy and security, have a significant impact on how other quality requirements (such as scalability, reliability, and interoperability) are handled in the overall architecture design of a cloud-based system. It is important to distinguish tenant-specific run-time architecturally significant quality requirements and corresponding cloud-based systems’ components so that run-time status of the tenant-specific architecture quality requirements can be monitored and system configurations can be adjusted accordingly. For the systems that can be used by multiple tenants, the requirements change management framework should consider if the addition or modification (triggered by a specific tenant) of a quality requirement can impact quality requirements of other tenants, and whether or not a trade-off point should be introduced in the architecture (corresponding to the requirements). The trade-off point can also be referred as a variability point, that is, a compromise has to be made among the number of quality requirements and only some of the requirements can be satisfied. System analysts and software architects can use the proposed
taxonomy and the management framework for identifying relevant quality requirements for multi-tenant cloud-based systems, for analyzing impact of changes in the requirements on the overall system architecture, and for managing variability of the architecturally significant requirements.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Cyber Security
Authors: Chauhan, M. A. (Intern), Probst, C. W. (Intern)
Pages: 181-205
Publication date: 2017

Host publication Information
Title of host publication: Requirements Engineering for Service and Cloud Computing
Publisher: Springer
ISBN (Print): 9783319513096
Chapter: 8

Series: Requirements Engineering for Service and Cloud Computing
Main Research Area: Technical/natural sciences
Computer Science, Computer Communication Networks, Software Engineering, Business Process Management, Cloud computing, Platform as a service (PaaS), Software as a service (SaaS), Architecturally significant requirements (ARSs), Requirements classification, Requirements change management, Architecture quality

Arctic Sea Level During the Satellite Altimetry Era
Results of the sea-level budget in the high latitudes (up to 80°N) and the Arctic Ocean during the satellite altimetry era. We investigate the closure of the sea-level budget since 2002 using two altimetry sea-level datasets based on the Envisat waveform retracking; temperature and salinity data from the ORAP5 reanalysis, and Gravity Recovery And Climate Experiment (GRACE) space gravimetry data to estimate the steric and mass components. Regional sea-level trends seen in the altimetry map, in particular over the Beaufort Gyre and along the eastern coast of Greenland, are of halosteric origin. However, in terms of regional average over the region ranging from 66°N to 80°N, the steric component contributes little to the observed sea-level trend, suggesting a dominant mass contribution in the Arctic region. This is confirmed by GRACE-based ocean mass time series that agree well with the altimetry-based sea-level time series. Direct estimate of the mass component is not possible prior to GRACE. Thus, we estimated the mass contribution from the difference between the altimetry-based sea level and the steric component. We also investigate the coastal sea level with tide gauge records. Twenty coupled climate models from the CMIP5 project are also used. The models lead us to the same conclusions concerning the halosteric origin of the trend patterns.

General information
State: Published
Organisations: National Space Institute, Geodesy, Nansen Environmental and Remote Sensing Center, Laboratoire d'Études en Géophysique et Océanographie Spatiales, CLS Satellite Oceanography Division
Authors: Carret, A. (Ekstern), Johannessen, J. A. (Ekstern), Andersen, O. B. (Intern), Ablain, M. (Ekstern), Prandi, P. (Ekstern), Velazquez-Blazquez, A. (Ekstern), Cazenave, A. (Ekstern)
Pages: 251-275
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Surveys in Geophysics
Volume: 38
Issue number: 1
ISSN (Print): 0169-3298
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 2.187 SNIP 1.904 CiteScore 3.7
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.518 SNIP 1.687 CiteScore 3.55
A Reaction Database for Small Molecule Pharmaceutical Processes Integrated with Process Information

This article describes the development of a reaction database with the objective to collect data for multiphase reactions involved in small molecule pharmaceutical processes with a search engine to retrieve necessary data in investigations of reaction-separation schemes, such as the role of organic solvents in reaction performance improvement. The focus of this reaction database is to provide a data rich environment with process information available to assist during the early stage synthesis of pharmaceutical products. The database is structured in terms of reaction classification of reaction types; compounds participating in the reaction; use of organic solvents and their function; information for single step and multistep reactions; target products; reaction conditions and reaction data. Information for reactor scale-up together with information for the separation and other relevant information for each reaction and reference are also available in the database. Additionally, the retrieved information obtained from the database can be evaluated in terms of sustainability using well-known “green” metrics published in the scientific literature. The application of the database is illustrated through the synthesis of ibuprofen, for which data on different reaction pathways have been retrieved from the database and compared using “green” chemistry metrics.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre, KT Consortium, King Mongkut's Institute of Technology Ladkrabang
Authors: Papadakis, E. (Intern), Anantpinijwatna, A. (Ekstern), Woodley, J. (Intern), Gani, R. (Intern)
Number of pages: 25
Publication date: 2017
Are building users prepared for energy flexible buildings—A large-scale survey in the Netherlands

Building energy flexibility might play a crucial role in demand side management for integrating intermittent renewables into smart grids. The potential of building energy flexibility depends not only on the physical characteristics of a building but also on occupant behaviour in the building. Building users will have to adopt smart technologies and to change their daily energy use behaviours or routines, if energy flexibility is to be achieved. The willingness of users to make changes will determine how much demand flexibility can be achieved in buildings and whether energy flexible buildings can be realized. This will have a considerable impact on the transition to smart grids. This study is thus to assess the perception of smart grids and energy flexible buildings by building users, and their readiness for them on a large scale. We attempted to identify the key characteristics of the ideal user of flexible buildings. A questionnaire was designed and administered as an online survey in the Netherlands. The questionnaire consisted of questions about the sociodemographic characteristics of the current users, house type, household composition, current energy use behaviour, willingness to use smart technologies, and willingness to change energy use behaviour. The survey was completed by 835 respondents, of which 785 (94%) were considered to have provided a genuine response. Our analysis showed that the concept of smart grids is an unfamiliar one, as more than 60% of the respondents had never heard of smart grids. However, unfamiliarity with smart grids increased with age, and half of the respondents aged 20–29 years old were aware of the concept. Monetary incentives were identified as the biggest motivating factor for adoption of smart grid technologies. It was also found that people would be most in favour of acquiring smart dishwashers (65% of the respondents) and refrigerator/freezers (60%). Statistical analysis shows that people who are willing to use smart technologies are also willing to change their behaviour, and can thus be categorised as potentially flexible building users. Given certain assumptions, 11% of the respondents were found to be potentially flexible building users. To encourage people to be prepared for energy flexible buildings, awareness of smart grids will have to be increased, and the adoption of smart technologies may have to be promoted by providing incentives such as financial rewards.
A regenerative elastocaloric device: Experimental results
Elastocaloric cooling and heating is an alternative cooling technology that has potential to be highly efficient and environmentally friendly. Experimental results are reported for two elastocaloric regenerators made of NiTi alloys in the form of parallel plates in two plate thicknesses. For the regenerator made of 0.2 mm plates, a maximum no-load temperature span of 17.6 K was achieved for an applied strain of 4.3 %. For the regenerator with 0.35 mm plates, a maximum temperature span of 19.9 K was reached for a strain of 3.5 %. The 0.2 mm regenerator failed after approximately 5200 cycles and the 0.35 mm regenerator failed after approximately 5500 cycles.
A regional and nonstationary model for partial duration series of extreme rainfall

Regional extreme value models for estimation of extreme rainfall intensities are widely applied, but their underlying assumption of stationarity is challenged. Many recent studies show that the rainfall extremes worldwide exhibit a nonstationary behavior. This paper presents a spatiotemporal model of extreme rainfall. The framework is built on a partial duration series approach with a nonstationary, regional threshold value. The model is based on generalized linear regression solved by generalized estimation equations. It allows a spatial correlation between the stations in the network and accounts furthermore for variable observation periods at each station and in each year. Marginal regional and temporal regression models solved by generalized least squares are used to validate and discuss the results of the full spatiotemporal model. The model is applied on data from a large Danish rain gauge network for four durations ranging from 10 min to 24 h. The observation period differs between stations, and the number of stations with more than 10 years of observations has increased over the years. A spatiotemporal model for the threshold is suggested, applying the mean annual precipitation and time as the explanatory variables in the regional and temporal domain, respectively. Further analysis of partial duration series with nonstationary and regional thresholds shows that the mean exceedances also exhibit a significant variation in space and time for some rainfall durations, while the shape parameter is found to be constant.

General information
State: Published
Organisations: Department of Environmental Engineering, Water Resources Engineering, Urban Water Systems, DHI Denmark
Authors: Gregersen, I. B. (Intern), Madsen, H. (Ekstern), Rosbjerg, D. (Intern), Arnbjerg-Nielsen, K. (Intern)
Pages: 2659-2678
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Water Resources Research
Volume: 53
Issue number: 4
ISSN (Print): 0043-1397
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
A regularized vortex-particle mesh method for large eddy simulation

We present recent developments of the remeshed vortex particle-mesh method for simulating incompressible fluid flow. The presented method relies on a parallel higher-order FFT based solver for the Poisson equation. Arbitrary high order is achieved through regularization of singular Green’s function solutions to the Poisson equation and recently we have
derived novel high order solutions for a mixture of open and periodic domains. With this approach the simulated variables may formally be viewed as the approximate solution to the filtered Navier Stokes equations, hence we use the method for Large Eddy Simulation by including a dynamic subfilter-scale model based on test-filters compatible with the aforementioned regularization functions. Further the subfilter-scale model uses Lagrangian averaging, which is a natural candidate in light of the Lagrangian nature of vortex particle methods. A multiresolution variation of the method is applied to simulate the benchmark problem of the flow past a square cylinder at Re = 22000 and the obtained results are compared to results from the literature.

General information
State: Published
Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering
Authors: Spietz, H. J. (Intern), Walther, J. H. (Intern), Hejlesen, M. M. (Intern)
Number of pages: 1
Publication date: 2017
Event: Abstract from 70th Annual Meeting of the American Physical Society Division of Fluid Dynamics (DFD17), Denver, United States.
Main Research Area: Technical/natural sciences
Electronic versions:
abstract_hejusp.pdf
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

A research agenda for a people-centred approach to energy access in the urbanizing global south
Energy access is typically viewed as a problem for rural areas, but people living in urban settings also face energy challenges that have not received sufficient attention. A revised agenda in research and practice that puts the user and local planning complexities centre stage is needed to change the way we look at energy access in urban areas, to understand the implications of the concentration of vulnerable people in slums and to identify opportunities for planned management and innovation that can deliver urban energy transitions while leaving no one behind. Here, we propose a research agenda focused on three key issues: understanding the needs of urban energy users; enabling the use of context-specific, disaggregated data; and engaging with effective modes of energy and urban governance. This agenda requires interdisciplinary scholarship across the social and physical sciences to support local action and deliver large-scale, inclusive transformations.

General information
State: Published
Organisations: Department of Management Engineering, UNEP DTU Partnership, University of Sheffield, University College London, Loughborough University, University of York
Authors: Broto, V. C. (Ekstern), Stevens, L. (Ekstern), Ackom, E. (Intern), Tomei, J. (Ekstern), Parikh, P. (Ekstern), Bisaga, I. (Ekstern), To, L. S. (Ekstern), Kirshner, J. (Ekstern), Mulugetta, Y. (Ekstern)
Pages: 776-779
Publication date: 2017
Main Research Area: Technical/natural sciences
Publication information
Journal: Nature Energy
Volume: 2
Issue number: 10
ISSN (Print): 2058-7546
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Web of Science (2016): Indexed yes
Original language: English
DOIs:
10.1038/s41560-017-0007-x
Source: FindIt
Source-ID: 2391514925
Publication: Research - peer-review › Journal article – Annual report year: 2017

A resource-efficient network interface supporting low latency reconfiguration of virtual circuits in time-division multiplexing networks-on-chip
This paper presents a resource-efficient time-division multiplexing network interface of a network-on-chip intended for use in a multicore platform for hard real-time systems. The network-on-chip provides virtual circuits to move data between core-local on-chip memories. In such a platform, a change of the application’s operating mode may require reconfiguration of virtual circuits that are setup by the network-on-chip. A unique feature of our network interface is the instantaneous reconfiguration between different time-division multiplexing schedules, containing sets of virtual circuits, without affecting virtual circuits that persist across the reconfiguration. The results show that the worst-case latency from triggering a reconfiguration until the new schedule is executing, is in the range of 300 clock cycles. Experiments show that new schedules can be transmitted from a single master to all slave nodes for a 16-core platform in between 500 and 3500 clock cycles. The results also show that the hardware cost for an FPGA implementation of our architecture is considerably smaller than other network-on-chips with similar reconfiguration functionalities, and that the worst-case time for a reconfiguration is smaller than that seen in functionally equivalent architectures.
A review of animal models used to evaluate potential allergenicity of genetically modified organisms (GMOs)

Food safety regulators request prediction of allergenicity for newly expressed proteins in genetically modified (GM) crops and in novel foods. Some have suggested using animal models to assess potential allergenicity. A variety of animal models have been used in research to evaluate sensitisation or elicitation of allergic responses. However, protocols for sensitisation and challenge, animal species and strains, diets and other environmental factors differ widely. We present a comprehensive review of published, peer-reviewed experimental animal models used for the evaluation of allergenicity of genetically modified organisms (GMOs).

General information
State: Published
Organisations: National Food Institute, Research Group for Gut Microbiology and Immunology, University of Nebraska, Medical University of Vienna
Authors: Marsteller, N. (Ekstern), Bøgh, K. L. (Intern), Goodman, R. E. (Ekstern), Epstein, M. M. (Ekstern)
Number of pages: 8
Pages: 81-88
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Drug Discovery Today: Disease Models
Volume: 17-18
ISSN (Print): 1740-6757
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.74 SJR 0.391 SNIP 0.242
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.278 SNIP 0.122 CiteScore 0.55
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.35 SNIP 0.194 CiteScore 0.72
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.274 SNIP 0.23 CiteScore 0.62
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.226 SNIP 0.171 CiteScore 0.61
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.363 SNIP 0.197 CiteScore 0.8
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.313 SNIP 0.15
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.254 SNIP 0.143
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.193 SNIP 0.119
Scopus rating (2007): SJR 0.202 SNIP 0.096
Scopus rating (2006): SJR 0.176 SNIP 0.084
Scopus rating (2005): SJR 0.13 SNIP 0.029
Original language: English
DOIs:
10.1016/j.ddmod.2016.11.001
Source: FindIt
Source-ID: 2349064696
A Review of Biotechnological Artemisinin Production in Plants

Malaria is still an eminent threat to major parts of the world population mainly in sub-Saharan Africa. Researchers around the world continuously seek novel solutions to either eliminate or treat the disease. Artemisinin, isolated from the Chinese medicinal herb Artemisia annua, is the active ingredient in artemisinin-based combination therapies used to treat the disease. However, naturally artemisinin is produced in small quantities, which leads to a shortage of global supply. Due to its complex structure, it is difficult chemically synthesize. Thus to date, A. annua remains as the main commercial source of artemisinin. Current advances in genetic and metabolic engineering drives to more diverse approaches and developments on improving in planta production of artemisinin, both in A. annua and in other plants. In this review, we describe efforts in bioengineering to obtain a higher production of artemisinin in A. annua and stable heterologous in planta systems. The current progress and advancements provides hope for significantly improved production in plants.

General Information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Photosynthetic Cell Factories, University of Malaya
Authors: Ikram, N. K. B. K. (Ekstern), Simonsen, H. T. (Intern)
Number of pages: 10
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication Information
Journal: Frontiers in Plant Science
Volume: 8
Article number: 1966
ISSN (Print): 1664-462X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.52 SJR 1.917 SNIP 1.239
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.023 SNIP 1.137 CiteScore 4.44
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.84 SNIP 0.917 CiteScore 3.56
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.743 SNIP 0.734 CiteScore 3.49
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.949 SNIP 0.399
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 0.111 SNIP 0
Original language: English
Plant biotechnology, Malaria, Artemisinin, Artemisia annua, Bioengineering

Electronic versions:
fpls_08_01966.pdf
DOIs:
10.3389/fpls.2017.01966
Source: FindIt
Source-ID: 2393362900
Publication: Research - peer-review › Journal article – Annual report year: 2017

A review of control strategies for manipulating the feed rate in fed-batch fermentation processes

A majority of industrial fermentation processes are operated in fed-batch mode. In this case, the rate of feed addition to the system is a focus for optimising the process operation, as it directly impacts metabolic activity, as well as directly affecting the volume dynamics in the system. This review covers a range of strategies which have been employed to use the feed rate as a manipulated variable in a control strategy. The feed rate is chosen as the focus for this review, as it is seen that this variable may be used towards many different objectives depending on the process of interest, the characteristics of the strain, or the product being produced, which leads to different drivers for process optimisation. This
review summarises the methods, as well as focusing on the different objectives for the controllers, and the choice of measured variables involved in the strategy. The discussion includes a summary of considerations for control strategy development.

**General information**
State: Published
Organisations: Department of Chemical and Biochemical Engineering, CAPEC-PROCESS, Novozymes A/S
Authors: Mears, L. (Intern), Stocks, S. M. (Ekstern), Sin, G. (Intern), Gernaey, K. (Intern)
Pages: 34-46
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Journal of Biotechnology
ISSN (Print): 0168-1656
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.88 SJR 0.978 SNIP 0.937
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.068 SNIP 0.987 CiteScore 2.87
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.113 SNIP 1.144 CiteScore 2.95
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.173 SNIP 1.188 CiteScore 3.22
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.255 SNIP 1.312 CiteScore 3.4
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.157 SNIP 1.064 CiteScore 2.87
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.126 SNIP 1.18
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.216 SNIP 1.235
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.136 SNIP 1.265
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.132 SNIP 1.273
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.091 SNIP 1.383
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.162 SNIP 1.369
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.009 SNIP 1.43
Web of Science (2004): Indexed yes
A review of cyber-physical energy system security assessment

Increasing penetration of renewable energy resources (RES) and electrification of services by implementing distributed energy resources (DER) has caused a paradigm shift in the operation of the power system. The controllability of the power system is predicted to be shifted from the generation side to the consumption side. This transition entails that the future power system evolves into a complex cyber-physical energy system (CPES) with strong interactions between the power, communication and neighboring energy systems. Current power system security assessment methods are based on centralized computation and N-1 contingencies, while these risks should still be considered in the future CPES, additional factors are affecting the system security. This paper serves as a review of the challenges entailed by transforming the power system into a CPES from a security assessment perspective. It gives an indication of theoretical solutions to CPES challenges and proposes a new framework for security assessment in CPES.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, University of Sydney
Authors: Rasmussen, T. B. (Intern), Yang, G. (Intern), Nielsen, A. H. (Intern), Dong, Z. (Ekstern)
Number of pages: 6
Publication date: 2017

Host publication information
Title of host publication: Proceedings of 2017 IEEE Manchester PowerTech
Publisher: IEEE
Main Research Area: Technical/natural sciences
Conference: 12th IEEE Power and Energy Society PowerTech Conference, Manchester, United Kingdom, 18/06/2017 - 18/06/2017
Communication system, Cyber-physical systems, Distributed power generation, Power system security, Security assessment
DOIs: 10.1109/PTC.2017.7980942
Source: FindIt
Source-ID: 2372482768
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

A Review of Cyber-Physical Energy System Security Assessment
Increasing penetration of renewable energy resources (RES) and electrification of services by implementing distributed energy resources (DER) has caused a paradigm shift in the operation of the power system. The controllability of the power system is predicted to be shifted from the generation side to the consumption side. This transition entails that the future power system evolves into a complex cyber-physical energy system (CPES) with strong interactions between the power, communication and neighboring energy systems. Current power system security assessment methods are based on centralized computation and N-1 contingencies, while these risks should still be considered in the future CPES, additional factors are affecting the system security. This paper serves as a review of the challenges entailed by transforming the power system into a CPES from a security assessment perspective. It gives an indication of theoretical solutions to CPES challenges and proposes a new framework for security assessment in CPES.

General information
A review of measured bioaccumulation data in terrestrial plants for organic chemicals: Metrics, variability and the need for standardized measurement protocols: Review of bioaccumulation data in terrestrial plants

Quantifying the transfer of organic chemicals from the environment into terrestrial plants is essential for assessing human and ecological risks, using plants as environmental contamination biomonitors, and predicting phytoremediation effectiveness. Experimental data describing chemical uptake by plants are often expressed as ratios of chemical concentrations in the plant compartments of interest (e.g., leaves, shoots, roots, xylem sap) to that in the exposure medium (e.g., soil, soil pore water, hydroponic solution, air). These ratios are generally referred to as bioconcentration factors (BCFs) but have also been named for the specific plant compartment sampled, such as root concentration factors (RCFs), leaf concentration factors (LCFs), or transpiration stream (xylem sap) concentrations factors (TSCFs). We reviewed over 350 papers to develop a database with 7,049 entries of measured bioaccumulation data for 310 organic chemicals and 112 terrestrial plant species. Various experimental approaches have been used; therefore, inter-study comparisons and data quality evaluations are difficult. Key exposure and plant growth conditions were often missing, and units were often unclear or not reported. The lack of comparable high confidence data also limits model evaluation and development. Standard test protocols, or at a minimum, standard reporting guidelines, for the measurement of plant uptake data are recommended to generate comparable, high-quality data that will improve mechanistic understanding of organic chemical uptake by plants. This article is protected by copyright. All rights reserved.
A review of models for near-field exposure pathways of chemicals in consumer products

Exposure to chemicals in consumer products has been gaining increasing attention, with multiple studies showing that near-field exposures from products is high compared to far-field exposures. Regarding the numerous chemical-product combinations, there is a need for an overarching review of models able to quantify the multiple transfers of chemicals from products used near-field to humans. The present review therefore aims at an in-depth overview of modeling approaches for near-field chemical release and human exposure pathways associated with consumer products. It focuses on lower-
tier, mechanistic models suitable for life cycle assessments (LCA), chemical alternative assessment (CAA) and high-throughput screening risk assessment (HTS). Chemicals in a product enter the near-field via a defined “compartment of entry”, are transformed or transferred to adjacent compartments, and eventually end in a “human receptor compartment”. We first focus on models of physical mass transfers from the product to ‘near-field’ compartments. For transfers of chemicals from article interior, adequate modeling of in-article diffusion and of partitioning between article surface and air/skin/food is key. Modeling volatilization and subsequent transfer to the outdoor is crucial for transfers of chemicals used in the inner space of appliances, on object surfaces or directly emitted to indoor air. For transfers from skin surface, models need to reflect the competition between dermal permeation, volatilization and fraction washed-off. We then focus on transfers from the ‘near-field’ to ‘human’ compartments, defined as respiratory tract, gastrointestinal tract and epidermis, for which good estimates of air concentrations, non-dietary ingestion parameters and skin permeation are essential, respectively. We critically characterize for each exposure pathway the ability of models to estimate near-field transfers and to best inform LCA, CAA and HTS, summarizing the main characteristics of the potentially best-suited models. This review identifies large knowledge gaps for several near-field pathways and suggests research needs and future directions.

General information
State: Published
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, University of Michigan, National Risk Management Research Laboratory
Authors: Huang, L. (Ekstern), Ernstoff, A. (Intern), Fantke, P. (Intern), Csiszar, S. A. (Ekstern), Jolliet, O. (Ekstern)
Pages: 1182-1208
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Science of the Total Environment
Volume: 574
ISSN (Print): 0048-9697
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.09 SJR 1.621 SNIP 1.849
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.674 SNIP 1.642 CiteScore 4.33
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.635 SNIP 1.847 CiteScore 4.2
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.527 SNIP 1.759 CiteScore 3.73
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.773 SNIP 1.811 CiteScore 3.7
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.798 SNIP 1.681 CiteScore 3.61
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.644 SNIP 1.513
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.571 SNIP 1.602
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.463 SNIP 1.501
A review of recent research on the use of zeotropic mixtures in power generation systems

The use of zeotropic fluid mixtures in refrigeration cycles and heat pumps has been widely studied in the last three decades or so. However it is only in the past few years that the use of zeotropic mixtures in power generation applications has been analysed in a large number of studies, mostly with low grade heat as the energy source. This paper presents a review of the recent research on power cycles with zeotropic mixtures as the working fluid. The available literature primarily discusses the thermodynamic performance of the mixture power cycles through energy and exergy analyses but there are some studies which also consider the economic aspects through the investigation of capital investment costs or through a thermoeconomic analysis. The reviewed literature in this paper is divided based on the various applications such as solar energy based power systems, geothermal heat based power systems, waste heat recovery power systems, or generic studies. The fluid mixtures used in the various studies are listed along with the key operation parameters and the scale of the power plant. In order to limit the scope of the review, only the studies with system level analysis of various power cycles are considered. An overview of the key trends and general conclusions from the various studies and some possible directions for future research are also presented.

General information
State: Published
Organisations: Department of Mechanical Engineering, Thermal Energy, Indian Institute of Technology, Bombay
Authors: Modi, A. (Ekstern), Haglind, F. (Intern)
Pages: 603–626
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Energy Conversion and Management
Volume: 138
ISSN (Print): 0196-8904
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 6.04 SJR 2.287 SNIP 2.065
Web of Science (2016): Indexed yes
The utilization of solar energy based technologies has attracted increased interest in recent times in order to satisfy the various energy demands of our society. This paper presents a thorough review of the open literature on solar energy based heat and power plants. In order to limit the scope of the review, only fully renewable plants with at least the production of electricity and heat/hot water for end use are considered. These include solar photovoltaic and solar thermal based plants with both concentrating and non-concentrating collectors in both solar-only and solar-hybrid configurations. The paper also presents a selection of case studies for the evaluation of solar energy based combined heat and power generation possibility in Denmark. The considered technologies for the case studies are (1) solar photovoltaic modules, (2) solar flat plate collectors, (3) a ground source heat pump, (4) a biomass burner, and (5) an organic Rankine cycle. The various cases are compared on the basis of economic profitability and environmental performance. The results from the
case studies indicate that it is economically and environmentally beneficial to invest in both small and large capacity solar-biomass hybrid plants for combined heat and power production in the Nordic climatic conditions. The results also suggest that the configuration with an organic Rankine cycle with solar thermal collectors and a biomass burner is particularly attractive for large capacity plants.

General information
State: Published
Organisations: Department of Mechanical Engineering, Thermal Energy
Authors: Modi, A. (Intern), Bühler, F. (Intern), Andreasen, J. G. (Intern), Haglind, F. (Intern)
Pages: 1047-1064
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Renewable & Sustainable Energy Reviews
Volume: 67
ISSN (Print): 1364-0321
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 9.52 SJR 3.051 SNIP 3.454
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.999 SNIP 3.387 CiteScore 8.35
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.106 SNIP 3.761 CiteScore 7.79
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 3.072 SNIP 3.889 CiteScore 7.88
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.814 SNIP 3.915 CiteScore 7.24
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.787 SNIP 3.901 CiteScore 7.39
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.374 SNIP 3.112
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.494 SNIP 3.6
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.447 SNIP 3.127
Web of Science (2008): Indexed yes
Scopus rating (2006): SJR 0.889 SNIP 1.758
Scopus rating (2005): SJR 0.956 SNIP 2.649
Scopus rating (2004): SJR 1.152 SNIP 2.268
Scopus rating (2003): SJR 0.813 SNIP 2.492
Scopus rating (2002): SJR 0.72 SNIP 2.152
Scopus rating (2001): SJR 0.201 SNIP 1.035
Scopus rating (2000): SJR 0.267 SNIP 1.112
A review of the potential to establish a global, operational river monitoring based on Sentinel-3 water surface elevation observations

**General information**

State: Published
Organisations: Department of Environmental Engineering, Water Resources Engineering
Authors: Kittel, C. M. M. (Intern), Bauer-Gottwein, P. (Intern)
Number of pages: 2
Publication date: 2017
Main Research Area: Technical/natural sciences

A Review on Grid-connected Converter Control for Short Circuit Power Provision under Grid Unbalanced Faults

As an increasing amount of converter-based generation on power electronics is connected to power systems, transmission system operators (TSOs) are revising the grid connection requirements to streamline the connectivity of the devices to maintain security of supply. Converter-based generation can behave significantly different from the traditional alternators under grid faults. In order to evaluate the potential impact of future converter-based power systems on protective relays, it is necessary to consider diverse current control strategies of voltage source converters (VSC) under unbalanced faults as the performance of converters primarily depends on their control objectives. In this paper, current control strategies of VSC under unbalanced faults for short circuit power provision are reviewed in two groups, namely power-characteristic-oriented and voltage-support-oriented control strategy respectively. As the fault current provided by converters should be restricted within secure operation limits considering semiconductor capabilities, converter current limit issue is also discussed.

**General information**

State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems
Authors: Jia, J. (Intern), Yang, G. (Intern), Nielsen, A. H. (Intern)
Number of pages: 13
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: IEEE Transactions on Power Delivery
ISSN (Print): 0885-8977
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.46 SJR 1.791 SNIP 2.408
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.967 SNIP 2.66 CiteScore 3.96
Web of Science (2015): Indexed yes
A Riccati-Based Interior Point Method for Efficient Model Predictive Control of SISO Systems

This paper presents an algorithm for Model Predictive Control of SISO systems. Based on a quadratic objective in addition to (hard) input constraints it features soft upper as well as lower constraints on the output and an input rate-of-change penalty term. It keeps the deterministic and stochastic model parts separate. The controller is designed based on the deterministic model, while the Kalman filter results from the stochastic part. The controller is implemented as a primal-dual interior point (IP) method using Riccati recursion and the computational savings possible for SISO systems. In particular the computational complexity scales linearly with the control horizon. No warm-start strategies are considered. Numerical examples are included illustrating applications to Artificial Pancreas technology. We provide typical execution times for a single iteration of the IP algorithm and the number of iterations required for convergence in different situations.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Scientific Computing, Copenhagen Center for Health Technology, Center for Energy Resources Engineering, Lund University
Authors: Hagdrup, M. (Intern), Johansson, R. (Ekstern), Bagterp Jørgensen, J. (Intern)
Pages: 10672-10678
Publication date: 2017
Conference: 20th IFAC World Congress 2017, Toulouse, France, 09/07/2017 - 09/07/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IFAC-PapersOnLine
Volume: 50
Issue number: 1
ISSN (Print): 2405-8963
Ratings:
Scopus rating (2016): CiteScore 0.45 SJR 0.263 SNIP 0.334
Scopus rating (2015): SJR 0.256 SNIP 0.324
Scopus rating (2014): SJR 0.285 SNIP 0.342
Scopus rating (2013): SJR 0.305 SNIP 0.364
Scopus rating (2012): SJR 0.247 SNIP 0.278
Scopus rating (2011): SJR 0.257 SNIP 0.312
Scopus rating (2010): SJR 0.196 SNIP 0.26
Scopus rating (2009): SJR 0.215 SNIP 0.296
Scopus rating (2008): SJR 0.125 SNIP 0.105
Scopus rating (2007): SJR 0.126 SNIP 0.065
Scopus rating (2006): SJR 0.101 SNIP 0.005
Scopus rating (2005): SJR 0.21 SNIP 0.467
Scopus rating (2004): SJR 0.268 SNIP 0.432
Scopus rating (2003): SJR 0.276 SNIP 0.41
Original language: English
Control and Systems Engineering, Artificial Pancreas, Closed-loop control, Constrained optimization, Interior point methods, Linear systems, Predictive control, Quadratic programming, Riccati iteration
Electronic versions:
1_s2.0_S2405896317328549_main.pdf
DOIs:
10.1016/j.ifacol.2017.08.2184
Source: FindIt
Source-ID: 2392248819
Publication: Research - peer-review › Conference article – Annual report year: 2017
A risk modelling approach for setting microbiological limits using enterococci as indicator for growth potential of Salmonella in pork

Microbiological limits are widely used in food processing as an aid to reduce the exposure to hazardous microorganisms for the consumers. However, in pork, the prevalence and concentrations of Salmonella are generally low and microbiological limits are not considered an efficient tool to support hygiene interventions. The objective of the present study was to develop an approach which could make it possible to define potential risk-based microbiological limits for an indicator, enterococci, in order to evaluate the risk from potential growth of Salmonella. A positive correlation between the concentration of enterococci and the prevalence and concentration of Salmonella was shown for 6640 pork samples taken at Danish cutting plants and retail butchers. The samples were collected in five different studies in 2001, 2002, 2010, 2011 and 2013. The observations that both Salmonella and enterococci are carried in the intestinal tract, contaminate pork by the same mechanisms and share similar growth characteristics (lag phase and maximum specific growth rate) at temperatures around 5-10 °C, suggest a potential of enterococci to be used as an indicator of potential growth of Salmonella in pork. Elevated temperatures during processing will lead to growth of both enterococci and, if present, also Salmonella. By combining the correlation between enterococci and Salmonella with risk modelling, it is possible to predict the risk of salmonellosis based on the level of enterococci. The risk model used for this purpose includes the dose-response relationship for Salmonella and a reduction factor to account for preparation of the fresh pork. By use of the risk model, it was estimated that the majority of salmonellosis cases, caused by the consumption of pork in Denmark, is caused by the small fraction of pork products that has enterococci concentrations above 5 log. CFU/g. This illustrates that our approach can be used to evaluate the potential effect of different microbiological limits and therefore, the perspective of this novel approach is that it can be used for definition of a risk-based microbiological limit for enterococci. The limit for enterococci can then be used for development of a process hygiene criterion in cutting plants and retail butcher shops, with the purpose of reducing the risk of Salmonella for the consumer.

General information
State: Published
Organisations: National Food Institute, Research Group for Microbial Food Safety, Research Group for Risk-Benefit
Authors: Bollerslev, A. M. (Intern), Nauta, M. (Intern), Hansen, T. B. (Intern), Aabo, S. (Intern)
Pages: 102-107
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Food Microbiology
Volume: 240
ISSN (Print): 0168-1605
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.97 SJR 1.462 SNIP 1.554
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.628 SNIP 1.694 CiteScore 4.02
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.501 SNIP 1.711 CiteScore 3.62
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.602 SNIP 1.86 CiteScore 3.8
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.62 SNIP 1.709 CiteScore 3.7
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.595 SNIP 1.717 CiteScore 3.63
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
A Robust Statistical Model to Predict the Future Value of the Milk Production of Dairy Cows Using Herd Recording Data

The future value of an individual dairy cow depends greatly on its projected milk yield. In developed countries with developed dairy industry infrastructures, facilities exist to record individual cow production and reproduction outcomes consistently and accurately. Accurate prediction of the future value of a dairy cow requires further detailed knowledge of the costs associated with feed, management practices, production systems, and disease. Here, we present a method to predict the future value of the milk production of a dairy cow based on herd recording data only. The method consists of several steps to evaluate lifetime milk production and individual cow somatic cell counts and to finally predict the average production for each day that the cow is alive. Herd recording data from 610 Danish Holstein herds were used to train and test a model predicting milk production (including factors associated with milk yield, somatic cell count, and the survival of individual cows). All estimated parameters were either herd- or cow-specific. The model prediction deviated, on average, less than 0.5kg from the future average milk production of dairy cows in multiple herds after adjusting for the effect of somatic cell count. We conclude that estimates of future average production can be used on a day-to-day basis to rank cows for culling, or can be implemented in simulation models of within-herd disease spread to make operational decisions, such as culling versus treatment. An advantage of the approach presented in this paper is that it requires no specific knowledge of disease status or any other information beyond herd recorded milk yields, somatic cell counts, and reproductive status.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, National Veterinary Institute, Epidemiology, Dynamical Systems, University of Copenhagen
Authors: Græsbøll, K. (Intern), Kirkeby, C. T. (Intern), Nielsen, S. S. (Ekstern), Hisham Beshara Halasa, T. (Intern), Toft, N. (Intern), Christiansen, L. E. (Intern)
Number of pages: 9
Publication date: 2017
Identification of epitopes targeted by antibodies (B cell epitopes) is of critical importance for the development of many diagnostic and therapeutic tools. For clinical usage, such epitopes must be extensively characterized in order to validate specificity and to document potential cross-reactivity. B cell epitopes are typically classified as either linear epitopes, i.e. short consecutive segments from the protein sequence or conformational epitopes adapted through native protein folding. Recent advances in high-density peptide microarrays enable high-throughput, high-resolution identification and characterization of linear B cell epitopes. Using exhaustive amino acid substitution analysis of peptides originating from target antigens, these microarrays can be used to address the specificity of polyclonal antibodies raised against such antigens containing hundreds of epitopes. However, the interpretation of the data provided in such large-scale screenings is far from trivial and in most cases it requires advanced computational and statistical skills. Here, we present an online application for automated identification of linear B cell epitopes, allowing the non-expert user to analyse peptide microarray data. The application takes as input quantitative peptide data of fully or partially substituted overlapping peptides from a given antigen sequence and identifies epitope residues (residues that are significantly affected by substitutions) and visualize the selectivity towards each residue by sequence logo plots. Demonstrating utility, the application was used to identify and address the antibody specificity of 18 linear epitope regions in Human Serum Albumin (HSA), using peptide microarray data consisting of fully substituted peptides spanning the entire sequence of HSA and incubated with polyclonal rabbit anti-HSA (and mouse anti-rabbit-Cy3). The application is made available at: www.cbs.dtu.dk/services/ArrayPitope.

ArrayPitope: Automated Analysis of Amino Acid Substitutions for Peptide Microarray-Based Antibody Epitope Mapping

General information
State: Published
Organisations: Center for Biological Sequence Analysis, Department of Bio and Health Informatics, Department of Acoustic Technology, Center for Biological sequence analysis, Immunoinformatics and Machine Learning, University of Copenhagen
Authors: Hansen, C. S. (Intern), Østerbye, T. (Ekstern), Marcatili, P. (Intern), Lund, O. (Intern), Buus, S. (Intern), Nielsen, M. (Intern)
Number of pages: 14
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: P L o S One
Volume: 12
Issue number: 1
Article number: e0168453
ISSN (Print): 1932-6203
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.11 SJR 1.201 SNIP 1.092
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.414 SNIP 1.131 CiteScore 3.32
We describe a principle to determine which features of an object will be easy to reconstruct from limited X-ray CT data and which will be difficult. The principle depends on the geometry of the data set, and it applies to any limited data set. We also describe a characterization of Frikel and the author explaining artifacts that can be added to limited angle reconstructions, and we provide an easy-to-implement method to decrease them. These ideas are justified using microlocal analysis, deep mathematics that involves Fourier theory. Reconstructions from simulated and real limited data are given to illustrate our ideas.

**General information**

State: Published

Organisations: Department of Applied Mathematics and Computer Science, Scientific Computing

Authors: Quinto, T. (Intern)

Number of pages: 14

Publication date: 2017

Main Research Area: Technical/natural sciences

**Publication information**

Journal: Sensing and Imaging

Volume: 18

Issue number: 1

ISSN (Print): 1557-2064

Ratings:

BFI (2017): BFI-level 1

Web of Science (2017): Indexed yes

BFI (2016): BFI-level 1

Scopus rating (2016): SJR 0.239 SNIP 0.725 CiteScore 0.72

BFI (2015): BFI-level 1

Scopus rating (2015): SJR 0.178 SNIP 0.788 CiteScore 0.59

BFI (2014): BFI-level 1

Scopus rating (2014): SJR 0.156 SNIP 0.868 CiteScore 1.09

BFI (2013): BFI-level 1

Scopus rating (2013): SJR 0.194 SNIP 0.617 CiteScore 0.59

ISI indexed (2013): ISI indexed no

BFI (2012): BFI-level 1

Scopus rating (2012): SJR 0.165 SNIP 0.486 CiteScore 0.79

ISI indexed (2012): ISI indexed no

BFI (2011): BFI-level 1

Scopus rating (2011): SJR 0.111 SNIP 0.425 CiteScore 0.47

ISI indexed (2011): ISI indexed no

BFI (2010): BFI-level 1

Scopus rating (2010): SJR 0.426 SNIP 1.298

BFI (2009): BFI-level 1

Scopus rating (2009): SJR 0.372 SNIP 1.142

BFI (2008): BFI-level 1

Scopus rating (2008): SJR 0.308 SNIP 0.569

Scopus rating (2007): SJR 0.207 SNIP 1.023

Scopus rating (2006): SJR 0.162 SNIP 0.378

Original language: English


DOIs:

10.1007/s11220-017-0158-7

Source: FindIt

Source-ID: 2351631152

Publication: Research - peer-review › Journal article – Annual report year: 2017
Art in the smart sustainable city: values, visions and engagement

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis
Authors: Gregg, J. S. (Intern)
Publication date: 2017
Event: Poster session presented at Smart Sustainable Cities, Kgs. Lyngby, Denmark.
Main Research Area: Technical/natural sciences
Electronic versions:
Smart_art_cities.pdf

Bibliographical note
Smart Sustainable Cities Workshop DTU, 6 Feb 2017
Source: PublicationPreSubmission
Source-ID: 130397496
Publication: Research › Poster – Annual report year: 2017

Artsspecifik sporing og kvantificering af eDNA fra marine fisk i Østersøen

General information
State: Published
Authors: Knudsen, S. W. (Ekstern), Ebert, R. B. (Ekstern), Hesselsøe, M. (Ekstern), Kuntke, F. (Ekstern), Hassingboe, J. (Ekstern), Mortensen, P. B. (Ekstern), Thomsen, P. F. (Forskerdatabase), Hansen, B. K. (Intern), Eg Nielsen, E. (Intern), Møller, P. R. (Ekstern)
Publication date: 2017
Event: Abstract from Dansk Havforskermøde, Helsingør, Denmark.
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2017

A Runtime Analysis of Parallel Evolutionary Algorithms in Dynamic Optimization
A simple island model with (Formula presented.) islands and migration occurring after every (Formula presented.) iterations is studied on the dynamic fitness function Maze. This model is equivalent to a (Formula presented.) EA if (Formula presented.), i.e., migration occurs during every iteration. It is proved that even for an increased offspring population size up to (Formula presented.), the (Formula presented.) EA is still not able to track the optimum of Maze. If the migration interval is chosen carefully, the algorithm is able to track the optimum even for logarithmic (Formula presented.). The relationship of (Formula presented.), and the ability of the island model to track the optimum is then investigated more closely. Finally, experiments are performed to supplement the asymptotic results, and investigate the impact of the migration topology.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic, University of Sheffield
Authors: Lissovoi, A. (Ekstern), Witt, C. (Intern)
Pages: 641–659
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Algorithmica
Volume: 78
Issue number: 2
ISSN (Print): 0178-4617
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.11 SJR 0.685 SNIP 1.338
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.77 SNIP 1.354 CiteScore 1.15
A safflower oil-based high fat/high-sucrose diet modulates the gut microbiota and liver phospholipid profiles associated with early glucose intolerance in the absence of tissue inflammation

n-6 PUFA-rich diets are generally considered obesogenic in rodents. Here we examined how long-term intake of a high fat/high sucrose (HF/HS) diet based on safflower oil affected metabolism, inflammation and gut microbiota composition. We fed male C57BL/6J mice a HF/HS diet based on safflower oil - rich in n-6 PUFAs - or low-fat/low-sucrose (LF/LS) diet for 40 weeks. Compared to the LF/LS diet, intake of the safflower-based HF/HS diet only led to moderate weight gain, while glucose intolerance developed at week 5 prior to signs of inflammation, but concurrent with increased levels of linoleic acid and arachidonic acid in hepatic phospholipids. Intake of the HF/HS diet resulted in early changes in the gut microbiota, including an increased abundance of Blautia, while late changes coincided with altered inflammatory profiles and increased fasting plasma insulin. Analysis of immune cells in visceral fat and liver revealed no differences between diets before week 40, where the number of immune cells decreased in the liver of HF/HS-fed mice. We suggest that a diet-dependent increase in the n-6 to n-3 PUFA ratio in hepatic phospholipids together with gut microbiota changes contributed to early development of glucose intolerance without signs of inflammation. This article is protected by copyright. All rights reserved.
A Scalable Neuro-inspired Robot Controller Integrating a Machine Learning Algorithm and a Spiking Cerebellar-like Network

Combining Fable robot, a modular robot, with a neuroinspired controller, we present the proof of principle of a system that can scale to several neurally controlled compliant modules. The motor control and learning of a robot module are carried out by a Unit Learning Machine (ULM) that embeds the Locally Weighted Projection Regression algorithm (LWPR) and a spiking cerebellar-like microcircuit. The LWPR guarantees both an optimized representation of the input space and the learning of the dynamic internal model (IM) of the robot. However, the cerebellar-like sub-circuit integrates LWPR input-driven contributions to deliver accurate corrective commands to the global IM. This article extends the earlier work by including the Deep Cerebellar Nuclei (DCN) and by reproducing the Purkinje and the DCN layers using a spiking neural network (SNN) implemented on the neuromorphic SpiNNaker platform. The performance and robustness outcomes from the real robot tests are promising for neural control scalability.

General information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control, Centre for Playware
Authors: Baira Ojeda, I. (Intern), Tolu, S. (Intern), Lund, H. H. (Intern)
Pages: 375-386
Publication date: 2017

Host publication information
Title of host publication: Proceedings of Living Machines 2017
Publisher: Springer
Series: Lecture Notes in Computer Science
Volume: 10384
ISSN: 0302-9743
Main Research Area: Technical/natural sciences
Conference: Living Machines 2017, Stanford, United States, 25/07/2017 - 25/07/2017
Neuro-robotics, Bio-inspiration, Motor control, Cerebellum, Machine Learning, Compliant control, Internal model
Electronic versions:
LM2017_009_original_v2.pdf
DOIs:
10.1007/978-3-319-63537-8 31
Source: PublicationPreSubmission
Source-ID: 134007502
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

A Scalable Smart Meter Data Generator Using Spark

Today, smart meters are being used worldwide. As a matter of fact smart meters produce large volumes of data. Thus, it is important for smart meter data management and analytics systems to process petabytes of data. Benchmarking and testing of these systems require scalable data, however, it can be challenging to get large data sets due to privacy and/or data protection regulations. This paper presents a scalable smart meter data generator using Spark that can generate realistic data sets. The proposed data generator is based on a supervised machine learning method that can generate data of any size by using small data sets as seed. Moreover, the generator can preserve the characteristics of data with respect to consumption patterns and user groups. This paper evaluates the proposed data generator in a cluster based environment in order to validate its effectiveness and scalability.

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis, University College of Northern Denmark
Authors: Iflikhar, N. (Ekstern), Liu, X. (Intern), Danalachi, S. (Ekstern), Nordbjerg, F. (Ekstern), Vollesen, J. (Ekstern)
Pages: 21-36
Publication date: 2017
A Science Cloud for Smart Cities Research

Cities are densely populated and heavily equipped areas with a high level of service provision. Smart cities can use these conditions to achieve the goals of a smart society for their citizens. To facilitate such developments, the necessary IT-infrastructure has to be in place for supporting, amongst many other things, the whole lifecycle of big data management and analytics for research activities. At the Centre for IT-Intelligent Smart Energy for Cities, we have therefore been developing a flexible infrastructure, based on open sourcetechnologies. This paper presents this solution and its application in a city and building research.

General information

State: Published
Organisations: Department of Civil Engineering, Section for Building Energy, Department of Management Engineering, Systems Analysis, Section for Indoor Climate and Building Physics, Centre for IT-Intelligent Energy Systems in Cities
Authors: Heller, A. (Intern), Liu, X. (Intern), Gianniou, P. (Intern)
Pages: 679-684
Publication date: 2017
Conference: CISBAT 2017, Lausanne, Switzerland, 06/09/2017 - 06/09/2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Energy Procedia
Volume: 122
ISSN (Print): 1876-6102
Ratings:
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.16 SJR 0.467 SNIP 0.586
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.365 SNIP 0.561 CiteScore 0.92
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.433 SNIP 0.81 CiteScore 1.09
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.425 SNIP 0.785 CiteScore 1.02
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 0.425 SNIP 0.563 CiteScore 1.08
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 0.918 SNIP 1.505 CiteScore 2.42
ISI indexed (2011): ISI indexed no
Scopus rating (2010): SJR 0.433 SNIP 0.957
Web of Science (2009): Indexed yes
Original language: English
Electronic versions:
Untitled.pdf
A scored human protein-protein interaction network to catalyze genomic interpretation

Genome-scale human protein-protein interaction networks are critical to understanding cell biology and interpreting genomic data, but challenging to produce experimentally. Through data integration and quality control, we provide a scored human protein-protein interaction network (InWeb_InBioMap, or InWeb_IM) with severalfold more interactions (>500,000) and better functional biological relevance than comparable resources. We illustrate that InWeb_InBioMap enables functional interpretation of >4,700 cancer genomes and genes involved in autism.
A semi-empirical airfoil stall noise model based on surface pressure measurements

This work is concerned with the experimental study of airfoil stall and the modelling of stall noise. Using pressure taps and high-frequency surface pressure microphones flush-mounted on airfoils measured in wind tunnels and on an operating wind turbine blade, the characteristics of stall are analyzed. This study shows that the main quantities of interest, namely convection velocity, spatial correlation and surface pressure spectra, can be scaled highlighting the universal nature of stall independently of airfoil shapes and flow conditions, although within a certain range of experimental conditions. Two main regimes for the scaling of the correlation lengths and the surface pressure spectra, depending on the Reynolds number of the flow, can be distinguished. These results are used to develop a model for the surface pressure spectra within the detached flow region valid for Reynolds numbers ranging from $1 \times 10^5$ to $6 \times 10^6$. Subsequently, this model is used to derive a model for stall noise. Modelled noise spectra are compared with experimental data measured in anechoic wind tunnels with reasonably satisfactory agreement.

General information
State: Published
Organisations: Department of Wind Energy, Aerodynamic design
Authors: Bertagnolio, F. (Intern), Aagaard Madsen, H. (Intern), Fischer, A. (Intern), Bak, C. (Intern)
Number of pages: 36
Pages: 127-162
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Sound and Vibration
Volume: 387
ISSN (Print): 0022-460x
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.09 SJR 1.462 SNIP 2.162
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.391 SNIP 2.142 CiteScore 2.71
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.447 SNIP 2.38 CiteScore 2.54
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.391 SNIP 2.64 CiteScore 2.61
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.495 SNIP 2.992 CiteScore 2.3
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.441 SNIP 2.698 CiteScore 2.05
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
A serum biomarker reflecting collagen type I degradation (C1M) is an independent risk factor for acute myocardial infarction in postmenopausal women: results from the PERF study

Cardiovascular disease (CVD) is the leading cause of death in postmenopausal women, and symptoms of ischemic heart disease (IHD) and acute myocardial infarction (AMI) are often overlooked. With the loss of estrogen production collagen stability is affected with potential of an increased risk of unstable plaques in coronary vessels. Collagen type I, a major component of the cardiac extracellular matrix (ECM), is cleaved by matrix metalloproteinases (MMPs) and known to be active remodeled in CVD.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Disease Systems Immunology, University of Copenhagen, Nordic Bioscience A/S, ProScion A/S
Authors: Bertelsen, D. (Ekstern), Nielsen, S. H. (Intern), Neergaard, J. (Ekstern), Karsdal, M. A. (Ekstern), Nielsen, H. (Ekstern)
Pages: 722
Publication date: 2017
Conference: ESC Congress 2017, Barcelona, Spain, 26/08/2017 - 26/08/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: European Heart Journal
Volume: 38
Issue number: Suppl. 1
Article number: P3449
ISSN (Print): 0195-668X
A Shared Scratchpad Memory with Synchronization Support

Multicore processors usually communicate via shared memory, which is backed up by a shared level 2 cache and a cache coherence protocol. However, this solution is not a good fit for real-time systems, where we need to provide tight guarantees on execution and memory access times. In this paper, we propose a shared scratchpad memory as a time-predictable communication and synchronization structure, instead of the level 2 cache. The shared on-chip memory is accessed via a time division multiplexing arbiter, isolating the execution time of load and store instructions between processing cores. Furthermore, the arbiter supports an extended time slot where an atomic load and store instruction can be executed to implement synchronization primitives. In the evaluation we show that a shared scratchpad memory is an efficient communication structure for a small number of processors; in our setup, 9 cores. Furthermore, we evaluate the efficiency of the synchronization support for implementation of classic locks.
A sheet metal necking formability diagram for nonlinear strain paths

A new procedure for drawing forming limit curves is suggested. The theoretical basis for computing the forming limit curve due to diffuse necking, for nonlinear strain paths, is derived. The theoretically determined forming limit curve is compared with experimentally determined forming limits for both linear and bilinear strain paths. Reasonable agreement is observed. The procedure can also be utilized for nonlinear strain paths in general.
A short numerical study on the optimization methods influence on topology optimization

Structural topology optimization problems are commonly defined using continuous design variables combined with material interpolation schemes. One of the challenges for density based topology optimization observed in the review article (Sigmund and Maute Struct Multidiscip Optim 48(6):1031–1055 2013) is the slow convergence that is often encountered in practice, when an almost solid-and-void design is found. The purpose of this forum article is to present some preliminary observations on how designs evolves during the optimization process for different choices of optimization methods. Additionally, the authors want to open a discussion on how to properly define and identify the boundary translation that is often observed in practice. The authors hope that these preliminary observations can open for fruitful discussions and stimulate further investigations concerning slowly moving boundaries. Although the discussion is centered on density based methods it may be equally relevant to level-set and phase-field approaches.
A simple method for preparing superconducting FeSe pellets without sealing in evacuated silica tubes

Superconducting tetragonal FeSe pellets were made by reacting mixtures of elemental Fe and Se powders in argon atmosphere without sealing in evacuated silica tubes. A simple tube furnace has been used. Although the tube's material consisted of quartz, an alumina tube could be used as well. X-ray pure samples with onset of superconducting transition between 8.0K and 8.5K were obtained under specific heat treatment conditions. Residual, unreacted Fe particles could be virtually eliminated through prolonged annealing. A key factor for the synthesis of good samples consists in using processing parameters that minimize Se losses.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Electrofunctional materials
Authors: Grivel, J. (Intern)
Pages: 11474-11480
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Ceramics International
Volume: 43
Issue number: 14
ISSN (Print): 0272-8842
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
A simple model for fatigue crack growth in concrete applied to a hinge beam model

In concrete structures, fatigue is one of the major causes of material deterioration. Repeated loads result in formation of cracks. Propagation of these cracks cause internal progressive damage within the concrete material which ultimately leads to failure. This paper presents a simplified general concept for non-linear analysis of concrete subjected to cyclic loading. The model is based on the fracture mechanics concepts of the fictitious crack model, considering a fiber of concrete material, and a simple energy based approach for estimating the bridging stress under cyclic loading. Further, the uni-axial fiber response is incorporated in a numerical hinge model for beam analysis. Finally, the hinge model is implemented into a finite element beam element on a constitutive level. The proposed model is compared to experimental results on both fiber-and beam level. The proposed model shows good performance and seems well suited for the description of fatigue crack growth in concrete. (C) 2017 Elsevier Ltd. All rights reserved.
A simple model of the wind turbine induction zone derived from numerical simulations

The induction zone in front of different wind turbine rotors is studied by means of steady-state Navier-Stokes simulations combined with an actuator disk approach. It is shown that, for distances beyond 1 rotor radius upstream of the rotors, the induced velocity is self-similar and independent of the rotor geometry. On the basis of these findings, a simple analytical model of the induction zone of wind turbines is proposed.
A simplified kinetic and mass transfer modelling of the thermal hydrolysis of vegetable oils

This work presents a combined modelling approach to investigate the kinetics and mass transfer effects on the hydrolysis of vegetable oils under subcritical conditions. The primary purpose of this simplified model is to interpret experimental data collected from typical batch tests and to estimate parameters for the proposed model. Due to its heterogeneous nature, the hydrolysis reaction is affected not only by the chemical kinetics but also by the rate of mass transfer between the oil and water as well as their specific contact area in this two phase emulsion. Considering these properties, a model was developed and evaluated by comparing the results with experimental data from literature. The model included among others the mass transfer coefficient as a function of operation and process variables, e.g. agitation speed, temperature, pressure, density and viscosity. Thereafter, uncertainty analysis was performed to assess the accuracy of estimated parameters and model predictions. The parameter estimation results showed that while the parameter estimates were accurate, however the pairwise correlation between estimates were significant. This indicates that the available experimental data is not fit to uniquely identify the mass and kinetic parameters requiring further and better design optimal experiment. The uncertainty analysis showed that model prediction uncertainty due to parameter estimation errors were rather negligible. Therefore it is recommended that the model be used for process analysis and improvement accompanied by Monte Carlo uncertainty analysis. Since the lack of experimental data is a crucial issue in the hydrolysis of vegetable oils, this model-based analysis of data is of substantial value to provide necessary information for detailed modeling and characterization of the process.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, CAPEC-PROCESS, CHEC Research Centre, Alfa Laval Copenhagen A/S
Pages: 1177-1182
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 27th European Symposium on Computer Aided Process Engineering (ESCAPE 27)
Volume: 40
Publisher: Elsevier Science
Editors: Espuña, A., Graells, M., Puigjaner, L.
Edition: 1
A simulation study to evaluate the performance of five statistical monitoring methods when applied to different time-series components in the context of control programs for endemic diseases

Disease monitoring and surveillance play a crucial role in control and eradication programs, as it is important to track implemented strategies in order to reduce and/or eliminate a specific disease. The objectives of this study were to assess the performance of different statistical monitoring methods for endemic disease control program scenarios, and to explore what impact of variation (noise) in the data had on the performance of these monitoring methods. We simulated 16 different scenarios of changes in weekly sero-prevalence. The changes included different combinations of increases, decreases and constant sero-prevalence levels (referred as events). Two space-state models were used to model the time series, and different statistical monitoring methods (such as univariate process control algorithms–Shewart Control Chart, Tabular Cumulative Sums, and the V-mask- and monitoring of the trend component–based on 99% confidence intervals and the trend sign) were tested. Performance was evaluated based on the number of iterations in which an alarm was raised for a given week after the changes were introduced. Results revealed that the Shewhart Control Chart was better at detecting increases over decreases in sero-prevalence, whereas the opposite was observed for the Tabular Cumulative Sums. The trend-based methods detected the first event well, but performance was poorer when adapting to several consecutive events. The V-Mask method seemed to perform most consistently, and the impact of noise in the baseline was greater for the Shewhart Control Chart and Tabular Cumulative Sums than for the V-Mask and trend-based methods. The performance of the different statistical monitoring methods varied when monitoring increases and decreases in disease sero-prevalence. Combining two of more methods might improve the potential scope of surveillance systems, allowing them to fulfill different objectives due to their complementary advantages.

General information
State: Published
Organisations: National Veterinary Institute, Epidemiology, University of Copenhagen
Authors: Lopes Antunes, A. C. (Intern), Jensen, D. (Ekstern), Hisham Beshara Halasa, T. (Intern), Toft, N. (Intern)
Number of pages: 18
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: P L o S One
Volume: 12
Issue number: 3
Article number: e0173099
ISSN (Print): 1932-6203
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.11 SJR 1.201 SNIP 1.092
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.414 SNIP 1.131 CiteScore 3.32
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.545 SNIP 1.141 CiteScore 3.54
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.74 SNIP 1.147 CiteScore 3.94
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
A Soft Tooling process chain employing Additive Manufacturing for injection molding of a 3D component with micro pillars

The purpose of the research presented in this paper is to investigate the capability of a soft tooling process chain employing Additive Manufacturing (AM) for preproduction of an insert with micro features by injection molding. The Soft Tooling insert was manufactured in a high temperature photopolymer by Digital Light Processing (vat photopolymerization). The mold cavity was formed by two insert halves, by design; both inserts have four angled tines, with micro holes (Ø200 μm, 200 μm deep) on the surface. Injection molding with polyethylene was used with the soft tool inserts to manufacture the final production components. The diameter and height of the pillars that were replicated on the molded components were characterized by means of a 3D profilometer. The influence of the injection molding parameters on the replication was evaluated using a 2-levels DOE of three factors. The uniformity of the pillars are also evaluated regarding the diameter and height.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Technical University of Denmark
Authors: Zhang, Y. (Intern), Pedersen, D. B. (Intern), Segebrecht Getje, A. (Ekstern), Mischkot, M. (Intern)
Pages: 138–144
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Manufacturing Processes
Volume: 27
ISSN (Print): 1526-6125
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 2.47 SJR 0.984 SNIP 1.686
Scopus rating (2015): SJR 0.993 SNIP 1.91 CiteScore 2.26
Scopus rating (2014): SJR 1.021 SNIP 1.963 CiteScore 1.77
Scopus rating (2013): SJR 0.872 SNIP 1.521 CiteScore 1.74
Scopus rating (2012): SJR 0.978 SNIP 1.814 CiteScore 1.72
Scopus rating (2011): SJR 0.62 SNIP 2.288 CiteScore 1.2
A sparse equivalent source method for near-field acoustic holography

This study examines a near-field acoustic holography method consisting of a sparse formulation of the equivalent source method, based on the compressive sensing (CS) framework. The method, denoted Compressive–Equivalent Source Method (C-ESM), encourages spatially sparse solutions (based on the superposition of few waves) that are accurate when the acoustic sources are spatially localized. The importance of obtaining a non-redundant representation, i.e., a sensing matrix with low column coherence, and the inherent ill-conditioning of near-field reconstruction problems is addressed. Numerical and experimental results on a classical guitar and on a highly reactive dipolelike source are presented. C-ESM is valid beyond the conventional sampling limits, making wideband reconstruction possible. Spatially extended sources can also be addressed with C-ESM, although in this case the obtained solution does not recover the spatial extent of the source.
We develop a high-resolution spatiotemporal model of stock size and harvest rates for snow crab (Chionoecetes opilio) in the southern Gulf of St. Lawrence, which supports an economically important fishery off the east coast of Canada. It is a spatial and weekly model during 1997–2014 that utilizes within-season depletion based on catch per unit of effort (CPUE; kg·pot⁻¹) and also biomass values from a survey designed specifically for this stock. The model is formulated in a state-space framework. The main contribution of the model is to provide a better understanding of fishery-dependent factors that affect CPUE. There is strong evidence of density dependence in the relationship with CPUE and stock biomass, in addition to a general increase in CPUE catchability over time that may be related to changes in gear soak time and spatial variation in catchability. We also find that a natural mortality rate of 0.4 provides a better fit to survey results. Model results suggest that there is no evidence of effort saturation in the fishery.
Aspergilli: Models for systems biology in filamentous fungi
Aspergillus is a diverse genus of filamentous fungi including common house hold mold as well as human pathogens. More than 350 species are currently part of this genus and all their genomes are soon to be sequenced. The availability of this vast amount of data will allow for more in-depth understanding of genetic traits governing desirable properties like enzyme production as well as the pathogenic potency of the organisms. In this review we give an overview of the systems biology research conducted in Aspergilli. This research has covered omics technologies like genomics, transcriptomics and proteomics where outstanding contributions are highlighted. From past developments it becomes apparent that CRISPR technology will speed up genetic research in the Aspergillus field. This speed up will allow for an increase in systems biology targeted research by accelerating data generation. The increase in throughput of data generation both per experiment and per time will lead to future challenges in the data handling, integration and interpretation.

Aspergillus hancockii sp. Nov., a biosynthetically talented fungus endemic to southeastern Australian soils
Aspergillus hancockii sp. nov., classified in Aspergillus subgenus Circumdati section Flavi, was originally isolated from soil in peanut fields near Kumbia, in the South Burnett region of southeast Queensland, Australia, and has since been found occasionally from other substrates and locations in southeast Australia. It is phylogenetically and phenotypically related most closely to A. leporis States and M. Chr., but differs in conidial colour, other minor features and particularly in metabolite profile. When cultivated on rice as an optimal substrate, A. hancockii produced an extensive array of 69 secondary metabolites. Eleven of the 15 most abundant secondary metabolites, constituting 90% of the total area under the curve of the HPLC trace of the crude extract, were novel. The genome of A. hancockii, approximately 40 Mbp, was sequenced and mined for genes encoding carbohydrate degrading enzymes identified the presence of more than 370 genes in 114 gene clusters, demonstrating that A. hancockii has the capacity to degrade cellulose, hemicellulose, lignin, pectin, starch, chitin, cutin and fructan as nutrient sources. Like most Aspergillus species, A. hancockii exhibited a diverse secondary metabolite gene profile, encoding 26 polyketide synthase, 16 nonribosomal peptide synthase and 15 nonribosomal peptide synthase-like enzymes.
Assembly Modulated by Particle Position and Shape: A New Concept in Self-Assembly

In this communication we outline how the bespoke arrangements and design of micron-sized superparamagnetic shapes provide levers to modulate their assembly under homogeneous magnetic fields. We label this new approach, 'assembly modulated by particle position and shape' (APPS). Specifically, using rectangular lattices of superparamagnetic micron-sized cuboids, we construct distinct microstructures by adjusting lattice pitch and angle of array with respect to a magnetic field. Broadly, we find two modes of assembly: (1) immediate 2D jamming of the cuboids as they rotate to align with the applied field (rotation-induced jamming) and (2) aggregation via translation after their full alignment (dipole-dipole assembly). The boundary between these two assembly pathways is independent on field strength being solely a function of the cuboid’s dimensions, lattice pitch, and array angle with respect to field—a relationship which we capture, along with other features of the assembly process, in a ‘phase diagram’. In doing so, we set out initial design rules to build custom made assemblies. Moreover, these assemblies can be made flexible thanks to the hinged contacts of their particle building blocks. This flexibility, combined with the superparamagnetic nature of the architectures, renders our assembly method particularly appropriate for the construction of complex actuators at a scale hitherto not possible.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Ceramic Engineering & Science, University Paris Diderot - Paris 7
Authors: Tavacoli, J. W. (Intern), Heuvingh, J. (Ekstern), Du Roure, O. (Ekstern)
Number of pages: 12
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials
Volume: 10
Issue number: 11
Article number: 1291
ISSN (Print): 1996-1944
Ratings:
Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 3.26 SJR 0.834 SNIP 1.497
Web of Science (2016): Indexed yes
Scopus rating (2015): SJR 0.852 SNIP 1.495 CiteScore 3.11
Scopus rating (2014): SJR 0.777 SNIP 1.256 CiteScore 2.69
Web of Science (2014): Indexed yes
Scopus rating (2013): SJR 0.998 SNIP 1.673 CiteScore 3.12
ISI indexed (2013): ISI indexed yes
Scopus rating (2012): SJR 0.838 SNIP 1.471
ISI indexed (2012): ISI indexed no
Scopus rating (2011): SJR 0.65 SNIP 1.239
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Scopus rating (2010): SJR 0.394 SNIP 0.99
Original language: English
MEMS, Magnetic systems, Microrobotics, Self-assembly
Electronic versions:
Assembly_Modulated_by_Particle_Position_and_Shape_A_New_Concept_in_Self_Assembly.pdf
DOIs:
10.3390/ma10111291
Source: FindIt
Source-ID: 2392885275
Publication: Research - peer-review › Journal article – Annual report year: 2017

Assessing and managing multiple risks in a changing world — The Roskilde recommendations

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Marine Ecology and Oceanography, Department of Civil Engineering, Section for Structural Engineering, Roskilde University, Stockholm University, University of Michigan, DHI Denmark, Simon Fraser University, Delft University of Technology, Enviresearch, Newcastle-upon-Tyne, Halmstad
Assessing climate impact on reinforced concrete durability with a multi-physics model

A framework for performance-based durability engineering can incorporate climate impacts in its assessment of the lifetime sustainability of built infrastructure. Most performance-based durability and climate impact assessments have used simplified deterioration models, which are insensitive to shorter-term fluctuations in boundary conditions and therefore may underestimate climate change impacts. A highly sensitive fully-coupled, validated, multi-physics model for heat, moisture and ion transport and corrosion was used to assess a reinforced concrete structure located in coastal Norfolk, Virginia. Deterioration was predicted using tidal exposure conditions obtained from statistically downscaled global climate model output under two emissions scenarios. Deterioration, repair, and decision metrics under the emissions scenarios were compared using the performance-based framework to assess the influence of climate change.

Assessing dermal exposure to nicotine - an interdisciplinary approach.

A framework for performance-based durability engineering can incorporate climate impacts in its assessment of the lifetime sustainability of built infrastructure. Most performance-based durability and climate impact assessments have used simplified deterioration models, which are insensitive to shorter-term fluctuations in boundary conditions and therefore may underestimate climate change impacts. A highly sensitive fully-coupled, validated, multi-physics model for heat, moisture and ion transport and corrosion was used to assess a reinforced concrete structure located in coastal Norfolk, Virginia. Deterioration was predicted using tidal exposure conditions obtained from statistically downscaled global climate model output under two emissions scenarios. Deterioration, repair, and decision metrics under the emissions scenarios were compared using the performance-based framework to assess the influence of climate change.

General information
State: Submitted
Organisations: Department of Civil Engineering, Section for Structural Engineering, Virginia Tech
Authors: Michel, A. (Intern), Flint, M. M. (Ekstern)
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences
Durability, Performance-based, Reinforced concrete, Corrosion, Climate change, Hygrothermal, Chlorides
Source: PublicationPreSubmission
Source-ID: 130671527
Publication: Research - peer-review » Paper – Annual report year: 2017

Host publication information
Title of host publication: ISES 2017 Abstract Book
Article number: TH-PL-D2-649
Main Research Area: Technical/natural sciences
Conference: 27th Annual meeting of the International Society of Exposure Science, Research Triangle Park, United States, 15/10/2017 - 15/10/2017
A-indoor environment, B-VOCs, C-air, A-biomonitoring, A-exposure models
Electronic versions:
Assessing glycolytic flux alterations resulting from genetic perturbations in E. coli using a biosensor

We describe the development of an optimized glycolytic flux biosensor and its application in detecting altered flux in a production strain and in a mutant library. The glycolytic flux biosensor is based on the Cra-regulated ppsA promoter of E. coli controlling fluorescent protein synthesis. We validated the glycolytic flux dependency of the biosensor in a range of different carbon sources in six different E. coli strains and during mevalonate production. Furthermore, we studied the flux-altering effects of genome-wide single gene knock-outs in E. coli in a multiplex FlowSeq experiment. From a library consisting of 2126 knock-out mutants, we identified 3 mutants with high-flux and 95 mutants with low-flux phenotypes that did not have severe growth defects. This approach can improve our understanding of glycolytic flux regulation improving metabolic models and engineering efforts.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Bacterial Synthetic Biology, Department of Biotechnology and Biomedicine
Authors: Lehning, C. E. (Intern), Siedler, S. (Intern), Ellabaan, M. M. H. (Intern), Sommer, M. O. A. (Intern)
Pages: 194-202
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication Information
Journal: Metabolic Engineering
Volume: 42
ISSN (Print): 1096-7176
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 8.33 SJR 3.54 SNIP 1.864
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.611 SNIP 1.822 CiteScore 8.2
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.381 SNIP 2.034 CiteScore 7.23
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 4.004 SNIP 2.185 CiteScore 8.43
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.032 SNIP 1.858 CiteScore 6.72
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 3.124 SNIP 2.144 CiteScore 6.75
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.373 SNIP 1.802
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.575 SNIP 1.421
Web of Science (2009): Indexed yes
Assessing impact of bottom trawling and hypoxia on seafloor status of the Baltic Sea

General information
State: Published
Organisations: National Institute of Aquatic Resources, Centre for Ocean Life
Authors: van Denderen, P. D. (Intern), Friedland, R. (Intern), Hiddink, J. (Ekstern), Noren, K. (Ekstern), Rijnsdorp, A. (Ekstern), Törnroos, A. (Intern), Valanko, S. (Ekstern)
Publication date: 2017
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2017

Assessing pre- and post-zygotic barriers between North Atlantic eels (Anguilla anguilla and A. rostrata)
Elucidating barriers to gene flow is important for understanding the dynamics of speciation. Here we investigate pre- and post-zygotic mechanisms acting between the two hybridizing species of Atlantic eels: Anguilla anguilla and A. rostrata. Temporally varying hybridization was examined by analyzing 85 species-diagnostic single-nucleotide polymorphisms (SNPs; FST 0.95) in eel larvae sampled in the spawning region in the Sargasso Sea in 2007 (N=92) and 2014 (N=460). We further investigated whether genotypes at these SNPs were nonrandomly distributed in post-F1 hybrids, indicating selection. Finally, we sequenced the mitochondrial ATP6 and nuclear ATP5c1 genes in 19 hybrids, identified using SNP and restriction site associated DNA (RAD) sequencing data, to test a previously proposed hypothesis of cytonuclear incompatibility leading to adenosine triphosphate (ATP) synthase dysfunction and selection against hybrids. No F1 hybrids but only later backcrosses were observed in the Sargasso Sea in 2007 and 2014. This suggests that interbreeding between the two species only occurs in some years, possibly controlled by environmental conditions at the spawning grounds, or that interbreeding has diminished through time as a result of a declining number of spawners. Moreover, potential selection was found at the nuclear and the cytonuclear levels. Nonetheless, one glass eel individual showed a mismatch, involving an American ATP6 haplotype and European ATP5c1 alleles. This contradicted the presence of cytonuclear incompatibility but may be explained by that (1) cytonuclear incompatibility is incomplete, (2) selection acts at a later life stage or (3) other genes are important for protein function. In total, the study demonstrates the utility of genomic data when examining pre- and post-zygotc barriers in natural hybrids.Heredity advance online publication, 9 November 2016; doi:10.1038/hdy.2016.96.

General information
Assessing the Added Value of information systems supporting facilities management business processes.

Purpose: To present a method for assessing the added value of Information Systems (IS), which are implemented to support the business processes in Facilities Management (FM). Theory: The method is based on a supply chain management model of FM, general value dimensions such as efficiency and effectiveness and the concepts of Value Adding Management (VAM) and Functional Affordances of IS. Design/methodology/approach: From case studies of IS implementation processes in FM in different countries, a general picture of the expressed added value of IS in FM was established. Based on this insight a method for assessing the added value of IS in FM was developed. The proposed method is applied to one of the cases. Findings: The paper analyses how a specific IS supports the management of a specific operational process – cleaning in an airport. The assessment shows that the IS definitely adds value to the cleaning process and because the resulting increase in user experience of the cleaning level is aligned with the strategy of the corporation, the IS also adds value to the primary process of the organisation. The analysis reveals that a well organised management setup is required to gain value from IS. It also illustrates that implementing IS includes both organisational and technological changes and demonstrates that the proposed assessment method is applicable to practice. Originality/value: This is the first paper using a supply chain management model of FM, general value dimensions, VAM and Functional Affordances to access the added value of IS in FM.

General information

State: Published
Organisations: Department of Management Engineering, Management Science, Implementation and Performance Management, Rambøll Management Consulting
Authors: Ebbesen, P. (Ekstern), Jensen, P. A. (Intern)
Number of pages: 11
Publication date: 2017

Host publication information

Title of host publication: Research Papers for EuroFM's 16th Research Symposium at EFMC2017
Main Research Area: Technical/natural sciences
Conference: EUROFM's 16th Research Symposium, EFMC 2017, Madrid, Spain, 25/04/2017 - 25/04/2017
Electronic versions:

Bibliographical note


Assessing the chemical contamination dynamics in a mixed land use stream system

Traditionally, the monitoring of streams for chemical and ecological status has been limited to surface water concentrations, where the dominant focus has been on general water quality and the risk for eutrophication. Mixed land use stream systems, comprising urban areas and agricultural production, are challenging to assess with multiple chemical stressors impacting stream corridors. New approaches are urgently needed for identifying relevant sources, pathways and potential impacts for implementation of suitable source management and remedial measures. We developed a method for risk assessing chemical stressors in these systems and applied the approach to a 16-km groundwater-fed stream corridor (Grindsted, Denmark). Three methods were combined: (i) in-stream contaminant mass discharge for source quantification, (ii) Toxic Units and (iii) environmental standards. An evaluation of the chemical quality of all three stream compartments – stream water, hyporheic zone, streambed sediment – made it possible to link chemical stressors to their respective sources and obtain new knowledge about source composition and origin. Moreover, toxic unit estimation and comparison to environmental standards revealed the stream water quality was substantially impaired by both geogenic and diffuse anthropogenic sources of metals along the entire corridor, while the streambed was less impacted. Quantification of the contaminant mass discharge originating from a former pharmaceutical factory revealed that several 100 kgs of chlorinated ethenes and pharmaceutical compounds discharge into the stream every year. The strongly reduced redox conditions in the plume result in high concentrations of dissolved iron and additionally release arsenic, generating the complex contaminant mixture found in the narrow discharge zone. The fingerprint of the plume was observed in the stream several
km downgradient, while nutrients, inorganics and pesticides played a minor role for the stream health. The results emphasize future investigations should include multiple compounds and stream compartments, and highlight the need for holistic approaches when risk assessing these dynamic systems.

**General information**

State: Published
Organisations: Department of Environmental Engineering, Water Resources Engineering
Authors: Sonne, A. T. (Intern), McKnight, U. S. (Intern), Rønde, V. (Intern), Bjerg, P. L. (Intern)
Pages: 141-151
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Water Research
Volume: 125
ISSN (Print): 0043-1354
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.49 SJR 2.629 SNIP 2.558
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.689 SNIP 2.507 CiteScore 6.63
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.957 SNIP 2.727 CiteScore 6.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.956 SNIP 2.693 CiteScore 6.02
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.966 SNIP 2.456 CiteScore 5.15
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.867 SNIP 2.374 CiteScore 5.43
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.582 SNIP 2.196
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.319 SNIP 2.225
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.065 SNIP 2.19
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.994 SNIP 2.208
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.895 SNIP 2.214
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.114 SNIP 2.337
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 2.227 SNIP 2.106
Assessing the edible city: Environmental implications of urban agriculture in the Northeast United States

One of the pivotal environmental challenges in the coming decades will be feeding an increasingly wealthy and populated planet in a sustainable manner. As industrialization and concomitant urbanization affect hitherto peripheral economies, much of this challenge will depend on the ability to support the nutritional demands of a global urban population in a fashion aligned with the biophysical capacity of the planet. Amongst the myriad of solutions proposed to guide humanity towards more environmentally sustainable food system, co-locating food production and consumption in cities is an area that has seen significant action in research, design and practice. In the Northeast United States, where per capita diets are amongst the most environmentally intensive globally, there is a growing interest in local food production as a way to reduce the ecological burdens of food demand. Urban farms and pro-urban agriculture planning agendas are proliferating throughout many of the region’s cities, typically with urban agriculture’s environmental sustainability evoked to varying degrees in support of these initiatives. However, environmental appraisals comparing urban and rural food production are scarce in existing literature, leaving a number of lingering questions surrounding urban agriculture’s environmental performance. In a Northern context, it remains to be seen whether the benefits of reducing distance from farm to fork are outweighed by the energy demanded by year-round growing systems. Even if urban agriculture does provide leaner resource intensities at the farm scale, do these add up to meaningful shifts in a city's environmental footprint at the urban scale? The aim of this project was to begin removing these uncertainties using the Northeast United States as a case study, since cities within that region have some of the most vibrant and well-supported urban farming communities in the Global North. This report is comprised of six chapters that probe and add to our current understanding of urban food systems.

Assessing the effects of seawater temperature and pH on the bioaccumulation of emerging chemical contaminants in marine bivalves

Emerging chemical contaminants [e.g. toxic metals speciation, flame retardants (FRs) and perfluorinated compounds (PFCs), among others], that have not been historically recognized as pollutants nor their toxicological hazards, are
increasingly more present in the marine environment. Furthermore, the effects of environmental conditions (e.g. temperature and pH) on bioaccumulation and elimination mechanisms of these emerging contaminants in marine biota have been poorly studied until now. In this context, the aim of this study was to assess, for the first time, the effect of warmer seawater temperatures (Δ = + 4°C) and lower pH levels (Δ = - 0.4 pH units), acting alone or combined, on the bioaccumulation and elimination of emerging FRs (dechloranes 602, 603 and 604, and TBBPA), inorganic arsenic (iAs), and PFCs (PFOA and PFOS) in two estuarine bivalve species (Mytilus galloprovincialis and Ruditapes philippinarum). Overall, results showed that warming alone or combined with acidification promoted the bioaccumulation of some compounds (i.e. dechloranes 602, 604, TBBPA), but also facilitated the elimination of others (i.e. iAs, TBBPA). Similarly, lower pH also resulted in higher levels of dechloranes, as well as enhanced iAs, PFOA and PFOS elimination. Data also suggests that, when both abiotic stressors are combined, bivalves’ capacity to accumulate contaminants may be time-dependent, considering significantly drastic increase observed with Dec 602 and TBBPA, during the last 10 days of exposure, when compared to reference conditions. Such changes in contaminants’ bioaccumulation/elimination patterns also suggest a potential increase of human health risks of some compounds, if the climate continues changing as forecasted. Therefore, this first study pointed out the urgent need for further research on the effects of abiotic conditions on emerging contaminants kinetics, to adequately estimate the potential toxicological hazards associated to these compounds and develop recommendations/regulations for their presence in seafood, considering the prevailing environmental conditions expected in tomorrow’s ocean.

General information
State: Published
Pages: 236-247
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Environmental Research
Volume: 161
ISSN (Print): 0013-9351
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.12 SJR 1.394 SNIP 1.334
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.449 SNIP 1.349 CiteScore 3.71
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.787 SNIP 1.766 CiteScore 4.32
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.552 SNIP 1.596 CiteScore 3.75
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.534 SNIP 1.362 CiteScore 3.31
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.696 SNIP 1.51 CiteScore 3.7
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.657 SNIP 1.491
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.495 SNIP 1.39
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Assessing the efficacy of hearing-aid amplification using a phoneme test

Consonant-vowel (CV) perception experiments provide valuable insights into how humans process speech. Here, two CV identification experiments were conducted in a group of hearing-impaired (HI) listeners, using 14 consonants followed by the vowel /a/. The CVs were presented in quiet and with added speech-shaped noise at signal-to-noise ratios of 0, 6, and 12 dB. The HI listeners were provided with two different amplification schemes for the CVs. In the first experiment, a frequency-independent amplification (flat-gain) was provided and the CVs were presented at the most-comfortable loudness level. In the second experiment, a frequency-dependent prescriptive gain was provided. The CV identification results showed that, while the average recognition error score obtained with the frequency-dependent amplification was lower than that obtained with the flat-gain, the main confusions made by the listeners on a token basis remained the same in a majority of the cases. An entropy measure and an angular distance measure were proposed to assess the highly individual effects of the frequency-dependent gain on the consonant confusions in the HI listeners. The results suggest that the proposed measures, in combination with a well-controlled phoneme speech test, may be used to assess the impact of hearing-aid signal processing on speech intelligibility.
Assessing the Energy Content of System Frequency and Electric Vehicle Charging Efficiency for Ancillary Service Provision

The purpose of this paper is to quantify the effect of biased system frequency deviations and charger losses in order for an aggregation of electric vehicles (EVs) to provide reliable primary frequency control (PFC). A data set consisting of one year of frequency measurements of the Nordic synchronous zone is used for the analysis. The average system frequency can be biased over the hour, which can lead storage units, performing PFC, to become fully charged or depleted. This paper presents statistical bounds on how variable the average system frequency can be on different time scales. Additionally, a method for calculating the expected energy loss caused by continuous charging and discharging is presented together with efficiency measurements of a commercial bidirectional EV charger. It is found that during a year, the energy balance of the service provider, relative to the grid, is within the calculated bounds. The efficiency losses are
calculated and validated to have a linear relationship with the reserve capacity and the provision time.

**General information**
State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Energy resources, services and control, Energy system operation and management
Authors: Thingvad, A. (Intern), Ziras, C. (Intern), Hu, J. (Intern), Marinelli, M. (Intern)
Number of pages: 6
Publication date: 2017

**Host publication information**
Title of host publication: Proceedings of the 52nd International Universities’ Power Engineering Conference
Publisher: IEEE
Main Research Area: Technical/natural sciences
Conference: 52nd International Universities’ Power Engineering Conference, Greece, 29/08/2017 - 29/08/2017
Electronic versions:
UPEC_2017_Assessing_the_energy_content_of_system_frequency_full_paper.pdf
Source: PublicationPreSubmission
Source-ID: 133645552
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

**Assessing the financial potential for modularization: A case study in a global OEM**
Assessing the financial potential of implementing a strategy, based on sharing of key modules and interfaces across a portfolio is difficult. However, this is a critical input when deciding strategic direction in industrial organizations. Through a case study, this paper gives an example of how to map and evaluate the architectures in a portfolio to identify the financial potential for implementing a platform-based modularization strategy. The approach has been applied in a global world-leading OEM with 50,000+ product variants and a turnover of USD 3.5b (2015). The results show a potential for reducing the cost-base by up to 15% through systematically sharing of key design principles across 80% of the company’s portfolio. This has supported the discussion of adjusting innovation strategy in the organization. The core contribution of the paper is the operational application of the systematic Architecture Mapping and Evaluation approach (AME) and discussion of how it can support strategic decision-making related to modularization. The approach builds on the understanding that a top-down assessment can give a starting point for implementing a level of modularity across a portfolio.

**General information**
State: Published
Organisations: Department of Mechanical Engineering, Engineering Design and Product Development
Authors: Løkkegaard, M. (Intern), Mortensen, N. H. (Intern)
Pages: 021-030
Publication date: 2017

**Host publication information**
Title of host publication: Proceedings of the 21st International Conference on Engineering Design (ICED 17) : Product, Services and Systems Design,
Volume: 3
Publisher: Design Society
Editors: Maier, A., Škec, S., Kim, H., Kokkolaras, M., Oehmen, J., Fadel, G., Salustri, F., Van der Loos, M.
Main Research Area: Technical/natural sciences
Conference: ICED17: 21st International Conference on Engineering Design, Vancouver, Canada, 21/08/2017 - 21/08/2017
Platform strategies, Product architecture, Case study, Decision support
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

**Assessing the impact of groundwater contamination on stream water quality by multiple approaches at the groundwater-surface water interface (Invited Presentation)**
Contaminants such as chlorinated solvents and pesticides, as well as new classes of compounds or emerging micropollutants are extensively produced, utilized and then discarded in society and subsequently released to streams from multiple point and diffuse sources. Sustainable management of water resources requires assessment of multiple contamination sources within a watershed in order to assess their direct impact on water quality. Determination of flow paths and groundwater fluxes are essential for evaluating the transport, fate and potential impact of contaminant plumes discharging to streams. This implies that investigators have the tools to evaluate the governing parameters, including an appreciation of the scale of variability, as well as conceptual and numerical models that incorporate the various mechanisms affecting flow and transport.

A major multidisciplinary field scale investigation of the Grindsted stream area including geology, hydrogeology, geophysics, environmental chemistry, ecology and environmental engineering was carried out in 2012-2017, to develop the scientific basis for conducting risk assessments for contaminated sites impacting surface waters. The Grindsted
stream area is a well-studied site, affected by many polluting sources including the plume from a former pharmaceutical factory. Our overall aim of the field investigations was to (i) test the applicability of different methods for mapping groundwater pollution as it enters streams at a complex site, and (ii) perform a source identification and risk assessment of the stream’s chemical and ecological status.

The study included development of a geological and hydrogeological model, numerical modeling of the flow and transport, mapping of the contaminant plume, and detailed field investigations at the main entry point of the plume. We quantified the contaminant mass discharge and attenuation of the plume at the groundwater-surface interface by different approaches (control planes at stream bank, in the hyporheic zone and in the stream using traditional and innovative tools and models for determination of flow and contaminant fluxes).

The field methods and key findings regarding contaminant mass discharge, and challenges with respect to multiple stressor impact on streams will be discussed in the presentation.

**General information**

State: Published
Organisations: Department of Environmental Engineering, Water Resources Engineering, University of Kansas, University of Florida
Authors: Bjerg, P. L. (Intern), Rønde, V. K. (Intern), Balbarini, N. (Intern), Sonne, A. T. (Intern), Devlin, J. (Ekstern), Cremeans, M. (Ekstern), Annable, M. (Ekstern), Binning, P. J. (Intern), McKnight, U. S. (Intern)
Number of pages: 1
Publication date: 2017
Main Research Area: Technical/natural sciences
Electronic versions:
GSA_Annual_Meeting_in_Seattle_Washington_USA_2017_127_6.pdf
Links:
https://gsa.confex.com/gsa/2017AM/webprogram/Paper296314.html
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

**Assessing the Importance of spatio-temporal RCM resolution when estimating sub-daily extreme precipitation under current and future climate conditions**

The increase in extreme precipitation is likely to be one of the most significant impacts of climate change in cities due to increased pluvial flood risk. Hence, reliable information on changes in sub-daily extreme precipitation is needed for robust adaptation strategies. This study explores extreme precipitation over Denmark generated by the regional climate model (RCM) HIRHAM-ECEARTH at different spatial resolutions (8, 12, 25 and 50km), three RCM from the RiskChange project at 8km resolution and three RCMs from ENSEMBLES at 25km resolution at temporal aggregations from 1 to 48h. The performance of the RCM simulations in current climate as well as projected changes for 2081-2100 is evaluated for non-central moments of order 1-3 and for the 2- and 10-year events. The comparison of the RCM simulations and observations shows that the higher spatial resolution simulations (8 and 12km) are more consistent across all temporal aggregations in the representation of high-order moments and extreme precipitation. The biases in the spatial pattern of extreme precipitation change across temporal and spatial resolution. The hourly extreme value distributions of the HIRHAM-ECEARTH simulations are more skewed than the observational dataset, which leads to an overestimation by the higher spatial resolution simulations. Nevertheless, in general, under current conditions RCM simulations at high spatial resolution represent extreme events and high-order moments better. The changes projected by the RCM simulations depend on the global climate model (GCM)-RCM combination, spatial resolution and temporal aggregation. The simulations disagree on the magnitude and spatial pattern of the changes. However, there is an agreement on higher changes for lower temporal aggregation and higher spatial resolution. Overall, the results from this study show the influence of the spatial resolution on the precipitation outputs from RCMs. The biases of the RCM simulations increase, and the projected changes decrease for decreasing spatial resolution of the simulations. This points towards the need for high spatial and temporal resolution RCMs to obtain reliable information on changes in sub-daily extreme precipitation.

**General information**

State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems, DHI Harshholm, Imperial College London
Authors: Sunyer Pinya, M. A. (Intern), Luchner, J. (Ekstern), Onof, C. (Ekstern), Madsen, H. (Ekstern), Arnbjerg-Nielsen, K. (Intern)
Number of pages: 18
Pages: 688-705
Publication date: 2017
Main Research Area: Technical/natural sciences
Publication information
Journal: International Journal of Climatology
Volume: 37
Assessing the need for better forecasting and observability of pv.
In its review of the challenges and opportunities associated with massive deployment of solar PV generation, the Grid integration working group of the ETIP PV identified forecasting and observability as critical technologies for the planning and operation of the power system with large PV penetration. In this white paper ETIP PV set out to spell out in more details what features are needed from these technologies and what is the state of the art.
Assessing the performance of the random phase approximation for exchange and superexchange coupling constants in magnetic crystalline solids

The random phase approximation (RPA) for total energies has previously been shown to provide a qualitatively correct description of static correlation in molecular systems, where density functional theory (DFT) with local functionals are bound to fail. This immediately poses the question of whether the RPA is also able to capture the correct physics of strongly correlated solids such as Mott insulators. Due to strong electron localization, magnetic interactions in such systems are dominated by superexchange, which in the simplest picture can be regarded as the analog of static correlation for molecules. In this paper, we investigate the performance of the RPA for evaluating both superexchange and direct exchange interactions in the magnetic solids NiO, MnO, Na3Cu2SbO6, Sr2CuO3, Sr2CuTeO6, and a monolayer of CrI3, which were chosen to represent a broad variety of magnetic interactions. It is found that the RPA can accurately correct the large errors introduced by Hartree-Fock, independent of the input orbitals used for the perturbative expansion. However, in most cases, accuracies similar to RPA can be obtained with DFT+U, which is significantly simpler from a computational point of view.

General information
State: Published
Organisations: Center for Nanostructured Graphene, Department of Physics, Theoretical Atomic-scale Physics
Authors: Olsen, T. (Intern)
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Physical Review B
Volume: 96
Issue number: 12
Article number: 125143
ISSN (Print): 2469-9950
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Assessing transformational change from institutionalising digital capabilities on implementation and development of Product-Service Systems: Learnings from the maritime industry

Digitization is rapidly reshaping industries and economic sectors. It enables novel Product-Service Systems (PSS) that transform customer/supplier relationships and introduces new value propositions. However, while opportunities for novel types of PSS arise, it is not clear how digitization and the institutionalisation of digital capabilities, particularly within the customer organisations, may affect implementation of PSS, potentially leading to transformational changes in the customer organisation. This paper examines one such potential transformational change from three complementary viewpoints – the resource based, the dynamic, and the relational viewpoint. It does so through action research study in the context of the maritime industry, which is particularly attractive for PSS offerings. The research methodology comprised a two-step action research process, focusing on both digitization and PSS development and implementation. The main findings are that rather than facilitating procurement to co-development of PSS, institutionalisation of digital capabilities facilitated development of PSS by stakeholders internal to the company, and strategic co-development with external stakeholders. The new digital capabilities circumvented cost barriers associated with the procurement of services from external stakeholders, supported process standardization - to the expense of process innovation-, and transformed the network that delivered PSS by closing opportunity gaps for externally procured services. Furthermore, the uptake of digital capabilities highlighted the importance of cost estimation in making the customer more responsive to threats and opportunities.

General information
State: Published
Organisations: Department of Mechanical Engineering, Engineering Design and Product Development, Department of Management Engineering, Engineering Systems
Authors: Pagoropoulos, A. (Intern), Maier, A. (Intern), McAloone, T. C. (Intern)
Pages: 369-380
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Cleaner Production
Volume: 166
ISSN (Print): 0959-6526
Assessing Transformational Change Potential in case of the Tunisian Cement NAMA

General information
Assessing transformational change potential: the case of the Tunisian cement Nationally Appropriate Mitigation Action (NAMA)

To effectively address the root causes of carbon lock-in across developing countries, Nationally Appropriate Mitigation Actions (NAMAs) with transformational change characteristics are being supported by donors and finance mechanisms as
a means to achieve ambitious nationally determined contributions (NDCs). However, there is still a scarcity of empirical studies on how transformational change policies and actions are designed and supported in practice. This article addresses such a gap in knowledge by combining theoretical insights from the multi-level perspective and transitions management literature to examine a donor-supported cement sector NAMA in Tunisia developed during 2012–2013. A narrative is constructed to analyse the adequacy of the NAMA design to promote structural shifts towards low carbon development in the cement sector. Data collection is based on semi-structured interviews and documentation gathered during field work in Tunisia 2014–2015. The study finds that the NAMA design is not likely to lead to transformational change of the cement sector, since underlying factors accounting for lock-in are not properly tackled. Although the NAMA has enabled new and promising sectoral partnerships across the cement sector, the analysis suggests that the NAMA’s transformational potential is currently limited by a number of factors not being adequately addressed. Measures are proposed to reorient the NAMA towards promoting system innovation, building on further research and experimentation with the policy entrepreneurial role of donors.
Assessment and recruitment status of Baltic Sea trout populations

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Pedersen, S. (Intern), Degerman, E. (Ekstern), Debowski, P. (Ekstern), Petereit, C. (Ekstern)
Pages: 423-441
Publication date: 2017

Host publication information
Title of host publication: Sea Trout: Science & Management : Proceedings of the 2nd International Sea Trout Symposium
Publisher: Troubador
Editor: Harris, G.
ISBN (Print): 9781788035354
Main Research Area: Technical/natural sciences
Conference: International Sea Trout Symposium, Dundalk, Ireland, 20/10/2015 - 20/10/2015
Publication information: Research - peer-review › Article in proceedings – Annual report year: 2017

Assessment of a combined dry anaerobic digestion and post-composting treatment facility for source-separated organic household waste, using material and substance flow analysis and life cycle inventory

The fate of total solids, volatile solids, total organic carbon, fossil carbon, biogenic carbon and 17 substances (As, Ca, CaCO3, Cd, Cl, Cr, Cu, H, Hg, K, Mg, N, Ni, O, P, Pb, S, Zn) in a combined dry anaerobic digestion and post-composting facility were assessed. Mass balances showed good results with low uncertainties for non-volatile substances, while balances for nitrogen, carbon, volatile solids and total organic carbon showed larger but reasonable uncertainties, due to volatilisation and emissions into the air. Material and substance flow analyses were performed in order to obtain transfer coefficients for a combined dry anaerobic digestion and post-composting facility. All metals passed through the facility and ended up in compost or residues, but all concentrations of metals in the compost complied with legislation. About 23% of the carbon content of the organic waste was transferred to the biogas, 24% to the compost, 13% to residues and 40% into the atmosphere. For nitrogen, 69% was transferred to the compost, 10% volatilised to the biofilter, 11% directly into the atmosphere and 10% to residues. Finally, a full life cycle inventory was conducted for the combined dry anaerobic digestion and post-composting facility, including waste received, fuel consumption, energy use, gaseous emissions, products, energy production and chemical composition of the compost produced.

General information
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering
Authors: Jensen, M. B. (Intern), Møller, J. (Intern), Scheutz, C. (Intern)
Pages: 23-35
Publication date: 2017
Main Research Area: Technical/natural sciences

Publications information
Journal: Waste Management
Volume: 66
ISSN (Print): 0956-053X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4 SJR 1.354 SNIP 2.044
Assessment of a Danish sludge treatment reed bed system and a stockpile area, using substance flow analysis

Sludge treatment reed bed (STRB) systems combine dewatering, stabilisation and long-term storage of sludge. The main objective of this study was to investigate how substance concentrations change in the sludge residue during treatment and to conduct substance flow analyses covering the flow of substances in an STRB system over a 12-year treatment period, followed by three months' post-treatment in a stockpile area (SPA). Samples of sludge, reject water and sludge residue of different ages were collected at two Danish STRB system facilities and analysed for content of relevant substances.
Concentrations of carbon and nitrogen in the sludge residue residing in an STRB system changed as a function of treatment time, mainly due to mineralisation; only a negligible part was lost to reject water. Considering metals and phosphorus, the main share was accumulated in the sludge residue; only minor fractions were lost to mineralisation or reject water. Post-treatment in an SPA resulted in an increase in dry matter content from 24% to 32%. After treatment, the concentrations of heavy metals (lead, cadmium, nickel, zinc, copper and chromium) in the sludge residue met the threshold values stated by the Danish Environmental Protection Agency and the EU.

General information
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering, Orbicon
Authors: Larsen, J. D. (Intern), Nielsen, S. M. (Ekstern), Scheutz, C. (Intern)
Number of pages: 13
Pages: 2291-2303
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Water Science and Technology
Volume: 76
Issue number: 9
ISSN (Print): 0273-1223
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.3 SJR 0.394 SNIP 0.621
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.466 SNIP 0.599 CiteScore 1.19
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.587 SNIP 0.685 CiteScore 1.14
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.568 SNIP 0.7 CiteScore 1.3
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.601 SNIP 0.669 CiteScore 1.13
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.591 SNIP 0.626 CiteScore 1.25
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.522 SNIP 0.602
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.589 SNIP 0.686
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.579 SNIP 0.697
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.749 SNIP 0.781
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.693 SNIP 0.796
Assessment of airborne bacteria and noroviruses in air emission from a new highly-advanced hospital wastewater treatment plant

Exposure to bioaerosols can pose a health risk to workers at wastewater treatment plants (WWTPs) and to habitants of their surroundings. The main objective of this study was to examine the presence of harmful microorganisms in the air emission from a new type of hospital WWTP employing advanced wastewater treatment technologies. Air particle measurements and sampling of inhalable bacteria, endotoxin and noroviruses (NoVs) were performed indoor at the WWTP and outside at the WWTP ventilation air exhaust, downwind of the air exhaust, and upwind of the WWTP. No significant differences were seen in particle and endotoxin concentrations between locations. Bacterial concentrations were comparable or significantly lower in the exhaust air than inside the WWTP and in the upwind reference. Bacterial isolates were identified using matrix-assisted laser desorption-ionization time-of-flight mass spectrometry. In total, 35 different bacterial genera and 64 bacterial species were identified in the air samples. Significantly higher genus and species richness was found with an Andersen Cascade Impactor compared with filter-based sampling. No pathogenic bacteria were found in the exhaust air. Streptomyces was the only bacterium found in the air both inside the WWTP and at the air emission, but not in the upwind reference. NoV genomes were detected in the air inside the WWTP and at the air exhaust, albeit in low concentrations. As only traces of NoV genomes could be detected in the exhaust air they are unlikely to pose a health risk to surroundings. Hence, we assess the risk of airborne exposure to pathogenic bacteria and NoVs from the WWTP air emission to surroundings to be negligible. However, as a slightly higher NoV concentration was detected inside the WWTP, we cannot exclude the possibility that exposure to airborne NoVs can pose a health risk to susceptible workers inside the WWTP, although the risk may be low.

General information
State: Published
Organisations: National Food Institute, Research Group for Microbial Food Safety, National Research Center for Working Environment, DHI Denmark
Authors: Uhrbrand, K. (Intern), Schultz, A. C. (Intern), Koivisto, A. J. (Ekstern), Nielsen, U. (Ekstern), Madsen, A. M. (Ekstern)
Number of pages: 10
Pages: 110-119
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Water Research
Volume: 112
ISSN (Print): 0043-1354
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.49 SJR 2.629 SNIP 2.558
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.689 SNIP 2.507 CiteScore 6.63
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.957 SNIP 2.727 CiteScore 6.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.956 SNIP 2.693 CiteScore 6.02
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.966 SNIP 2.456 CiteScore 5.15
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.867 SNIP 2.374 CiteScore 5.43
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.582 SNIP 2.196
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.319 SNIP 2.225
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.065 SNIP 2.19
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.994 SNIP 2.208
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.895 SNIP 2.214
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.114 SNIP 2.337
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 2.227 SNIP 2.106
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.696 SNIP 1.917
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.54 SNIP 1.775
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.321 SNIP 1.711
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.305 SNIP 1.688
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.456 SNIP 1.576
Original language: English
Air sampling, Bioaerosols, Microbial diversity, Norovirus, Wastewater, Ecological Modeling, Water Science and Technology, Waste Management and Disposal, Pollution
DOIs:
10.1016/j.watres.2017.01.046
Source: FindIt
Source-ID: 2351559635
Publication: Research › peer-review › Journal article – Annual report year: 2017
Assessment of broadband snr estimation for hearing aid applications

An accurate estimation of the broadband input signal-to-noise ratio (SNR) is a prerequisite for many hearing-aid algorithms. An extensive comparison of three SNR estimation algorithms was performed. Moreover, the influence of the duration of the analysis window on the SNR estimation performance was systematically investigated. The most accurate approach utilized an estimation of the clean speech power spectral density (PSD) and the noisy speech power across a sliding window of 1280 ms and achieved a total SNR estimation error below 3 dB across a wide variety of background noises and input SNRs.

General information
State: Published
Organisations: Department of Electrical Engineering, Hearing Systems
Authors: May, T. (Intern), Kowalewski, B. (Intern), Fereczkowski, M. (Intern), MacDonald, E. (Intern)
Pages: 231-235
Publication date: 2017

Host publication information
Title of host publication: Proceedings of ICASSP 2017
Publisher: IEEE
ISBN (Print): 978-1-5090-4117-6
Main Research Area: Technical/natural sciences
Conference: 19th International Conference on Acoustics, Speech and Signal Processing, Kyoto, Japan, 05/03/2017 - 05/03/2017
Signal-to-noise ratio estimation, Noise power estimation, Hearing-aid algorithms
Source: PublicationPreSubmission
Source-ID: 130767340
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Assessment of drinking water quality at the tap using fluorescence spectroscopy

Treated drinking water may become contaminated while travelling in the distribution system on the way to consumers. Elevated dissolved organic matter (DOM) at the tap relative to the water leaving the treatment plant is a potential indicator of contamination, and can be measured sensitively, inexpensively and potentially on-line via fluorescence and absorbance spectroscopy. Detecting elevated DOM requires potential contamination events to be distinguished from natural fluctuations in the system, but how much natural variation to expect in a stable distribution system is unknown. In this study, relationships between DOM optical properties, microbial indicator organisms and trace elements were investigated for households connected to a biologically-stable drinking water distribution system. Across the network, humic-like fluorescence intensities showed limited variation (RSD = 3.5-4.4%), with half of measured variation explained by interactions with copper. After accounting for quenching by copper, fluorescence provided a very stable background signal (RSD

General information
State: Published
Organisations: Section for Marine Ecology and Oceanography, National Institute of Aquatic Resources, Section for Oceans and Arctic, Chalmers University of Technology, Gästrike Vatten AB, National Food Agency
Authors: Heibati, M. (Ekstern), Stedmon, C. A. (Intern), Stenroth, K. (Ekstern), Rauch, S. (Ekstern), Toljander, J. (Ekstern), Säve-Söderbergh, M. (Ekstern), Murphy, K. R. (Ekstern)
Pages: 1-10
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Water Research
Volume: 125
ISSN (Print): 0043-1354
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.49 SJR 2.629 SNIP 2.558
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.689 SNIP 2.507 CiteScore 6.63
Web of Science (2015): Indexed yes
Assessment of filament led bulbs with respect to temporal light artefacts

Temporal light artefacts, abbreviated TLAs (including flicker, stroboscopic effect and phantom arrays), i.e. undesired time modulation in luminance from a light source, has shown to be a threat to wider SSL adoption especially related to dimming functions and low-quality LED products. This is due to the effects that both noticeable and unperceivable TLAs have on human perception and wellbeing. In the present work a number of filament LED bulbs, currently available on the market,
are assessed primarily with respect to TLAs, but also with respect to photometric, colorimetric and efficiency properties. The investigation shows that only one of the 10 investigated lamps can be considered flicker free. The rest of the lamps the TLAs are of such a magnitude that none of them fulfil the suggested recommendations currently available.

### General information
- **State:** Published
- **Organisations:** Department of Photonics Engineering, Diode Lasers and LED Systems
- **Authors:** Lindén, J. (Intern), Thorseth, A. (Intern), Corell, D. D. (Intern), Dam-Hansen, C. (Intern)
- **Pages:** 718-727
- **Publication date:** 2017

### Host publication information
- **Title of host publication:** Proceedings of the Conference on "Smarter Lighting for Better Life" at the CIE Midterm Meeting 2017
- **Publisher:** CIE - International Commission on Illumination
- **ISBN (Print):** 978-3-901906-95-4
- **Main Research Area:** Technical/natural sciences
- **Conference:** CIE Midterm Meeting 2017, Jeju, Korea, Republic of, 23/10/2017 - 23/10/2017
- **Temporal Light Artefacts, TLA, Flicker, Filament LEDs, Dimming, Photometry, Colorimetry, Colour Rendering**
- **DOIs:** 10.25039/x44.2017.PP38

### Relations
- **Activities:**
  - CIE 2017 Mid-term meeting Jeju Island
- **Projects:**
  - Assessment of filament led bulbs with respect to temporal light artefacts
  - Assessment of groundwater contamination impacting stream ecosystems

### Assessment of groundwater contamination impacting stream ecosystems

#### General information
- **State:** Published
- **Organisations:** Department of Environmental Engineering, Water Resources Engineering, Bielefeld University, Aarhus University
- **Authors:** Bjerg, P. L. (Intern), Sonne, A. T. (Intern), Rasmussen, J. J. (Ekstern), Höss, S. (Ekstern), Rønde, V. (Intern), Traunspurger, W. (Ekstern), McKnight, U. S. (Intern)
- **Pages:** 98-98
- **Publication date:** 2017

#### Host publication information
- **Title of host publication:** 14th International Conference on Sustainable Use and Management of Soil : Book of abstracts
- **Place of publication:** Lyon, France
- **Main Research Area:** Technical/natural sciences
- **Conference:** 14th International Conference Sustainable Use and Management of Soil, Sediment and Water Resources (AquaConSoil), Lyon, France, 26/06/2017 - 26/06/2017
- **Electronic versions:** abstractband_acs_2017_06_22_99.pdf
- **Publication:** Research - peer-review › Conference abstract in proceedings – Annual report year: 2017

### Assessment of methane production from shredder waste in landfills: The influence of temperature, moisture and metals

In this study, methane (CH4) production rates from shredder waste (SW) were determined by incubation of waste samples over a period of 230 days under different operating conditions, and first-order decay kinetic constants (k-values) were calculated. SW and sterilized SW were incubated under different temperatures (20-25°C, 37°C, and 55°C), moisture contents (35% and 75% w/w) and amounts of inoculum (5% and 30% of the samples wet weight). The biochemical methane potential (BMP) from different types of SW (fresh, old and sieved) was determined and compared. The ability of metals (iron, aluminum, zinc, and copper) contained in SW to provide electrons for methanogens resulting in gas compositions with high CH4 contents and very low CO2 contents was investigated. The BMP of SW was 1.5-6.2 kg CH4/ton waste. The highest BMP was observed in fresh SW samples, while the lowest was observed in sieved samples (fine fraction of SW). Abiotic production of CH4 was not observed in laboratory incubations. The biotic experiments showed that when the moisture content was 35% w/w and the temperature was 20-25°C, CH4 production was extremely low. Increasing the temperature from 20-25°C to 37°C resulted in significantly higher CH4 production while increasing the temperature from 37°C to 55°C resulted in higher CH4 production, but to a lower extent. Increasing the moisture and inoculum content also increased CH4 production. The k-values were 0.033-0.075 yr(-1) at room temperature, 0.220-0.429 yr(-1) at 37°C and 0.235-0.488 yr(-1) at 55°C, indicating that higher temperatures resulted in higher k-values. It was
observed that H2 can be produced by biocorrosion of iron, aluminum, and zinc and it was shown that produced H2 can be utilized by hydrogenotrophic methanogens to convert CO2 to CH4. Addition of iron and copper to SW resulted in inhibition of CH4 production, while addition of aluminum and zinc resulted in higher CH4 production. This suggested that aluminum and zinc contribute to high CH4 production from SW by providing H2 for hydrogenotrophic methanogens. Gas compositions with higher CH4 and lower CO2 observed in landfilled SW are thus most likely due to the consumption of existing CO2 in the produced biogas and the produced H2 by biocorrosion of aluminum and zinc by methanogens.

General information
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering
Authors: Fathi Aghdam, E. (Intern), Scheutz, C. (Intern), Kjeldsen, P. (Intern)
Pages: 226-237
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Waste Management
Volume: 63
ISSN (Print): 0956-053x
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4 SJR 1.354 SNIP 2.044
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.739 SNIP 2.256 CiteScore 4.33
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.777 SNIP 2.482 CiteScore 3.43
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.822 SNIP 2.435 CiteScore 3.39
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.611 SNIP 2.184 CiteScore 2.91
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.698 SNIP 2.085 CiteScore 2.99
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.555 SNIP 1.78
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.502 SNIP 1.899
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.378 SNIP 2.13
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.035 SNIP 1.767
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.046 SNIP 1.749
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.059 SNIP 1.65
Assessment of perceptual diffuseness in the time domain
This study proposes a numerical and experimental framework for evaluating the perceptual aspect of the diffuse field condition with intended final use in music auditoria. Multiple Impulse Responses are simulated based on the time domain Poisson process with increasing reflection density. Different diffuseness conditions are realized by altering the directions of arrival of the reflected waves. This model also considers room characteristics such as the volume, absorption of surfaces, air absorption and geometrical divergence. Listening tests are performed in an anechoic 64-loudspeaker-based virtual acoustic environment to examine how sensitive the human auditory system is to changes in the diffuseness condition, which factors are most crucial and which conditions are most favourable in music halls. Two types of stimuli, a music signal and an impulse response, are tested under the same diffuseness conditions. The study shows that subjective diffuseness is highly correlated to the parameters of Surround, Source Width, and Timbre, and is modelled with relevant acoustic parameters such as LG, LF and uniformity of the incident sound.

Assessment of RC walls with cut-out openings strengthened by FRP composites using a rigid-plastic approach
Building refurbishment works frequently require the cutting of new openings in concrete walls. Cutting new openings weakens the overall response of such elements, so they usually require strengthening. However, current design codes offer little guidance on strengthening walls with openings, and less still on the use of non-metallic reinforcements such as FRP (Fibre Reinforced Polymers) to ensure sufficient load bearing capacity. This paper proposes a new procedure based on limit analysis theory for evaluating the ultimate load of walls with cut-out openings that have been strengthened with carbon-FRP (CFRP). First, the approach is verified against transverse (out-of-plane) and axial (in-plane) loading for unstrengthened specimens. These loading types result in different failure mechanisms; transverse loading leads to failure due to yielding/rupture of the steel reinforcement while axial loading leads to failure by concrete crushing. Second, the proposed method is further developed for CFRP-strengthened specimens under axial loading. It accounts for the contribution of CFRP indirectly, by updating the concrete model with an enhanced compressive strength as a result of confining the piers. Predictions made using the new method agree closely with experimental results. (C) 2017 Elsevier Ltd. All rights reserved.
Assessment of stormwater management options in urban contexts using Multiple Attribute Decision-Making

This paper addresses the problem of selecting the most sustainable stormwater management alternative in developing countries in a dense urban context. Firstly, suitable Low Impact Development (LID) stormwater management measures for dense urban areas in developing countries were identified based on critical review of literature. Alternatives have been formulated as varying percentages (degree of adoption) of these suitable measures to manage the stormwater sustainably. Further, a novel decision-making framework is developed which generates the hierarchy for selection of the most sustainable stormwater management alternative. Four main criteria (technical, economic, environmental and social) comprising three quantitative and eight qualitative indicators have been used for evaluating seven alternatives. The regional and local societal priorities are captured through criteria-weightings and are translated into a decision-making methodology. Experts’ opinions have been included using Analytical Hierarchy Process (AHP). One of the most widely used Multiple Attribute Decision-Making (MADM) method, TOPSIS, is used to rank the alternatives and to identify the most sustainable alternatives. Various scenarios to represent different stakeholders’ perspectives have been articulated. Alternative with medium level of cost implication and satisfactory level of performance is chosen by the decision making method in most of the scenarios. The proposed decision making approach can be used for selecting sustainable stormwater management options in densely populated areas of developing countries.

General information
State: Published
Organisations: Department of Management Engineering, Maharashtra Institute of Technology, Government College of Engineering Pune
Authors: Gogate, N. G. (Ekstern), Kalbar, P. (Intern), Raval, P. M. (Ekstern)
Pages: 2046-2059
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Cleaner Production
Volume: 142
ISSN (Print): 0959-6526
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.83 SJR 1.615 SNIP 2.382
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.609 SNIP 2.383 CiteScore 5.57
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.661 SNIP 2.477 CiteScore 4.6
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.644 SNIP 2.581 CiteScore 4.47
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.706 SNIP 2.328 CiteScore 4.07
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.461 SNIP 1.825 CiteScore 3.19
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.419 SNIP 1.742
Assessment of the Contour Method for 2-D Cross Sectional Residual Stress Measurements of Friction Stir Welded Parts of AA2024-T3—Numerical and Experimental Comparison

The contour method is one of the newest techniques for obtaining residual stress fields from friction stir welded (FSW) parts, experimentally. This method has many advantages; however, edge effects coming from the process itself might introduce artifacts in the obtained results, and this was slightly touched upon in the very first paper on the method. This concern is further assessed in the present work, where the contour method is compared with the results that were obtained numerically via a thermomechanical model and experimentally via the cut-compliance method. For the two-dimensional (2-D) cross sectional map obtained by the method, peak stresses in tension are observed in the mid-section of the FSW butt-welded plates at the distance of the tool radius from the centerline. The corresponding numerical simulation indicates the same behavior because of the particular clamping conditions, and consequently this should not be interpreted as a misleading result of the contour method. Edge effects from the cutting process involved in the contour method should, however, be taken into consideration, most likely resulting in the residual stresses observed near the surfaces of the cross section being less extreme in reality than observed.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, University of Salerno
Authors: Sonne, M. R. (Intern), Carlone, P. (Ekstern), Hattel, J. H. (Intern)
Number of pages: 12
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Metals
Volume: 7
Issue number: 11
Article number: 508
ISSN (Print): 2075-4701
Ratings:
Scopus rating (2016): CiteScore 1.89
Scopus rating (2015): CiteScore 19
Assessment of the Risk to Public Health due to Use of Antimicrobials in Pigs—An Example of Pleuromutins in Denmark

Antibiotic consumption in pigs can be optimized by developing treatment guidelines, which encourage veterinarians to use effective drugs with low probability of developing resistance of importance for human health. In Denmark, treatment guidelines for use in swine production are currently under review at the Danish Veterinary and Food Administration. Use of pleuromutins in swine has previously been associated with a very low risk for human health. However, recent international data and sporadic findings of novel resistance genes suggest a change of risk. Consequently, a reassessment was undertaken inspired by a risk assessment framework developed by the European Medicines Agency. Livestock-associated methicillin-resistant Staphylococcus aureus of clonal complex 398 (MRSA CC398) and enterococci were identified as relevant hazards. The release assessment showed that the probability of development of pleuromutin resistance was high in MRSA CC398 (medium uncertainty) and low in enterococci (high uncertainty). A relatively small proportion of Danes has an occupational exposure to pigs, and foodborne transmission was only considered of relevance for enterococci, resulting in an altogether low exposure risk. The human consequences of infection with pleuromutin-resistant MRSA CC398 or enterococci were assessed as low for the public in general but high for vulnerable groups such as hospitalized and immunocompromised persons. For MRSA CC398, the total risk was estimated as low (low uncertainty), among other due to the current guidelines on prevention of MRSA in place at Danish hospitals, which include screening of patients with daily contact to pigs on admittance. Moreover, MRSA CC398 has a medium human–human transmission potential. For enterococci, the total risk was estimated as low due to low prevalence of resistance, low probability of spread to humans, low virulence, but no screening of hospitalized patients, high ability of acquiring resistance genes, and a limited number of alternative antimicrobials (high uncertainty). This assessment reflects the current situation and should be repeated if pleuromutin consumption increases substantially, resulting in increased prevalence of mobile, easily transmissible resistance mechanisms. Continuous monitoring of pleuromutin resistance in selected human pathogens should therefore be considered. This also includes monitoring of linezolid resistance, since resistance mechanisms for pleuromutins and oxazolidones are often coupled.
Assessment of Unusual Gigantic Jets observed during the Monsoon season: First observations from Indian Subcontinent

Gigantic Jets are electric discharges from thunderstorm cloud tops to the bottom of ionosphere at similar to 90 km altitude and electrically connect the troposphere and lower ionosphere. Since their first report in 2002, sporadic observations have been reported from ground and space based observations. Here we report first observations of Gigantic Jets in Indian subcontinent over the Indo-Gangetic plains during the monsoon season. Two storms each produced two jets with characteristics not documented so far. Jets propagated similar to 37 km up remarkably in similar to 5 ms with velocity of similar to 7.4 x 10(6) ms(-1) and disappeared within similar to 40-80 ms, which is faster compared to jets reported earlier. The electromagnetic signatures show that they are of negative polarity, transporting net negative charge of similar to 17-23 C to the lower ionosphere. One jet had an unusual form observed for the first time, which emerged from the leading edge of a slowly drifting complex convective cloud close to the highest regions at similar to 17 km altitude. A horizontal displacement of similar to 10 km developed at similar to 50 km altitude before connecting to the lower ionosphere.

Modeling of these Gigantic jets suggests that Gigantic Jets may bend when initiated at the edge of clouds with misaligned vertical charge distribution.

General information
State: Published
Organisations: National Space Institute, Astrophysics and Atmospheric Physics, Indian Institute of Geomagnetism, Duke University, AGH University of Science and Technology, Georgia Institute of Technology, Indian Institute of Tropical Meteorology – IITM, University of the South Pacific
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Scientific Reports
Volume: 7
Issue number: 1
Article number: 16436
ISSN (Print): 2045-2322
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.63 SJR 1.625 SNIP 1.401
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.057 SNIP 1.684 CiteScore 5.3
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.103 SNIP 1.544 CiteScore 4.75
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.886 SNIP 1.51 CiteScore 4.06
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.458 SNIP 0.896 CiteScore 2.44
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
ISI indexed (2011): ISI indexed no
Original language: English
Electronic versions:
Maurya_et_al_2017_Scientific_Reports.pdf
DOIs:
10.1038/s41598-017-16696-5

Bibliographical note
© The Author(s) 2017 Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and
Assessment of Urban Pluvial Flood Risk and Efficiency of Adaptation Options Through Simulations – A New Generation of Urban Planning Tools

We present a new framework for flexible testing of flood risk adaptation strategies in a variety of urban development and climate scenarios. This framework couples the 1D-2D hydrodynamic simulation package MIKE FLOOD with the agent-based urban development model DANCE4Water and provides the possibility to systematically test various flood risk adaptation measures ranging from large infrastructure changes over decentralised water management to urban planning policies. We have tested the framework in a case study in Melbourne, Australia considering 9 scenarios for urban development and climate and 32 potential combinations of flood adaptation measures. We found that the performance of adaptation measures strongly depended on the considered climate and urban development scenario and the other implementation measures implemented, suggesting that adaptive strategies are preferable over one-off investments. Urban planning policies proved to be an efficient means for the reduction of flood risk, while implementing property buyback and pipe increases in a guideline-oriented manner was too costly. Random variations in location and time point of urban development could have significant impact on flood risk and would in some cases outweigh the benefits of less efficient adaptation strategies. The results of our setup can serve as an input for robust decision making frameworks and thus support the identification of flood risk adaptation measures that are economically efficient and robust to variations of climate and urban layout.

General information

State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems, Monash University, DHI Denmark
Authors: Löwe, R. (Intern), Urich, C. (Ekstern), Sto. Domingo, N. D. F. (Ekstern), Mark, O. (Ekstern), Deletic, A. (Ekstern), Arnbjerg-Nielsen, K. (Intern)
Pages: 355–367
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Journal of Hydrology
Volume: 550
ISSN (Print): 0022-1694
Ratings:
- BFI (2017): BFI-level 2
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 3.89 SJR 1.745 SNIP 1.759
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 1.708 SNIP 1.771 CiteScore 3.54
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 1.679 SNIP 2.005 CiteScore 3.45
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 2
- Scopus rating (2013): SJR 1.71 SNIP 1.997 CiteScore 3.36
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 1.924 SNIP 2.016 CiteScore 3.38
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
Assisted crack tip flipping under Mode I thin sheet tearing

Crack tip flipping, where the fracture surface alternates from side to side in roughly 45° shear bands, seems to be an overlooked propagation mode in Mode I thin sheet tearing. In fact, observations of crack tip flipping is rarely found in the literature. Unlike the already established modes such as slanting, cup-cone (rooftop), or cup-cup (bathtub) the flipping crack never settles in a steady-state as the near tip stress/strain field continuously change when the flip successively initiates and develops shear-lips. A recent experimental investigation has revealed new insight by exploiting 3D X-ray tomography scanning of a developing crack tip flip. But, it remains to be understood what makes the crack flip systematically, what sets the flipping frequency, and under which material conditions this mode occurs. The present study aims at investigating the idea that a slight out-of-plane action (Mode III type loading) on the tip of a slant Mode I crack can provoke it to flip to the opposite side. Both experiments and micro-mechanics based modeling support this hypothesis.

General information

State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics
Authors: Felter, C. L. (Intern); Nielsen, K. L. (Intern)
Pages: 58–68
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Volume: 64
ISSN (Print): 0997-7538
**Ratings:**
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.7 SJR 1.462 SNIP 1.466
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.442 SNIP 1.492 CiteScore 2.56
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.317 SNIP 1.627 CiteScore 2.14
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.647 SNIP 2.129 CiteScore 2.6
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.379 SNIP 1.828 CiteScore 1.92
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.271 SNIP 1.742 CiteScore 1.92
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.251 SNIP 1.696
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.644 SNIP 1.634
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.688 SNIP 1.675
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.407 SNIP 1.58
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.044 SNIP 1.617
Scopus rating (2005): SJR 1.224 SNIP 1.108
Scopus rating (2004): SJR 1.367 SNIP 1.295
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.385 SNIP 1.504
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.547 SNIP 1.38
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.014 SNIP 1.254
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.548 SNIP 1.226
Scopus rating (1999): SJR 1.518 SNIP 1.183

**Original language:** English
**Thin sheet, Mode I tearing, Gurson model, Fracture modes, Surface morphology**

**DOIs:**
10.1016/j.euromechsol.2017.01.009

**Publication:** Research - peer-review › Journal article – Annual report year: 2017

---

**Associating ground magnetometer observations with current or voltage generators**
A circuit analogy for magnetosphere-ionosphere current systems has two extremes for drivers of ionospheric currents: ionospheric electric fields/voltages constant while current/conductivity vary—the "voltage generator"—and current constant while electric field/conductivity vary—the "current generator." Statistical studies of ground magnetometer observations associated with dayside Transient High Latitude Current Systems (THLCS) driven by similar mechanisms find contradictory results using this paradigm: some studies associate THLCS with voltage generators, others with current generators. We argue that most of this contradiction arises from two assumptions used to interpret ground magnetometer observations: (1) measurements made at fixed position relative to the THLCS field-aligned current and (2) negligible auroral precipitation.
contributions to ionospheric conductivity. We use observations and simulations to illustrate how these two assumptions substantially alter expectations for magnetic perturbations associated with either a current or a voltage generator. Our results demonstrate that before interpreting groundmagnetometer observations of THLCS in the context of current/voltage generators, the location of a ground magnetometer station relative to the THLCS field-aligned current and the location of any auroral zone conductivity enhancements need to be taken into account.

**General information**

State: Published

Organisations: National Space Institute, Geomagnetism, Virginia Polytechnic Institute and State University, Beihang University, New Jersey Institute of Technology, Institute for Space Research, University of Michigan


Pages: 7130–7141

Publication date: 2017

Main Research Area: Technical/natural sciences
Association between polycyclic aromatic hydrocarbon exposure and peripheral blood mononuclear cell DNA damage in human volunteers during fire extinction exercises

This study investigated a number of biomarkers, associated with systemic inflammation as well as genotoxicity, in 53 young and healthy subjects participating in a course to become firefighters, while wearing personal protective equipment (PPE). The exposure period consisted of a 3-day training course where the subjects participated in various live-fire training exercises. The subjects were instructed to extinguish fires of either wood or wood with electrical cords and mattresses. The personal exposure was measured as dermal polycyclic aromatic hydrocarbon (PAH) concentrations and urinary excretion of 1-hydroxypyrene (1-OHP). The subjects were primarily exposed to particulate matter (PM) in bystander positions, since the self-contained breathing apparatus effectively prevented pulmonary exposure. There was increased dermal exposure to pyrene (88.1%, 95% CI: 52.5%, 83.8%) and sum of 16 polycyclic aromatic hydrocarbons (ΣPAH; 79.5%, 95% CI: 52.5%, 106.6%), and increased urinary excretion of 1-OHP (70.4%, 95% CI: 52.5%; 106.6%) after the firefighting exercise compared with the mean of two control measurements performed 2 weeks before and 2 weeks after the firefighting course, respectively. The level of Fpg-sensitive sites in peripheral blood mononuclear cells (PBMCs) was increased by 8.0% (95% CI: 0.02%, 15.9%) compared with control measurements. The level of DNA strand breaks was positively associated with dermal exposure to pyrene and ΣPAHs, and urinary excretion of 1-OHP. Fpg-sensitive sites were only associated positively with PAHs. Biomarkers of inflammation and lung function showed no consistent response. In summary, the study demonstrated that PAH exposure during firefighting activity was associated with genotoxicity in PBMCs.

General information
State: Accepted/In press
Organisations: Department of Micro- and Nanotechnology, Danish Technological Institute, Bispebjerg University Hospital, University of Copenhagen, National Research Center for Working Environment
Authors: Andersen, M. H. G. (Ekstern), Saber, A. T. (Ekstern), Clausen, P. A. (Ekstern), Pedersen, J. E. (Ekstern), Lehr, M. (Ekstern), Kermanizadeh, A. (Ekstern), Loft, S. (Ekstern), Ebbehøj, N. (Ekstern), Hansen, Å. M. (Ekstern), Pedersen, P. B. (Ekstern), Koponen, I. K. (Ekstern), Nørskov, E. (Ekstern), Møller, P. (Ekstern), Vogel, U. B. (Intern)
Number of pages: 11
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Mutagenesis
ISSN (Print): 0267-8357
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.42 SJR 1.013 SNIP 0.882
Bacterial antimicrobial resistance (AMR) in pigs is an important public health concern due to its possible transfer to humans. We aimed at quantifying the relationship between the lifetime exposure of antimicrobials and seven antimicrobial resistance genes in Danish slaughter pig farms. AMR gene levels were quantified by qPCR of total-community DNA in faecal samples obtained from 681 batches of slaughter pigs. The lifetime exposure to antimicrobials was estimated at batch level for the piglet, weaner, and finisher periods individually for the sampled batches. We showed that the effect of antimicrobial exposure on the levels of AMR genes was complex and unique for each individual gene. Several antimicrobial classes had both negative and positive correlations with the AMR genes. From 10-42% of the variation in AMR gene levels could be explained in the final regression models, indicating that antimicrobial exposure is not the only important determinant of the AMR gene levels.

Association between selected antimicrobial resistance genes and antimicrobial exposure in Danish pig farms

Bacterial antimicrobial resistance (AMR) in pigs is an important public health concern due to its possible transfer to humans. We aimed at quantifying the relationship between the lifetime exposure of antimicrobials and seven antimicrobial resistance genes in Danish slaughter pig farms. AMR gene levels were quantified by qPCR of total-community DNA in faecal samples obtained from 681 batches of slaughter pigs. The lifetime exposure to antimicrobials was estimated at batch level for the piglet, weaner, and finisher periods individually for the sampled batches. We showed that the effect of antimicrobial exposure on the levels of AMR genes was complex and unique for each individual gene. Several antimicrobial classes had both negative and positive correlations with the AMR genes. From 10-42% of the variation in AMR gene levels could be explained in the final regression models, indicating that antimicrobial exposure is not the only important determinant of the AMR gene levels.

General information
State: Published
Organisations: National Veterinary Institute, Epidemiology, Section for Epidemiology, Section for Bacteriology, Pathology and Parasitology, Bacteriology & Parasitology
Authors: Birkegård, A. C. (Intern), Hisham Beshara Halasa, T. (Intern), Græsbøll, K. (Intern), Clasen, J. (Intern), Folkesson, A. (Intern), Toft, N. (Intern)
Publication date: 2017
Association between single nucleotide polymorphisms in the antioxidant genes CAT, GR and SOD1, erythrocyte enzyme activities, dietary and life style factors and breast cancer risk in a Danish, prospective cohort study

Exposure to estrogens and alcohol consumption - the two only well-established risk factors for breast cancer - are capable of causing oxidative stress, which has been linked to progression of breast cancer. Here, five functional polymorphisms in the antioxidant genes SOD1, CAT and GSR were investigated in 703 breast cancer case-control pairs in the Danish, prospective "Diet, Cancer and Health" cohort together with gene-environment interactions between the polymorphisms, enzyme activities and intake of fruits and vegetables, alcohol and smoking in relation to breast cancer risk. Our results showed that genetically determined variations in the antioxidant enzyme activities of SOD1, CAT and GSR were not associated with risk of breast cancer per se. However, intake of alcohol, fruit and vegetables, and smoking status interacted with some of the polymorphisms in relation to breast cancer risk. Four polymorphisms were strongly associated with enzyme activity, but there was no interaction between any of the studied environmental factors and the polymorphisms in relation to enzyme activity. Additionally, single measurement of enzyme activity at entry to the cohort was not associated with risk of breast cancer. Our results therefore suggest that the antioxidant enzyme activities studied here are not major determinants of breast cancer risk.
Associations between Antibacterial Treatment and the Prevalence of Tail- Biting-Related Sequelae in Danish Finishers at Slaughter

Secondary infections as a result of tail biting cause substantial economic losses in pig production and are a subject of concern for animal welfare. The use of first-choice antibacterial agents in the treatment of tail biting in finishing pigs is hypothesized to be negatively correlated with the development of systemic infection. This would be expected to reduce the prevalence of post-mortem pyemic sequelae (such as osteomyelitis and abscesses) in finishers with tail-bite lesions. We performed a register-based study that included three Danish databases, holding information on the purchase of antibacterials at herd level (VetStat), herd demographics (Central Husbandry Register), and relevant observations at slaughter (meat inspection data). We included all finishers from indoor production finisher herds that met the inclusion criterion of at least one slaughtered finisher with a recorded tail-bite observation during 2015 at the single largest Danish abattoir. The final dataset held 1,070 herds with one or more tail-bite observations, from which 14,411 of 2,906,626 finishers (0.50%) had an individual record of a tail bite. Within this group of finishers with tail-bite observations, the recorded tail-biting-related sequelae included osteomyelitis (8.1%), abscesses in the hindquarters (10.5%), abscesses in the forequarters (2.3%), abscesses in the mid-section of the carcass (2.9%), abscesses in the limbs (2.4%), and chronic arthritis (0.5%). Due to a high-herd prevalence (>25%), osteomyelitis and hindquarter abscesses in individual finishers with tail-bite observations was described using a generalized linear mixed effects model with binomial response and logit link. Herd was included as a random effect, while herd size and various antibacterial treatments were tested for inclusion in the model as fixed effects. The final models indicated a significant association between herd size and both osteomyelitis (p = 0.014) and hindquarter abscesses (p < 0.001), with larger herds (2,001–12,000 registered finisher pigs) showing a reduced risk. Further, a negative association was found between the occurrence of hindquarter abscesses and the use of oral pleuromutilin (p = 0.022). The significant association with herd size highlights the potential importance of management factors in reducing the occurrence of tail-bite lesions in finishing pigs.
A Statistical Method for Aggregated Wind Power Plants to Provide Secondary Frequency Control
The increasing penetration of wind power brings significant challenges to power system operators due to the wind’s inherent uncertainty and variability. Traditionally, power plants and more recently demand response have been used to balance the power system. However, the use of wind power as a balancing-power source has also been investigated, especially for wind power dominated power systems such as Denmark. The main drawback is that wind power must be curtailed by setting a lower operating point, in order to offer upward regulation. We propose a statistical approach to reduce wind power curtailment for aggregated wind power plants providing secondary frequency control (SFC) to the power system. By using historical SFC signals and wind speed data, we calculate metrics for the reserve provision error as a function of the scheduled wind power. We show that wind curtailment can be significantly reduced compared to a robust and conservative scheduling, by appropriately choosing a higher operating point based on the error’s expected value and the service error requirement.

A Statistical Model for Hourly Large-Scale Wind and Photovoltaic Generation in New Locations
The analysis of large-scale wind and photovoltaic (PV) energy generation is of vital importance in power systems where their penetration is high. This paper presents a modular methodology to assess the power generation and volatility of a system consisting of both PV plants (PVPs) and wind power plants (WPPs) in new locations. The methodology is based on statistical modelling of PV and WPP locations with a vector autoregressive model, which takes into account both the
temporal correlations in individual plants and the spatial correlations between the plants. The spatial correlations are linked through distances between the locations, which allows the methodology to be used to assess scenarios with PVPS and WPPS in multiple locations without actual measurement data. The methodology can be applied by the transmission and distribution system operators when analysing the effects and feasibility of new PVPS and WPPS in system planning. The model is verified against hourly measured wind speed and solar irradiance data from Finland. A case study assessing the impact of the geographical distribution of the PVPS and WPPS on aggregate power generation and its variability is presented.

**General information**

State: Published
Organisations: Department of Wind Energy, Integration & Planning, Aalto University
Authors: Ekstrom, J. (Ekstem), Koivisto, M. J. (Intern), Mellin, I. (Ekstem), Millar, J. (Ekstem), Lehtonen, M. (Ekstem)
Number of pages: 10
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: IEEE Transactions on Sustainable Energy
Volume: 8
Issue number: 4
Article number: 7879358
ISSN (Print): 1949-3029
Ratings:
- BFI (2017): BFI-level 1
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 7.8 SJR 2.636 SNIP 2.883
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): SJR 3.031 SNIP 3.235 CiteScore 7.09
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 1
- Scopus rating (2014): SJR 2.972 SNIP 3.954 CiteScore 7.03
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 2.384 SNIP 3.777 CiteScore 7.03
- ISI indexed (2013): ISI indexed no
- Web of Science (2013): Indexed yes
- Scopus rating (2012): SJR 1.355 SNIP 3.731 CiteScore 6.58
- ISI indexed (2012): ISI indexed no
- Scopus rating (2011): SJR 0.818 SNIP 3.133 CiteScore 5.13
- ISI indexed (2011): ISI indexed no
- Original language: English
- Electronic versions: 07879358.pdf
- DOIs: 10.1109/TSTE.2017.2682338

**Bibliographical note**

(c) 2017 IEEE. Personal use of this material is permitted. Permission from IEEE must be obtained for all other users, including reprinting/republishing this material for advertising or promotional purposes, creating new collective works for resale or redistribution to servers or lists, or reuse of any copyrighted components of this work in other work.

**Relations**

Projects:
A Statistical Model for Hourly Large-Scale Wind and Photovoltaic Generation in New Locations
Source: PublicationPreSubmission
Source-ID: 133558545
Publication: Research - peer-review › Journal article – Annual report year: 2017
A statistical strategy to assess cleaning level of surfaces using fluorescence spectroscopy and Wilks’ ratio

• A statistical strategy combining fluorescence spectroscopy, multivariate analysis and Wilks’ ratio is proposed. • The method was tested both off-line and on-line having riboflavin as a (controlled) contaminant. • Wilks’ ratio signals unusual recordings based on shifts in variance and covariance structure described in in-control data.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Surface Engineering, University of Copenhagen
Authors: Stoica, I. (Ekstern), Babamoradi, H. (Intern), van den Berg, F. (Ekstern)
Number of pages: 11
Pages: 11-21
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Chemometrics and Intelligent Laboratory Systems
Volume: 165
ISSN (Print): 0169-7439
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.6 SJR 0.651 SNIP 1.21
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.671 SNIP 1.282 CiteScore 2.68
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.878 SNIP 1.763 CiteScore 2.96
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.885 SNIP 1.419 CiteScore 2.67
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.869 SNIP 1.643 CiteScore 2.68
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.761 SNIP 1.342 CiteScore 2.27
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.747 SNIP 1.166
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.066 SNIP 1.321
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.962 SNIP 1.272
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.21 SNIP 1.364
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.873 SNIP 1.655
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.269 SNIP 1.515
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.525 SNIP 1.911
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.588 SNIP 1.767
Scopus rating (2002): SJR 1.046 SNIP 1.372
Scopus rating (2001): SJR 1.33 SNIP 1.249
Web of Science (2001): Indexed yes
A Stochastic Model to Assess the Effect of Meat Inspection Practices on the Contamination of the Pig Carcasses

The objective of meat inspection is to promote animal and public health by preventing, detecting, and controlling hazards originating from animals. With the improvements of sanitary level in pig herds, the hazards profile has shifted and the inspection procedures no longer target major foodborne pathogens (i.e., not risk based). Additionally, carcass manipulations performed when searching for macroscopic lesions can lead to cross-contamination. We therefore developed a stochastic model to quantitatively describe cross-contamination when consecutive carcasses are submitted to classic inspection procedures. The microbial hazard used to illustrate the model was Salmonella, the data set was obtained from Brazilian slaughterhouses, and some simplifying assumptions were made. The model predicted that due to cross-contamination during inspection, the prevalence of contaminated carcass surfaces increased from 1.2% to 95.7%, whereas the mean contamination on contaminated surfaces decreased from 1 logCFU/cm² to −0.87 logCFU/cm², and the standard deviations decreased from 0.65 to 0.19. These results are explained by the fact that, due to carcass manipulations with hands, knives, and hooks, including the cutting of contaminated lymph nodes, Salmonella is transferred to previously uncontaminated carcasses, but in small quantities. These small quantities can easily go undetected during sampling. Sensitivity analyses gave insight into the model performance and showed that the touching and cutting of lymph nodes during inspection can be an important source of carcass contamination. The model can serve as a tool to support discussions on the modernization of pig carcass inspection.

General information
State: Published
Organisations: National Food Institute, Research Group for Risk-Benefit, Federal University of Rio Grande do Sul
Authors: de Freitas Costa, E. (Ekstern), Corbellini, L. G. (Ekstern), da Silva, A. P. S. P. (Ekstern), Nauta, M. (Intern)
Number of pages: 16
Pages: 1849-1864
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Risk Analysis
Volume: 37
Issue number: 10
ISSN (Print): 0272-4332
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.21 SJR 0.955 SNIP 1.458
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.305 SNIP 1.521 CiteScore 2.51
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.352 SNIP 1.61 CiteScore 2.2
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.067 SNIP 1.563 CiteScore 2.1
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.763 SNIP 1.612 CiteScore 2.12
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.725 SNIP 1.707 CiteScore 2.15
A stochastic surplus production model in continuous time

Surplus production modelling has a long history as a method for managing data-limited fish stocks. Recent advancements have cast surplus production models as state-space models that separate random variability of stock dynamics from error in observed indices of biomass. We present a stochastic surplus production model in continuous time (SPICT), which in addition to stock dynamics also models the dynamics of the fisheries. This enables error in the catch process to be reflected in the uncertainty of estimated model parameters and management quantities. Benefits of the continuous-time state-space model formulation include the ability to provide estimates of exploitable biomass and fishing mortality at any point in time from data sampled at arbitrary and possibly irregular intervals. We show in a simulation that the ability to analyse subannual data can increase the effective sample size and improve estimation of reference points relative to discrete-time analysis of aggregated annual data. Finally, subannual data from five North Sea stocks are analysed with particular focus on using residual analysis to diagnose model insufficiencies and identify necessary model extensions such as robust estimation and incorporation of seasonality. We argue that including all known sources of uncertainty, propagation of that uncertainty to reference points and checking of model assumptions using residuals are critical prerequisites to rigorous fish stock management based on surplus production models.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Marine Living Resources
Authors: Pedersen, M. W. (Intern), Berg, C. W. (Intern)
Pages: 226-243
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Fish and Fisheries
Volume: 18
Issue number: 2
ISSN (Print): 1467-2960
Ratings:
BFI (2017): BFI-level 2
A straight forward approach to electrodeposit tungsten disulfide/poly(3,4-ethylenedioxythiophene) composites onto nanoporous gold for the hydrogen evolution reaction

1.1nm tungsten disulfide/poly(3,4-ethylenedioxythiophene) (PEDOT) was successfully electrodeposited on the surface of dealloyed nanoporous gold (NPG) surface to form uniform nanocomposites and offers an excellent electrocatalysis for the electrochemical dihydrogen evolution reaction (HER) in acidic media. The approach is straight forward and does not require any expensive equipment or intensive energy. The morphology and composition of the nanocomposites were structurally mapped by high-resolution transmission electron microscopy (HRTEM), X-ray photoelectron spectroscopy (XPS) and Fourier transform infrared spectrometry (FTIR). The roles of both the NPG substrate and PEDOT in the observed enhanced HER activity compared to planar Au-electrode surfaces and pure single-component WS$_2$ have been deconvoluted experimentally. PEDOT itself is inert for the HER, but was found to improve significantly the conductivity and operating stability of the WS$_2$ catalyst. The prepared nanocomposites reach the best in 2D WS$_2$ catalyst family, exhibiting excellent electrochemical catalytic activity for the HER. The optimal electrode showed an onset potential of -164 mV vs. reversible hydrogen electrode (RHE), an apparent exchange current density as high as 0.04 mAcm$^{-2}$, and a very low Tafel
slope of 53mV dec⁻¹. These catalysts are promising electrocatalysts for generation a large amount of H₂ from water.
A Strategic View of University Timetabling

University Timetabling has traditionally been studied as an operational problem where the goal is to assign lectures to rooms and timeslots and create timetables of high quality for students and teachers. Two other important decision problems arise before this can be solved: what rooms are necessary, and in which teaching periods? These decisions may have a large impact on the resulting timetables and are rarely changed or even discussed. This paper focuses on solving these two strategic problems and investigates the impact of these decisions on the quality of the resulting timetables.

The relationship and differences between operational, tactical and strategic timetabling problems are reviewed. Based on the formulation of curriculum-based course timetabling and data from the Second International Timetabling Competition (ITC 2007), three new bi-objective mixed-integer models are formulated. We propose an algorithm based on the -constraint method to solve them. The algorithm can be used to analyze the impact of having different resources available on most timetabling problems. Finally, we report results on how the three objectives - rooms, teaching periods and quality - influence one another.
A Strategy to Suppress Phonon Transport in Molecular Junctions Using π-Stacked Systems

Molecular junctions are promising candidates for thermoelectric devices due to the potential to tune the electronic and thermal transport properties. However, a high figure of merit is hard to achieve, without reducing the phononic contribution to thermal conductance. Here, we propose a strategy to suppress phonon transport in graphene-based molecular junctions preserving high electronic power factor, using nonbonded π-stackal systems. Using first-principles calculations, we find that the thermal conductance of π-stacked systems can be reduced by about 95%, compared with that of a covalently bonded molecular junction. Phonon transmission of π-stacked systems is largely attenuated in the whole frequency range, and the remaining transmission occurs mainly below 5 THz, where out-of-plane channels dominate. The figure of merit (ZT) of the π-stacked molecular junction is dramatically enhanced because of the very low phononic thermal conductance, leaving room for further optimization of the electronic properties.

General information

State: Published
Organisations: Department of Physics, Theoretical Atomic-scale Physics, University of Copenhagen, Univesite Grenoble Alpes, University of California at Davis
Authors: Li, Q. (Ekstern), Strange, M. (Intern), Duchemin, I. (Ekstern), Donadio, D. (Ekstern), Solomon, G. C. (Ekstern)
Number of pages: 8
Pages: 7175-7182
Publication date: 2017
Main Research Area: Technical/natural sciences
A study of associations between early DHA status and fatty acid desaturase (FADS) SNP and developmental outcomes in children of obese mothers

DHA from diet or endogenous synthesis has been proposed to affect infant development, however, results are inconclusive. In this study, we aim to verify previously observed fatty acid desaturase gene cluster (FADS) SNP-specific
associations with erythrocyte DHA status in 9-month-old children and sex-specific association with developmental outcomes. The study was performed in 166 children (55 % boys) of obese mothers. Erythrocyte fatty acid composition was analysed in blood-samples obtained at 9 months of age, and developmental outcomes assessed by the Ages and Stages Questionnaire at 3 years. Erythrocyte DHA level ranged from 4·4 to 9·9 % of fatty acids, but did not show any association with FADS SNP or other potential determinants. Regression analysis showed associations between erythrocyte DHA and scores for personal-social skills (β 1·8 (95 % CI 0·3, 3·3), P=0·019) and problem solving (β 3·4 (95 % CI 1·2, 5·6), P=0·003). A tendency was observed for an association in opposite direction between minor alleles (G-variant) of rs1535 and rs174575 and personal-social skills (P=0·062 and 0·068, respectively), which became significant when the SNP were combined based on their previously observed effect on erythrocyte DHA at 9 months of age (β 2·6 (95 % CI 0·01, 5·1), P=0·011). Sex-SNP interaction was indicated for rs174575 genotype on fine motor scores (P=0·016), due to higher scores among minor allele carrying girls (P=0·043), whereas no effect was seen among boys. In conclusion, DHA-increasing FADS SNP and erythrocyte DHA status were consistently associated with improved personal-social skills in this small cohort of children of obese mothers irrespective of sex, but the sample was too small to verify potential sex-specific effects.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Systems Metabolic Lipidology, University of Copenhagen, Rigshospitalet
Authors: Andersen, K. R. (Ekstern); Harsløf, L. B. S. (Ekstern); Schnurr, T. M. (Ekstern); Hansen, T. (Ekstern); Hellgren, L. (Intern); Michaelsen, K. F. (Ekstern); Lauritzen, L. (Ekstern)
Pages: 278–286
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: The British Journal of Nutrition
Volume: 117
Issue number: 2
ISSN (Print): 0007-1145
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.46 SJR 1.983 SNIP 1.533
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.583 SNIP 1.446 CiteScore 3.52
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.468 SNIP 1.278 CiteScore 3.18
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.72 SNIP 2.521 CiteScore 3.61
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.263 SNIP 2.484 CiteScore 3.12
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.079 SNIP 1.661 CiteScore 3.13
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.248 SNIP 1.277
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.62 SNIP 0.581
A Study of Deactivating Carbon Species during Methanation on a Ni/Al₂O₃ Catalyst

This Ph.D. thesis describes the research and findings from experimental testing of a methanation catalyst and the characterisation of said catalyst. Methanation is the conversion of syngas (CO and H₂) typically from coal or biomass to methane and water. Methane is the biggest constituent of natural gas and as the infrastructure is already in place for natural gas, it is an attractive alternative to depleting oil resources. Catalysts based on nickel are the most common choice within industry due to the relatively low price of nickel and its acceptable performance. However, nickel catalysts are prone to deactivate due to sintering and carbon deposition. The latter process is not well understood and thus, this work attempted to further the research in low temperature carbon formation. In order to obtain fundamental knowledge, the experimental setup had to be free of impurities and great care was taken to eliminate potential sources. Experiments designed for that purpose established that the influence of sulfur was negligible. Through a series of experiments of temperature programmed hydrogenation (TPH) - methanation - TPH, the carbon build-up during the methanation was studied by the second TPH. Four types of carbon were identified and especially one was found to be the main cause of deactivation. Through x-ray diffraction (XRD) it was established that part of the carbon dissolved into the nickel particles expanding the crystal structure. No carbon was observed during transmission electron microscopy (TEM). Yet by scanning transmission electron microscopy (STEM) energy dispersive spectroscopy (EDS) carbon was discovered in proximity to the nickel particles. However, this was not as well-defined shells and thus, it was deduced that the particles were not encapsulated by carbon. Instead, the carbon was likely very inhomogeneously distributed across the nickel surface, which was supported by remaining activity observed during the methanation tests. Preliminary results on the effect of particle size, temperature and total pressure of methanation showed that especially temperature greatly affected the types of carbon deposited.

General information
State: Published
Organisations: Department of Physics, Experimental Surface and Nanomaterials Physics
Authors: Olesen, S. E. (Intern), Chorkendorff, I. (Intern), Andersson, K. J. (Intern)
Number of pages: 132
A study of DLC coatings for ironing of stainless steel
Stamping of sheet metal components without lubrication or using minimum amount of hazard free lubricant is a possible solution to diminish health hazards to personnel and environmental impact and to reduce production costs. This paper studies the application of diamond-like coating (DLC) under severe lubrication conditions by adopting strip reduction testing to replicate industrial ironing production of deep drawn, stainless steel cans. Three DLC coatings are investigated; multi-layer, double layer and single layer. Experiments revealed that the double layer coating worked successful, i.e. with no sign of galling using no lubrication even at elevated tool temperature, while the other two coatings peeled off and resulted in severe galling unless lubrication was applied.
A study on burning behavior and convective flows in Methanol pool fires bound by ice

An experimental study on methanol pool fires bound by ice was carried to research the burning behavior and flow field (within the liquid-phase) of methanol. The experiments were conducted in two parts: 1- in a cylindrical ice cavity/pan (10.2 cm diameter and 6 cm depth) at three different conditions to analyze burning parameters of methanol, 2- in a square glass tray with outside dimensions of 10 x 10 cm and a depth of 5 cm to obtain flow field of methanol pool with a two-dimensional PIV (Particle Image Velocimetry) system. The results of the experiments of the first part show the cold boundaries of the ice cavity/pan act as a heat sink causing considerable heat losses. Thus, burning rates and burning efficiencies are found to be lower with cold boundaries. However, the burning rate values in ice cavity are found to be the highest because of the melting of the ice and expansion of the cavity. The analysis of the results obtained by the PIV system showed the velocity magnitudes and flow patterns in the liquid-phase of icy methanol fire significantly change over the course of burning. In the instants after ignition a horizontal flow induced by Marangoni near the surface was observed. Later on, mixing of melt-water with methanol and sinking of this mixture caused a cycle in the tray that resulted in a vortex appearing in the middle of the pool. Magnitudes of velocity were also observed to increase after ignition. The increase in the velocity magnitudes is expected to significantly impact the melting and size of the lateral cavity.

A Study on Text-Score Disagreement in Online Reviews

In this paper, we focus on online reviews and employ artificial intelligence tools, taken from the cognitive computing field, to help understand the relationships between the textual part of the review and the assigned numerical score. We move from the intuitions that (1) a set of textual reviews expressing different sentiments may feature the same score (and vice-versa), and (2) detecting and analyzing the mismatches between the review content and the actual score may benefit both service providers and consumers, by highlighting specific factors of satisfaction (and dissatisfaction) in texts. To prove the intuitions, we adopt sentiment analysis techniques and we concentrate on hotel reviews, to find polarity mismatches therein. In particular, we first train a text classifier with a set of annotated hotel reviews, taken from the Booking website. Then, we analyze a large dataset, with around 160k hotel reviews collected from TripAdvisor, with the aim of detecting a polarity mismatch, indicating if the textual content of the review is in line, or not, with the associated score. Using well-established artificial intelligence techniques and analyzing in depth the reviews featuring a mismatch between the text polarity and the score, we find that-on a scale of five stars-those reviews ranked with middle scores include a mixture of positive and negative aspects. The approach proposed here, beside acting as a polarity detector, provides an effective selection of reviews-on an initial very large dataset-that may allow both consumers and providers to focus directly on the review subset featuring a text/score disagreement, which conveniently convey to the user a summary of positive and negative features of the review target.
A survey of modelling methods for high-fidelity wind farm simulations using large eddy simulation

Large eddy simulations (LES) of wind farms have the capability to provide valuable and detailed information about the dynamics of wind turbine wakes. For this reason, their use within the wind energy research community is on the rise, spurring the development of new models and methods. This review surveys the most common schemes available to model the rotor, atmospheric conditions and terrain effects within current state-of-the-art LES codes, of which an overview is provided. A summary of the experimental research data available for validation of LES codes within the context of single and multiple wake situations is also supplied. Some typical results for wind turbine and wind farm flows are presented to illustrate best practices for carrying out high-fidelity LES of wind farms under various atmospheric and terrain conditions. This article is part of the themed issue "Wind energy in complex terrains".

General information
State: Published
Organisations: Department of Wind Energy, Fluid Mechanics, Uppsala University, Dawson College
Authors: Breton, S. (Ekstern), Sumner, J. (Ekstern), Sørensen, J. N. (Intern), Hansen, K. S. (Intern), Sarmast, S. (Ekstern), Ivanell, S. (Ekstern)
Number of pages: 127
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences
Volume: 375
Issue number: 2091
Article number: 20160097
ISSN (Print): 1364-503X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
A Survey of Scholarly Data: From Big Data Perspective

Recently, there has been a shifting focus of organizations and governments towards digitization of academic and technical documents, adding a new facet to the concept of digital libraries. The volume, variety and velocity of this generated data, satisfies the big data definition, as a result of which, this scholarly reserve is popularly referred to as big scholarly data. In order to facilitate data analytics for big scholarly data, architectures and services for the same need to be developed. The evolving nature of research problems has made them essentially interdisciplinary. As a result, there is a growing demand for scholarly applications like collaborator discovery, expert finding and research recommendation systems, in addition to several others. This research paper investigates the current trends and identifies the existing challenges in development of a big scholarly data platform, with specific focus on directions for future research and maps them to the different phases of the big data lifecycle.

General information
A survey of xerophilic Aspergillus from indoor environment, including descriptions of two new section Aspergillus species producing euortium-like sexual states

Xerophilic fungi grow at low water activity or low equilibrium relative humidity and are an important part of the indoor fungal community, of which Aspergillus is one of the dominant genera. A survey of xerophilic fungi isolated from Canadian and Hawaiian house dust resulted in the isolation of 1039 strains; 296 strains belong to Aspergillus and represented 37
species. Reference sequences were generated for all species and deposited in GenBank. Aspergillus sect. Aspergillus (formerly called Eurotium) was one of the most predominant groups from house dust with nine species identified. Additional cultures deposited as Eurotium were received from the Canadian Collection of Fungal Cultures and were also re-identified during this study. Among all strains, two species were found to be new and are introduced here as A. mallochii and A. megasporus. Phylogenetic comparisons with other species of section Aspergillus were made using sequences of ITS, beta-tubulin, calmodulin and RNA polymerase II second largest subunit. Morphological observations were made from cultures grown under standardized conditions. Aspergillus mallochii does not grow at 37 degrees C and produces roughened ascospores with incomplete equatorial furrows. Aspergillus megasporus produces large conidia (up to 12 μm diam) and roughened ascospores with equatorial furrows. Echinulin, quinolactacin A(1) & A(2), preechinulin and neoechinulin A & B were detected as major extrolites of A. megasporus, while neoechinulin A & B and isoechinulin A, B & C were the major extrolites from A. mallochii.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Fungal Chemodiversity, University of Ottawa, Agriculture and Agri-Food Canada, Charles University, CBS-KNAW Fungal Biodiversity Centre
Pages: 1-30
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication Information
Journal: MycoKeys
Volume: 19
ISSN (Print): 1314-4057
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): SJR 1.148 SNIP 0.893 CiteScore 3.6
Original language: English
BenA, CaM, Indoor environments, Mycotoxin, RPB2
Electronic versions:
MC_article_11161.pdf
DOI:
10.3897/mycokeys.19.11161

Bibliographical note
This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Source: FindIt
Source-ID: 2350948999
Publication: Research - peer-review › Journal article – Annual report year: 2017

A Survey on Robustness in Railway Planning
Planning problems in passenger railway range from long term strategic decision making to the detailed planning of operations. Operations research methods have played an increasing role in this planning process. However, recently more attention has been given to considerations of robustness in the quality of solutions to individual planning problems, and of operations in general. Robustness in general is the capacity for some system to absorb or resist changes. In the context of railway robustness it is often taken to be the capacity for operations to continue at some level when faced with a disruption such as delay or failure. This has resulted in more attention given to the inclusion of robustness measures and objectives in individual planning problems, and to the providing of tools to ensure operations continue under disrupted situations. In this paper we survey the literature on robustness in railway planning problems, considering how robustness is conceptualized and modelled for the individual problems of railway, the degree to which an overall railway robustness concept is present, and consider the future directions of robustness in railway planning.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Management Science, Operations Research, Transport DTU
Authors: Lusby, R. M. (Intern), Larsen, J. (Intern), Bull, S. H. (Intern)
Number of pages: 42
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication Information
Journal: European Journal of Operational Research
ISSN (Print): 0377-2217
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.83 SJR 2.505 SNIP 2.339
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.334 SNIP 2.412 CiteScore 3.59
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.186 SNIP 2.485 CiteScore 3.21
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.346 SNIP 2.735 CiteScore 3.25
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.418 SNIP 2.588 CiteScore 3.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.401 SNIP 2.441 CiteScore 3.02
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.477 SNIP 2.435
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.326 SNIP 2.577
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.739 SNIP 1.984
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.679 SNIP 2.041
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.299 SNIP 2.023
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.194 SNIP 1.913
Scopus rating (2004): SJR 1.24 SNIP 1.882
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.991 SNIP 1.507
Scopus rating (2002): SJR 0.97 SNIP 1.279
Scopus rating (2001): SJR 1.078 SNIP 1.183
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.046 SNIP 1.135
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.104 SNIP 1.059
Original language: English
Links:
Publication: Research - peer-review › Journal article – Annual report year: 2017
Asymmetrical Fault Analysis at the Offshore Network of HVDC connected Wind Power Plants

Short-circuit faults for HVDC connected Wind Power Plants (WPPs) have been studied mostly for dc link and onshore ac grid faults, while the offshore ac faults, especially asymmetrical faults, have been mostly omitted in the literature. Requirements related to the offshore asymmetrical faults have been kept as future development at national levels in the recent ENTSO-E HVDC network code. In this paper offshore ac faults are studied using the classical power system fault analysis methods. It is shown that suppression of negative sequence current flow is not applicable and negative sequence current has to flow during the asymmetrical offshore faults, which implies that the offshore WPP and the HVDC offshore converter are required to provide flow of negative sequence current. The steady-state fault analysis is verified with time-domain simulations.

General information
State: Published
Organisations: Department of Wind Energy, Integration & Planning, Dong Energy Wind Power A/S
Authors: Goksu, O. (Intern), Cutululis, N. A. (Intern), Sorensen, P. (Intern), Zeni, L. (Ekstern)
Number of pages: 5
Publication date: 2017

Host publication information
Title of host publication: PowerTech, 2017 IEEE Manchester
Publisher: IEEE Xplore
Series: 2017 IEEE Manchester Powertech
Main Research Area: Technical/natural sciences
Conference: 12th IEEE Power and Energy Society PowerTech Conference, Manchester, United Kingdom, 18/06/2017 - 18/06/2017
DOIs: 10.1109/PTC.2017.7981120
Source: FindIt
Source-ID: 2392030043
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Asymmetric Total Syntheses of (-)-α-Lycorane, (-)-Zephyranthine and Formal Synthesis of (+)-Clivonine

We report the successful achievement of an asymmetric route to (-)-α-lycorane and (-)-zephyranthine as well as a formal total synthesis of (+)-clivonine. A pivotal intermediate, which serves as a potent precursor for the divergent syntheses of these natural products, was accessed by a diastereoselective Pd-catalyzed cinnamylation of an N-tert-butanesulfinyl imine.

General information
State: Published
Organisations: Department of Chemistry, Centre for Catalysis and Sustainable Chemistry, Organic Chemistry, Fudan University
Authors: Chen, Y. (Ekstern), Cai, S. (Ekstern), Wang, C. (Ekstern), Cheng, J. (Ekstern), Kramer, S. (Intern), Sun, X. (Ekstern)
Number of pages: 6
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Chemistry - An Asian Journal
ISSN (Print): 1861-4728
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.92 SJR 1.584 SNIP 0.773
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.766 SNIP 0.911 CiteScore 4.41
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.762 SNIP 0.974 CiteScore 4.38
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Asymptotically Matched Layer (AML) for transient wave propagation in a moving frame of reference

The paper presents an Asymptotically Matched Layer (AML) formulation in a moving frame of reference for transient dynamic response of a multi-layer 2D half-space. A displacement based finite element formulation of the convected domain problem is presented together with the AML formulation in which the original convolution integrals are represented via two auxiliary displacement-like state-space variables. A parametric study of the AML parameters is conducted for optimizing the absorbing properties. The performance is demonstrated on a single- and a two-layered half-space for various velocities of an impulse Ricker load. Excellent absorbing properties are demonstrated in both half spaces.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Geotechnics and Geology, Department of Mechanical Engineering, Solid Mechanics
Authors: Madsen, S. S. (Intern), Krenk, S. (Intern)
Pages: 124-133
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Computers and Geotechnics
Volume: 82
ISSN (Print): 0266-352X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 2.012 SNIP 2.371 CiteScore 3.11
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.959 SNIP 2.157 CiteScore 2.65
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.025 SNIP 2.649 CiteScore 2.83
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.158 SNIP 2.959 CiteScore 2.51
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Convected coordinates, Finite element method, Absorbing boundary, PML, Moving load, Transient wave propagation

Asynchronous Distributed Execution of Fixpoint-Based Computational Fields

Coordination is essential for dynamic distributed systems whose components exhibit interactive and autonomous behaviors. Spatially distributed, locally interacting, propagating computational fields are particularly appealing for allowing components to join and leave with little or no overhead. Computational fields are a key ingredient of aggregate programming, a promising software engineering methodology particularly relevant for the Internet of Things. In our approach, space topology is represented by a fixed graph-shaped field, namely a network with attributes on both nodes and arcs, where arcs represent interaction capabilities between nodes. We propose a SMuC calculus where \( \mu \)-calculus-like modal formulas represent how the values stored in neighbor nodes should be combined to update the present node. Fixpoint operations can be understood globally as recursive definitions, or locally as asynchronous converging propagation processes. We present a distributed implementation of our calculus. The translation is first done mapping SMuC programs into normal form, purely iterative programs and then into distributed programs. Some key results are presented that show convergence of fixpoint computations under fair asynchrony and under reinitialization of nodes. The first result allows nodes to proceed at different speeds, while the second one provides robustness against certain kinds of failure. We illustrate our approach with a case study based on a disaster recovery scenario, implemented in a prototype simulator that we use to evaluate the performance of a recovery strategy.
A synthetic glycan microarray enables epitope mapping of plant cell wall glycan-directed antibodies

In the last three decades, more than 200 monoclonal antibodies have been raised against most classes of plant cell wall polysaccharides by different laboratories worldwide. These antibodies are widely used to identify differences in plant cell wall components in mutants, organ and tissue types, and developmental stages. Despite their importance and broad use, the precise binding epitope for only a few of these antibodies has been determined. Here, we use a plant glycan microarray equipped with 88 synthetic oligosaccharides to comprehensively map the epitopes of plant cell wall glycan-directed antibodies. Our results reveal the binding epitopes for 78 arabinogalactan-, rhamnogalacturonan-, xylan-, and xyloglucan-directed antibodies. We demonstrate that, with knowledge of the exact epitopes recognized by individual antibodies, specific glycosyl hydrolases can be implemented into immunological cell wall analyses, providing a framework to obtain structural information on plant cell wall glycans with unprecedented molecular precision.

General information
State: Published
Organisations: Department of Chemistry, Organic Chemistry, Max Planck Institute of Colloids and Interfaces, Freie Universität Berlin, Saitama University, University of Leeds, University of Georgia
Authors: Ruprecht, C. (Ekstern), Bartetzko, M. P. (Ekstern), Senf, D. (Ekstern), Dallabernardina, P. (Ekstern), Boos, I. (Intern), Andersen, M. C. F. (Intern), Kotake, T. (Ekstern), Knox, J. P. (Ekstern), Hahn, M. G. (Ekstern), Clausen, M. H. (Intern), Pfrengle, F. (Ekstern)
Pages: 1094-1104
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Plant Physiology
Volume: 175
Issue number: 3
ISSN (Print): 0032-0889
A systematic methodology to extend the applicability of a bioconversion model for the simulation of various co-digestion scenarios

Detailed simulation of anaerobic digestion (AD) requires complex mathematical models and the optimization of numerous model parameters. By performing a systematic methodology and identifying parameters with the highest impact on process variables in a well-established AD model, its applicability was extended to various co-digestion scenarios. More specifically, the application of the step-by-step methodology led to the estimation of a general and reduced set of parameters, for the simulation of scenarios where either manure or wastewater were co-digested with different organic substrates. Validation of the general parameter set involved the simulation of laboratory-scale data from three continuous co-digestion experiments, treating mixtures of different organic residues either at thermophilic or mesophilic conditions. Evaluation of the results showed that simulations using the general parameter set fitted experimental data quite well, indicating that it offers a reliable reference point for future simulations of anaerobic co-digestion scenarios.

General information
State: Published
Organisations: Department of Environmental Engineering, Residual Resource Engineering
Authors: Kovalovszki, A. (Intern), Alvarado-Morales, M. (Intern), Fotidis, I. (Intern), Angelidaki, I. (Intern)
Pages: 157-166
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Bioresource Technology
Volume: 235
ISSN (Print): 0960-8524
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.94 SJR 2.191 SNIP 1.91
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.255 SNIP 1.908 CiteScore 5.47
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.41 SNIP 2.104 CiteScore 5.3
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.412 SNIP 2.503 CiteScore 5.97
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.389 SNIP 2.465 CiteScore 5.25
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.314 SNIP 2.508 CiteScore 5.56
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.086 SNIP 2.355
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.912 SNIP 2.231
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.734 SNIP 2.732
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.529 SNIP 2.423
A systematic model identification method for chemical transformation pathways – the case of heroin biomarkers in wastewater

This study presents a novel statistical approach for identifying sequenced chemical transformation pathways in combination with reaction kinetics models. The proposed method relies on sound uncertainty propagation by considering parameter ranges and associated probability distribution obtained at any given transformation pathway levels as priors for parameter estimation at any subsequent transformation levels. The method was applied to calibrate a model predicting the transformation in untreated wastewater of six biomarkers, excreted following human metabolism of heroin and codeine. The method developed was compared to parameter estimation methods commonly encountered in literature (i.e., estimation of all parameters at the same time and parameter estimation with fix values for upstream parameters) by assessing the model prediction accuracy, parameter identifiability and uncertainty analysis. Results obtained suggest that the method developed has the potential to outperform conventional approaches in terms of prediction accuracy, transformation pathway identification and parameter identifiability. This method can be used in conjunction with optimal experimental designs to effectively identify model structures and parameters. This method can also offer a platform to promote a closer interaction between analytical chemists and modellers to identify models for biochemical transformation pathways, being a prominent example for the emerging field of wastewater-based epidemiology.

General information
State: Published
Organisations: Department of Environmental Engineering, Water Technologies, Department of Chemical and Biochemical Engineering, CAPEC-PROCESS, Environmental Chemistry, Water Resources Engineering
Authors: Ramin, P. (Intern), Valverde Pérez, B. (Intern), Polesel, F. (Intern), Locatelli, L. (Intern), Plósz, B. G. (Intern)
Number of pages: 11
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Scientific Reports
Volume: 7
Issue number: 1
Article number: 9390
ISSN (Print): 2045-2322
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.63 SJR 1.625 SNIP 1.401
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
A system dynamics case study of resilient response to IP theft from a cyber-attack

Undesirable changes in supply chain physical operations derived from disruptions in the transmission or storage of digital information are reported daily despite the Information Technology (IT) protection available. Once a disruption materializes, the company losses will depend on the coherence and swiftness of the supply chain response (resilience). However, current resilience frameworks are qualitative, do not address evolution over time as a relevant aspect, and thus do not provide indications on how to design a resilient response. This paper contributes to closing this gap by developing a system dynamics model from an actual case of resilient response after a cyber-attack. Both casespecific and generic structures are extracted from the case data analysis, and a reaction mechanism is proposed that results in the observed behavior. The identification of these structures should eventually aid decision makers in the process of designing a resilient supply chain response.

A taste of plastic - quantifying micro- and nanoplastic ingestion and interactions with feeding in daphnia magna (E)

Aquatic ecosystems worldwide are polluted by microplastics and they are ingested by a broad range of organisms. Although research so far mainly focused on marine ecosystems, freshwater organisms are just as affected. Approaches to study microplastic ingestion are predominantly qualitative since quantitative measures are analytically challenging. The aim of this study was to develop and apply a quantitative approach to measure particle body burden to study uptake and depuration of micro- and nanoplastics in the freshwater flea Daphnia magna, using fluorescent polystyrene beads. The animals were first exposed to a particle concentration of 1 mg/l for 24 h (uptake) and thereafter transferred to clean medium for another 24 h (depuration). During both phases animals were sampled and particle body burdens were determined by measuring particle fluorescence in the dissolved tissue. To analyze the influence of particle size, the study was done with beads of 2 µm and 100 nm. It was furthermore analyzed how the processes are affected by food availability and how the particles in turn affect the feeding rate of D. magna. Both particle sizes were readily taken up and body burdens increased with exposure time. The 2 µm beads were taken up in a higher quantity. Likewise, depuration was
more efficient for the bigger particles. Smaller particles remain in the organism for a longer time, potentially increasing their hazard. Food availability strongly influenced particle body burdens, with lower levels in the presence of food. In turn, the particles can potentially alter the animals' feeding rate, which could lead to impairments of physiology and fitness.

**General information**

State: Published
Organisations: Department of Environmental Engineering, Environmental Chemistry
Authors: Rist, S. (Intern), Baun, A. (Intern), Hartmann, N. B. (Ekstern)
Number of pages: 1
Publication date: 2017
Event: Abstract from ALSO 2017 Aquatic Sciences Meeting, Honolulu, United States.
Main Research Area: Technical/natural sciences
Electronic versions:
ASLO_Abstract_Sinja_Rist.pdf
Links:
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

**A Thermodynamic Library for Simulation and Optimization of Dynamic Processes**

Process system tools, such as simulation and optimization of dynamic systems, are widely used in the process industries for development of operational strategies and control for process systems. These tools rely on thermodynamic models and many thermodynamic models have been developed for different compounds and mixtures. However, rigorous thermodynamic models are generally computationally intensive and not available as open-source libraries for process simulation and optimization. In this paper, we describe the application of a novel open-source rigorous thermodynamic library, ThermoLib, which is designed for dynamic simulation and optimization of vapor-liquid processes. ThermoLib is implemented in Matlab and C and uses cubic equations of state to compute vapor and liquid phase thermodynamic properties. The novelty of ThermoLib is that it provides analytical first and second order derivatives. These derivatives are needed for efficient dynamic simulation and optimization. The analytical derivatives improve the computational performance by a factor between 12 and 35 as compared to finite difference approximations. We present two examples that use ThermoLib routines in their implementations: (1) simulation of a vapor-compression cycle, and (2) optimal control of an isoenergetic-isochoric flash separation process. The ThermoLib software used in this paper is distributed as open-source software at www.psetools.org.

**General information**

State: Published
Organisations: Center for Energy Resources Engineering, Department of Applied Mathematics and Computer Science, Scientific Computing
Authors: Ritschel, T. K. S. (Intern), Gaspar, J. (Intern), Jørgensen, J. B. (Intern)
Pages: 3542-3547
Publication date: 2017
Conference: 20th IFAC World Congress 2017, Toulouse, France, 09/07/2017 - 09/07/2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: IFAC-PapersOnLine
Volume: 50
Issue number: 1
ISSN (Print): 2405-8963
Ratings:
Scopus rating (2016): CiteScore 0.45 SJR 0.263 SNIP 0.334
Scopus rating (2015): SJR 0.256 SNIP 0.324
Scopus rating (2014): SJR 0.285 SNIP 0.342
Scopus rating (2013): SJR 0.305 SNIP 0.364
Scopus rating (2012): SJR 0.247 SNIP 0.278
Scopus rating (2011): SJR 0.257 SNIP 0.312
Scopus rating (2010): SJR 0.196 SNIP 0.26
Scopus rating (2009): SJR 0.215 SNIP 0.296
Scopus rating (2008): SJR 0.125 SNIP 0.105
Scopus rating (2007): SJR 0.126 SNIP 0.065
Scopus rating (2006): SJR 0.101 SNIP 0.005
Scopus rating (2005): SJR 0.21 SNIP 0.467
Scopus rating (2004): SJR 0.268 SNIP 0.432
A third order accurate Lagrangian finite element scheme for the computation of generalized molecular stress function fluids

A third order accurate, in time and space, finite element scheme for the numerical simulation of three-dimensional time-dependent flow of the molecular stress function type of fluids in a generalized formulation is presented. The scheme is an extension of the K-BKZ Lagrangian finite element method presented by Marin and Rasmussen (2009).
Concentrations of atmospheric carbon dioxide (CO2) have continued to increase whereas atmospheric deposition of sulphur and nitrogen has declined in Europe and the USA during recent decades. Using time series of flux observations from 23 forests distributed throughout Europe and the USA, and generalised mixed models, we found that forest-level net ecosystem production and gross primary production have increased by 1% annually from 1995 to 2011. Statistical models indicated that increasing atmospheric CO2 was the most important factor driving the increasing strength of carbon sinks in these forests. We also found that the reduction of sulphur deposition in Europe and the USA lead to higher recovery in ecosystem respiration than in gross primary production, thus limiting the increase of carbon sequestration. By contrast, trends in climate and nitrogen deposition did not significantly contribute to changing carbon fluxes during the studied period. Our findings support the hypothesis of a general CO2-fertilization effect on vegetation growth and suggest that, so far unknown, sulphur deposition plays a significant role in the carbon balance of forests in industrialized regions. Our results show the need to include the effects of changing atmospheric composition, beyond CO2, to assess future dynamics of carbon-climate feedbacks not currently considered in earth system/climate modelling.
Several program verification techniques assist in showing that software adheres to the required security policies. Such policies may be sensitive to the flow of execution and the verification may be supported by combinations of type systems and Hoare logics. However, this requires user assistance and to obtain full automation we shall explore the over-approximating nature of static analysis. We demonstrate that the use of atomistic Galois insertions constitutes a stable framework in which to obtain sound and fully automatic enforcement of flow sensitive integrity. The framework is illustrated on a concurrent language with local storage and polyadic synchronous communication.
A Top-down Approach to Genetic Circuit Synthesis and Optimized Technology Mapping

Genetic logic circuits are becoming popular as an emerging field of technology. They are composed of genetic parts of DNA and work inside a living cell to perform a dedicated boolean function triggered by the presence or absence of certain proteins or other species.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Embedded Systems Engineering
Authors: Baig, H. (Intern), Madsen, J. (Intern)
Number of pages: 2
Publication date: 2017

Host publication information
Title of host publication: Proceedings of 9th International Workshop on Bio-Design Automation
Main Research Area: Technical/natural sciences
Conference: 9th International Workshop on Bio-Design Automation, Pittsburgh, United States, 08/08/2017 - 08/08/2017
Electronic versions: IWBDA_HB_JM.pdf
Source: PublicationPreSubmission
Source-ID: 134658523
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017
A total generalized variation approach for near-field acoustic holography
Near-field methods based on microphone array measurements are useful to understand how a source radiates sound. Due to discretization errors, these methods are typically restricted to low frequencies. Sparse approaches have gained considerable attention, as they can potentially recover a seemingly under-sampled signal with remarkable accuracy, extending the valid frequency range. However, near-field problems are generally not spatially sparse, and it is more appropriate to promote block-sparse solutions (i.e. spatially extended) rather than direct spatial sparsity. In this paper, a method is examined that promotes solutions with sparse spatial derivatives. The method seeks spatially extended solutions, valid over a wide frequency range, and suitable to near-fields and extended sources. The methodology is based on a Total Variation approach using higher order derivatives. The frequency range of validity is examined, as well as the robustness to noise. The performance of different finite difference stencils is investigated. Numerical and experimental results are presented, with particular focus on the estimated power radiated by the source. The method is benchmarked against conventional approaches.

General information
State: Published
Organisations: Department of Electrical Engineering, Acoustic Technology
Authors: Fernandez Grande, E. (Intern)
Number of pages: 1
Pages: 3842
Publication date: 2017
Conference: 173rd Meeting of the Acoustical Society of America and the 8th Forum Acusticum, Boston, United States, 25/06/2017 - 25/06/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of the Acoustical Society of America
Volume: 141
Issue number: 5
ISSN (Print): 0001-4966
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.83 SJR 0.749 SNIP 1.27
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.802 SNIP 1.437 CiteScore 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.788 SNIP 1.423 CiteScore 1.8
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.705 SNIP 1.966 CiteScore 2
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.763 SNIP 1.622 CiteScore 1.75
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.695 SNIP 1.642 CiteScore 1.68
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.754 SNIP 1.528
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.783 SNIP 1.717
A trait-based approach to understanding marine communities composition, assembly and diversity

General information
State: Published
Organisations: National Institute of Aquatic Resources, Centre for Ocean Life, Section for Oceans and Arctic
Authors: Pécuchet, L. (Intern), Lindegren, M. (Intern), Payne, M. (Intern)
Number of pages: 126
Publication date: 2017

Publication information
Publisher: DTU Aqua. National Institute of Aquatic Resources
Original language: English
Main Research Area: Technical/natural sciences
Publication: Research › Ph.D. thesis – Annual report year: 2017

A trait database for marine copepods
The trait-based approach is gaining increasing popularity in marine plankton ecology but the field urgently needs more and easier accessible trait data to advance. We compiled trait information on marine pelagic copepods, a major group of zooplankton, from the published literature and from experts and organized the data into a structured database. We collected 9306 records for 14 functional traits. Particular attention was given to body size, feeding mode, egg size, spawning strategy, respiration rate, and myelination (presence of nerve sheathing). Most records were reported at the species level, but some phylogenetically conserved traits, such as myelination, were reported at higher taxonomic levels, allowing the entire diversity of around 10 800 recognized marine copepod species to be covered with a few records. Aside from myelination, data coverage was highest for spawning strategy and body size, while information was more limited for quantitative traits related to reproduction and physiology. The database may be used to investigate relationships between traits, to produce trait biogeographies, or to inform and validate trait-based marine ecosystem models. The data can be downloaded from PANGAEA, doi:10.1594/PANGAEA.862968

General information
State: Published
Attribution mechanisms for ancillary service costs induced by variability in power delivery

The increased penetration of renewable energy sources in existing power systems has led to necessary developments in electricity market mechanisms. Most importantly, renewable energy generation is increasingly made accountable for deviations between scheduled and actual energy generation. However, there is no mechanism to enforce accountability for the additional costs induced by power fluctuations. These costs are socialized and eventually supported by electricity customers. We propose some metrics for assessing the contribution of all market participants to power regulation needs, as well as an attribution mechanism for fairly redistributing related power regulation costs. We discuss the effect of various metrics used by the attribution mechanisms, and we illustrate, in a game-theoretical framework, their consequences on the strategic behavior of market participants. We also illustrate, by using the case of Western Denmark, how these mechanisms may affect revenues and the various market participants.
Attribution of global foodborne disease to specific foods: Findings from a World Health Organization structured expert elicitation

Background Recently the World Health Organization, Foodborne Disease Burden Epidemiology Reference Group (FERG) estimated that 31 foodborne diseases (FBDs) resulted in over 600 million illnesses and 420,000 deaths worldwide in 2010. Knowing the relative role importance of different foods as exposure routes for key hazards is critical to preventing illness. This study reports the findings of a structured expert elicitation providing globally comparable food source attribution estimates for 11 major FBDs in each of 14 world subregions.

Methods and findings We used Cooke’s Classical Model to elicit and aggregate judgments of 73 international experts. Judgments were elicited from each expert individually and aggregated using both equal and performance weights. Performance weighted results are reported as they increased the informativeness of estimates, while retaining accuracy. We report measures of central tendency and uncertainty bounds on food source attribution estimate. For some pathogens we see relatively consistent food source attribution estimates across subregions of the world; for others there is substantial regional variation. For example, for non-typhoidal salmonellosis, pork was of minor importance compared to eggs and poultry meat in the American and African subregions, whereas in the European and Western Pacific subregions the importance of these three food sources were quite similar.

Our regional results broadly agree with estimates from earlier European and North American food source attribution research. As in prior food source attribution research, we find relatively wide uncertainty bounds around our median estimates. Conclusions We present the first worldwide estimates of the proportion of specific foodborne diseases attributable to specific food exposure routes. While we find substantial uncertainty around central tendency estimates, we believe these estimates provide the best currently available basis on which to link FBDs and specific foods in many parts of the world, providing guidance for policy actions to control FBDs.

General information
State: Published
Organisations: National Food Institute, Research Group for Genomic Epidemiology, U.S. Department of Agriculture, Scientific Institute of Public Health, Brussels, Aspinall & Associates, University of Bristol, Resources for the Future, Delft University of Technology, World Health Organization, University of Florida, National Institute of Public Health and the Environment, Utrecht University, Centers for Disease Control and Prevention, Gibb Epidemiology Consulting LLC, Australian National University, ESR, Universite Catholique de Louvain, University of Zurich
Number of pages: 26
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: PLoS ONE
Volume: 12
Issue number: 9
Article number: e0183641
ISSN (Print): 1932-6203
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.11 SJR 1.201 SNIP 1.092
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.414 SNIP 1.131 CiteScore 3.32
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.545 SNIP 1.141 CiteScore 3.54
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.74 SNIP 1.147 CiteScore 3.94
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.945 SNIP 1.142 CiteScore 4.15
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
A two-dimensional Dirac fermion microscope

The electron microscope has been a powerful, highly versatile workhorse in the fields of material and surface science, micro and nanotechnology, biology and geology, for nearly 80 years. The advent of two-dimensional materials opens new possibilities for realizing an analogy to electron microscopy in the solid state. Here we provide a perspective view on how a two-dimensional (2D) Dirac fermion-based microscope can be realistically implemented and operated, using graphene as a vacuum chamber for ballistic electrons. We use semiclassical simulations to propose concrete architectures and design rules of 2D electron guns, deflectors, tunable lenses and various detectors. The simulations show how simple objects can be imaged with well-controlled and collimated in-plane beams consisting of relativistic charge carriers. Finally, we discuss the potential of such microscopes for investigating edges, terminations and defects, as well as interfaces, including external nanoscale structures such as adsorbed molecules, nanoparticles or quantum dots.

General information
State: Published
Organisations: Center for Nanostructured Graphene, Department of Micro- and Nanotechnology, Nanocarbon, Theoretical Nanoelectronics, RWTH Aachen University
Authors: Bøggild, P. (Intern), Caridad, J. (Intern), Stampfer, C. (Ekstern), Calogero, G. (Intern), Papior, N. R. (Intern), Brandbyge, M. (Intern)
Number of pages: 1
Pages: 15783
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Nature Communications
Volume: 8
ISSN (Print): 2041-1723
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 11.8 SJR 6.399 SNIP 2.995
Auditory brainstem response latency in forward masking, a marker of sensory deficits in listeners with normal hearing thresholds

In rodent models, acoustic exposure too modest to elevate hearing thresholds can nonetheless cause auditory nerve fiber deafferentation, interfering with the coding of supra-threshold sound. Low-spontaneous rate nerve fibers, important for encoding acoustic information at supra-threshold levels and in noise, are more susceptible to degeneration than high-spontaneous rate fibers. The change in auditory brainstem response (ABR) wave-V latency with noise level has been shown to be associated with auditory nerve deafferentation. Here, we measured ABR in a forward masking paradigm and evaluated wave-V latency changes with increasing masker-to-probe intervals. In the same listeners, behavioral forward masking detection thresholds were measured. We hypothesized that 1) auditory nerve fiber deafferentation increases forward masking thresholds and increases wave-V latency and 2) a preferential loss of low-spontaneous rate fibers results in a faster recovery of wave-V latency as the slow contribution of these fibers is reduced. Results showed that in young audiometrically normal listeners, a larger change in wave-V latency with increasing masker-to-probe interval was related to a greater effect of a preceding masker behaviorally. Further, the amount of wave-V latency change with masker-to-probe interval was positively correlated with the rate of change in forward masking detection thresholds. Although we cannot rule out central contributions, these findings are consistent with the hypothesis that auditory nerve fiber deafferentation occurs in humans and may predict how well individuals can hear in noisy environments. (C) 2017 Elsevier B.V. All rights reserved.

General information
State: Published
Organisations: Department of Electrical Engineering, Hearing Systems, Broad Institute of Harvard University and Massachusetts Institute of Technology
Authors: Mehraei, G. (Intern), Paredes Gallardo, A. (Intern), Shinn-Cunningham, B. G. (Ekstern), Dau, T. (Intern)
Pages: 34-44
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Hearing Research
Volume: 346
ISSN (Print): 0378-5955
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
Augmented Reality Interfaces for Additive Manufacturing

This paper explores potential use cases for using augmented reality (AR) as a tool to operate industrial machines. As a baseline we use an additive manufacturing system, more commonly known as a 3D printer. We implement novel augmented interfaces and controls using readily available open source frameworks and low cost hardware. Our results show that the technology enables richer and more intuitive printer control and performance monitoring than currently available on the market. Therefore, there is a great deal of potential for these types of technologies in future digital factories.
A Unified Trading Model Based on Robust Optimization for Day-Ahead and Real-Time Markets with Wind Power Integration

In a conventional electricity market, trading is conducted based on power forecasts in the day-ahead market, while the power imbalance is regulated in the real-time market, which is a separate trading scheme. With large-scale wind power connected into the power grid, power forecast errors increase in the day-ahead market which lowers the economic efficiency of the separate trading scheme. This paper proposes a robust unified trading model that includes the forecasts of real-time prices and imbalance power into the day-ahead trading scheme. The model is developed based on robust optimization in view of the undefined probability distribution of clearing prices of the real-time market. For the model to be used efficiently, an improved quantum-behaved particle swarm algorithm (IQPSO) is presented in the paper based on an in-depth analysis of the limitations of the static character of quantum-behaved particle swarm algorithm (QPSO). Finally, the impacts of associated parameters on the separate trading and unified trading model are analyzed to verify the superiority of the proposed model and algorithm.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Energy system operation and management, Fuzhou University
Authors: Jiang, Y. (Ekstern), Chen, M. (Ekstern), You, S. (Intern)
Number of pages: 19
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Energies
Volume: 10
Issue number: 4
Article number: 554
ISSN (Print): 1996-1073
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.5 SJR 0.691 SNIP 1.053
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.804 SNIP 1.416 CiteScore 2.87
Web of Science (2015): Indexed yes
Auralisations with loudspeaker arrays from a phased combination of the image source method and acoustical radiosity

In order to create a simulation tool that is well-suited for small rooms with low diffusion and highly absorbing ceilings, a new room acoustic simulation tool has been developed that combines a phased version of the image source with acoustical radiosity and that considers the angle dependence of the surface properties. The new tool is denoted PARISM, and here PARISM is used to create loudspeaker array-based auralisations. Different auralisation techniques are compared, such as Ambisonics, vector-based panning and the method of nearest loudspeaker. The implementation of the auralisation techniques with PARISM are described and compared to implementations of auralisations with another geometrical acoustic simulation tool, i.e. ODEON and the LoRA toolbox that applies Ambisonics to ODEON simulations. In opposition to the LoRA toolbox, higher order Ambisonics are also applied to the late part of the PARISM impulse response, because more directional information is available with acoustical radiosity. Small rooms with absorbing surfaces are tested, because this is the room type that PARISM is particularly useful for.

General information
State: Published
Organisations: Department of Electrical Engineering, Acoustic Technology
Authors: Marbjerg, G. H. (Intern)
Publication date: 2017
Conference: 173rd Meeting of the Acoustical Society of America and the 8th Forum Acusticum, Boston, United States, 25/06/2017 - 25/06/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of the Acoustical Society of America
Volume: 141
Issue number: 3783
ISSN (Print): 0001-4966
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.83 SJR 0.749 SNIP 1.27
Auralizations with loudspeaker arrays from a phased combination of the image source method and acoustical radiosity

In order to create a simulation tool that is well-suited for small rooms with low diffusion and highly absorbing ceilings, a new room acoustic simulation tool has been developed that combines a phased version of the image source with acoustical radiosity and that considers the angle dependence of the surface properties. The new tool is denoted PARISM, and here PARISM is used to create loudspeaker array-based auralizations. Different auralization techniques are compared, such as Ambisonics, vector-based panning, and the method of nearest loudspeaker. The implementations of the auralization techniques with PARISM are described and compared to implementations of auralizations with another geometrical acoustic simulation tool, i.e., ODEON and the LoRA toolbox that applies Ambisonics to ODEON simulations. In opposition to the LoRA toolbox, higher order Ambisonics are also applied to the late part of the PARISM impulse response, because more directional information is available with acoustical radiosity. Small rooms with absorbing surfaces are tested, because this is the room type that PARISM is particularly useful for.

General information
State: Published
Organisations: Department of Electrical Engineering, Acoustic Technology, Interacoustics A/S
Authors: Marbjerg, G. H. (Intern), Brunskog, J. (Intern), Jeong, C. (Intern), Zapata-Rodriguez, V. (Ekstern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of the Acoustical Society of America
Volume: 141
Issue number: 5
Article number: 3785
ISSN (Print): 0001-4966
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.83 SJR 0.749 SNIP 1.27
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.802 SNIP 1.437 CiteScore 1.77
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.788 SNIP 1.423 CiteScore 1.8
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.705 SNIP 1.966 CiteScore 2
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.763 SNIP 1.622 CiteScore 1.75
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.695 SNIP 1.642 CiteScore 1.68
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.754 SNIP 1.528
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.783 SNIP 1.717
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.848 SNIP 1.633
Authentication for E-Government in Developing Countries - With special focus on the North Africa Countries

Recently, many countries include both developed countries as well as developing countries have transformed paper based systems into electronic systems using ICT technologies in order to improve service delivery and reduce cost. Several researches and International Organizations in the field of e-Government reports that many countries over the world have not achieved transaction stages of government e-services and most of those countries are from developing countries. One of the main issues challenge government e-service inclusion is digital divide which barriers achieving principle of equal access and benefit of government e-service. Therefore, This thesis aims to investigate digital divide and IDM issues challenge government e-service in developing countries such as North Africa Countries (NAC) from achieving the priciple of equal access in a secure manner. To achieve this aim we, developed a framework that consists of two components include digital divide variables and a simple IDM model in order to assess the current state of government e-service in NAC. Moreover, we analyzed the existing IDM protocol's concept to understand whether those concepts consider disadvantaged user’s needs. Based on the identified challenges in NAC using the developed framework and the analysis of IDM protocol's concept we identify the requirements to be satisfied in order to allow large portion of citizens access and benefit of government e-service in equal and secure manner. One possible solution to improve e-Government inclusion is to consider vulnerable group needs such as the case in which users (citizens) do not have the ability either to read or write and as a result are excluded from e-services. Thus, a solution should enable such users to benefit from e-services. Introducing vulnerable group such as illiterate individuals might introduce new risks which have not existed in citizens-government face to face interaction. Thus, considering security property include confidentiality, integrity, non-repudiation and accountability for a proposed solution is needed. User authentication based on social relationship protocol is proposed in order to bridge digital divide. We formalized the proposed protocol as well as IDM protocol's concept using Open Source Fixed Point Model Checker tool (OFMC) To verify security properties include secrecy of exchanged information and authenticity of communication parties of the target protocols. OFMC is an automatic protocol security verification tool to identify the strengths of the verified protocol. Based on the verification result of OFMC tool, an attack is found against the existing IDM protocol's concept when considering vulnerable users while the proposed protocol has achieved the specified goals without ant attack at least in one session. We also, performed a simple usability comparison between the proposed protocol and public kiosk service delivery channel and the proposed protocol shows its effectiveness as well as efficient.

General information
State: Submitted
Organisations: Cyber Security, Department of Applied Mathematics and Computer Science
Authors: Elaswad, O. (Intern), Jensen, C. D. (Intern)
Automated Analysis of Flow Cytometry Data to Reduce Inter-Lab Variation in the Detection of Major Histocompatibility Complex Multimer-Binding T Cells

Manual analysis of flow cytometry data and subjective gate-border decisions taken by individuals continue to be a source of variation in the assessment of antigen-specific T cells when comparing data across laboratories, and also over time in individual labs. Therefore, strategies to provide automated analysis of major histocompatibility complex (MHC) multimer-binding T cells represent an attractive solution to decrease subjectivity and technical variation. The challenge of using an automated analysis approach is that MHC multimer-binding T cell populations are often rare and therefore difficult to detect. We used a highly heterogeneous dataset from a recent MHC multimer proficiency panel to assess if MHC multimer-binding CD8(+) T cells could be analyzed with computational solutions currently available, and if such analyses would reduce the technical variation across different laboratories. We used three different methods, FLOw Clustering without K (FLOCK), Scalable Weighted Iterative Flow-clustering Technique (SWIFT), and ReFlow to analyze flow cytometry data files from 28 laboratories. Each laboratory screened for antigen-responsive T cell populations with frequency ranging from 0.01 to 1.5% of lymphocytes within samples from two donors. Experience from this analysis shows that all three programs can be used for the identification of high to intermediate frequency of MHC multimer-binding T cell populations, with results very similar to that of manual gating. For the less frequent populations
Automated angular and translational tomographic alignment and application to phase-contrast imaging

X-ray computerized tomography (CT) is a 3D imaging technique that makes use of x-ray illumination and image reconstruction techniques to reproduce the internal cross-sections of a sample. Tomographic projection data usually require an initial relative alignment or knowledge of the exact object position and orientation with respect to the detector. As tomographic imaging reaches increasingly better resolution, thermal drifts, mechanical instabilities, and equipment limitations are becoming the main dominant factors contributing to sample positioning uncertainties that will further introduce reconstruction artifacts and limit the attained resolution in the final tomographic reconstruction. Alignment algorithms that require manual interaction impede data analysis with ever-increasing data acquisition rates, supplied by more brilliant sources. We present in this paper an iterative reconstruction algorithm for wrapped phase projection data and an alignment algorithm that automatically takes 5 degrees of freedom, including the possible linear and angular motion errors, into consideration. The presented concepts are applied to simulated and real measured phase-contrast data, exhibiting a possible improvement in the reconstruction resolution. A MATLAB implementation is made publicly available and will allow robust analysis of large volumes of phase-contrast tomography data.
Automated Determination of Oxygen-Dependent Enzyme Kinetics in a Tube-in-Tube Flow Reactor

Enzyme-mediated oxidation is of particular interest to synthetic organic chemists. However, the implementation of such systems demands knowledge of enzyme kinetics. Conventionally collecting kinetic data for biocatalytic oxidations is fraught with difficulties such as low oxygen solubility in water and limited oxygen supply. Here, we present a novel method for the collection of such kinetic data using a pressurized tube-in-tube reactor, operated in the low-dispersed flow regime to generate time-series data, with minimal material consumption. Experimental development and validation of the instrument revealed not only the high degree of accuracy of the kinetic data obtained, but also the necessity of making measurements in this way to enable the accurate evaluation of high \( K_{MO} \) enzyme systems. For the first time, this paves the way to integrate kinetic data into the protein engineering cycle.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre, KT Consortium
Authors: Ringborg, R. H. (Intern), Pedersen, A. T. (Intern), Woodley, J. (Intern)
Pages: 3285 – 3288
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Chemcatchem
Volume: 9
ISSN (Print): 1867-3880
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.33 SJR 1.636 SNIP 0.932
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.751 SNIP 1 CiteScore 4.57
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.88 SNIP 1.102 CiteScore 4.52
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.167 SNIP 1.06 CiteScore 4.82
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 2.375 SNIP 1.142 CiteScore 4.58
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 2.238 SNIP 1.056 CiteScore 4.3
Automated four-dimensional Monte Carlo workflow using log files and real-time motion monitoring

With emerging techniques for tracking and gating methods in radiotherapy of lung cancer patients, there is an increasing need for efficient four-dimensional Monte Carlo (4DMC) based quality assurance (QA). An automated and flexible workflow for 4DMC QA, based on the 4DdefDOSXYZnrc user code, has been developed in python. The workflow has been tested and verified using an in-house developed dosimetry system comprised of a dynamic thorax phantom constructed for plastic scintillator dosimetry. The workflow is directly compatible with any treatment planning system and can also be triggered by the appearance of linac log files. It has minimum user interaction and, with the use of linac log files, it provides a method for verification of the actually delivered dose in the patient geometry.

General information

State: Published
Organisations: Center for Nuclear Technologies, Radiation Physics, Skåne University Hospital, Carleton University, University Hospital Herlev
Authors: Sibolt, P. (Intern), Cronholm, R. (Ekstern), Heath, E. (Ekstern), Andersen, C. E. (Intern), Behrens, C. F. (Ekstern)
Number of pages: 4
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Journal of Physics: Conference Series (Online)
Volume: 847
Article number: 012030
ISSN (Print): 1742-6596
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.45 SJR 0.24 SNIP 0.383
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.24 SNIP 0.373 CiteScore 0.35
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.253 SNIP 0.344 CiteScore 0.32
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.231 SNIP 0.272 CiteScore 0.25
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.28 SNIP 0.354 CiteScore 0.33
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.292 SNIP 0.352 CiteScore 0.43
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.288 SNIP 0.344
Automated HAZOP revisited

Hazard and operability analysis (HAZOP) has developed from a tentative approach to hazard identification for process plants in the early 1970s to an almost universally accepted approach today, and a central technique of safety engineering. Techniques for automated HAZOP analysis were developed in the 1970s, but still have not displaced expensive manual approaches. Reasons for this were investigated and conclusions are drawn. The author's actual experience in applying automated HAZOP techniques over a period of more than 30 years is revisited, including results from several full-scale validation studies and many industrial applications. Automated techniques, when combined with manual approaches, were found to provide significant improvements in HAZOP quality and a limited but valuable improvement in efficiency.

General information

State: Published
Organisations: Department of Management Engineering, Engineering Systems
Authors: Taylor, J. R. (Intern)
Pages: 635-651
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Process Safety and Environmental Protection
Volume: 111
ISSN (Print): 0957-5820
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3 SJR 0.685 SNIP 1.642
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.662 SNIP 1.352 CiteScore 2.55
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.078 SNIP 2.118 CiteScore 2.85
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.919 SNIP 1.869 CiteScore 2.22
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.763 SNIP 1.248 CiteScore 1.67
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.713 SNIP 1.205 CiteScore 1.65
ISI indexed (2011): ISI indexed yes
**Automated specification and verification of Web-based applications**

**General information**
State: Published  
Organisations: Department of Applied Mathematics and Computer Science, Formal Methods, Consiglio Nazionale delle Ricerche  
Authors: ter Beek, M. H. (Ekstern), Lluch Lafuente, A. (Intern)  
Pages: 51-51  
Publication date: 2017  
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Journal of Logical and Algebraic Methods in Programming  
Volume: 87  
Ratings:  
Web of Science (2017): Indexed Yes  
Scopus rating (2016): CiteScore 0.88 SJR 0.394 SNIP 1.175  
Scopus rating (2015): SJR 0.25 SNIP 1.166 CiteScore 0.55  
Original language: English  
DOIs:  
10.1016/j.jlamp.2016.11.004  
Publication: Research - Editorial – Annual report year: 2017

**Automatic Atrial Fibrillation Detection: A Novel Approach Using Discrete Wavelet Transform and Heart Rate Variability**

Early detection of Atrial Fibrillation (AF) is crucial in order to prevent acute and chronic cardiac rhythm disorders. In this study, a novel method for robust automatic AF detection (AAFD) is proposed by combining atrial activity (AA) and heart rate variability (HRV), which could potentially be used as a screening tool for patients suspected to have AF. The method includes an automatic peak detection prior to the feature extraction, as well as a noise cancellation technique followed by a bagged tree classification. Simulation studies on the MIT-BIH Atrial Fibrillation database was performed to evaluate the performance of the proposed method. Results from these extensive studies showed very promising results, with an average sensitivity of 96.51%, a specificity of 99.19%, and an overall accuracy of 98.22%
Automatic Identification of Similarities Across Products to Improve the Configuration Process in ETO Companies

Engineer-To-Order (ETO) companies making complex products face the challenge of delivering highly customised products with high quality, affordable price and a short delivery time. To respond to these challenges, ETO companies strive to increase the commonality between different projects and to reuse product-related information. Therefore, ETO companies need to retrieve data about previously designed products and identify parts of the design that can be reused to improve the configuration process. This allows companies to reduce complexity in the product portfolio, decrease engineering hours and improve the accuracy of the product specifications. This article proposes a framework to identify and compare products’ similarities. The framework (1) identifies the most important product variables available in the Product Configuration System (PCS), (2) retrieves data of previously designed products in an Enterprise Resource Planning (ERP) system, (3) identifies a method to compare products based on the main product variables and (4) sets up an IT system (database) with data of the previously designed products to integrate with the PCS. The proposed approach (the framework and the IT system) is tested in an ETO company to evaluate the application of the framework and the IT system. We retrieved the needed data from the ERP system at the case company and developed the IT system in Microsoft Excel, which is integrated with the PCS.

Automatic minimization of ocular artifacts from electroencephalogram: A novel approach by combining Complete EEMD with Adaptive Noise and Renyi's Entropy

Ocular artifacts (OAs) are one of the major interferences that obscure electroencephalogram (EEG) signals. In this paper, a novel, completely automatic, adaptive and fast method that combines the Complete Empirical Mode Decomposition with Adaptive Noise (CEEMDAN) and Renyi’s Entropy (RE) is proposed for minimizing the OAs from corrupted EEG signals.
The RE criterion is suggested to automatically select the Intrinsic Mode Functions (IMFs) to reconstruct the artifact minimized EEG signals. The scheme requires only a single channel OAs corrupted EEG recording and a reasonable computation time. The methods first evaluated on simulated OAs (one, two, and several blinks as well as saccadic eye movements) corrupted EEG signals and then extended to real EEG signals. The signal-to-noise ratio improvement (SNRimp) along with time and power spectral density (PSD) plots are used for evaluating the performance of the scheme. The method is compared to the one based on the CEEMDAN and manual choice of IMFs for OAs minimization from EEG. Results from extensive simulation studies clearly indicate the efficacy of the proposed scheme in automatically minimizing the OAs from the corrupted EEG signals.

**General information**

State: Published  
Organisations: Department of Electrical Engineering, Biomedical Engineering, Politecnico di Torino  
Authors: Guarascio, M. (Ekstern), Puthusserypady, S. (Intern)  
Pages: 63–75  
Publication date: 2017  
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Biomedical Signal Processing and Control  
Volume: 36  
ISSN (Print): 1746-8094  
Ratings:  
BFI (2017): BFI-level 1  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 1  
Scopus rating (2016): CiteScore 2.82 SJR 0.659 SNIP 1.574  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 1  
Scopus rating (2015): SJR 0.631 SNIP 1.559 CiteScore 2.55  
BFI (2014): BFI-level 1  
Scopus rating (2014): SJR 0.43 SNIP 1.44 CiteScore 1.89  
BFI (2013): BFI-level 1  
Scopus rating (2013): SJR 0.566 SNIP 1.8 CiteScore 2.28  
ISI indexed (2013): ISI indexed yes  
BFI (2012): BFI-level 1  
Scopus rating (2012): SJR 0.378 SNIP 1.277 CiteScore 1.6  
ISI indexed (2012): ISI indexed yes  
BFI (2011): BFI-level 1  
Scopus rating (2011): SJR 0.407 SNIP 1.087 CiteScore 1.75  
ISI indexed (2011): ISI indexed yes  
BFI (2010): BFI-level 1  
Scopus rating (2010): SJR 0.37 SNIP 0.926  
BFI (2009): BFI-level 1  
Scopus rating (2009): SJR 0.31 SNIP 1.083  
BFI (2008): BFI-level 1  
Scopus rating (2008): SJR 0.251 SNIP 0.813  
Scopus rating (2007): SJR 0.141 SNIP 0.284  
Original language: English

Electroencephalogram (EEG), Ocular artifacts (OAs), Artifact minimization, Complete Ensemble Empirical Mode, Decomposition Adaptive Noise (CEEMDAN), Renyi’s Entropy (RE)

DOIs:  
10.1016/j.bspc.2017.03.017

Publication: Research - peer-review › Journal article – Annual report year: 2017

**Automatic Segmentation of Abdominal Fat in MRI-Scans, Using Graph-Cuts and Image Derived Energies**

For many clinical studies changes in the abdominal distribution of fat is an important measure. However, the segmentation of abdominal fat in MRI scans is both difficult and time consuming using manual methods. We present here an automatic and flexible software package, that performs both bias field correction and segmentation of the fat into superficial and deep subcutaneous fat as well as visceral fat with the spinal compartment removed. Assessment when comparing to the gold standard - CT-scans - shows a correlation and bias comparable to manual segmentation. The method is flexible by
tuning the image-derived energies used for the segmentation, allowing the method to be applied to other body parts, such as the thighs.

**General information**

**State:** Published

**Organisations:** Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, Rector’s office, Statistics and Data Analysis, University of Copenhagen

**Authors:** Christensen, A. N. (Intern), Larsen, C. T. (Intern), Mandrup Jensen, C. M. (Ekstern), Petersen, M. B. (Ekstern), Larsen, R. (Intern), Conradsen, K. (Intern), Dahl, V. A. (Intern)

**Pages:** 109-120

**Publication date:** 2017

**Host publication information**

**Title of host publication:** Image Analysis

**Volume:** 10270

**Publisher:** Springer

**ISBN (Print):** 9783319591285

**Series:** Lecture Notes in Computer Science

**Main Research Area:** Technical/natural sciences

**Conference:** 20th Scandinavian Conference on Image Analysis, Tromsø, Norway, 12/06/2017 - 12/06/2017

**Computer Science, Image Processing and Computer Vision, Pattern Recognition, Artificial Intelligence (incl. Robotics), Computer Graphics, Data Mining and Knowledge Discovery**

**DOIs:**

10.1007/978-3-319-59129-2_10

**Source:** FindIt

**Source-ID:** 2372493663

**Publication:** Research - peer-review › Article in proceedings – Annual report year: 2017

**Automatic Segmentation of Vessels in In-Vivo Ultrasound Scans**

Ultrasound has become highly popular to monitor atherosclerosis, by scanning the carotid artery. The screening involves measuring the thickness of the vessel wall and diameter of the lumen. An automatic segmentation of the vessel lumen, can enable the determination of lumen diameter. This paper presents a fully automatic segmentation algorithm, for robustly segmenting the vessel lumen in longitudinal B-mode ultrasound images. The automatic segmentation is performed using a combination of B-mode and power Doppler images. The proposed algorithm includes a series of preprocessing steps, and performs a vessel segmentation by use of the marker-controlled watershed transform. The ultrasound images used in the study were acquired using the bk3000 ultrasound scanner (BK Ultrasound, Herlev, Denmark) with two transducers “8L2 Linear” and “10L2w Wide Linear” (BK Ultrasound, Herlev, Denmark). The algorithm was evaluated empirically and applied to a dataset of in-vivo 1770 images recorded from 8 healthy subjects. The segmentation results were compared to manual delineation performed by two experienced users. The results showed a sensitivity and specificity of 90.41 ± 11.2 % and 97.93 ± 5.7 % (mean ± standard deviation), respectively. The amount of overlap of segmentation and manual segmentation, was measured by the Dice similarity coefficient, which was 91.25 ± 11.6 %. The empirical results demonstrated the feasibility of segmenting the vessel lumen in ultrasound scans using a fully automatic algorithm.

**General information**

**State:** Published

**Organisations:** Department of Electrical Engineering, Biomedical Engineering, Center for Fast Ultrasound Imaging, Technical University of Denmark

**Authors:** Tamimi-Sarnikowski, P. (Ekstern), Brink-Kjær, A. (Ekstern), Moshavegh, R. (Intern), Jensen, J. A. (Intern)

**Number of pages:** 9

**Publication date:** 2017

**Host publication information**

**Title of host publication:** Proceedings of SPIE

**Volume:** 10137

**Publisher:** SPIE - International Society for Optical Engineering

**Article number:** 101371P

**Series:** Proceedings of SPIE, the International Society for Optical Engineering

**Volume:** 10137

**ISSN:** 0277-786X

**Main Research Area:** Technical/natural sciences

**Conference:** SPIE Medical Imaging 2017 - Biomedical Applications in Molecular, Structural, and Functional Imaging, Orlando, United States, 11/02/2017 - 11/02/2017
Automatiseret simplificering af 1D hydraulisk model – med hensyn til 1D-2D oversvømmelsesberegninger

General information
State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems
Authors: Löwe, R. (Intern), Davidsen, S. (Intern), Thrysøe, C. (Intern), Arnbjerg-Nielsen, K. (Intern)
Pages: 26-31
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: EVA : Erfaringsudveksling i vandmiljøteknikken
Volume: 30
Issue number: 2
ISSN (Print): 1901-3663
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Electronic versions:
2017_02_EVA_blad.pdf

Bibliographical note
s. 26 og følgende<br/>fra: http://www.evanet.dk/bladet/
Source: PublicationPreSubmission
Source-ID: 137167051
Publication: Research - peer-review › Journal article – Annual report year: 2017

Autonomous control of metabolic state by a quorum sensing (QS)-mediated regulator for bisabolene production in engineered E. coli

Inducible gene expression systems are widely used in microbial host strains for protein and commodity chemical production because of their extensive characterization and ease of use. However, some of these systems have disadvantages such as leaky expression, lack of dynamic control, and the prohibitively high costs of inducers associated with large-scale production. Quorum sensing (QS) systems in bacteria control gene expression in response to population density, and the LuxI/R system from Vibrio fischeri is a well-studied example. A QS system could be ideal for biofuel production strains as it is self-regulated and does not require the addition of inducer compounds, which reduce operational costs for inducer. In this study, a QS system was developed for inducer-free production of the biofuel compound bisabolene from engineered E. coli. Seven variants of the Sensor plasmid, which carry the luxI-luxR genes, and four variants of the Response plasmid, which carry bisabolene producing pathway genes under the control of the PluxI promoter, were designed for optimization of bisabolene production. Furthermore, a chromosome-integrated QS strain was engineered with the best combination of Sensor and Response plasmid and produced bisabolene at a titer of 1.1g/L without addition of external inducers. This is a 44% improvement from our previous inducible system. The QS strain also displayed higher homogeneity in gene expression and isoprenoid production compared to an inducible-system strain.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Synthetic Biology Tools for Yeast, Joint Bioenergy Institute
Authors: Kim, E. (Ekstern), Min Woo, H. (Ekstern), Tian, T. (Ekstern), Yilmaz, S. (Ekstern), Javidpour, P. (Ekstern), Keasling, J. D. (Intern), Soon Lee, T. (Ekstern)
Autoresonant control of drift waves
The control of nonlinear drift waves in a magnetized plasma column has been investigated. The studies are based on the Hasegawa–Mima model, which is solved on a disk domain with radial inhomogeneity of the plasma density. The system is forced by a rotating potential with varying frequency defined on the boundary. To excite and control the waves we apply the autoresonant effect, taking place when the amplitude of the forcing exceeds a threshold value and the waves are phase-locked with the forcing. We demonstrate that the autoresonant approach is applicable for excitation of a range of steady nonlinear waves of the lowest azimuthal mode numbers and for controlling their amplitudes and phases. We also demonstrate the excitation of zonal flows (m = 0 modes), which are controlled via the forced modes.

General information
State: Published
Organisations: Department of Physics, Plasma Physics and Fusion Energy, Ural Federal University
Authors: Shagalov, A. (Ekstern), Rasmussen, J. J. (Intern), Naulin, V. (Intern)
Number of pages: 9
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Physica Scripta
Volume: 92
Issue number: 3
Article number: 034001
ISSN (Print): 0031-8949
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.84
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.64
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.62
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.61
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.67
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0.85
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Web of Science (2002): Indexed yes
Web of Science (2000): Indexed yes
Available Resources for Reconfigurable Systems in 5G Networks

In this paper, the concept of a Radio-over-Fiber based Centralized Radio Access Network is explained and analyzed, in order to identify a set of resources within the network that can be used as a base in the design of reconfigurable systems. This analysis is then used to design a different reconfigurable system to be implemented as part of the next generation Radio Access Unit. These systems are then implemented and experimentally tested, allowing to demonstrate their operation. The obtained results allow to show the feasibility of the systems and the implementation of a flexible architecture for the next generation of networks.

General information
State: Published
Organisations: Department of Photonics Engineering, Metro-Access and Short Range Systems, Networks Technology and Service Platforms, Electromagnetic Systems
Authors: Rodríguez Páez, J. S. (Intern), Vegas Olmos, J. J. (Intern)
Number of pages: 6
Pages: 24-29
Publication date: 2017

A valence force field-Monte Carlo algorithm for quantum dot growth modeling

We present a novel kinetic Monte Carlo version for the atomistic valence force fields algorithm in order to model a self-assembled quantum dot growth process. We show our atomistic model is both computationally favorable and capture more details compared to traditional kinetic Monte Carlo models based on continuum elastic models. We anticipate the model will be useful to experimentalists in understanding better the growth dynamics of quantum dot systems.

General information
State: Published
Organisations: Department of Photonics Engineering, Center for Electron Nanoscopy, Nanophotonic Devices, Centre of Excellence for Silicon Photonics for Optical Communications, University of Rome Tor Vergata, National Research Council of Italy
Authors: Barettin, D. (Ekstern), Willatzen, M. (ed.) (Intern), Kadkhodazadeh, S. (Intern), Pecchia, A. (Ekstern), Auf der Maur, M. (Ekstern), Semenova, E. (Intern)
Number of pages: 2
Pages: 117-118
Publication date: 2017
This paper presents a vector flow imaging method for the integration of quantitative blood flow imaging in portable ultrasound systems. The method combines directional transverse oscillation (TO) and synthetic aperture sequential beamforming to yield continuous velocity estimation in the whole imaging region. Six focused emissions are used to create a high-resolution image (HRI), and a dual-stage beamforming approach is used to lower the data throughput between the probe and the processing unit. The transmit/receive focal points are laterally separated to obtain a TO in the HRI that allows for the velocity estimation along the lateral and axial directions using a phase-shift estimator. The performance of the method was investigated with constant flow measurements in a flow rig system using the SARUS scanner and a 4.1-MHz linear array. A sequence was designed with interleaved B-mode and flow emissions to obtain continuous data acquisition. A parametric study was carried out to evaluate the effect of critical parameters. The vessel was placed at depths from 20 to 40 mm, with beam-to-flow angles of 65°, 75°, and 90°. For the lateral velocities at 20 mm, a bias between -5% and -6.2% was obtained, and the standard deviation (SD) was between 6% and 9.6%. The axial bias was lower than 1% with an SD around 2%. The mean estimated angles were $66.70° \pm 2.86°$, $72.65° \pm 2.48°$, and $89.13° \pm 0.79°$ for the three cases. A proof-of-concept demonstration of the real-time processing and wireless transmission was tested in a commercial tablet obtaining a frame rate of 27 frames/s and a data rate of 14 MB/s. An in vivo measurement of a common carotid artery of a healthy volunteer was finally performed to show the potential of the method in a realistic setting. The relative SD averaged over a cardiac cycle was 4.33%.

General information
State: Published
Organisations: Department of Electrical Engineering, Biomedical Engineering, Center for Fast Ultrasound Imaging, Copenhagen University Hospital, Alexandra Institute
Authors: di Ianni, T. (Intern), Villagómez Hoyos, C. A. (Intern), Ewertsen, C. (Ekstern), Kjeldsen, T. K. (Ekstern), Mosegaard, J. (Ekstern), Nielsen, M. B. (Ekstern), Jensen, J. A. (Intern)
Pages: 1655-1665
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control
Volume: 64
Issue number: 11
ISSN (Print): 0885-3010
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.73 SJR 1.154 SNIP 1.473
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.82 SNIP 1.537 CiteScore 2.43
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.064 SNIP 1.624 CiteScore 2.18
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.84 SNIP 1.473 CiteScore 2.18
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.793 SNIP 1.461 CiteScore 1.87
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.738 SNIP 1.318 CiteScore 1.95
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
A versatile one-step CRISPR-Cas9 based approach to plasmid-curing

Background
Plasmids are widely used and essential tools in molecular biology. However, plasmids often impose a metabolic burden and are only temporarily useful for genetic engineering, bio-sensing and characterization purposes. While numerous techniques for genetic manipulation exist, a universal tool enabling rapid removal of plasmids from bacterial cells is lacking.

Results
Based on replicon abundance and sequence conservation analysis, we show that the vast majority of bacterial cloning and expression vectors share sequence similarities that allow for broad CRISPR-Cas9 targeting. We have constructed a universal plasmid-curing system (pFREE) and developed a one-step protocol and PCR procedure that allow for identification of plasmid-free clones within 24 h. While the context of the targeted replicons affects efficiency, we obtained curing efficiencies between 40 and 100% for the plasmids most widely used for expression and engineering purposes. By virtue of the CRISPR-Cas9 targeting, our platform is highly expandable and can be applied in a broad host context. We exemplify the wide applicability of our system in Gram-negative bacteria by demonstrating the successful application in both Escherichia coli and the promising cell factory chassis Pseudomonas putida.

Conclusion
As a fast and freely available plasmid-curing system, targeting virtually all vectors used for cloning and expression purposes, we believe that pFREE has the potential to eliminate the need for individualized vector suicide solutions in molecular biology. We envision the application of pFREE to be especially useful in methodologies involving multiple plasmids, used sequentially or simultaneously, which are becoming increasingly popular for genome editing or combinatorial pathway engineering.
A vertical ball mill as a new reactor design for biomass hydrolysis and fermentation process

A vertical ball mill (VBM) reactor was evaluated for use in biomass conversion processes. The effects of agitation speed (100–200 rpm), number of glass spheres (0–30 units) and temperature (40–46 °C) on enzymatic hydrolysis of rice straw and on glucose fermentation by a thermotolerant Kluyveromyces marxianus strain were separately studied. The results revealed an important role of the spheres during biomass' fiber liquefaction and yeast's fermentative performance. For hydrolysis, the spheres were the only variable with significant positive impact on cellulose conversion, while for fermentation all the variables have influenced the ethanol volumetric productivity (QP). For QP, the spheres showed an interactive effect with temperature, being obtained a maximum of 2.16 g/L.h when both variables were used in the lowest level. By applying the needed adjustments on the levels of the variables for each process (hydrolysis and fermentation), the VBM reactor could be efficiently used for biomass conversion into ethanol.

General information

State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Biomass Conversion and Bioprocess Technology, Universidade de Sao Paulo
Authors: de Assis Castro, R. C. (Ekstern), Mussatto, S. I. (Intern), Conceicao Roberto, I. (Ekstern)
Pages: 775-780
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Renewable Energy
Volume: 114
Issue number: Part B
ISSN (Print): 0960-1481
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.83 SJR 1.697 SNIP 2.044
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.845 SNIP 2.118 CiteScore 4.51
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.983 SNIP 2.687 CiteScore 4.51
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.066 SNIP 2.767 CiteScore 4.63
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.852 SNIP 2.745 CiteScore 3.97
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
A wavefront analyzer for terahertz time-domain spectrometers

We report on the development of a terahertz wavefront sensor able to determine the optical aberrations of a terahertz time-domain spectrometer. The system measures point-by-point the amplitude and phase of the terahertz electric field in a given plane. From this measurement, we reconstruct the terahertz wavefront and calculate its Zernike coefficients. In particular, we especially show that the focus spot of the spectrometer suffers from optical aberrations such as remaining defocus, first and second order astigmatisms, as well as spherical aberration. This opens a route to wavefront correction for improved terahertz imaging and spectroscopy.

General information
State: Published
Organisations: Department of Photonics Engineering, Ultrafast Infrared and Terahertz Science, Universite de Bordeaux
Authors: Abraham, E. (Ekstern), Brossard, M. (Ekstern), Fauche, P. (Ekstern), Perrin, M. (Ekstern), Iwaszczuk, K. (Intern), Jepsen, P. U. (Intern)
Pages: 1-1
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 42nd International Conference on Infrared, Millimeter, and Terahertz Waves
Publisher: IEEE
ISBN (Print): 9781509060498

Series: International Conference on Infrared, Millimeter and Terahertz Waves
ISSN: 2162-2027
Main Research Area: Technical/natural sciences
Conference: 42nd International Conference on Infrared, Millimeter, and Terahertz Waves, Cancun, Mexico, 27/08/2017 - 27/08/2017

In order to compensate multiple time scales power fluctuation resulted from distributed energy resources and loads, hybrid energy storage systems are employed as the buffer unit in DC microgrid. In this paper, a wireless hierarchical control strategy is proposed to realize power sharing between energy density storage unit and power density storage unit in reasonable fashion. Primary control introduces change rate of voltage as virtual information carrier, and urges supercapacitor unit to pick up major dynamic power immediately in the load switching moment, by setting sensitivity of different storage interface converters. The steady state error produced in primary control is eliminated by secondary control, in which voltage magnitude is maintained and zero steady state current in supercapacitor is guaranteed. In this framework, autonomous and coordinated control is achieved using only local information of each unit, therefore economic and reliability issues born along communication network can be avoided. The feasibility and effectiveness of the proposed control strategy are validated by experimental results.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power components, Beijing Jiaotong University, Collaborative Innovation Center of Electric Vehicles in Beijing
Authors: Yang, J. (Ekstern), Jin, X. (Ekstern), Wu, X. (Ekstern), Chen, M. (Ekstern), Agelidis, V. (Intern)
Pages: 135-144
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Diangong Jishu Xuebao/transactions of China Electrotechnical Society
Volume: 32
Issue number: 10
ISSN (Print): 1000-6753
Ratings:
Scopus rating (2016): CiteScore 1.77 SJR 0.666 SNIP 0.944
Scopus rating (2015): CiteScore 1.5 SJR 0.633 SNIP 1.104
Scopus rating (2014): CiteScore 1.41 SJR 0.746 SNIP 1.253
Scopus rating (2013): CiteScore 1.04 SJR 0.565 SNIP 1.067
Scopus rating (2012): CiteScore 0.85 SJR 0.539 SNIP 0.95
Scopus rating (2011): CiteScore 0.81 SJR 0.453 SNIP 0.802
Scopus rating (2010): SJR 0.406 SNIP 0.621
Scopus rating (2009): SJR 0.352 SNIP 0.546
Scopus rating (2008): SJR 0.276 SNIP 0.281
Scopus rating (2007): SJR 0.271 SNIP 0.114
Scopus rating (2006): SJR 0.205
Scopus rating (2005): SJR 0.18
Scopus rating (2004): SJR 0.15
Scopus rating (2003): SJR 0.144
Scopus rating (2002): SJR 0.121
Scopus rating (2001): SJR 0.102
Scopus rating (2000): SJR 0.102
Scopus rating (1999): SJR 0.102

Original language: English
Electrical and Electronic Engineering, DC microgrid, Hierarchical control, Hybrid energy storage systems (HESS), Power sharing, Energy resources, Energy storage, Hierarchical systems, Supercapacitor, Dc micro-grid, Distributed Energy Resources, Energy-density storage, Hybrid energy storage systems, Interface converters, Buffer storage

Source: FindIt
Source-ID: 2373093387
Publication: Research - peer-review › Journal article – Annual report year: 2017
Azimuthal asymmetry in HE1,X modes analyzed

An analytical study of higher-order modes in step-index fibers has been conducted with the aim of justifying the circular asymmetry experimentally observed in the intensity of higher-order Bessel-like modes.

General information
State: Published
Organisations: Department of Photonics Engineering, Fiber Optics, Devices and Non-linear Effects, Networks Technology and Service Platforms, Centre of Excellence for Silicon Photonics for Optical Communications
Authors: Astorino, A. (Intern), Usuga Castaneda, M. A. (Intern), Israelsen, S. M. (Intern), Lægsgaard, J. (Intern), Rottwitt, K. (Intern)
Number of pages: 2
Publication date: 2017

Host publication information
Title of host publication: Frontiers in Optics 2017
Publisher: Optical Society of America OSA
Article number: JTu3A.87
ISBN (Print): 978-1-943580-33-0
Main Research Area: Technical/natural sciences
Electronic versions:
FiO_conference_Antonio_final_version.pdf
DOIs:
10.1364/FIO.2017.JTu3A.87

Bibliographical note
From the session: Joint Poster Session II (JTu3A)
Source: PublicationPreSubmission
Source-ID: 137851258
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

BacHBerry: BACterial Hosts for production of Bioactive phenolics from bERRY fruits

BACterial Hosts for production of Bioactive phenolics from bERRY fruits (BacHBerry) was a 3-year project funded by the Seventh Framework Programme (FP7) of the European Union that ran between November 2013 and October 2016. The overall aim of the project was to establish a sustainable and economically-feasible strategy for the production of novel high-value phenolic compounds isolated from berry fruits using bacterial platforms. The project aimed at covering all stages of the discovery and pre-commercialization process, including berry collection, screening and characterization of their bioactive components, identification and functional characterization of the corresponding biosynthetic pathways, and construction of Gram-positive bacterial cell factories producing phenolic compounds. Further activities included optimization of polyphenol extraction methods from bacterial cultures, scale-up of production by fermentation up to pilot scale, as well as societal and economic analyses of the processes. This review article summarizes some of the key findings obtained throughout the duration of the project.

General information
State: Accepted/In press
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Microbial Evolution and Synthetic Biology, Applied Metabolic Engineering, Instituto de Biologia Experimental e Tecnológica, Universidade Nova de Lisboa, INRIA Institut National de Recherche en Informatique et en Automatique, Pontificia Universidad Catolica de Chile, Evolva, University of Copenhagen, Research Centre Julich (FZJ), Biocentrum, University of Minho, John Innes Centre, The James Hutton Institute, Chr. Hansen AS, Universidade de Lisboa, University of Edinburgh, Institute of Botany Chinese Academy of Sciences, Department of Plant and Environmental Science, Biofaktion KG, University of Groningen, Delft University of Technology, N.I.Vavilov Research Institute of Plant Industry, Heriot-Watt University, Centrum voor Wiskunde en Informatica
Bacillus cereus in fresh ricotta: Comparison of growth and Haemolysin BL production after artificial contamination during production or post processing

Bacillus cereus is of particular concern for the production of fresh ricotta, due to the ability of spores to survive to the thermal treatment, leading to a potential germination, growth and toxin production in the product. This study aimed to evaluate the effect of a B. cereus contamination occurring in the whey used for the production of ricotta, or in the final product as post-production event. Four B. cereus strains (ATCC 14579 and three clinical isolates, GGu1, GPe2 and RCe1) were first evaluated for their ability to grow at different temperatures (from 5 to 55°C) and spore survival rate to different thermal treatments (65, 70, 80 and 90Â°C for 30, 15, 10 and 3 min, respectively). None of the strains showed to be psychrotrophic, as no growth below 10Â°C was observed. Strains ATCC 14579 and GPe2 were the most resistant to thermal stresses and were selected for the inoculation tests. In the first trial, two aliquots of whey were inoculated with ATCC 14579 or GPe2 strain and used for the production of fresh ricotta samples, that were stored at 10Â°C for 7 days (only GPe2) or 15Â°C for 5 days (both the strains). In the second trial, the inoculation was made on fresh ricotta just after production. Samples were stored in the same conditions and analysed daily for the quantification of B. cereus vegetative cells and spores; the L2 component of Haemolysin BL was also quantified in the product. At 15Â°C, a very fast germination of spores, followed by an active growth, was constantly observed in the two trials for both B. cereus
strains. An earlier growth was detected in the whey-inoculated samples, suggesting the potential activation of spore germination caused by high temperatures reached during ricotta production. A slightly faster growth was observed for ATCC 14579 strain. At 10°C, GPe2 strain showed a slow growth, with similar rates between whey- or product-inoculated ricotta samples. The production of HBL toxin was significant only in samples kept at 15°C, starting from the 4th day of storage. In order to ensure the consumers’ protection, these results suggest the suitability of fresh ricotta as a substrate for the growth and metabolic activity of B. cereus, highlighting the need to prevent the contamination of the product and, above all, to apply a correct refrigeration during its storage.

**General information**

**State:** Published

**Organisations:** National Food Institute, Università degli Studi di Milano, University of Pisa, Azienda Agricola Casati s. a.

**Authors:** Tirloni, E. (Ekstern), Ghelardi, E. (Ekstern), Celandroni, F. (Ekstern), Bernardi, C. (Ekstern), Casati, R. (Ekstern), Rosshaug, P. S. (Intern), Stella, S. (Ekstern)

**Number of pages:** 7

**Pages:** 272-278

**Publication date:** 2017

**Main Research Area:** Technical/natural sciences

**Publication information**

**Journal:** Food Control

**Volume:** 79

**ISSN (Print):** 0956-7135

**Ratings:**

- BFI (2017): BFI-level 1
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 3.86 SJR 1.462 SNIP 1.719
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): SJR 1.509 SNIP 1.72 CiteScore 3.65
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 1
- Scopus rating (2014): SJR 1.389 SNIP 1.718 CiteScore 3.27
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 1.273 SNIP 1.745 CiteScore 3.14
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): SJR 1.264 SNIP 1.916 CiteScore 3.1
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): SJR 1.2 SNIP 1.726 CiteScore 2.9
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 1
- Scopus rating (2010): SJR 1.214 SNIP 1.683
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 1
- Scopus rating (2009): SJR 1.193 SNIP 1.685
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 1
- Scopus rating (2008): SJR 1.136 SNIP 1.394
- Web of Science (2008): Indexed yes
- Scopus rating (2007): SJR 0.89 SNIP 1.549
- Web of Science (2007): Indexed yes
- Scopus rating (2006): SJR 0.776 SNIP 1.323
Backlash Estimation for Industrial Drive-Train Systems

Backlash in gearing and other transmission components is a common positioning-degrading phenomenon that develops over time in industrial machines. High-performance machine tool controls use backlash compensation algorithms to maintain accurate positioning of the tool to cope with such deadzone phenomena. As such, estimation of the magnitude of deadzones is essential. This paper addresses the generic problem of accurately estimating the width of the deadzone in a single-axis mechanical drive train. The paper suggests a scheme to estimate backlash between motor and load, employing a sliding mode observer and a nonlinear adaptive estimator. The efficacy of the approach is illustrated via simulations.

General information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control, Siemens
Authors: Papageorgiou, D. (Intern), Blanke, M. (Intern), Niemann, H. H. (Intern), Richter, J. H. (Ekstern)
Pages: 3336-3341
Publication date: 2017

Host publication information
Title of host publication: Preprints of the 20th World Congress
Publisher: International Federation of Automatic Control
Main Research Area: Technical/natural sciences
Conference: The 20th World Congress of the International Federation of Automatic Control, Toulouse, France, 09/07/2017 - 09/07/2017
Parameter estimation based methods for FDI, FDI for nonlinear Systems, Condition Monitoring
Electronic versions:
Backlash_Estimation_for_Industrial_Drive_Train_Systems.pdf
DOIs:
10.1016/j.ifacol.2017.08.621

Bibliographical note
MoP20 Invited Session; 'Industrial Fault Diagnosis and Fault-Tolerant Control'
Source: PublicationPreSubmission
Source-ID: 137168022
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Bacteria from Wheat and Cucurbit Plant Roots Metabolize PAHs and Aromatic Root Exudates: Implications for Rhizodegradation

The chemical interaction between plants and bacteria in the root zone can lead to soil decontamination. Bacteria which degrade PAHs have been isolated from the rhizospheres of plant species with varied biological traits, however, it is not known what phytochemicals promote contaminant degradation. One monocot and two dicotyledon plants were grown in PAH-contaminated soil from a manufactured gas plant (MGP) site. A phytotoxicity assay confirmed greater soil decontamination in rhizospheres when compared to bulk soil controls. Bacteria were isolated from plant roots (rhizobacteria) and selected for growth on anthracene and chrysene on PAH-amended plates. Rhizosphere isolates metabolized 3- and 4-ring PAHs and PAH catabolic intermediates in liquid incubations. Aromatic root exudate compounds, namely flavonoids and simple phenols, were also substrates for isolated rhizobacteria. In particular, the phenolic compounds - morin, caffeic acid, and protocatechuic acid - appear to be linked to bacterial degradation of 3- and 4- ring PAHs in the rhizosphere.
Bacterial activity dynamics in the water phase during start-up of recirculating aquaculture systems

Microbial water quality in recirculating aquaculture systems (RAS) is important for successful RAS operation but difficult to assess and control. There is a need to identify factors affecting changes in the bacterial dynamics—in terms of abundance and activity—to get the information needed to manage microbial stability in RAS. This study aimed to quantify bacterial activity in the water phase in six identical, pilot scale freshwater RAS stocked with rainbow trout (Oncorhynchus mykiss) during a three months period from start-up. Bacterial activity and dynamics were investigated by the use of a patented method, BactiQuant®. The method relies on the hydrolysis of a fluorescent enzyme-substrate and is a rapid technique for quantifying bacterial enzyme activity in a water sample. The results showed a forty-fold increase in bacterial activity within the first 24 days from start-up. Average BactiQuant® values (BQV) were below 1000 at Day 0 and stabilized around 40,000 BQV after four weeks from start. The study revealed considerable variation in initial BQV levels between identically operated and designed RAS; over time these differences diminished. Total ammonia nitrogen, nitrite and nitrate levels were very similar in all six RAS and were neither related to nor affected by BQV. Chemical oxygen demand (COD) and biological oxygen demand (BOD5) were highly reproducible parameters between RAS with a stable equilibrium dynamic over time. This study showed that bacterial activity was not a straightforward predictable parameter in the water phase as e.g. nitrate-N would be in identical RAS, and showed unexpected sudden changes/fluctuations within specific RAS. However, a bacterial activity stabilization phase was observed as systems matured and reached equilibrium, suggesting a successive transition from fragile to robust microbial community compositions.
Bacterial community composition and potential driving factors in different reef habitats of the Spermonde Archipelago, Indonesia

Coastal eutrophication is a key driver of shifts in bacterial communities on coral reefs. With fringing and patch reefs at varying distances from the coast the Spermonde Archipelago in southern Sulawesi, Indonesia offers ideal conditions to study the effects of coastal eutrophication along a spatially defined gradient. The present study investigated bacterial community composition of three coral reef habitats: the water column, sediments, and mucus of the hard coral genus Fungia, along that cross shelf environmental and water quality gradient. The main research questions were: (1) How do water quality and bacterial community composition change along a coastal shelf gradient? (2) Which water quality parameters influence bacterial community composition? (3) Is there a difference in bacterial community composition among the investigated habitats? For this purpose, a range of key water parameters were measured at eight stations in distances from 2 to 55 km from urban Makassar. This was supplemented by sampling of bacterial communities of important microbial habitats using 454 pyrosequencing. Findings revealed that the population center Makassar had a strong effect on the concentrations of Chlorophyll a, suspended particulate matter (SPM), and transparent exopolymer particles (TEP), which were all significantly elevated at the inshore compared the other seven sites. Shifts in the bacterial communities were specific to each sampled habitat. Two OTUs, belonging to the genera Escherichia/Shigella (Gammaproteobacteria) and Raistonia (Betaproteobacteria), respectively, both dominated the bacterial community composition of the both size fractions of the water column and coral mucus. The sampled reef sediments were more diverse, and no single OTUs was dominant. There was no gradual shift in bacterial classes or OTUs within the sampled habitats. In addition, we observed very distinct communities between the investigated habitats. Our data show strong changes in the bacterial community composition at the inshore site for water column and sediment samples. Alarmingly, there was generally a high prevalence of potentially pathogenic bacteria across the entire gradient.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Centre for Ocean Life, Leibniz Center for Tropical Marine Research, Hasanuddin University, Leibniz Centre for Tropical Marine Research, University of Bremen
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Frontiers in Microbiology
Volume: 8
Article number: 662
ISSN (Print): 1664-302X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.16 SJR 1.731 SNIP 1.172
Web of Science (2016): Indexed yes
Bacterial Electrocatalysis of $\text{K}_4[\text{Fe(CN)}_6]$ Oxidation

Shewanella oneidensis MR-1 (MR-1), a model strain of electrochemically active bacteria, can transfer electrons from cell to extracellular electron acceptors including Fe(III) (hydro)oxides. It has been reported that several redox species such as cytochromes in membranes and flavins assist in the electron transport (ET) processes. However, the oxidation of metal compounds was barely described. Here we report electrocatalysis of $\text{K}_4[\text{Fe(CN)}_6]$ oxidation by MR-1. $\text{K}_4[\text{Fe(CN)}_6]$ is a redox inorganic compound and shows a reversible redox process on bare glassy carbon (GCE). This is reflected by a pair of symmetric peaks on cyclic voltammetry (CV) (Fig. 1). Interestingly, unsymmetric peaks with a strong anodic peak and a very weak cathodic peak are found on CVs of 1.0 mM $\text{K}_4[\text{Fe(CN)}_6]$ when the GCE was coated with MR-1, distinguished from the reversible CV on bare electrodes (Fig. 1). A similar electrochemical pattern has been observed using $\text{K}_3[\text{Fe(CN)}_6]$. These results suggested an electrocatalysis process of $[\text{Fe(CN)}_6]^{4-}$ to $[\text{Fe(CN)}_6]^{3-}$ by MR-1. The ratio of anodic peak current vs cathodic peak current depends on scan rate, suggesting both diffusion of redox molecules and interfacial ET rate are key factors of the electrocatalysis. Moreover, Selectivity of MR-1 is another interesting issue: MR-1 does not catalyze other redox compounds such as $\text{Ru}[\text{(NH}_3)_{6}]^3\text{Cl}_4^-$ and Resorufin. In our recent work, extracellular polymeric substances (EPS) showed redox properties and electron hopping through EPS. Here we notice that neither the glassy carbon electrode (GCE) coating EPS extracted from MR-1 nor MR-1 removed EPS (MR-1ΔEPS) exhibited asymmetric redox feature (Fig.1), but caused the decrease of current and the broadening of the difference of anodic and cathodic peak potential, indicating the hindrance of reaction. More work to disclose the origin of the electrocatalysis phenomenon is in progress, aiming at the identification of related compositions in MR-1.

General information

State: Published
Organisations: Department of Chemistry, NanoChemistry, Metalloprotein Chemistry and Engineering, Organic Chemistry, Chinese Academy of Sciences
Authors: Zheng, Z. (Intern), Xiao, Y. (Intern), Wu, R. (Intern), Christensen, H. E. M. (Intern), Zhao, F. (Ekstern), Zhang, J. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences
Electronic versions:
20170510_Abstract_of_16th_ISEAC_version_3.pdf
Source: PublicationPreSubmission
Source-ID: 136749263
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017
Bacterial gangs: United and strong by means of quorum sensing

Microorganisms can effectively communicate with each other. They share information about their community size (quorum), and thereby their nutrient requirement, then take appropriate action such as moving away. They use signalling molecules to coordinate their behaviour. These compounds, like similar molecules in humans, are called pheromones.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, University of Groningen
Authors: Kuipers, O. P. (Ekstern), Kovács, Á. T. (Intern)
Pages: 71-73
Publication date: 2017

Host publication information
Title of host publication: Mighty Microbes: the amazing world of microorganisms
Volume: 1
Place of publication: The Netherlands
Edition: 1
ISBN (Print): 978-90-816644-4-8
Main Research Area: Technical/natural sciences
Microbiology, Quorum sensing, Communication

Electronic versions:
B4_Kuipers_2017_MightyMicrobes.pdf
Source: PublicationPreSubmission
Source-ID: 138863651
Publication: Communication › Book chapter – Annual report year: 2017

Bacterial invasion of the uterus and oviducts in bovine pyometra

Pyometra is a common disease of cattle that causes infertility and thereby financial losses to the cattle industry. Bacteria involved in the development and progression of pyometra have been investigated by microbial culture but their tissue invading abilities, which is an important aspect of bacterial pathogenicity and development of lesions, have not been investigated. Bacterial invasion of the uterus and oviducts was studied in 21 cows diagnosed with pyometra at the time of slaughter by applying fluorescence in situ hybridization using probes targeting 16S ribosomal RNA of Fusobacterium necrophorum, Porphyromonas levii, Trueperella pyogenes and the overall bacterial domain Bacteria. Fusobacterium necrophorum and P. levii were found to invade the endometrium, especially if the endometrium was ulcerated, and penetrated deep into the lamina propria. These species co-localized within the tissue thus indicating a synergism. Trueperella pyogenes did not invade the uterine tissue. In addition to endometrial lesions, most cows with pyometra also had salpingitis but without significant bacterial invasion of the oviductal wall.

General information
State: Published
Organisations: National Veterinary Institute, Pathology, University of Copenhagen
Authors: Karstrup, C. C. (Ekstern), Pedersen, H. G. (Ekstern), Jensen, T. K. (Intern), Agerholm, J. S. (Ekstern)
Number of pages: 6
Pages: 93-98
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Theriogenology
Volume: 93
ISSN (Print): 0093-691X
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.99 SJR 0.766 SNIP 1.188
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.864 SNIP 1.254 CiteScore 1.86
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.955 SNIP 1.349 CiteScore 2.12
Bacterial whole genome-based phylogeny: construction of a new benchmarking dataset and assessment of some existing methods

Background
Whole genome sequencing (WGS) is increasingly used in diagnostics and surveillance of infectious diseases. A major application for WGS is to use the data for identifying outbreak clusters, and there is therefore a need for methods that can accurately and efficiently infer phylogenies from sequencing reads. In the present study we describe a new dataset that we have created for the purpose of benchmarking such WGS-based methods for epidemiological data, and also present an analysis where we use the data to compare the performance of some current methods.

Results
Our aim was to create a benchmark data set that mimics sequencing data of the sort that might be collected during an outbreak of an infectious disease. This was achieved by letting an E. coli hypermutator strain grow in the lab for 8 consecutive days, each day splitting the culture in two while also collecting samples for sequencing. The result is a data set consisting of 101 whole genome sequences with known phylogenetic relationship. Among the sequenced samples 51 correspond to internal nodes in the phylogeny because they are ancestral, while the remaining 50 correspond to leaves. We also used the newly created data set to compare three different online available methods that infer phylogenies from whole-genome sequencing reads: NDtree, CSI Phylogeny and REALPHY. One complication when comparing the output of these methods with the known phylogeny is that phylogenetic methods typically build trees where all observed sequences are placed as leafs, even though some of them are in fact ancestral. We therefore devised a method for post processing the inferred trees by collapsing short branches (thus relocating some leafs to internal nodes), and also present two new measures of tree similarity that takes into account the identity of both internal and leaf nodes.

Conclusions
Based on this analysis we find that, among the investigated methods, CSI Phylogeny had the best performance, correctly identifying 73% of all branches in the tree and 71% of all clades. We have made all data from this experiment (raw sequencing reads, consensus whole-genome sequences, as well as descriptions of the known phylogeny in a variety of
formats) publicly available, with the hope that other groups may find this data useful for benchmarking and exploring the performance of epidemiological methods. All data is freely available at: https://cge.cbs.dtu.dk/services/evolution_data.php.

**General information**

State: Published
Organisations: Department of Bio and Health Informatics, Genomic Epidemiology, Disease Intelligence and Molecular Evolution, National Food Institute, Research Group for Genomic Epidemiology, University of Copenhagen
Authors: Ahrenfeldt, J. (Intern), Skaarup, C. (Intern), Hasman, H. (Ekstern), Pedersen, A. G. (Intern), Aarestrup, F. M. (Intern), Lund, O. (Intern)
Number of pages: 13
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**
Journal: BMC Genomics
Volume: 18
Article number: 19
ISSN (Print): 1471-2164
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.05 SJR 2.065 SNIP 1.122
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.287 SNIP 1.172 CiteScore 4.3
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.297 SNIP 1.205 CiteScore 4.18
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.141 SNIP 1.174 CiteScore 4.39
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.181 SNIP 1.225 CiteScore 4.61
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.271 SNIP 1.197 CiteScore 4.38
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.109 SNIP 1.038
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.181 SNIP 1.015
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 2.067 SNIP 1.005
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.846 SNIP 1.04
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.431 SNIP 0.895
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.994 SNIP 0.894
Web of Science (2005): Indexed yes
Bag om Måltidsmærket: Udvikling og afprøvning af mærkets principper for sund kantinemad

General information
State: Published
Organisations: National Food Institute, Division of Risk Assessment and Nutrition
Authors: Lassen, A. D. (Intern), Christensen, L. M. (Intern), Trolle, E. (Intern)
Number of pages: 10
Pages: 1-10
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: E-artikel fra DTU Fødevareinstitutet
Volume: 2017
Issue number: 3
ISSN (Print): 1904-5581
Original language: Danish
Electronic versions:
E_artikel_bag_om_maaltidsmaerket.pdf
Publication: Research - peer-review › Journal article – Annual report year: 2017

Baicalein reduces oxidative stress in CHO cell cultures and improves recombinant antibody productivity

Oxidative stress that naturally accumulates in the endoplasmic reticulum (ER) as a result of mitochondrial energy metabolism and protein synthesis can disturb the ER function. Because ER has a responsibility on the protein synthesis and quality control of the secreted proteins, ER homeostasis has to be well maintained. When H2O2, an oxidative stress inducer, was added to recombinant Chinese hamster ovary (rCHO) cell cultures, it reduced cell growth, monoclonal antibody (mAb) production, and galactosylated form of mAb in a dose-dependent manner. To find an effective antioxidant for rCHO cell cultures, six antioxidants (hydroxyanisole, N-acetylcysteine, baicalein, berberine chloride, kaempferol, and apigenin) with various concentrations were examined individually as chemical additives to rCHO cell cultures producing mAb. Among these antioxidants, baicalein showed the best mAb production performance. Addition of baicalein significantly reduced the expression level of BiP and CHOP along with reduced reactive oxygen species level, suggesting oxidative stress accumulated in the cells can be relieved using baicalein. As a result, addition of baicalein in batch cultures resulted in 1.7 - 1.8-fold increase in the maximum mAb concentration (MMC), while maintaining the galactosylation of mAb. Likewise, addition of baicalein in fed-batch culture resulted in 1.6-fold increase in the MMC while maintaining the galactosylation of mAb. Taken together, the results obtained here demonstrate that baicalein is an effective antioxidant to increase mAb production in rCHO cells.

General information
State: Accepted/In press
Balancing Constraints and the Sweet Spot as Coming Topics for Creativity Research

The aim of this chapter is the introduction of two new concepts, ‘balancing constraints’ and ‘the sweet spot of creativity’, as promising new paths for creativity research. This is motivated by the fact that creativity research shows a growing interest in the fundamental entwinement of constraints and creativity, with skillful and innovative handling of constraints seen as a prerequisite for apt creative performance. Based on a brief review of current disparate conceptualizations of constraints as both enablers and restrainers of creative activities, we begin by proposing the unifying concept ‘creativity constraints’ to help establish common terminological ground. Since the presence of constraints change over time, we suggest the term ‘constrainedness’ to articulate this total constraint intensity at a given time. This allows us to introduce our main contribution, the concept ‘the sweet spot’, to address the salient situations where the creative practitioner can be said to experience the ‘right’ level of constrainedness conducive to optimum creative performance. We then proceed to consider
how the sweet spot can be attained by balancing constraints, i.e., by manipulating the intensity of constrainedness. More concretely, this means by hardening or softening the constraints at hand, resulting in a higher or lower level of constrainedness. Finally, we discuss how future studies can employ and inform these new concepts, which we see as potentially rich for cross-disciplinary creativity research focusing on the essential entwinement of constraints and creativity.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Technology and Innovation Management, Aarhus University
Authors: Onarheim, B. (Intern), Biskjaer, M. M. (Ekstern)
Publication date: 2017

Host publication information
Title of host publication: Creativity in Design: Understanding, Capturing, Supporting
Editor: Ball, L. J.
Main Research Area: Technical/natural sciences
Electronic versions:
Balancing_Constraints_and_the_Sweet_Spot.pdf
Source: FindIt
Source-ID: 2185858676
Publication: Research - peer-review » Book chapter – Annual report year: 2017

Bandpass transmission filters based on phase shifted fiber Bragg gratings in microstructured polymer optical fibers
In this contribution we report on the fabrication of novel bandpass transmission filters based on PS-FBGs in microstructured polymer fibers at telecom wavelengths. The phase mask technique is employed to fabricate several superimposed gratings with slight different periods in order to form Moiré structures with a single or various π phase shifts along the device. Simulations and experimental results are included in order to demonstrate very narrowband transmission filters. Experimental characterization under strain and temperature variations is provided in a non-annealed fiber and time stability of the fabricated devices has been also measured under different pre-strain conditions.

General information
State: Published
Organisations: Department of Photonics Engineering, Fiber Sensors and Supercontinuum Generation, Universidad Politecnica de Valencia
Authors: Ortega, B. (Ekstern), Min, R. (Ekstern), Sáez-Rodriguez, D. (Ekstern), Mi, Y. (Ekstern), Nielsen, K. (Intern), Bang, O. (Intern)
Number of pages: 11
Publication date: 2017

Host publication information
Title of host publication: Proceedings of SPIE
Volume: 10232
Publisher: SPIE - International Society for Optical Engineering
Article number: 1023209
ISBN (Print): 978150969655
Series: Proceedings of SPIE, the International Society for Optical Engineering
Volume: 10232
ISSN: 0277-786X
Main Research Area: Technical/natural sciences
Conference: Micro-structured and Specialty Optical Fibres V, Prague, Czech Republic, 26/04/2017 - 26/04/2017
Polymer optical fibers, Fiber Bragg grating, Optical fiber devices, Optical filters
Electronic versions:
1023209_1_.pdf
DOIs:
10.1117/12.2268281

Bibliographical note
Copyright 2017 Society of Photo Optical Instrumentation Engineers. One print or electronic copy may be made for personal use only. Systematic reproduction and distribution, duplication of any material in this paper for a fee or for commercial purposes, or modification of the content of the paper are prohibited.
Source: FindIt
Source-ID: 2372303501
Publication: Research - peer-review » Article in proceedings – Annual report year: 2017
Band structure engineered layered metals for low-loss plasmonics

Plasmonics currently faces the problem of seemingly inevitable optical losses occurring in the metallic components that challenges the implementation of essentially any application. In this work, we show that Ohmic losses are reduced in certain layered metals, such as the transition metal dichalcogenide TaS2, due to an extraordinarily small density of states for scattering in the near-IR originating from their special electronic band structure. On the basis of this observation, we propose a new class of band structure engineered van der Waals layered metals composed of hexagonal transition metal chalcogenide-halide layers with greatly suppressed intrinsic losses. Using first-principles calculations, we show that the suppression of optical losses lead to improved performance for thin-film waveguiding and transformation optics.

General information
State: Published
Organisations: Center for Nanostructured Graphene, Department of Physics, Theoretical Atomic-scale Physics
Authors: Gjerding, M. N. (Intern), Pandey, M. (Intern), Thygesen, K. S. (Intern)
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Nature Communications
Volume: 8
ISSN (Print): 2041-1723
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 11.8 SJR 6.399 SNIP 2.995
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 6.364 SNIP 3.053 CiteScore 11.23
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 6.331 SNIP 3.091 CiteScore 10.77
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 5.967 SNIP 2.776 CiteScore 9.85
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 5.586 SNIP 2.724 CiteScore 8.32
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 3.122 SNIP 1.544 CiteScore 4.44
ISI indexed (2011): ISI indexed no
Web of Science (2010): Indexed yes
Original language: English
Electronic versions:
ncomms15133.pdf
DOIs:
10.1038/ncomms15133
Source: FindIt
Source-ID: 2357954443
Publication: Research - peer-review › Journal article – Annual report year: 2017

Band structure engineering in van der Waals heterostructures via dielectric screening: the GΔW method

The idea of combining different two-dimensional (2D) crystals in van der Waals heterostructures (vdWHs) has led to a new paradigm for band structure engineering with atomic precision. Due to the weak interlayer couplings, the band structures of the individual 2D crystals are largely preserved upon formation of the heterostructure. However, regardless of the details of the interlayer hybridisation, the size of the 2D crystal band gaps are always reduced due to the enhanced dielectric screening provided by the surrounding layers. The effect can be significant (on the order of electron volts) but its precise magnitude is non-trivial to predict because of the non-local nature of the screening in quasi-2D crystals. Moreover, the effect is not captured by effective single-particle methods such as density functional theory. Here we present an efficient and general method for calculating the band gap renormalization of a 2D material embedded in an arbitrary
vdWH. The method evaluates the change in the GW self-energy of the 2D material from the change in the screened Coulomb interaction. The latter is obtained using the quantum-electrostatic heterostructure (QEH) model. We benchmark the GΔW method against full first-principles GW calculations and use it to unravel the importance of screening-induced band structure renormalisation in various vdWHs. A main result is the observation that the size of the band gap reduction of a given 2D material when inserted into a heterostructure scales inversely with the polarisability of the 2D material. Our work demonstrates that dielectric engineering via van der Waals heterostructuring represents a promising strategy for tailoring the band structure of 2D materials.

**General information**

State: Published
Organisations: Theoretical Atomic-scale Physics, Center for Nanostructured Graphene, Department of Physics
Authors: Winther, K. T. (Intern), Thygesen, K. S. (Intern)
Number of pages: 8
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: 2D materials
Volume: 4
Issue number: 2
Article number: 025059
ISSN (Print): 2053-1583
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.26 SJR 2.173 SNIP 0.772
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 4.212 SNIP 0.929 CiteScore 5.89
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISi indexed (2013): ISI indexed no
Original language: English
DOIs: 10.1088/2053-1583/aa6531
Source: Findit
Source-ID: 2355771032
Publication: Research - peer-review > Journal article – Annual report year: 2017

**Bandwidth-adaptable silicon photonic differentiator employing a slow light effect**

A photonic differentiator (DIFF) plays a crucial role in photonic circuits. Despite the fact that a DIFF having a tera-hertz bandwidth has been reported, the practical bandwidth is limited to being a bandpass response. In this Letter, we propose the concept of a bandwidth-adaptable DIFF, which exploits the slow light effect in a photonic crystal waveguide (PhCW) to overcome the inherent bandwidth limitation of current photonic DIFFs. We fabricated a PhCW Mach-Zehnder interferometer (PhCW-MZI) on the silicon-on-isolator material platform to validate our concept. Input Gaussian pulses with full width to half-maximums (FWHMs) ranging from 2.7 to 81.4 ps are accurately differentiated using our PhCW-MZI. Our all-passive scheme circumvents the bandwidth bottlenecks of previously reported photonic DIFFs and can greatly broaden the application area of photonic DIFFs. (C) 2017 Optical Society of America

**General information**

State: Published
Organisations: Department of Photonics Engineering, Nanophotonic Devices, Centre of Excellence for Silicon Photonics for Optical Communications, High-Speed Optical Communication, Huazhong University of Science and Technology
Authors: Yan, S. (Ekstern), Cheng, Z. (Ekstern), Frandsen, L. H. (Intern), Ding, Y. (Intern), Zhou, F. (Ekstern), Dong, J. (Ekstern), Zhang, X. (Ekstern)
Pages: 1596-1599
Publication date: 2017
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Optics Letters
Volume: 42
Issue number: 8
ISSN (Print): 0146-9592
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.54 SJR 1.864 SNIP 1.658
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.142 SNIP 1.642 CiteScore 3.53
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.497 SNIP 2.056 CiteScore 3.86
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.458 SNIP 2.095 CiteScore 3.95
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.596 SNIP 1.95 CiteScore 3.52
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.518 SNIP 2.475 CiteScore 3.69
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.669 SNIP 2.293
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 3.167 SNIP 2.665
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 3.408 SNIP 2.378
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 3.489 SNIP 2.102
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 3.143 SNIP 2.334
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 3.251 SNIP 2.483
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 3.521 SNIP 2.718
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 3.708 SNIP 2.573
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 3.702 SNIP 2.39
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 3.62 SNIP 2.244
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 3.416 SNIP 1.705
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 4.044 SNIP 1.699
Original language: English
DOIs:
Barley genotypic β-glucan variation combined with enzymatic modifications direct its potential as a natural ingredient in a high fiber extract

β-Glucan was extracted from eight different barley genotypes varying in β-glucan content and molecular structure using Termamyl® SC (T), Attenuzyme® (A) and Attenuzyme® Flex (AF) amylolytic enzymes in combinations. Extracts from barley lines Lys5f, KVL408, KVL1104 and CDC Fibar exceeded 4 g β-glucan/l, providing European Food Safety Authority (EFSA) and U.S. Food and Drug Administration (FDA) recommended amounts (3 g β-glucan/day) from three portions. TAF extracts of Lys5f and KVL408 grains reached extraordinary high concentrations of 8-9 g β-glucan/l. The β-glucan molecular mass decreased with enzyme treatment T < TA < TAF due to minor lichenase side activity. Extractability was generally higher and molecular mass lower for barley lines low in triosyl/tetraosyl (DP3/DP4) ratios than for those high in DP3/DP4 ratios (Lys5f, KVL408 and KVL1104). Overall, the higher β-glucan content and structural robustness in Lys5f and KVL408 raw materials favor these in a β-glucan rich extract with potential for EFSA and FDA health and Nutrition claims.
Barriers for district heating as a source of flexibility for the electricity system

The Scandinavian countries Denmark, Norway and Sweden currently deploy large amounts of variable renewable energy (VRE) sources, especially wind power. This calls for additional flexibility in the power market. The right coupling to the underlying national and local district heating (DH) markets can generate large amounts of flexibility. However, regulatory barriers and different energy market designs may hinder the potential benefits from system integration, and lower the potential that can be realized. The Scandinavian countries have a large extension of DH with a good potential for providing flexibility services to the electricity market. We survey and discuss regulatory barriers and drivers for exploiting this potential for flexibility. Combined heat and power (CHP) is widely integrated in the power market, but it is threatened by low electricity prices due to the increasing amounts of wind power. Power-to-heat technologies, electric boilers and heat pumps are blocked by high tariffs and taxes. A calculation of the heat costs of different DH technologies demonstrates that, under the present price and tax conditions in Denmark and Sweden, CHP and power-to-heat are unable to compete with heat-only boilers that use tax-free biomass.
Base-Catalyzed Depolymerization of Solid Lignin-Rich Streams Enables Microbial Conversion

Lignin valorization offers significant potential to enhance the economic viability of lignocellulosic biorefineries. However, because of its heterogeneous and recalcitrant nature, conversion of lignin to value-added coproducts remains a considerable technical challenge. In this study, we employ base-catalyzed depolymerization (BCD) using a process-relevant solid lignin stream produced via deacetylation, mechanical refining, and enzymatic hydrolysis to enable biological lignin conversion. BCD was conducted with the solid lignin substrate over a range of temperatures at two NaOH concentrations, and the results demonstrate that the lignin can be partially extracted and saponified at temperatures as low as 60°C. At 120°C and 2% NaOH, the high extent of lignin solubility was accompanied by a considerable decrease in the lignin average molecular weight and the release of lignin-derived monomers including hydroxycinnamic acids. BCD liquors were tested for microbial growth using seven aromatic-catabolizing bacteria and two yeasts. Three organisms (Pseudomonas putida KT2440, Rhodotorula mucilaginosa, and Corynebacterium glutamicum) tolerate high BCD liquor concentrations (up to 90% v/v) and rapidly consume the main lignin-derived monomers, resulting in lignin conversion of up to 15%. Furthermore, as a proof of concept, muconic acid production from a representative lignin BCD liquor was demonstrated with an engineered P. putida KT2440 strain. These results highlight the potential for a mild lignin depolymerization process to enhance the microbial conversion of solid lignin-rich biorefinery streams.
Basic and practical aspects of pregnancy establishment in cattle
Bovine embryos are increasingly produced using reproductive technologies, e.g. ovum pick-up (OPU), in vitro embryo production (IVP) and embryo transfer (ET). Such in vitro manipulated embryos are known to deviate in several aspects compared to in vivo derived embryos. Pregnancy establishment in cattle involves timed biological events including fine-tuned communication, initiated and carried out by both the embryo and the endometrium. This stimulates research to increase the understanding of events and interactions taking place in the uterus after embryo transfer, both from a biological and systems biology point of view. This review will focus on the biological events taking place during early embryonic development, implantation and beginning of placentation, with focus on transfer of in vitro produced embryos, including a systems biology approach for selection of superior embryo recipients.

Batch fabrication of nanopatterned graphene devices via nanoimprint lithography
Previous attempts to tune the electrical properties of large-scale graphene via nanopatterning have led to serious degradation of the key electrical parameters that make graphene a desirable material for electronic devices. We use thermal nanoimprint lithography to pattern wafer-scale graphene on a 4-in. wafer with prefabricated 25mm² devices. The nanopatterning process introduces a modest decrease in carrier mobility and only a minor change in residual doping. Due to the rapid fabrication time of approximately 90 min per wafer, this method has potential for large-scale industrial production. The chemiresistive gas sensing response towards NO2 was assessed in humid synthetic air and dry air, with devices showing a response to 50 ppb of NO2 only when nanopatterned.
Batch medication of intestinal infections in nursery pigs—A randomised clinical trial on the efficacy of treatment strategy, type of antibiotic and bacterial load on average daily weight gain

Introduction

Previous research projects have demonstrated the need for better diagnostic tools to support decisions on medication strategies for infections caused by Escherichia coli F4 (F4) and F18 (F18), Lawsonia intracellularis (LI) and Brachyspira pilosicoli (PILO). This study was carried out as a randomised clinical trial in three Danish pig herds and included 1047 nursery pigs, distributed over 10 batches and 78 pens. The objectives of this study were: (1) to assess the effect of four 5-day treatment strategies (initiated at clinical outbreak of diarrhoea or at fixed time points 14, 21, or 28 days after weaning) on average daily weight gain (ADG); (2) to compare the effect of treatment with doxycycline or tylosine on diarrhoea prevalence, pathogenic bacterial load, and ADG; (3) to evaluate PCR testing of faecal pen floor samples as a diagnostic tool for determining the optimal time of treatment. Results (1) The four treatment strategies had a significant overall effect on ADG (p = 0.01). Pigs starting treatment 14 days after weaning had a significantly higher ADG (42 g) compared to pigs treated on day 28 (p = 0.01). (2) When measured 2 days after treatment, doxycycline treatment resulted in fewer LI-positive pens (p = 0.004), lower excretion levels of LI (p = 0.013), and fewer pens with a high level of LI (p = 0.031) compared to pens treated with tylosine. There was no significant difference in F4, F18 and PILO levels after treatment with the two antibiotic compounds. There was a significant difference (p = 0.04) of mean diarrhoea prevalence on day 21 of the study between pens treated with tylosine (0.254, 95% CI: 0.184–0.324), and doxycycline (0.167, 95% CI: 0.124–0.210). The type of antibiotic compound was not found to have a significant effect on ADG (p = 0.209). (3) Pigs starting treatment on day 14 in pens where F4, F18, LI or PILO were detected by qPCR on the pen floor had a statistically significant increase in ADG (66 g) compared to pigs treated on day 14 in pens where no enteric pathogens were detected (p = 0.04). Conclusions

The results of this study showed that the highest ADG was achieved when treatment was initiated 14 days after weaning in pens where intestinal pathogens were detected. Doxycycline was more effective in reducing diarrhoea and LI excretion levels than treatment with tylosine.

General information

State: Published
Organisations: National Veterinary Institute, Virology, University of Copenhagen
Authors: Weber, N. R. (Ekstern), Pedersen, K. S. (Ekstern), Hansen, C. F. (Ekstern), Denwood, M. (Ekstern), Hjulsager, C. K. (Intern), Nielsen, J. P. (Ekstern)
Number of pages: 8
Pages: 69-76
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information

Journal: Preventive Veterinary Medicine
Volume: 137
Issue number: Part A
ISSN (Print): 0167-5877
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.2 SJR 1.185 SNIP 1.329
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.26 SNIP 1.23 CiteScore 2.1
Batf3-dependent classical dendritic cells are required for mounting optimal rotavirus-specific IgA immune responses

General information
State: Published
Organisations: National Veterinary Institute, Mucosal Immunology, Lund University
Authors: Nakawesi, J. (Ekstern), Hütter, J. (Intern), Lahl, K. (Intern)
Pages: 281
Publication date: 2017
Conference: 44th Annual Meeting of the Scandinavian Society of Immunology, Stockholm, Sweden, 17/10/2017 - 17/10/2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Scandinavian Journal of Immunology
Volume: 86
Issue number: 4
Article number: A-31356
ISSN (Print): 0300-9475
Ratings:
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.03 SJR 0.951 SNIP 0.646
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.93 SNIP 0.684 CiteScore 1.97
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.898 SNIP 0.666 CiteScore 1.91
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.86 SNIP 0.712 CiteScore 2.05
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.88 SNIP 0.749 CiteScore 2.16
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.854 SNIP 0.66 CiteScore 2.06
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.844 SNIP 0.622
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.962 SNIP 0.662
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.236 SNIP 0.078
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.286 SNIP 0.141
Scopus rating (2006): SJR 0.421 SNIP 0.125
Scopus rating (2005): SJR 0.999 SNIP 0.642
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.841 SNIP 0.583
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.807 SNIP 0.626
Scopus rating (2002): SJR 0.775 SNIP 0.591
Bayesian inference of the flow resistivity of a sound absorber and the room's influence on the Sabine absorption coefficients

A Bayesian analysis is applied to determine the flow resistivity of a porous sample and the influence of the test chamber based on measured Sabine absorption coefficient data. The Sabine absorption coefficient measured in a reverberation chamber according to ISO 354 is influenced by the test chamber significantly, whereas the flow resistivity is a rather reproducible material property, from which the absorptive characteristics can be calculated through reliable models. Using Sabine absorption coefficients measured in 13 European reverberation chambers, the maximum a posteriori and the uncertainty of the flow resistivity and the test chamber's influence are estimated. Inclusion of more than one chamber's absorption data helps the flow resistivity converge towards a reliable value with a standard deviation below 17%
Bayesian Modelling of Functional Whole Brain Connectivity

This thesis deals with parcellation of whole-brain functional magnetic resonance imaging (fMRI) using Bayesian inference with mixture models tailored to the fMRI data. In the three included papers and manuscripts, we analyze two different approaches to modeling fMRI signal; either we accept the prevalent strategy of standardizing fMRI time series and model data using directional statistics or we model the variability in the signal across the brain and across multiple subjects. In either case, we use Bayesian nonparametric modeling to automatically learn from the fMRI data the number of functional units, i.e. parcels. We benchmark the proposed mixture models against state of the art methods of brain parcellation, both probabilistic and non-probabilistic.

The time series of each voxel are most often standardized using z-scoring which projects the time series data onto a hypersphere. This underlying manifold is often ignored and the data is modeled using Gaussian distributions. In one contribution, we show that using a mixture model based on the directional distribution, the von Mises-Fisher distribution, increase the reliability of inferred parcellations.

We develop a mixture model for modeling time-series using a Gaussian Process as a prior that is informed of the temporal dynamics of the data expected from the blood oxygenation level dependent (BOLD) signal. In two contributions, we explore the potential of this modeling framework. In the first, we show that this mixture model can delineate regions of task activation that can then be identified unsupervised. This forms a promising framework for unsupervised identification of task activated when the task design is unknown. In the final contribution, we evaluate the performance of the mixture model on the problem of clustering whole-brain fMRI. Based on both simulations on synthetic data and analysis of two fMRI datasets, we show that the model provides improved reliability of clustering compared to traditional clustering methods. Furthermore, the inferred parcellations provide the foundation for a method for increasing the reliability and sensitivity in analyses of task activation and for determining the networks of functionally connectivity in fMRI.

The proposed mixture models form promising tools for brain parcellation and we hope the methods can provide a nudge towards using probabilistic models for fMRI parcellation.
Bayesian state prediction of wind turbine bearing failure

A statistical approach to abstract and predict turbine states in an online manner has been developed. Online inference is performed on temperature measurement residuals to predict the failure state $\delta_n$ steps ahead of time. In this framework a case study is performed showing the ability to predict bearing failure 33 days, on average, ahead of time. The approach is based on the separability of the sufficient statistics and a hidden variable, namely the state length. The predictive probability is conditioned on the data available, as well as the state variables. It is shown that the predictive probability can be calculated by a model for the samples and a hazard function describing the probability for undergoing a state transition. This study is concerned with the prior training of the model, for which run-to-failure time series of bearing measurements are used. For the sample model prediction is conditioned on prior information and predict the next $\delta_n$ samples from a feature space spanned by the prior samples. By assuming that the feature space can be described by a multivariate Gaussian distribution, the prediction is treated as a Gaussian process over the feature space.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science , Siemens Wind Power A/S, University of Southern Denmark
Authors: Herp, J. (Forskerdatabase), Ramezani, M. H. (Ekstern), Bach-Andersen, M. (Intern), Pedersen, N. L. (Ekstern), Nadimi, E. S. (Ekstern)
Number of pages: 9
Pages: 164-172
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Renewable Energy
Volume: 116
Issue number: Part B
ISSN (Print): 0960-1481
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.83 SJR 1.697 SNIP 2.044
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.845 SNIP 2.118 CiteScore 4.51
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.983 SNIP 2.687 CiteScore 4.51
Bayesian estimation of $P(X > x)$ from a small sample of Gaussian data

The classical statistical uncertainty problem of estimation of upper tail probabilities on the basis of a small sample of observations of a Gaussian random variable is considered. Predictive posterior estimation is discussed, adopting the standard statistical model with diffuse priors of the two normal distribution parameters. Rarely the uncertainty of the predictive estimate itself is quantified in practice. By considering the exceedance probability as a random variable over the posterior probability distribution of the parameters, an explicit expression for the distribution of this random variable is obtained. It is shown that the usual elementary estimate based on the normal distribution is very close to the median of this distribution. For increasing exceedance level the distribution skewness increases so that the predictive estimate, which is equal to the mean of the distribution, comes further and further out in the upper tail of the distribution. The dual frequentist's confidence interval approach is shown to have difficulties not present for the Bayesian approach. (C) 2017 Elsevier Ltd. All rights reserved.
General information
State: Published
Organisations: Department of Civil Engineering, Department of Mechanical Engineering
Authors: Ditlevsen, O. D. (Intern)
Number of pages: 4
Pages: 110-113
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Structural Safety
Volume: 68
ISSN (Print): 0167-4730
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.15 SJR 1.615 SNIP 2.367
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.462 SNIP 2.249 CiteScore 2.7
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.607 SNIP 2.809 CiteScore 2.89
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.585 SNIP 3.359 CiteScore 4.06
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.741 SNIP 3.533 CiteScore 3.13
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.07 SNIP 3.365 CiteScore 3.22
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.15 SNIP 2.722
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.256 SNIP 2.964
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.414 SNIP 2.507
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.261 SNIP 2.743
Scopus rating (2006): SJR 1.179 SNIP 3.275
Scopus rating (2005): SJR 1.309 SNIP 2.582
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.11 SNIP 2.13
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.546 SNIP 1.766
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.56 SNIP 1.037
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.716 SNIP 1.495
Scopus rating (2000): SJR 0.572 SNIP 1.312
Scopus rating (1999): SJR 0.493 SNIP 0.82
Original language: English
BCB polymer based row-column addressed CMUT
This paper presents an inexpensive, low temperature and rapid fabrication method for capacitive micromachined ultrasonic transducers (CMUT). The fabrication utilizes the bonding and dielectric properties of the photosensitive polymer Benzocyclobutene (BCB). A BCB based row-column addressed CMUT with integrated apodization has been fabricated and characterized with initial impedance measurement. Furthermore, two linear BCB CMUT arrays have been fabricated with different bottom electrode designs and characterized acoustically. All the fabricated arrays have a center frequency of 2.5 MHz when immersed into water and a pull-in voltage of 75 V. Stability tests have showed a stable coupling coefficient of approximately 0.1 during 10 hours of biased operation. Acoustic measurements, with a hydrophone positioned 1 cm from the CMUTs, have showed a peak-to-peak pressure of 14 kPa.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, MEMS-AppliedSensors, Silicon Microtechnology, Department of Electrical Engineering, Biomedical Engineering, Center for Fast Ultrasound Imaging
Number of pages: 4
Publication date: 2017

BDK-doped core microstructured PMMA optical fiber for effective Bragg grating photo-inscription
An endlessly single-mode doped microstructured poly(methyl methacrylate) (PMMA) optical fiber is produced for effective fiber Bragg grating (FBG) photo-inscription by means of a 400 nm femtosecond pulsed laser and the phase mask technique. The fiber presents a uniform benzyl dimethyl ketal (BDK) distribution in its core without drastic loss increase. It was produced using the selected center hole doping technique, and the BDK dopant acts as a photoinitiator. In this Letter, we report a rapidly growing process of the grating reflection band. For an 11 mW mean laser power, the FBG reflectivity reaches 83% in only 40 s.

General information
State: Published
Organisations: Department of Photonics Engineering, Fiber Sensors and Supercontinuum Generation, University of Mons
Pages: 2209-2212
Publication date: 2017
Main Research Area: Technical/natural sciences
Beam steering application for W-band data links with moving targets in 5G wireless networks

Ubiquitous broadband Internet access is one of the major goals of the next generation of wireless communications. However, there are still some locations where this is difficult to achieve. This is the case on moving vehicles and, particularly, on trains. Among the possible solutions to this problem, RoF (Radio-over-Fiber) architectures have been proposed as low-latency, cost-effective candidates. Two elements are introduced to extend the RoF approach. First, the carrier frequency is raised into the W-band (75–110 GHz) to increase the available capacity. Second, a mechanical beam-steering solution based on a Stewart platform is adopted for the transmitter antenna to allow it to follow a moving receiver along a known path, thereby enhancing the coverage area. The performance of a system transmitting a 2.5 Gbit/s non-return-to-zero signal generated by photonic up-conversion over a wireless link is evaluated in terms of real-time BER (Bit Error Rate) measurements. The receiver is situated in different positions, and the orientation of the transmitter is changed accordingly. Values below the forward error correction limit for 7% overhead are obtained over a range of 60 cm around a center point situated 2 m away from the transmitter.

General information
State: Published
Organisations: Department of Photonics Engineering, Metro-Access and Short Range Systems, Networks Technology and Service Platforms, Technical University of Denmark
Authors: Morales Vicente, A. (Intern), Rodríguez Páez, J. S. (Intern), Gallardo, O. (Ekstern), Vegas Olmos, J. J. (Intern), Tafur Monroy, I. (Intern)
Pages: 91-100
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Communications and Information Networks
Volume: 2
Issue number: 2
ISSN (Print): 2509-3312
Original language: English
Computer Science, Computer Communication Networks, Information Systems and Communication Service, Communications Engineering, Networks, SC6, 5G mobile communications, Mechanical steering, Millimeter-wave communications, Photonic up-conversion, Vehicular communications
DOIs: 10.1007/s41650-017-0023-9
Source: Findit
Source-ID: 2371923817
Publication: Research - peer-review › Journal article – Annual report year: 2017

Beamstop-based low-background ptychography to image weakly scattering objects

In recent years, X-ray ptychography has been established as a valuable tool for high-resolution imaging. Nevertheless, the spatial resolution and sensitivity in coherent diffraction imaging are limited by the signal that is detected over noise and over background scattering. Especially, coherent imaging of weakly scattering specimens suffers from incoherent background that is generated by the interaction of the central beam with matter along its propagation path in particular close to and inside of the detector. Common countermeasures entail evacuated flight tubes or detector-side beamstops, which improve the experimental setup in terms of background reduction or better coverage of high dynamic range in the diffraction patterns. Here, we discuss an alternative approach: we combine two ptychographic scans with and without beamstop and reconstruct them simultaneously taking advantage of the complementary information contained in the two scans. We experimentally demonstrate the potential of this scheme for hard X-ray ptychography by imaging a weakly scattering object composed of catalytic nanoparticles and provide the analysis of the signal-to-background ratio in the diffraction patterns.

General information
State: Published
Organisations: Department of Physics, Center for Electron Nanoscopy, Experimental Surface and Nanomaterials Physics, Department of Chemical and Biochemical Engineering, Deutsches Elektronensynchrotron DESY, Technische Universität Dresden, Karlsruhe Institute of Technology KIT
Authors: Reinhardt, J. (Ekstern), Hoppe, R. (Ekstern), Hofmann, G. (Ekstern), Damsgaard, C. D. (Intern), Patommel, J. (Ekstern), Baumbach, C. (Ekstern), Baier, S. (Ekstern), Rochet, A. (Ekstern), Grunwaldt, J. (Intern), Falkenberg, G. (Ekstern), Schroer, C. G. (Ekstern)
Number of pages: 6
Pages: 52-57
Publication date: 2017
Main Research Area: Technical/natural sciences

Greenland's bed topography is a primary control on ice flow, grounding line migration, calving dynamics, and subglacial drainage. Moreover, fjord bathymetry regulates the penetration of warm Atlantic water (AW) that rapidly melts and undercuts Greenland's marine-terminating glaciers. Here we present a new compilation of Greenland bed topography that assimilates seafloor bathymetry and ice thickness data through a mass conservation approach. A new 150 m horizontal resolution bed topography/bathymetric map of Greenland is constructed with seamless transitions at the ice/ocean interface, yielding major improvements over previous data sets, particularly in the marine-terminating sectors of northwest and southeast Greenland. Our map reveals that the total sea level potential of the Greenland ice sheet is 7.42 ± 0.05 m, which is 7 cm greater than previous estimates. Furthermore, it explains recent calving front response of numerous outlet glaciers and reveals new pathways by which AW can access glaciers with marine-based basins, thereby highlighting sectors of Greenland that are most vulnerable to future oceanic forcing.

General information
State: Published
Organisations: National Space Institute, Geodesy, University of Bristol, Aberystwyth University, Cambridge University, Karolinska University Hospital, Utrecht University, University of Durham, University of Exeter, Imperial College London, Greenland Institute of Natural Resources, University of California, Irvine, Alfred Wegener Institute for Polar and Marine Research, University of Texas at Austin, California Institute of Technology, Natural Environment Research Council, The Ohio State University, University of New Hampshire, Durham, Aarhus University, Woods Hole Oceanographic Institution
Pages: 11,051–11,061
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Geophysical Research Letters
Volume: 44
Issue number: 21
ISSN (Print): 0094-8276
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.35 SJR 2.91 SNIP 1.499
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 3.324 SNIP 1.496 CiteScore 4.27
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 3.315 SNIP 1.532 CiteScore 4.26
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 3.461 SNIP 1.704 CiteScore 4.45
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 3.317 SNIP 1.579 CiteScore 3.82
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Behavior is a major determinant of predation risk in zooplankton

Zooplankton exhibit different small-scale motile behaviors related to feeding and mating activities. These different motile behaviors may result in different levels of predation risk, which may partially determine the structure of planktonic communities. Here, we experimentally determined predation mortality associated with (1) feeding activity (ambush feeders vs. feeding-current vs. cruising feeders) and (2) mate-finding behavior (males vs. females). The copepods Oithona nana, O. davisae (ambush feeders), Temora longicornis (feeding-current feeder), and Centropages hamatus (cruising feeder) were used as prey for different predatory copepods. Copepods with “active” feeding behaviors (feeding-current and cruising feeders) showed significantly higher mortality from predation (~2–8 times) than similarly sized copepods with low motility feeding behavior (ambush feeders). Copepod males, which have a more active motile behavior than females (mate-seeking behavior), suffered a higher predation mortality than females in most of the experiments. However, the predation risk for mate-searching behavior in copepods varied depending on feeding behavior with ambush feeders consistently having the greatest difference in predation mortality between genders (~4 times higher for males than for females). This gender-specific predation pressure may partially explain field observations of female-biased sex ratios in ambush feeding copepods (e.g., Oithonidae). Overall, our results demonstrate that small-scale motile behavior is a key trait in zooplankton that significantly affects...
predation risk and therefore is a main determinant of distribution and composition of zooplankton communities in the ocean.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Centre for Ocean Life
Authors: Almeda, R. (Intern), van Someren Gréve, H. (Intern), Kiørboe, T. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Behavioural changes of Atlantic cod (Gadus morhua) after marine boulder reef restoration: Implications for coastal habitat management and Natura 2000 areas
While marine reefs are degraded globally, the responses of fish to marine reef restoration remain uncertain, particularly in temperate waters. This study measured the effect of marine boulder reef restoration on the behaviour of Atlantic cod, Gadus morhua L., in a Natura 2000 area using acoustic telemetry. Cod were tagged and released in the study area before and after the restoration and tracked continuously for six months. A larger fraction of the released fish remained in the study area after restoration (94%) than before (53%). Moreover, throughout the study period, cod spent significantly more hours per day and prolonged their residence time in the study area after the restoration. The study indicates that marine reefs subjected to boulder extraction can be restored and function as favourable cod habitats. Temperate marine boulder reef restoration represents a valuable management tool to improve habitats for temperate fish species.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, FishStats, Danish AgriFish Agency, Aarhus University
Authors: Støttrup, J. G. (Intern), Svendsen, J. C. (Intern), Stenberg, C. (Ekstern), Hansen, O. K. H. (Forskerdatabase), Grønkjær, P. (Ekstern), Kristensen, L. D. (Intern)
Pages: 353-360
Publication date: 2017
Main Research Area: Technical/natural sciences

Behavioural changes of Atlantic cod (Gadus morhua) after marine boulder reef restoration: Implications for coastal habitat management and Natura 2000 areas
While marine reefs are degraded globally, the responses of fish to marine reef restoration remain uncertain, particularly in temperate waters. This study measured the effect of marine boulder reef restoration on the behaviour of Atlantic cod, Gadus morhua L., in a Natura 2000 area using acoustic telemetry. Cod were tagged and released in the study area before and after the restoration and tracked continuously for six months. A larger fraction of the released fish remained in the study area after restoration (94%) than before (53%). Moreover, throughout the study period, cod spent significantly more hours per day and prolonged their residence time in the study area after the restoration. The study indicates that marine reefs subjected to boulder extraction can be restored and function as favourable cod habitats. Temperate marine boulder reef restoration represents a valuable management tool to improve habitats for temperate fish species.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, FishStats, Danish AgriFish Agency, Aarhus University
Authors: Støttrup, J. G. (Intern), Svendsen, J. C. (Intern), Stenberg, C. (Ekstern), Hansen, O. K. H. (Forskerdatabase), Grønkjær, P. (Ekstern), Kristensen, L. D. (Intern)
Pages: 353-360
Publication date: 2017
Main Research Area: Technical/natural sciences

Behavioural changes of Atlantic cod (Gadus morhua) after marine boulder reef restoration: Implications for coastal habitat management and Natura 2000 areas
While marine reefs are degraded globally, the responses of fish to marine reef restoration remain uncertain, particularly in temperate waters. This study measured the effect of marine boulder reef restoration on the behaviour of Atlantic cod, Gadus morhua L., in a Natura 2000 area using acoustic telemetry. Cod were tagged and released in the study area before and after the restoration and tracked continuously for six months. A larger fraction of the released fish remained in the study area after restoration (94%) than before (53%). Moreover, throughout the study period, cod spent significantly more hours per day and prolonged their residence time in the study area after the restoration. The study indicates that marine reefs subjected to boulder extraction can be restored and function as favourable cod habitats. Temperate marine boulder reef restoration represents a valuable management tool to improve habitats for temperate fish species.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, FishStats, Danish AgriFish Agency, Aarhus University
Authors: Støttrup, J. G. (Intern), Svendsen, J. C. (Intern), Stenberg, C. (Ekstern), Hansen, O. K. H. (Forskerdatabase), Grønkjær, P. (Ekstern), Kristensen, L. D. (Intern)
Pages: 353-360
Publication date: 2017
Main Research Area: Technical/natural sciences

Behavioural changes of Atlantic cod (Gadus morhua) after marine boulder reef restoration: Implications for coastal habitat management and Natura 2000 areas
While marine reefs are degraded globally, the responses of fish to marine reef restoration remain uncertain, particularly in temperate waters. This study measured the effect of marine boulder reef restoration on the behaviour of Atlantic cod, Gadus morhua L., in a Natura 2000 area using acoustic telemetry. Cod were tagged and released in the study area before and after the restoration and tracked continuously for six months. A larger fraction of the released fish remained in the study area after restoration (94%) than before (53%). Moreover, throughout the study period, cod spent significantly more hours per day and prolonged their residence time in the study area after the restoration. The study indicates that marine reefs subjected to boulder extraction can be restored and function as favourable cod habitats. Temperate marine boulder reef restoration represents a valuable management tool to improve habitats for temperate fish species.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, FishStats, Danish AgriFish Agency, Aarhus University
Authors: Støttrup, J. G. (Intern), Svendsen, J. C. (Intern), Stenberg, C. (Ekstern), Hansen, O. K. H. (Forskerdatabase), Grønkjær, P. (Ekstern), Kristensen, L. D. (Intern)
Pages: 353-360
Publication date: 2017
Main Research Area: Technical/natural sciences

Behavioural changes of Atlantic cod (Gadus morhua) after marine boulder reef restoration: Implications for coastal habitat management and Natura 2000 areas
While marine reefs are degraded globally, the responses of fish to marine reef restoration remain uncertain, particularly in temperate waters. This study measured the effect of marine boulder reef restoration on the behaviour of Atlantic cod, Gadus morhua L., in a Natura 2000 area using acoustic telemetry. Cod were tagged and released in the study area before and after the restoration and tracked continuously for six months. A larger fraction of the released fish remained in the study area after restoration (94%) than before (53%). Moreover, throughout the study period, cod spent significantly more hours per day and prolonged their residence time in the study area after the restoration. The study indicates that marine reefs subjected to boulder extraction can be restored and function as favourable cod habitats. Temperate marine boulder reef restoration represents a valuable management tool to improve habitats for temperate fish species.
Behavioural design: A process for integrating behaviour change and design

Nudge, persuasion, and the influencing of human behaviour through design are increasingly important topics in design research and in the wider public consciousness. However, current theoretical approaches to behaviour change have yet to be operationalized in the design process support. Specifically, there are few empirically grounded processes supporting designers in realising behaviour change projects. In response to this, 20 design projects from a case company are analysed in order to distil a core process for behavioural design. Results show a number of process stages and activities associated with project success, pointing to a new perspective on the traditional design process, and allowing designers to integrate key insights from behaviour change theory. Using this foundation we propose the Behavioural Design process.
Being, doing and leading in the project society

The last decades have seen a proliferation of projects across different contexts, from the building of an iconic venue to the planning of a family vacation. Building on Jensen (2009) work on the project society and Jensen et al (2016) articulation of projects as human conditions, this article explores strategies for living in the project society. Guided by the philosophical concepts of activity, time, space and relations, we explore the project society as an ideal type, in opposition to the disciplinary society. We discuss implications of being, doing and leading in a project society. Taken together this analysis describes some of the key challenges emerging from the project society and suggests some ideas and advices to fellow project man and woman, navigating in project society.

The work extends our understanding of projects beyond organizational settings – to a societal and individual level. We argue that, first, our growing and insightful body of literature on project organizing can become useful for each one of us as individuals navigating in project society. Second, it opens up to a more extensive empirical context – studying behaviour of people in projects, outside classic organizational settings. In this respect, the article serves as a basis for future research on living in the project society where nothing lasts forever but our projects define who we are and what we can become.

General information
State: Published
Organisations: Department of Management Engineering, Engineering Systems, Filosoffen.dk
Authors: Jensen, A. (Ekstern), Geraldi, J. (Intern), Thuesen, C. (Intern)
Number of pages: 18
Publication date: 2017

Host publication information
Title of host publication: Conference proceedings of International Research Network on Organizing by Projects (IRNOP 2017)
Publisher: Design Society
Main Research Area: Technical/natural sciences
Conference: International Research Network on Organizing by Projects, IRNOP 2017, Boston, United States, 11/06/2017 - 11/06/2017
Electronic versions:
Being_doing_and_leading_in_the_project_society_170130.pdf
Source: PublicationPreSubmission
Source-ID: 130532606
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Benchmarking (Code2Code) of the 1Hs 3-Bladed Onshore VAWT
This study is part of the Inflow project. In this report the Nenuphar’s onshore 3-bladed Vertical Axis Wind Turbine (VAWT) prototype (1HS) is modelled in HAWC2 aeroelastic code. In the first part the model properties are summarized. Then the analysis is focused on the rotor performance and various cases are simulated assuming rigid structure. Finally, a code two code comparison is presented based on the HAWC2 results (DTU) and a 2D/3D vortex simulations from IFPEN. From the code to code comparison, a very good agreement is found on aerodynamic performance when dynamic stall effects are not included on the blade. When these effects are added, HAWC2 and vortex simulation results differ. Looking in the overall rotor performance, aerodynamic power predictions also vary between the codes for the blade. The main reasons that have been identified from the analysis are the dynamic stall modelling, the Reynolds effects on the airfoil polars and the blade-wake interaction and the finite aspect ratio effects. Finally, by studying the blade performance within HAWC2 it was made clear that the airfoil polars which are the main input for the simulations, apart from the structural modelling, can lead to different results especially on the rotor power performance.

General information
State: Published
Organisations: Department of Wind Energy, Wind turbine loads & control
Authors: Galinos, C. (Intern), Schmidt Paulsen, U. (Intern)
Number of pages: 52
Publication date: 2017

Publication information
Benchmarking Density Functionals for Chemical Bonds of Gold

Gold plays a major role in nanochemistry, catalysis, and electrochemistry. Accordingly, hundreds of studies apply density functionals to study chemical bonding with gold, yet there is no systematic attempt to assess the accuracy of these methods applied to gold. This paper reports a benchmark against 51 experimental bond enthalpies of AuX systems and seven additional polyatomic and cationic molecules. Twelve density functionals were tested, covering meta functionals, hybrids with variable HF exchange, double-hybrid, dispersion-corrected, and nonhybrid GGA functionals. The defined benchmark data set probes all types of bonding to gold from very electronegative halides that force Au⁺ electronic structure, via covalently bonded systems, hard and soft Lewis acids and bases that either work against or complement the softness of gold, the Au₂ molecule probing gold’s bond with itself, and weak bonds between gold and noble gases. Zero-point vibrational corrections are relatively small for Au-X bonds, ~ 11-12 kJ/mol except for Au-H bonds. Dispersion typically provides ~5 kJ/mol of the total bond enthalpy but grows with system size and is 10 kJ/mol for AuXe and AuKr. HF exchange and LYP correlation produce weaker bonds to gold. Most functionals provide similar trend accuracy, though somewhat lower for M06 and M06L, but very different numerical accuracy. Notably, PBE and TPSS functionals with dispersion display the smallest numerical errors and very small mean signed errors (0-6 kJ/mol), i.e. no bias toward over- or under-binding. Errors are evenly distributed versus atomic number, suggesting that relativistic effects are treated fairly; the mean absolute error is almost halved from B3LYP (45 kJ/mol) to TPSS and PBE (23 kJ/mol, including difficult cases); 23 kJ/mol is quite respectable considering the diverse bonds to gold and the complication of relativistic effects. Thus, studies that use DFT with effective core potentials for gold chemistry, with no alternative due to computational cost, are on solid ground using TPSS-D3 or PBE-D3.
Benchmarking five computational methods for analyzing large photonic crystal membrane cavities

We benchmark five state-of-the-art computational methods by computing quality factors and resonance wavelengths in photonic crystal membrane L5 and L9 line defect cavities. The convergence of the methods with respect to resolution, degrees of freedom and number of modes is investigated. Convergence is not obtained for some of the methods, indicating that some are more suitable than others for analyzing line defect cavities.

General information
State: Published
Organisations: Department of Photonics Engineering, Nanophotonics Theory and Signal Processing, Nanophotonic Devices, Plasmonics and Metamaterials, Department of Mechanical Engineering, Solid Mechanics, Department of Electrical Engineering, Electromagnetic Systems, St. Petersburg National Research University of Information Technologies, Mechanics and Optics (ITMO), Zuse Institute Berlin
Authors: Gregersen, N. (Intern), de Lasson, J. R. (Intern), Frandsen, L. H. (Intern), Häärynen, T. (Intern), Lavrinenko, A. (Intern), Mark, J. (Intern), Wang, F. (Intern), Sigmund, O. (Intern), Kim, O. S. (Intern), Breinbjerg, O. (Intern), Ivinskaya, A. (Ekstern), Gutsche, P. (Ekstern), Burger, S. (Ekstern)
Pages: 89-90
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 2017 International Conference on Numerical Simulation of Optoelectronic Devices (NUSOD)
Publisher: IEEE
ISBN (Electronic): 978-1-5090-5323-0
Main Research Area: Technical/natural sciences
Conference: 17th International Conference on Numerical Simulation of Optoelectronic Devices (NUSOD17) , Kgs. Lyngby, Denmark, 24/07/2017 - 24/07/2017
Photonic crystal, Microcavity, Line defect cavity, Quality factor, Numerical simulations
DOIs: 10.1109/NUSOD.2017.8010005
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Benchmarking healthcare logistics processes: a comparative case study of Danish and US hospitals

Logistics processes in hospitals are vital in the provision of patient care. Improving healthcare logistics processes provides an opportunity for reduced healthcare costs and better support of clinical processes. Hospitals are faced with increasing healthcare costs around the world and improvement initiatives prevalent in manufacturing industries such as lean, business process reengineering and benchmarking have seen an increase in use in healthcare. This study investigates
how logistics processes in a hospital can be benchmarked to improve process performance. A comparative case study of
the bed logistics process and the pharmaceutical distribution process was conducted at a Danish and a US hospital. The
case study results identified decision criteria for designing efficient and effective healthcare logistics processes. The most
important decision criteria were related to quality, security of supply and employee engagement. Based on these decision
criteria, performance indicators were developed to enable benchmarking of logistics processes in healthcare. The study
contributes to the limited literature on healthcare logistics benchmarking. Furthermore, managers in healthcare logistics
are provided with a list of decision parameters relevant for designing and benchmarking processes.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Management Science, Operations Management, Transport DTU,
Norwegian University of Science and Technology
Authors: Feibert, D. C. (Intern), Andersen, B. (Ekstern), Jacobsen, P. (Intern)
Pages: 1-27
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
ISSN (Print): 1478-3363
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.59 SJR 0.652 SNIP 1.327
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.658 SNIP 1.301 CiteScore 1.71
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.562 SNIP 1.272 CiteScore 1.91
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.593 SNIP 1.472 CiteScore 1.81
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.604 SNIP 1.051 CiteScore 1.27
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.552 SNIP 0.937 CiteScore 1.12
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.411 SNIP 0.723
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.431 SNIP 0.719
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.516 SNIP 0.732
Scopus rating (2007): SJR 0.474 SNIP 0.667
Scopus rating (2006): SJR 0.52 SNIP 0.9
Scopus rating (2005): SJR 0.617 SNIP 0.794
Scopus rating (2004): SJR 0.461 SNIP 0.967
Scopus rating (2003): SJR 0.841 SNIP 0.819
Scopus rating (2002): SJR 0.741 SNIP 0.994
Scopus rating (2001): SJR 0.662 SNIP 1.139
Scopus rating (2000): SJR 0.493 SNIP 0.862
Scopus rating (1999): SJR 0.319 SNIP 0.881
Original language: English
Business, Management and Accounting (all), bed logistics, benchmarking, business process management, hospital
logistics, performance measurement, pharmaceutical distribution
Benchmarking Pt and Pt-lanthanide sputtered thin films for oxygen electroreduction: fabrication and rotating disk electrode measurements

Platinum-lanthanide alloys are very promising as active and stable catalysts for the oxygen reduction reaction (ORR) in low-temperature fuel cells. We have fabricated Pt and Pt$_5$Gd metallic thin films via (co-)sputtering deposition in an ultra-high vacuum (UHV) chamber. The electrochemical ORR activity, stability, as-well as chemical composition and crystallographic structure of Pt$_5$Gd thin film catalysts have been investigated using a combination of electrochemical measurements, X-ray photoemission spectroscopy (XPS) and X-ray diffraction (XRD) techniques. We describe the measurement procedures, with the aim of benchmarking electrochemical characterization of Pt-based thin film catalysts for ORR. Pt$_5$Gd thin films present an activity enhancement by a factor of 4.5 and 2.5 over polycrystalline Pt and Pt thin films, respectively.

General information
State: Published
Organisations: Experimental Surface and Nanomaterials Physics, Department of Physics
Number of pages: 14
Pages: 708-721
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Electrochimica Acta
Volume: 247
ISSN (Print): 0013-4686
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.74 SJR 1.357 SNIP 1.167
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.349 SNIP 1.344 CiteScore 4.86
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.391 SNIP 1.482 CiteScore 4.59
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.435 SNIP 1.607 CiteScore 4.44
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.651 SNIP 1.592 CiteScore 3.99
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.621 SNIP 1.803 CiteScore 4.15
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.691 SNIP 1.725
Web of Science (2010): Indexed yes
Benders' Decomposition for Curriculum-Based Course Timetabling

In this paper we applied Benders' decomposition to the Curriculum-Based Course Timetabling (CBCT) problem. The objective of the CBCT problem is to assign a set of lectures to time slots and rooms. Our approach was based on segmenting the problem into time scheduling and room allocation problems. The Benders' algorithm was then employed to generate cuts that connected the time schedule and room allocation. We generated only feasibility cuts, meaning that most of the solutions we obtained from a mixed integer programming solver were infeasible, therefore, we also provided a heuristic in order to regain feasibility.

We compared our algorithm with other approaches from the literature for a total of 32 data instances. We obtained a lower bound on 23 of the instances, which were at least as good as the lower bounds obtained by the state-of-the-art, and on eight of these, our lower bounds were higher. On two of the instances, our lower bound was an improvement of the currently best-known. Lastly, we compared our decomposition to the model without the decomposition on an additional six instances, which are much larger than the other 32. To our knowledge, this was the first time that lower bounds were calculated for these six instances.
Bent and bent(4) spectra of Boolean functions over finite fields

For $c \in \mathbb{F}(2)^n$, a $c$-bent4 function $f$ from the finite field $\mathbb{F}(2)^n$ to $\mathbb{F}$-2 is a function with a flat spectrum with respect to the unitary transform $V_f(c)$, which is designed to describe the component functions of modified planar functions. For $c = 0$ the transform $V_f(c)$ reduces to the conventional Walsh transform, and hence a 0-bent4 function is bent. In this article we generalize the concept of partially bent functions to the transforms $V_f(c)$. We show that every quadratic function is partially bent, and hence it is plateaued with respect to any of the transforms $V_f(c)$. In detail we analyse two quadratic monomials. The first has values as small as possible in its spectra with respect to all transforms $V_f(c)$, and the second has a flat spectrum for a large number of $c$. Moreover, we show that every quadratic function is $c$-bent4 for at least three distinct $c$. In the last part we analyse a cubic monomial. We show that it is $c$-bent(4) only for $c = 1$, the function is then called negabent, which shows that non-quadratic functions exhibit a different behaviour. (C) 2017 Elsevier Inc. All rights reserved.
BepiPred-2.0: improving sequence-based B-cell epitope prediction using conformational epitopes

Antibodies have become an indispensable tool for many biotechnological and clinical applications. They bind their molecular target (antigen) by recognizing a portion of its structure (epitope) in a highly specific manner. The ability to predict epitopes from antigen sequences alone is a complex task. Despite substantial effort, limited advancement has been achieved over the last decade in the accuracy of epitope prediction methods, especially for those that rely on the sequence of the antigen only. Here, we present BepiPred-2.0 (http://www.cbs.dtu.dk/services/BepiPred/), a web server for predicting B-cell epitopes from antigen sequences. BepiPred-2.0 is based on a random forest algorithm trained on epitopes annotated from antibody-antigen protein structures. This new method was found to outperform other available tools for sequence-based epitope prediction both on epitope data derived from solved 3D structures, and on a large collection of linear epitopes downloaded from the IEDB database. The method displays results in a user-friendly and informative way, both for computer-savvy and non-expert users. We believe that BepiPred-2.0 will be a valuable tool for the bioinformatics and immunology community.

General information
State: Published
Organisations: Department of Bio and Health Informatics, Immunoinformatics and Machine Learning, La Jolla Institute for Allergy & Immunology
Authors: Jespersen, M. C. (Intern), Peters, B. (Ekstern), Nielsen, M. (Intern), Marcatili, P. (Intern)
Number of pages: 6
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Nucleic Acids Research
Volume: 45
Issue number: W1
Article number: gkx346
ISSN (Print): 0305-1048
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 9.28 SJR 7.397 SNIP 2.657
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 7.239 SNIP 2.639 CiteScore 9.48
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 6.576 SNIP 2.568 CiteScore 8.74
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 6.582 SNIP 2.266 CiteScore 8.46
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 6.13 SNIP 2.392 CiteScore 8.62
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 5.758 SNIP 2.172 CiteScore 7.86
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 5.24 SNIP 2.034
Beskedent overtryk gav spektakulære følger
For at undertrykke generende opskumning blev en tank sat under et såkaldt "meget beskedent overtryk". Pludselig svigtede samlingen i bunden. Tanken nåede en højde på 30 m og faldt ned og knuste en varevogn. Uheldet viser, at et stort volumen af gas under lavt tryk indeholder en ikke uvæsentlig mængde energi.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems, Statistics and Data Analysis
Authors: Hedlund, F. H. (Intern)
Pages: 16-18
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Kjemi
Volume: 77
Issue number: 1
ISSN (Print): 0023-1983
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish

Bibliographical note
Artikken er tidligere trykket i Dansk Kemi 97, nr. 4, 2016
Source: PublicationPreSubmission
Source-ID: 130116512
Best Practice for Caching of Single-Path Code

Single-path code has some unique properties that make it interesting to explore different caching and prefetching alternatives for the stream of instructions. In this paper, we explore different cache organizations and how they perform with single-path code.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Embedded Systems Engineering, Vienna University of Technology
Authors: Schoeberl, M. (Intern), Cilku, B. (Ekstern), Prokesch, D. (Ekstern), Puschner, P. (Ekstern)
Number of pages: 10
Publication date: 2017

Host publication information
Title of host publication: Proceedings of 17th International Workshop on Worst-Case Execution Time Analysis
Main Research Area: Technical/natural sciences
Conference: 17th International Workshop on Worst-Case Execution Time Analysis, Dubrovnik, Croatia, 27/06/2017 - 27/06/2017
Single-path, Method cache, Prefetching
Electronic versions:
WCET_2017_paper_2.pdf
DOIs: 10.4230/OASIcs.CVIT.2016.23
Source: PublicationPreSubmission
Source-ID: 140261878
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Between Indoor and Outdoor. Norwegian Perceptions of Well-Being in Energy Efficient Housing

An increased societal focus on energy efficiency has led to the development of new building concepts and standards in many countries, such as the passive house standard in Norway which implies a dense building envelope with restrictions on the use of glass and natural ventilation. Generally low-energy building concepts are based on a rational approach to comfort in housing limited to mainly measurable aspects. This, however, hardly reflects what makes residents feel comfortable at home, since it lacks a holistic understanding of residential well-being. Well-being is a complex and multi-faceted concept that includes atmosphere and feeling at home. In a qualitative study of four Norwegian low-energy housing projects, we investigate and discuss the impact of visual and sensory qualities, like view, daylight and access to fresh air, on residential well-being. The study reveals that it is possible to achieve well-being in energy-efficient housing, but some practices jeopardize the energy-design concept and influence energy use. Residents find strategies to achieve well-being by opening windows and doors, despite restrictions on airing naturally. Access to daylight and view and the ability to open windows or balcony doors to let in air, smells and sounds from the outside are crucial for residents' well-being and thus important factors to consider when designing and building energy-efficient housing where people feel at home.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Norwegian University of Science and Technology
Authors: Wågø, S. (Ekstern), Hauge, B. (Intern), Støa, E. (Ekstern)
Pages: 326-346
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Architectural and Planning Research
Volume: 33
Issue number: 4
ISSN (Print): 0738-0895
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 0.33 SJR 0.189 SNIP 0.595
Beyond 100 Gbit/s wireless connectivity enabled by THz photonics

Beyond 100Gbit/s wireless connectivity is appreciated in many scenarios, such as big data wireless cloud, ultrafast wireless download, large volume data transfer, etc. In this paper, we will present our recent achievements on beyond 100Gbit/s ultrafast terahertz (THz) wireless links enabled by THz photonics.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Zhejiang University, KTH - Royal Institute of Technology
Authors: Yu, X. (Ekstern), Jia, S. (Ekstern), Pang, X. (Ekstern), Morioka, T. (Intern), Oxenløwe, L. K. (Intern)
Number of pages: 4
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 19th International Conference on Transparent Optical Networks
Publisher: IEEE
Article number: 8024975
ISBN (Print): 978-1-5386-0859-3
Series: International Conference on Transparent Optical Networks
ISSN: 2162-7339
Main Research Area: Technical/natural sciences
Conference: 19th International Conference on Transparent Optical Networks, Girona, Spain, 02/07/2017 - 02/07/2017
Beyond effectuation: Analysing the transformation of business ideas into ventures using actor-network theory

Purpose
The purpose of this paper is to show that the entrepreneurial project ongoingly is transformed. Empirically, three defining junctions demonstrate the malleability of the entrepreneurial project in perpetual action, expanding beyond effectuation theory on what constitutes given means, affordable loss, and other key concepts from this theoretical perspective. Drawing upon actor-network theory (ANT), this study demonstrates how different framing and support devices implicate different human and non-human actors in changing interpositions within the entrepreneurial process.

Design/methodology/approach
This study uses a longitudinal case study design. The case provides an overview of a new business's emergence based on three identified translations, each representing critical junctures in the business's development. An ethnographic approach is selected, which combines observations with qualitative interviews. This design allows the authors to focus on how the project emerges and is continuously supported by allies but is sometimes not supported by various human and non-human actors.

Findings
This study demonstrates that the entrepreneurial project undertaken by the entrepreneurial network changes as new humans or non-humans become part of it. Including a resource in the network means simultaneously changing the network. This interactionism shows that what sparks interest or attracts resources to a business idea is not simply an influx of additional resources but is simultaneously a dynamic definition of the entrepreneurial endeavour.

Originality/value
This paper examines how ideas are transformed into business ventures by using the ANT to expand understanding from effectuation theory. This shows that means, for instance, are not given but are co-created by the process of translation. In addition, which losses are affordable can be determined by the process within which the entrepreneur frames the project and manages to associate allies within and into the network.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Technology and Innovation Management, Copenhagen Business School
Authors: Murdock, K. (Intern), Varnes, C. J. (Forskerdatabase)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Entrepreneurial Behavior & Research
ISSN (Print): 1355-2554
Ratings:
Scopus rating (2016): CiteScore 2.05
Scopus rating (2015): CiteScore 1.71
Scopus rating (2014): CiteScore 1.36
Scopus rating (2013): CiteScore 1.68
Scopus rating (2012): CiteScore 1.52
Scopus rating (2011): CiteScore 1.25
Original language: English
Links:
Source: PublicationPreSubmission
Source-ID: 138910685
Publication: Research - peer-review › Journal article – Annual report year: 2017
Bidirectional apical-basal traffic of the cation-independent mannose-6-phosphate receptor in brain endothelial cells

Brain capillary endothelium mediates the exchange of nutrients between blood and brain parenchyma. This barrier function of the brain capillaries also limits passage of pharmaceuticals from blood to brain, which hinders treatment of several neurological disorders. Receptor-mediated transport has been suggested as a potential pharmaceutical delivery route across the brain endothelium, e.g. reports have shown that the transferrin receptor (TfR) facilitates transcytosis of TfR antibodies, but it is not known whether this recycling receptor itself traffics from apical to basal membrane in the process. Here, we elucidate the endosomal trafficking of the retrograde transported cation-independent mannose-6-phosphate receptor (MPR300) in primary cultures of brain endothelial cells (BECs) of porcine and bovine origin. Receptor expression and localisation of MPR300 in the endo-lysosomal system and trafficking of internalised receptor are analysed. We also demonstrate that MPR300 can undergo bidirectional apical-basal trafficking in primary BECs in co-culture with astrocytes. This is, to our knowledge, the first detailed study of retrograde transported receptor trafficking in BECs, and the study demonstrates that MPR300 can be transported from the luminal to abluminal membrane and reverse. Such trafficking of MPR300 suggests that retrograde transported receptors in general may provide a mechanism for transport of pharmaceuticals into the brain.
Bifacial PV cell with reflector for stand-alone mast for sensor powering purposes

Reflectors to bifacial PV-cells are simulated and prototyped in this work. The aim is to optimize the reflector to specific latitudes, and particularly northern latitudes. Specifically, by using minimum semiconductor area the reflector must be able to deliver the electrical power required at the condition of minimum solar travel above the horizon, worst weather condition etc. We will test a bifacial PV-module with a retroreflector, and compare the output with simulations combined with local solar data.
Bifacial PV cell with reflector for stand-alone mast for sensor powering purposes
Reflector to bifacial PV-cells are simulated and prototyped in this work. The aim is to optimize the reflector to specific latitudes, and particularly northern latitudes. Specifically, by using minimum semiconductor the reflector must be able to deliver the electrical power required at minimum the condition of solar travel above the horizon, worst weather condition etc. We will test a bifacial PV-cell with a retroreflector, and compare the output with simulations combined with local solar data.

General information
State: Published
Organisations: Department of Photonics Engineering, Optical Sensor Technology, Photovoltaic Materials and Systems, SolarLab ApS
Authors: Jakobsen, M. L. (Intern), Thorsteinsson, S. (Intern), Poulsen, P. B. (Intern), Riedel, N. (Intern), Rødder, P. M. (Ekstern), Rødder, K. (Ekstern)
Number of pages: 7
Publication date: 2017
Main Research Area: Technical/natural sciences
Electronic versions:
   Poster
   CPV_13_Full_Paper_ver05.pdf
Source: PublicationPreSubmission
Source-ID: 139555886
Publication: Research - peer-review › Paper – Annual report year: 2017

Big Data er en meningsskabelsesproces, der tager afsæt i dit mindset

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Afdelingen for Forretningsudvikling
Authors: Rydén, P. (Intern)
Publication date: 2017

Publication information
Type: Article
Source/Publisher: DI Handel
Last modified date: 14/08/2017
Main Research Area: Technical/natural sciences
Electronic versions:
   .pdf
Links:
Source: PublicationPreSubmission
Source-ID: 137978621
Publication: Research › Internet publication – Annual report year: 2017

Big Data hvor N=1
Forsknings vedrørende anvendelsen af 'big data' indenfor sundhed er kun lige begyndt, og kan på sigt blive en stor hjælp i forhold til at tilrettelægge en mere personlig og helhedsorienteret sundhedsindsats for multisyre. Personlig sundhedsteknologi, som kort præsenteres i dette kapitel, rummer et stor potentiale for at gennemføre 'big data' analyser for den enkelte person, det vil sige hvor N=1. Der er store teknologiske udfordringer i at få lavet teknologier og metoder til at indsamle og håndtere personlige data, som kan deles, på tværs på en standardiseret, forsvarlig, robust, sikker og ikke mindst anonym facon.

General information
State: Published
Organisations: Copenhagen Center for Health Technology, Department of Applied Mathematics and Computer Science, Embedded Systems Engineering
Authors: Bardram, J. E. (Intern)
Pages: 103-108
Publication date: 2017

Host publication information
Big data - modelling of midges in Europa using machine learning techniques and satellite imagery

Biting midges (Diptera, Ceratopogonidae) of the genus Culicoides are important vectors of pathogens causing diseases in free living and production animals and can lead to large economic losses in many European countries. In Europe, Culicoides imicola and the Obsoletus group are considered to be the main vectors of bluetongue virus that mostly affects ruminants such as cattle and sheep. Spatio-temporal modelling of vector distribution and abundance allows us to identify high risk areas for virus transmission and can aid in applying effective surveillance and control measures.

We used presence-absence and monthly abundance data of Culicoides from 1005 sites across 9 countries (Spain, France, Denmark, Poland, Switzerland, Austria, Poland, Sweden, Norway) collected between the years 2007 and 2013. The dataset included information on the vector species abundance (number of specimens caught per night), GPS coordinates of each trap, start and end dates of trapping. We used 120 environmental predictor variables together with Random Forest machine learning algorithms to predict the overall species distribution (probability of occurrence) and monthly abundance in Europe. We generated maps for every month of the year, to visualize the abundance of C. imicola and Obsoletus group in Europe as well as distribution maps showing the probability of occurrence.

We were able to create predictive maps of both Culicoides sp. occurrence and abundance using Random Forest models, and although the variance was large, the predicted abundance values for each site had a positive correlation with the observed abundance. We found relatively large spatial variations in probability of occurrence and abundance for both C. imicola and the Obsoletus group. For C. imicola probability of occurrence and abundance was higher in southern Spain, where as the Obsoletus group had higher probability of occurrence and abundance in central and northern Europe such as France and Germany. Temporal variation was also observed with higher abundance occurring during summer months and low or no abundance during winter months for both C. imicula and the Obsoletus group, although abundance was generally higher for a longer period of time for C. imicula than for the Obsoletus group.

Using machine learning techniques, we were able to model the spatial distribution in Europe for C. imicola and the Obsoletus group in terms of abundance and suitability (probability of occurrence). Our maps corresponded well with the previously reported distribution for C. imicola and the Obsoletus group. The observed seasonal variation was also consistent with reported population dynamics for Culicoides, as it depends on environmental factors such as temperature and rainfall. Longer seasonal abundance for C. imicula compared to the Obsoletus group can be explained by the species distribution, as C. imicula is limited to the southern parts of Europe where the warm season lasts longer, whereas the Obsoletus group is found further north. The outputs obtained here will be used as input for epidemiological models and can be helpful for determining high risk areas for disease transmission.

General information
State: Published
Organisations: National Veterinary Institute, Epidemiology, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Universidad de Zaragoza, University of the Balearic Islands, Avia-GIS, Aarhus University, Roskilde Universitet, National Veterinary Institute, Bernhard Nocht Institute for Tropical Medicine, National Veterinary Research Institute, Norwegian Veterinary Institute, Institute for Veterinary Public Health, Centre de cooperation Internationale en Recherche Agronomique pour le Développement, Universite de Strasbourg, EID Méditerranée, University of Zurich

Number of pages: 2
Publication date: 2017

Host publication information
Title of host publication: NKVet Symposium 2017 - abstract book
Place of publication: Oslo, Norway
Main Research Area: Technical/natural sciences
Conference: NKVet Symposium 2017, Oslo, Norway, 11/01/2017 - 11/01/2017
Bigger is not better: cortisol-induced cardiac growth and dysfunction in salmonids

Stress and elevated cortisol levels are associated with pathological heart growth and cardiovascular disease in humans and other mammals. We recently established a link between heritable variation in post-stress cortisol production and cardiac growth in salmonid fish too. A conserved stimulatory effect of the otherwise catabolic steroid hormone cortisol is probably implied, but has to date not been established experimentally. Furthermore, whereas cardiac growth is associated with failure of the mammalian heart, pathological cardiac hypertrophy has not previously been described in fish. Here, we show that rainbow trout (Oncorhynchus mykiss) treated with cortisol in the diet for 45 days have enlarged hearts with lower maximum stroke volume and cardiac output. In accordance with impaired cardiac performance, overall circulatory oxygen-transporting capacity was diminished as indicated by reduced aerobic swimming performance. In contrast to the well-known adaptive/physiological heart growth observed in fish, cortisol-induced growth is maladaptive. Furthermore, the observed heart growth was associated with up-regulated signature genes of mammalian cardiac pathology, suggesting that signalling pathways mediating cortisol-induced cardiac remodelling in fish are conserved from fish to mammals. Altogether, we show that excessive cortisol can induce pathological cardiac remodelling. This is the first study to report and integrate the etiology, physiology and molecular biology of cortisol-induced pathological remodelling in fish.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Aquaculture, Center for Electron Nanoscopy, University of Oslo, University of Gothenburg, Swedish University of Agricultural Sciences, Norwegian University of Life Sciences
Pages: 2545-2553
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Experimental Biology
Volume: 220
ISSN (Print): 0022-0949
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.62 SJR 1.722 SNIP 1.279
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.812 SNIP 1.222 CiteScore 2.4
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.722 SNIP 1.331 CiteScore 2.51
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.719 SNIP 1.323 CiteScore 2.75
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.612 SNIP 1.395 CiteScore 2.91
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.534 SNIP 1.315 CiteScore 2.77
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.474 SNIP 1.341
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.764 SNIP 1.365
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.91 SNIP 1.363
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.583 SNIP 1.404
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.432 SNIP 1.36
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.591 SNIP 1.309
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.504 SNIP 1.314
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.256 SNIP 1.197
Web of Science (2003): Indexed yes
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.48 SNIP 1.32
Scopus rating (2000): SJR 1.493 SNIP 1.194
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.547 SNIP 1.331

Original language: English
Cardiac performance, Chronic stress, Heart failure, Myocardial hypertrophy, Rainbow trout

Electronic versions:
Publishers version
DOIs:
10.1242/jeb.135046

Links:
http://jeb.biologists.org/content/early/2017/05/04/jeb.135046
Source: FindIt
Source-ID: 2358424962
Publication: Research - peer-review › Journal article – Annual report year: 2017

Projects:

**Synchronization patterns in neural networks**
Department of Applied Mathematics and Computer Science
Dynamical Systems
Period: 20/05/2018 → …
Number of participants: 1
Project participant:
Martens, Erik Andreas (Intern)

**Vascular network dynamics**
Department of Applied Mathematics and Computer Science
Dynamical Systems
Period: 20/05/2018 → …
Number of participants: 1
Project participant:
Martens, Erik Andreas (Intern)
Smart Cities Accellerator
European Interreg Project with 6 municipality implementing the research findings of the CITIES project in cooperation with other universities in the area Copenhagen, Southern Sweden.

Centre for IT-Intelligent Energy Systems in Cities
Department of Civil Engineering
Department of Applied Mathematics and Computer Science
Department of Management Engineering
Period: 20/04/2018 → 20/07/2018
Number of participants: 3
Acronym: SCA
Project participant:
Heller, Alfred (Intern)
Nielsen, Per Sieverts (Intern)
Project Manager, academic:
Madsen, Henrik (Intern)

Tracking the Microstructure Evolution of an Operating Lithium-Sulphur Battery in Three Dimensions
Department of Energy Conversion and Storage
Imaging and Structural Analysis
Chalmers University of Technology
Period: 16/02/2018 → 17/08/2018
Number of participants: 2
x-ray tomography, battery
Project ID: DTU-034
Number of related Ph.D. students: 0
Project Manager, academic:
Bowen, Jacob R. (Intern)
Project applicant:
De Angelis, Salvatore (Intern)

Relations
Related projects:
ESS & MAX IV: Cross border science and society

Smart Tip
We will design innovative rotor blade tips for wind turbines with the objectives to increase Annual Energy Production by 8% without exceeding the load envelope, reduce noise, reduce performance degradation, reduce costs and make turbines more adaptable for site-specific conditions. The goal is ambitious, yet looking at all the diversity in wing tip design in both aerospace and nature, it is obvious this area has a huge potential for innovation. The tip region for wind turbines produces the most energy, loads and noise. Yet, it has not received focused attention because the complex flow conditions require sophisticated high-fidelity simulations. DTU wind energy will apply high-fidelity surrogate based optimization, wind tunnel and mechanical testing to develop multiple innovations. Siemens will field test the most promising concept. The Siemens development pipeline for tip innovations will be primed. The new competencies created will allow Siemens to improve turbines for years to come.

Department of Wind Energy
Aerodynamic design
Period: 01/12/2017 → 30/11/2020
Number of participants: 1
Acronym: SmartTip
Project Manager, organisational:
Analysis of Lightning and TLEs observed by ASIM and LIS on the International Space Station

National Space Institute
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Dimitriadou, Krystallia (Intern)
Supervisor:
Chanrion, Olivier (Intern)
Köhn, Christoph (Intern)
Main Supervisor:
Neubert, Torsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Analysis of space and ground observations of thunderstorms

National Space Institute
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Tomicic, Maja (Intern)
Supervisor:
Köhn, Christoph (Intern)
Neubert, Torsten (Intern)
Main Supervisor:
Chanrion, Olivier (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

A search for novel antibiotic producing bacteria based on human gut microbiome data

National Food Institute
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
George, Jack (Intern)
Supervisor:
Licht, Tine Rask (Intern)
Main Supervisor:
Bahl, Martin Iain (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Assessing Hearing Device Benefit using Virtual Sound Environments

Department of Electrical Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Mansour, Naim (Intern)
Supervisor:
Marschall, Marton (Intern)
Westermann, Adam (Intern)
Main Supervisor:
Dau, Torsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Assessment of a new market structure and regulatory framework for the integration of distributed energy resources in electricity markets towards a coherent Nordic energy system
Department of Management Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Vasileiou, Tryfon (Intern)
Supervisor:
Bergaentzlé, Claire (Intern)
Papakonstantinou, Athanasios (Intern)
Main Supervisor:
Skytte, Klaus (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

A study of neutron star's extreme physics with X-ray bursts
National Space Institute
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Alizai, Khaled (Intern)
Supervisor:
Brandt, Søren (Intern)
Main Supervisor:
Chenevez, Jérôme (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Biological production of n-Hexanol
Department of Environmental Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Yang, Xiaoyong (Intern)
Supervisor:
Kougias, Panagiotis (Intern)
Main Supervisor:
Angelidaki, Irini (Intern)

Financing sources
**Capability transfer and upgrading in PV value chains in Sub Saharan Africa**

Department of Management Engineering  
Period: 01/12/2017 → 30/11/2020  
Number of participants: 3  
Phd Student:  
Davy, Elder (Intern)  
Supervisor:  
Dhar, Subash (Intern)  
Main Supervisor:  
Nygaard, Ivan (Intern)

**Financing sources**

Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

**Detecting and Characterizing exoplanet systems**

National Space Institute  
Period: 01/12/2017 → 30/09/2020  
Number of participants: 3  
Phd Student:  
Tronsgaard Rasmussen, René (Intern)  
Supervisor:  
Hornstrup, Allan (Intern)  
Main Supervisor:  
Buchhave, Lars A. (Intern)

**Financing sources**

Source: Internal funding (public)  
Name of research programme: Fonde  
Project: PhD

**Diffuse radiation and temperature effects on crop water use efficiency**

Department of Environmental Engineering  
Period: 01/12/2017 → 30/11/2020  
Number of participants: 5  
Phd Student:  
Sobejano Paz, Veronica (Intern)  
Supervisor:  
Garcia, Monica (Intern)  
Liu, Suxia (Ekstern)  
Mo, Xingguo (Ekstern)  
Main Supervisor:  
Bauer-Gottwein, Peter (Intern)

**Financing sources**

Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**Dosimetry for low energy x-rays**

Department of Physics
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student: 
Hjørringgaard, Jakob Grønewald (Intern)
Supervisor: 
Ankjærsgaard, Christina (Intern)
Miller, Arne (Intern)
Main Supervisor: 
Lindvold, Lars René (Intern)

Functional modification of matrix metalloproteinase (MMP) 9 activity by glycosylation

Department of Systems Biology
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student: 
Madzjarova, Elizabeta (Ekstern)
Supervisor: 
Brix, Susanne (Ekstern)
auf dem Keller, Ulrich (Intern)
Main Supervisor: 

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Hydraulic Modelling and data assimilation for deep urban tunnel systems

Department of Environmental Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student: 
Palmitessa, Rocco (Intern)
Supervisor: 
Borup, Morten (Intern)
Law, Adrian Wing Keung (Ekstern)
Main Supervisor: 
Mikkelsen, Peter Steen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

LOCRETA - Consortium for Lower Cretaceous reservoir analysis

Department of Civil Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student: 
Storebø, Einar Madsen (Intern)
Supervisor: 
Andreassen, Katrine Alling (Intern)
Main Supervisor: 
Fabricius, Ida Lykke (Intern)
Machine learning techniques applied to optical sensing

Department of Photonics Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Djurhuus, Martin Søren Engmann (Intern)
Supervisor:
Clausen, Anders (Intern)
Schmauss, Bernhard (Ekstern)
Main Supervisor:
Zibar, Darko (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Metabolic Responses to Bacterial Pathogens

Department of Electrical Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Nydahl, Tine Kliim (Intern)
Supervisor:
Lerche, Mathilde Hauge (Intern)
Main Supervisor:
Jensen, Pernille Rose (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Microbial electrochemistry meet UV: For effektive degradation of organic matter

Department of Environmental Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Zou, Rusen (Intern)
Supervisor:
Zhang, Yifeng (Intern)
Main Supervisor:
Angelidaki, Irini (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Modelling of shared and autonomous mobility

Department of Management Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Papu Carrone, Andrea Vanesa (Intern)
Supervisor:
Jensen, Anders Fjendbo (Intern)
Main Supervisor:
Rich, Jeppe (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Multiscale assessment of Swelling and Compressibility of Fine Grained Geomeaterials
Department of Civil Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Di Remigio, Giorgia (Intern)
Supervisor:
Andreassen, Katrine Alling (Intern)
Rocchi, Irene (Intern)
Main Supervisor:
Zania, Varvara (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Neutronics and thermal.hydraulics simulations of multi-fluid nuclear reactors
Department of Physics
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Nalbandyan, Ashkhen (Intern)
Supervisor:
Lauritzen, Bent (Intern)
Main Supervisor:
Klinkby, Esben Bryndt (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Noise in Waveguides for Signal Processing
Department of Photonics Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Larsen, Nicklas Munksgaard (Intern)
Supervisor:
Frandsen, Lars Hagedorn (Intern)
Galili, Michael (Intern)
Main Supervisor:
Rottwitt, Karsten (Intern)

Financing sources
Source: Internal funding (public)
**Novel microalgae based ingredients**

National Food Institute  
Period: 01/12/2017 → 30/11/2020  
Number of participants: 5  
Phd Student: Ljubic, Anita (Intern)  
Supervisor: Bysted, Anette (Intern)  
Holdt, Susan Levstad (Intern)  
Jakobsen, Jette (Intern)  
Main Supervisor: Jacobsen, Charlotte (Intern)

**Financing sources**  
Source: Internal funding (public)

**Omics-guided Discovery and Characterisation of Enzymes Involved in Utilisation of Xyloglucans and other Plant Dietary Fibres by Probiotic and Gastrointestinal Tract Resident Bacteria**

Department of Systems Biology  
Period: 01/12/2017 → 30/11/2020  
Number of participants: 4  
Phd Student: Petrovs, Deniss (Ekstern)  
Supervisor: Abou Hachem, Maher (Intern)  
yang, Fuquan (Ekstern)  
Main Supervisor: Svensson, Birte (Intern)

**Financing sources**  
Source: Internal funding (public)

**Planning Tools for Stormwater Pollution Management**

Department of Environmental Engineering  
Period: 01/12/2017 → 30/11/2020  
Number of participants: 3  
Phd Student: Jensen, Ditte Marie Reinholdt (Intern)  
Supervisor: Vezzaro, Luca (Intern)  
Main Supervisor: Mikkelsen, Peter Steen (Intern)

**Financing sources**  
Source: Internal funding (public)

**Smooth advanced silicon NEMS devices**

DTU Danchip
Smoothed advanced silicon NEMS devices

Department of Physics
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student: Nguyen, Vy Thi Hoang (Intern)
Supervisor: Hübner, Jörg (Intern)
Jensen, Flemming (Intern)
Main Supervisor: Jansen, Henri (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: DTU-Su Stipendium, Eksperiment
Project: PhD

Sustainability Impact Assessment for Circular Economy

Department of Mechanical Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 5
Phd Student: Kravchenko, Mariia (Intern)
Supervisor: Pigosso, Daniela Cristina Antelmi (Intern)
Hauschild, Michael Zwicky (Intern)
Hildenbrand, Jutta (Ekstern)
Main Supervisor: McAloone, Tim C. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Sustainable utilisation of bioenergy in the Chinese energy system

Department of Management Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student: Shapiro-Bengtsen, Sara Josefin (Intern)
Supervisor: Jørgensen, Birte Holst (Intern)
Main Supervisor: Münster, Marie (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Using Biodiversity to Identify Superior Cell Factories for Secondary Metabolite Production
Department of Systems Biology
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
PhD Student:
Kristensen, Line Hillerup (Intern)
Supervisor:
Workman, Christopher (Intern)
Main Supervisor:
Mortensen, Uffe Hasbro (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Vaccination of Seabass against a lethal viral disease and characterization of protective immunity
National Veterinary Institute
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
PhD Student:
Hansen, Sofie (Intern)
Supervisor:
Lorenzen, Niels (Intern)
Main Supervisor:
Olesen, Niels Jørgen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Validation of using urban sewage for disease surveillance using metagenomics
National Food Institute
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
PhD Student:
Lindhard, Barbara við Breiða (Intern)
Supervisor:
Pamp, Sünje Johanna (Intern)
Main Supervisor:
Hendriksen, Rene S. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Valorization of particulate waste materials in construction materials in cold climates
Department of Civil Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
PhD Student:
Ebert, Benjamin Alexander Regaard (Intern)
Supervisor:
Geiker, Mette Rica (Intern)
Steenari, Britt-Marie (Ekstern)
Main Supervisor:
Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

High Resolution X-ray Diffraction Contrast Tomography
Department of Energy Conversion and Storage
Period: 15/11/2017 → 14/11/2020
Number of participants: 3
Phd Student:
Lucas, Mariana Mar (Intern)
Supervisor:
Poulsen, Henning Friis (Intern)
Main Supervisor:
Andreasen, Jens Wenzel (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Large scale atmospheric structures in space-time over flat terrain
Department of Wind Energy
Period: 15/11/2017 → 14/11/2020
Number of participants: 4
Phd Student:
Alcayaga Romàn, Leonardo Andrès (Intern)
Supervisor:
Kelly, Mark C. (Intern)
Mann, Jakob (Intern)
Main Supervisor:
Larsen, Gunner Chr. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Shape and Topology Optimization of Aeroelastic Systems
Department of Mechanical Engineering
Period: 15/11/2017 → 14/11/2020
Number of participants: 4
Phd Student:
Conlan-Smith, Cian James (Intern)
Supervisor:
Ramos García, Néstor (Intern)
Sigmund, Ole (Intern)
Main Supervisor:
Andreasen, Casper Schousboe (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Coastal Hazard Risk Reduction and Management
Department of Management Engineering
Systems Analysis
National Space Institute
Geodesy
Agency for Data Supply and Efficiency (SDFE)
Danish Coastal Authority
Danish Meteorological Institute
DHI
Skive Kommune
Ringkøbing-Skjern Kommune
Aabenraa Kommune
Helmholtz-Zentrum Geesthacht
Smith Innovation
Period: 01/11/2017 → 30/10/2020
Number of participants: 4
Acronym: COHERENT
Project participant:
Larsen, Morten Andreas Dahl (Intern)
Drews, Martin (Intern)
Sørensen, Carlo Sass (Intern)

Project Manager, academic:
Halsnæs, Kirsten (Intern)

Financing sources
Source: Public research council
Name of research programme: Innovation Fund Denmark
Web address: https://innovationsfonden.dk/en
Amount: 10,000,000.00 Danish Kroner
Year of approval: 2017

3D oxygenation of thymic organoids
Department of Micro- and Nanotechnology
Period: 01/11/2017 → 31/10/2020
Number of participants: 2
Phd Student:
Wesseler, Milan Finn Laszlo (Intern)
Main Supervisor:
Larsen, Niels Bent (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Catalytic Cracking of Sugars for Production of Chemicals
Department of Chemical and Biochemical Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
Phd Student:
Schandel, Christian Bækhøj (Intern)
Supervisor:
Catalytic methanol synthesis
Department of Chemical and Biochemical Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student:
Nielsen, Niels Dyreborg (Intern)
Supervisor:
Jensen, Anker Degn (Intern)
Main Supervisor:
Christensen, Jakob Munkholt (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Continuous Biocatalytic Alkene Hydrogenation
Department of Chemical and Biochemical Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
Phd Student:
Lindeque, Rowan Malan (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Krühne, Ulrich (Intern)
Main Supervisor:
Woodley, John (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Detection and control of bimolecular reactions from preformed weakly bound clusters
Department of Chemistry
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
Phd Student:
Voute, Alexandre Paolo (Intern)
Supervisor:
Larsen, René Wugt (Intern)
Møller, Klaus Braagaard (Intern)
Main Supervisor:
Henriksen, Niels Engholm (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
Development of Highly sensitive raman spectroscopy system for monitoring of multicomponent drug mixtures in the PPM Concentration range
Department of Micro- and Nanotechnology
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
Phd Student:
Slipets, Roman (Intern)
Supervisor:
Ilchenko, Oleksii (Intern)
Rindzevicius, Tomas (Intern)
Main Supervisor:
Boisen, Anja (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Development of methods for element-wise assessment of oscillatory rotor-angle stability
Department of Electrical Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
Phd Student:
Müller, Daniel (Intern)
Supervisor:
Jóhannsson, Hjörtur (Intern)
Uhlen, Kjetil (Ekstern)
Main Supervisor:
Nielsen, Arne Hejde (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Development of Targeted Polymeric Nanomedicines for Intelligent Combination Nanotherapies
Department of Micro- and Nanotechnology
Period: 01/11/2017 → 31/10/2020
Number of participants: 2
Phd Student:
Sadeghi, Saeed (Intern)
Main Supervisor:
Kamaly, Nazila (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Development of ultra-high quality mechanical oscillators
Department of Physics
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student:
Høj, Dennis (Intern)
Supervisor:
Sigmund, Ole (Intern)
Main Supervisor:
Andersen, Ulrik Lund (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

---

**Ex-situ biogas upgrading through biologically mediated CO2 hydrogenation**
Department of Environmental Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student:
Peprah, Maria (Intern)
Supervisor:
Kougias, Panagiotis (Intern)
Main Supervisor:
Angelidaki, Irini (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

---

**Fatigue behaviour of polymer matrix at the microstructural scale**
Department of Wind Energy
Period: 01/11/2017 → 31/10/2020
Number of participants: 5
Phd Student:
Bangaru, Ashish Kumar (Intern)
Supervisor:
Legarth, Brian Nyvang (Intern)
Michel, Alexander (Intern)
Mikkelsen, Lars Pilgaard (Intern)
Main Supervisor:
Sørensen, Bent F. (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

---

**Fog Computing Security**
Technical University of Denmark
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student:
Kavaja, Juxhino (Ekstern)
Supervisor:
Madsen, Jan (Intern)
Main Supervisor:
Dragoni, Nicola (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD
Fog Computing Security
Technical University of Denmark
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student: Kavaja, Juxhino (Intern)
Supervisor: Madsen, Jan (Intern)
Main Supervisor: Dragoni, Nicola (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

From analysis to intervention to real world impact in behaviour design
Department of Management Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student: Nielsen, Camilla Kirstine Elisabeth (Intern)
Supervisor: Daalhuizen, Jaap (Ekstern)
Main Supervisor: Cash, Philip (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

From ecology to technology: Unraveling of the bioactive potention of marine bacteria
Department of Systems Biology
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student: Buijs, Yannick (Ekstern)
Supervisor: Larsen, Thomas Ostenfeld (Intern)
Main Supervisor: Gram, Lone (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

From ecology to technology: Unraveling of the bioactive potention of marine bacteria
Department of Systems Biology
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student: Buijs, Yannick (Intern)
Supervisor: Larsen, Thomas Ostenfeld (Intern)
Main Supervisor:
Gram, Lone (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

**Healthcare Design for Patient Engagement and Collaborative Care**

Department of Management Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
PhD Student:
Valentin-Hjorth, Julie Falck (Intern)
Supervisor:
Dominguez, Maria Helena (Ekstern)
Patou, François (Intern)
Main Supervisor:
Maier, Anja (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Identification of Safety and Security Cascading Risks in Cyber-Physical Systems**

Department of Management Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
PhD Student:
Carreras Guzman, Nelson Humberto (Intern)
Supervisor:
Lundteigen, Mary Ann (Ekstern)
Taylor, John (Ekstern)
Main Supervisor:
Kozin, Igor (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Less is more in TB vaccines**

National Veterinary Institute
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
PhD Student:
Clemmensen, Helena Strand (Ekstern)
Supervisor:
Aagaard, Claus (Intern)
Main Supervisor:
Jungersen, Gregers (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsstipendium
Project: PhD
Multi-axial fatigue damage laws for composite materials at the macro-scale

Department of Mechanical Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
Phd Student:
Moncy, Aakash (Intern)
Supervisor:
Branner, Kim (Intern)
Stang, Henrik (Intern)
Main Supervisor:
Berggreen, Christian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Multiscale coarsening studied by Dark Field X-ray Microscopy

Department of Physics
Period: 01/11/2017 → 31/10/2020
Number of participants: 2
Phd Student:
Kutsal, Mustafacan (Intern)
Main Supervisor:
Poulsen, Henning Friis (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

NanoBiophotonics for Light Robotoics

Department of Photonics Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student:
Engay, Einstom (Intern)
Supervisor:
Palima, Darwin (Intern)
Main Supervisor:
Glückstad, Jesper (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Nanofluidics devices for bioimaging

Department of Micro- and Nanotechnology
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student:
Rasmussen, Martin Kjærulff (Intern)
Supervisor:
Pedersen, Jonas Nyvold (Intern)
Main Supervisor:
Marie, Rodolphe (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Novel catalysts for the oxidation of methanol to formaldehyde
Department of Chemical and Biochemical Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
Phd Student: Thrane, Joachim (Intern)
Supervisor: Høj, Martin (Intern)
Thorhauge, Max (Ekstern)
Main Supervisor: Jensen, Anker Degn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Numerical modelling of reservoir souring in chalk reservoirs
Department of Applied Mathematics and Computer Science
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student: Jahanbani Veshareh, Moein (Intern)
Supervisor: Nielsen, Sidsel Marie (Intern)
Main Supervisor: Nick, Hamid (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Powdered bioaugmentation inocula to alleviate ammonia toxicity in anaerobic digesters
Department of Environmental Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student: Yan, Miao (Intern)
Supervisor: Fotidis, Ioannis (Intern)
Main Supervisor: Angelidaki, Irini (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Privatist
Project: PhD

Relative positioning and attitude from UAVs
National Space Institute
Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student:
Hu, Xiao (Intern)

Supervisor:
Jakobsen, Jakob (Intern)

Main Supervisor:
Knudsen, Per (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Solvent Molecular Design Process Synthesis and Energy Requirements in Chemical and Biochemical Processes

Department of Chemical and Biochemical Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
Phd Student:
Chen, Yuqiu (Ekstern)

Supervisor:
Gani, Rafiqul (Intern)
Kontogeorgis, Georgios (Intern)

Main Supervisor:
Woodley, John (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Strength of cracked concrete - Shear behaviour of arch-shaped members

Department of Civil Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 6
Phd Student:
Kragh-Poulsen, Jens-Christian (Intern)

Supervisor:
Fisker, Jakob (Ekstern)
Frederiksen, Jens Mejor (Ekstern)
Frettloehr, Bjorn (Ekstern)
Hagsten, Lars German (Intern)
Main Supervisor:
Hoang, Linh Cao (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

The effect of aging on fire safety of composite materials
Department of Civil Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 4
Phd Student:
Sandinge, Anna (Intern)
Supervisor:
Blomqvist, Per (Ekstern)
Markert, Frank (Intern)
Main Supervisor:
Dederichs, Anne Simone (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Design and Engineering of Nanostructured Halide Perovskites for Light Harvesting and Solar Power Conversion
Department of Chemistry
Period: 15/10/2017 → 14/10/2020
Number of participants: 3
Phd Student:
Liang, mingli (Intern)
Supervisor:
Duus, Jens Øllgaard (Intern)
Main Supervisor:
Chi, Qijin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

High pulse energy supercontinuum for combined fluorescence and MSOT
Department of Photonics Engineering
Period: 15/10/2017 → 14/10/2020
Number of participants: 3
Phd Student:
Efunbajo, Oyewole Benjamin (Intern)
Supervisor:
Moselund, Peter M. (Intern)
Main Supervisor:
Andersen, Peter E. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt EU-finansieret
Project: PhD
Identification of Genetic Associations within childhood Asthma using Probabilistic

Department of Bio and Health Informatics
Period: 15/10/2017 → 14/10/2020
Number of participants: 6
Phd Student:
Eliasen, Anders Ulrik (Intern)
Supervisor:
Ahluwalia, Tarunveer Singh (Ekstern)
Bisgaard, Hans (Ekstern)
Bønnelykke, Klaus (Ekstern)
Rasmussen, Morten Arendt (Ekstern)
Main Supervisor:
Pedersen, Anders Gorm (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Investigation of the relationships between the subjective assessment and objective parameters of music listening spaces

Department of Electrical Engineering
Period: 15/10/2017 → 14/10/2021
Number of participants: 4
Phd Student:
Wincentz, Jakob Nygård (Intern)
Supervisor:
Brunskog, Jonas (Intern)
Gade, Anders Christian (Intern)
Main Supervisor:
Jeong, Cheol-Ho (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Metal centres for activation of small molecules in porous materials

Department of Chemistry
Period: 15/10/2017 → 14/10/2020
Number of participants: 3
Phd Student:
Nielsen, David (Intern)
Supervisor:
Fehrmann, Rasmus (Intern)
Main Supervisor:
Mossin, Susanne (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Multi-modal microstructure imaging of biological tissue

Department of Applied Mathematics and Computer Science
Period: 15/10/2017 → 14/10/2020
Number of participants: 4
Phd Student:
Andersson, Mariam (Intern)
Supervisor:
Bech, Martin (Ekstern)
Dahl, Vedrana Andersen (Intern)
Main Supervisor:
Dyrby, Tim Bjørn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Novel Tools for Ultra-Specific Targeting of Nucleic Acids
Department of Chemistry
Period: 15/10/2017 → 14/04/2019
Number of participants: 3
Phd Student:
Taskova, Maria (Intern)
Supervisor:
Clausen, Mads Hartvig (Intern)
Main Supervisor:
Astakhova, Kira (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Open-access data platform for behavioural monitoring and visual analytics for mental health
Department of Applied Mathematics and Computer Science
Period: 15/10/2017 → 14/10/2020
Number of participants: 3
Phd Student:
Moradi Vastegani, Milad (Intern)
Supervisor:
Matic, Aleksander (Ekstern)
Main Supervisor:
Bardram, Jakob Eyvind (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Rain climate and erosion of wind turbine blades
Department of Wind Energy
Period: 15/10/2017 → 14/10/2020
Number of participants: 3
Phd Student:
Tilg, Anna-Maria (Intern)
Supervisor:
Veien, Flemming (Ekstern)
Main Supervisor:
Hasager, Charlotte Bay (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
Statistical Modelling of TCR Repertoires for Immunotherapy and Drug Delivery Systems

Department of Micro- and Nanotechnology
Period: 15/10/2017 → 14/10/2020
Number of participants: 3
PhD Student:
Vujovic, Milena (Intern)
Supervisor:
Kaplinsky, Joseph John (Intern)
Main Supervisor:
Andresen, Thomas Lars (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Development of a versatile slip-ring/rotary-union based in-operando high temperature functional material test cell for the DanMAX beamline

Department of Energy Conversion and Storage
Imaging and Structural Analysis
Neutrons and X-rays for Materials Physics
Period: 01/10/2017 → 31/03/2018
Number of participants: 3
X-ray synchrotron scattering
Acronym: Op-Stage
Project ID: DTU-029
Number of related Ph.D. students: 1
Project participant:
Karlsson, Maths (Ekstern)
Project Manager, academic:
Bowen, Jacob R. (Intern)
Project applicant:
Sierra Trujillo, José Xavier (Intern)

Relations
Related projects:
ESS & MAX IV: Cross border science and society
Project

Reservoirvæters mulige rolle for persistens af rådyrsyge

National Veterinary Institute
Bacteriology & Parasitology
Diagnostic & Development
Period: 01/10/2017 → 01/07/2018
Number of participants: 2
Project applicant:
Chriél, Mariann (Intern)
Project Coordinator:
Petersen, Heidi Huus (Intern)
Project

Energy Efficient Laser Enhancement of Stage Spotlights

Department of Photonics Engineering
Diode Lasers and LED Systems

Brother, Brother & Sons Aps
Period: 01/10/2017 → 01/10/2020
Number of participants: 4
Project participant:
Thorseth, Anders (Intern)
Lindén, Johannes (Intern)
Jensen, Ole Bjarlin (Intern)

Financing sources
Source: Public research council
Name of research programme: EUDP

Relations
Related projects:
Light engine V8 - a green revolution for colored light
Diode laser based lighting
D-Light, Energibesparende diodelaser belysning
Activities:
CIE DR 2-80, CIE Division 2 Reportership, on metrology of laser based lighting
Publications:
Investigation of saturation effects in ceramic phosphors for laser lighting
Saturation effects of phosphor converted laser diodes

Multiple working time arrangements and work process coordination in complex health and care systems
Department of Management Engineering
Management Science
International Research Institute of Stavanger
Period: 01/10/2017 → ...
Number of participants: 1
Project participant:
Edwards, Kasper (Intern)

Advanced Landing, Interception and Exploration Navigation through Sensorfusion
National Space Institute
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Christensen, Lukas Alexander Mads (Intern)
Supervisor:
Jørgensen, John Leif (Intern)
Main Supervisor:
Merayo, José M.G. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Bacteriophage based technology to control Flavobacterium pathogens in aquaculture
National Veterinary Institute
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Donati, Valentina Laura (Intern)
Supervisor:
Madsen, Lone (Intern)
Main Supervisor:
Dalsgaard, Inger (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Biomineralization and Biomimetics
Department of Micro- and Nanotechnology
Period: 01/10/2017 → 30/09/2020
Number of participants: 2
Phd Student:
Mandsberg, Nikolaj Kofoed (Intern)
Main Supervisor:
Berg, Rolf Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Characterization of wind turbine siting parameters in complex terrain using remote sensing
Department of Wind Energy
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
De Azevedo Santos, Pedro Alvim (Intern)
Supervisor:
Vasiljevic, Nikola (Intern)
Main Supervisor:
Mann, Jakob (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Design Approaches for Terahertz Electronics using Active Device Configurations
Department of Electrical Engineering
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Turhaner, Arsen (Intern)
Supervisor:
Boppel, Sebastian (Ekstern)
Main Supervisor:
Johansen, Tom Keinicke (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Development of advanced drug delivery systems for therapeutic radionuclides in cancer treatment

Department of Micro- and Nanotechnology
Period: 01/10/2017 → 30/09/2020
Number of participants: 4
Phd Student:
Magnus, Charlotte Busk (Intern)
Supervisor:
Andresen, Thomas Lars (Intern)
Herth, Matthias (Ekstern)
Main Supervisor:
Jensen, Andreas Tue Ingemann (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)

Dynamic Route Planning and Decision Support in Feecier Lines

Department of Management Engineering
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Hellsten, Erik Orm (Ekstern)
Supervisor:
Vilhelmsen, Charlotte (Intern)
Main Supervisor:
Pisinger, David (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet

Faster and Better Structure Determination of Bacterial Polysaccharides for Improved Diagnosis and Vaccines

Department of Chemistry
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Li, Chengxin (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Gaseous surface hardening and heat treatment of martensitic stainless steel

Department of Mechanical Engineering
Period: 01/10/2017 → 30/09/2020
Number of participants: 5
Phd Student:
Tibollo, Chiara (Intern)
Supervisor:
Barrallier, Laurent (Ekstern)
Christiansen, Thomas Lundin (Intern)
Michel, Grégory (Ekstern)
Main Supervisor:
Somers, Marcel A. J. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Lipids and carotenoids production by oleaginous yeasts from lignocellulose biomass

Technical University of Denmark
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Liu, Zhijia (Intern)
Supervisor:
Marcelo Dragone, Giuliano (Ekstern)
Main Supervisor:
Mussatto, Solange I. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsstipendium
Project: PhD

Modelling the thermo-metallurgical-mechanical conditions in precision additive metal manufacturing

Department of Mechanical Engineering
Period: 01/10/2017 → 30/09/2020
Number of participants: 5
Phd Student:
Bayat, Mohamad (Intern)
Supervisor:
Mohanty, Sankhya (Intern)
Thorborg, Jesper (Intern)
Tiedje, Niels Skat (Intern)
Main Supervisor:
Hattel, Jesper Henri (Intern)

Financing sources
**Modelling the thermo-metallurgical-mechanical conditions in precision additive metal manufacturing**

Department of Mechanical Engineering  
Period: 01/10/2017 → 30/09/2020  
Number of participants: 5  
Phd Student:  
Bayat, Mohamad (Intern)  
Supervisor:  
Mohanty, Sankhya (Intern)  
Thorborg, Jesper (Intern)  
Tiedje, Niels Skat (Intern)  
Main Supervisor:  
Hattel, Jesper Henri (Intern)

**Financing sources**

Source: Internal funding (public)  
Name of research programme: Marie Curie (EU-stipendium)  
Project: PhD

**Non-Gaussian Cluster States**

Department of Physics  
Period: 01/10/2017 → 30/09/2020  
Number of participants: 3  
Phd Student:  
Larsen, Mikkel Vilsbøll (Intern)  
Supervisor:  
Neergaard-Nielsen, Jonas Schou (Intern)  
Main Supervisor:  
Andersen, Ulrik Lund (Intern)

**Financing sources**

Source: Internal funding (public)  
Name of research programme: DTU-Su Stipendium, Eksperiment  
Project: PhD

**Optical phase conjugation for high-spectrally efficient transmission**

Department of Photonics Engineering  
Period: 01/10/2017 → 30/09/2020  
Number of participants: 4  
Phd Student:  
Kaminski, Pawel Marcin (Intern)  
Supervisor:  
Da Ros, Francesco (Intern)  
Forchhammer, Søren (Intern)  
Main Supervisor:  
Galili, Michael (Intern)

**Financing sources**

Source: Internal funding (public)  
Name of research programme: Grundforskningsfonden  
Project: PhD

**Optical Sensor Disc**

Department of Micro- and Nanotechnology
Period: 01/10/2017 → 30/09/2020
Number of participants: 4
Phd Student:
Serioli, Laura (Intern)
Supervisor:
Rindzevicius, Tomas (Intern)
Zor, Kinga (Intern)
Main Supervisor:
Boisen, Anja (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Performance optimization of wind farms using model-based data analysis
Department of Wind Energy
Period: 01/10/2017 → 30/09/2020
Number of participants: 5
Phd Student:
Schröder, Laura (Intern)
Supervisor:
Mirzaei, Mahmood (Intern)
Sørensen, John Aasted (Intern)
Verelst, David Robert (Intern)
Main Supervisor:
Hansen, Morten Hartvig (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Reconstituted high-density lipoproteins for immuno- and chemotherapeutic drug delivery
Department of Micro- and Nanotechnology
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Pedersbaek, Dennis (Intern)
Supervisor:
Andresen, Thomas Lars (Intern)
Main Supervisor:
Simonsen, Jens Bæk (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Ship propulsion in waves
Department of Mechanical Engineering
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Saettone, Simone (Intern)
Supervisor:
Steen, Sverre (Ekstern)
Main Supervisor:
Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Supplier Relationship Management at FLSmidth
Department of Management Engineering
Period: 01/10/2017 → 30/09/2020
Number of participants: 4
Phd Student:
Piatto, Alberto (Intern)
Supervisor:
Herbert-Hansen, Zaza Nadja Lee (Intern)
Linder, Anders (Ekstern)
Main Supervisor:
Jacobsen, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Systems Biology of the Infant Gut Microbiome
Department of Systems Biology
Period: 01/10/2017 → 30/09/2020
Number of participants: 4
Phd Student:
Myers, Pernille Neve (Intern)
Supervisor:
Nielsen, Henrik Bjørn (Intern)
Pedersen, Anders Gorm (Intern)
Main Supervisor:
Pedersen, Susanne Brix (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Towards accurate prediction of T cell targets: Learning the rules of T cell receptor interaction
National Veterinary Institute
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Holm, Jeppe Sejerø (Intern)
Supervisor:
Nielsen, Morten (Intern)
Main Supervisor:
Hadrup, Sine Reker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD
Trait-based modelling of copepod communities
National Institute of Aquatic Resources
Period: 01/10/2017 → 30/09/2020
Number of participants: 4
Phd Student:
Serra Pompei, Maria Camila (Intern)
Supervisor:
Kiørboe, Thomas (Intern)
Visser, Andre (Intern)
Main Supervisor:
Andersen, Ken Haste (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Vertical migration and the structure and function of pelagic ecosystems
National Institute of Aquatic Resources
Period: 01/10/2017 → 30/09/2020
Number of participants: 4
Phd Student:
Pinti, Jerome Pierre Alexandre (Intern)
Supervisor:
Kiørboe, Thomas (Intern)
Mariani, Patrizio (Intern)
Main Supervisor:
Visser, Andre (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Advanced meteorological modeling across scales
Department of Wind Energy
Period: 15/09/2017 → 14/09/2020
Number of participants: 3
Phd Student:
Imberger, Marc (Intern)
Supervisor:
Davis, Neil (Intern)
Main Supervisor:
Larsén, Xiaoli Guo (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Applied Biodiversity for Identification of Superior Cell Factories for Industrial Enzyme Production
Department of Systems Biology
Period: 15/09/2017 → 14/09/2020
Number of participants: 3
Phd Student:
Rendsvig, Jakob Krammer (Intern)
Supervisor:
Persson, Martin (Ekstern)
Main Supervisor:
Mortensen, Uffe Hasbro (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: DTU-Su Stipendium, Eksperiment
Project: PhD

Data driven UX engineering of cognitive interfaces for augmented hearing
Department of Applied Mathematics and Computer Science
Period: 15/09/2017 → 14/09/2020
Number of participants: 4
Phd Student:
Korzepa, Maciej Jan (Intern)
Supervisor:
Larsen, Jakob Eg (Intern)
Petersen, Michael Kai (Intern)
Main Supervisor:
Larsen, Jan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Developing Modular Product and Process Architectures in Engineer to Order (ETO) Companies
Department of Mechanical Engineering
Period: 15/09/2017 → 14/09/2020
Number of participants: 3
Phd Student:
Christensen, Carsten Keinicke Fjord (Intern)
Supervisor:
Hvam, Lars (Intern)
Main Supervisor:
Mortensen, Niels Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Extension of a Fast Potential Flow Solver to Fully-Nonlinear Wave Loading on Offshore Structures
Department of Mechanical Engineering
Period: 15/09/2017 → 14/09/2020
Number of participants: 4
Phd Student:
Hicks, Jacob Bjarke Hansen (Intern)
Supervisor:
Lindberg, Ole (Intern)
Read, Robert (Intern)
Main Supervisor:
Bingham, Harry B. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD
Integrating Micro and Nano structures on Steel Surfaces - Process Chain Implementation and Validation

Department of Mechanical Engineering
Period: 15/09/2017 → 14/09/2020
Number of participants: 4
Phd Student:
Loaldi, Dario (Intern)
Supervisor:
Calaon, Matteo (Intern)
Zhang, Yang (Intern)
Main Supervisor:
Tosello, Guido (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Latency Critical Networking

Department of Photonics Engineering
Period: 15/09/2017 → 14/09/2020
Number of participants: 4
Phd Student:
Zhou, Zifan (Intern)
Supervisor:
Berger, Michael Stübert (Intern)
Wessing, Henrik (Intern)
Main Supervisor:
Yan, Ying (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Mining of Cryptic Secondary Metabolism in Aspergillus

Department of Systems Biology
Period: 15/09/2017 → 14/09/2020
Number of participants: 3
Phd Student:
Guo, Yaojie (Intern)
Supervisor:
Mortensen, Uffe Hasbro (Intern)
Main Supervisor:
Larsen, Thomas Ostenfeld (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Model Predictive Control in Urban Systems

Department of Applied Mathematics and Computer Science
Period: 15/09/2017 → 14/09/2020
Number of participants: 5
Phd Student:
Svensen, Jan Lorenz (Intern)
Supervisor:
Falk, Anne Katrine Vinther (Intern)
Madsen, Henrik (Intern)
Niemann, Hans Henrik (Intern)
Main Supervisor:
Poulsen, Niels Kjølstad (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

New industrial paradigm for design of wind turbine blades - tip and root optimization for increasing power performance
Department of Wind Energy
Period: 15/09/2017 → 14/09/2020
Number of participants: 4
Phd Student:
Lønbæk, Kenneth (Ekstern)
Supervisor:
Madsen, Jens Ingemann (Ekstern)
Zahle, Frederik (Intern)
Main Supervisor:
Bak, Christian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Novel Response Methods for Challenging Phenomena
Department of Chemistry
Period: 15/09/2017 → 14/09/2020
Number of participants: 3
Phd Student:
Lopez Vidal, Marta (Intern)
Supervisor:
Møller, Klaus Braagaard (Intern)
Main Supervisor:
Coriani, Sonia (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Stochastic Predictive Control of Wastewater Treatment Processes
Department of Applied Mathematics and Computer Science
Period: 15/09/2017 → 14/09/2020
Number of participants: 6
Phd Student:
Stentoft, Peter Alexander (Intern)
Supervisor:
Madsen, Henrik (Intern)
Mikkelsen, Peter Steen (Intern)
Munk-Nielsen, Thomas (Ekstern)
Vezzaro, Luca (Intern)
Main Supervisor:
Møller, Jan Kloppenborg (Intern)

Financing sources
Topology optimization for transient problems

Department of Mechanical Engineering
Period: 15/09/2017 → 14/09/2020
Number of participants: 4
PhD Student:
Kristiansen, Hansotto (Intern)
Supervisor:
Poulios, Konstantinos (Intern)
Sigmund, Ole (Intern)
Main Supervisor:
Aage, Niels (Intern)

Viscoelastic Simulation and Optimization of Filament based 3D Printing

Department of Mechanical Engineering
Period: 15/09/2017 → 14/09/2020
Number of participants: 3
PhD Student:
Serdeczny, Marcin Piotr (Intern)
Supervisor:
Pedersen, David Bue (Intern)
Main Supervisor:
Spangenberg, Jon (Intern)

Experimental and numerical investigation of friction, power loss and lubricant transport between a piston ring and cylinder liner in a heavy duty diesel engine.

Department of Mechanical Engineering
Solid Mechanics
Period: 11/09/2017 → ...
Number of participants: 3
Project participant:
Overgaard, Hannibal Toxværd (Intern)
Klit, Peder (Intern)
Vølund, Anders (Intern)

Effective, Co-created and compliant ACM

The goal of the EcoKnow project is to develop world-leading solutions for the effective digitalization of knowledge work processes that empower caseworkers and citizens to plan evidence-based optimal process flows for the individual case, guaranteeing both efficiency and compliance with the law. EcoKnow brings together knowledge from leading national and international researchers, municipalities, representatives for case workers, key industrial partners, digitalisation consultants and lawyers, researching and developing methods for co-creation technologies for real-time analysis of process logs (process mining) and adaptive case management through a multi-disciplinary situated design process.

Department of Applied Mathematics and Computer Science
Software Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Acronym: EcoKnow
Project participant:
Weber, Barbara (Intern)
Burattin, Andrea (Intern)
Abbad Andaloussi, Amine (Intern)

Protein valorization through informatics, hydrolysis, and separation
WP leader on the industrialization part of proteins from seaweed
National Food Institute
Research Group for Bioactives – Analysis and Application
Research Group for Gut Microbiology and Immunology
Period: 01/09/2017 → 31/08/2021
Number of participants: 4
Acronym: PROVIDE
Project participant:
Holdt, Susan Løvstad (Intern)
Jacobsen, Charlotte (Intern)
Hansen, Egon Bech (Intern)
García Moreno, Pedro Jesús (Intern)

Smart innovation - Learningbank: Learning using VR
Digital Learning
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Learningbank
Period: 01/09/2017 → …
Number of participants: 2
Project participant:
Thyregod, Camilla (Intern)
Project Manager, academic:
Rootzén, Helle (Intern)

Cyber Resilience for the Shipping industry
The CyberShip project is aimed at providing shipping companies and regulators with a reference framework and decision
support model to better cope with disruptions originating from a cyber-attack.
Department of Management Engineering
Management Science
Transport DTU
Operations Management
Department of Applied Mathematics and Computer Science
Cyber Security
Copenhagen Center for Health Technology
Period: 01/09/2017 → 31/08/2019
Number of participants: 4
Acronym: CyberShip
Project participant:
Adaptability of tropical copepods to warmer and polluted future: with emphasis on metagenomics after multiple-generation exposure

The adaptability of tropical copepods to global warming and polluted environment will be tested using metagenomics approach.

National Institute of Aquatic Resources
Section for Oceans and Arctic
Period: 01/09/2017 → 31/08/2019
Number of participants: 1
tropical marine ecosystem, Pseudodiaptomus annandalei, global warming, adaptation, metagenomics, gut microbiomes, contaminants, PAH

3D Ultrasound Cardiac Vector Flow Imaging
Department of Electrical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Parkhomenko, Kseniya (Intern)
Supervisor:
Jensen, Jørgen Arendt (Intern)
Traberg, Marie Sand (Intern)
Main Supervisor:
Stuart, Matthias Bo (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Advanced Game-Theoretical Aspects in Electricity Markets
Department of Electrical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Dvorkin, Vladimir (Intern)
Supervisor:
Kazempour, Jalal (Intern)
Main Supervisor:
Pinson, Pierre (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Air-pollutant sensor system for wood slopes
Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Du, Yifan (Ekstern)
Supervisor:
Clausen, Sønnik (Intern)
Illerup, Jytte Boll (Intern)
Main Supervisor:
Glarborg, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Air-pollutant sensor system for wood stoves
Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Du, Yifan (Intern)
Supervisor:
Clausen, Sønnik (Intern)
Illerup, Jytte Boll (Intern)
Main Supervisor:
Glarborg, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Anticorrosive coatings and pigments engineering
Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Sedaghat Nezhad, Sina (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Erik Weinell, Claus (Intern)
Main Supervisor:
Kiil, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Automatic Decomposition of Mixed Integer Linear Programs
Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Clausen, Jens Vinther (Intern)
Supervisor:
Lubbecke, Marco (Ekstern)
Røpke, Stefan (Intern)
Main Supervisor:
Lusby, Richard Martin (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Biofuel production based on Integrated Systems combining Biomass Gasification and Solid Oxide Cells**
Department of Mechanical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Butera, Giacomo (Intern)
Supervisor:
Ahrenfeldt, Jesper (Intern)
Jensen, Søren Højgaard (Intern)
Main Supervisor:
Clausen, Lasse Røngaard (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Characterization and Reducing the Influence of Model Errors in Inverse Problems**
Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Riis, Nicolai Andre Brogaard (Intern)
Supervisor:
Frikel, Jürgen (Intern)
Hansen, Per Christian (Intern)
Main Supervisor:
Dong, Yiqiu (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Characterization of intestinal stromal cells**
National Veterinary Institute
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Pærregaard, Simone Isling (Intern)
Supervisor:
Svensson Frej, Marcus (Intern)
Main Supervisor:
Agace, William Winston (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Climate tipping indicators for improved environmental sustainability assessment of bioplastics

Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Fabbri, Serena (Intern)
Supervisor:
Hauschild, Michael Zwicky (Intern)
Main Supervisor:
Owsianiak, Mikolaj (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Coating interlayer adhesion loss

Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Wang, Ting (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Erik Weinell, Claus (Intern)
Main Supervisor:
Kiil, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

CodeSphere - Molecular encoding of Nanoparticles for targeted cargo delivery

National Veterinary Institute
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Moss, Keith Henry (Intern)
Supervisor:
Andresen, Thomas Lars (Intern)
Jakobsen, Søren Nyboe (Intern)
Main Supervisor:
Hadrup, Sine Reker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Computational design of electrocatalysts for CO2 reduction

Department of Energy Conversion and Storage
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Kildgaard, Jens Vive (Intern)
Supervisor:
Hansen, Heine Anton (Intern)
Main Supervisor:
Vegge, Tejs (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Deep Metric Learning
Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
PhD Student:
Detlefsen, Nicki Skafte (Intern)
Supervisor:
Winther, Ole (Intern)
Main Supervisor:
Hauberg, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Designing New Ways of Working in Industry 4.0
Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
PhD Student:
Kadir, Bzhwen A (Intern)
Supervisor:
Souza da Conceição, Carolina (Intern)
Maier, Anja (Intern)
Main Supervisor:
Broberg, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Design of heterogeneous metal catalysts for C-H Functionalization
Department of Chemistry
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
PhD Student:
Bennedsen, Niklas Rosendal (Intern)
Supervisor:
Kramer, Søren (Intern)
Mielby, Jerrik Jørgen (Intern)
Main Supervisor:
Kegnæs, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
Development and Application of Novel Free-floating Sensor Device for Bioprocess Optimization

Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 5
Phd Student:
Bisgaard, Jonas (Intern)
Supervisor:
Huusom, Jakob Kjøbsted (Intern)
Skyggebjerg, Ole (Intern)
Skyggebjerg, Ole (Intern)
Main Supervisor:
Gernaey, Krist V. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Development of polymer-particle composites for adhesive formulations with controlled water uptake kinetics

Department of Chemistry
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Eiler, Johannes (Intern)
Supervisor:
Almdal, Kristoffer (Intern)
Bingöl, Bahar (Ekstern)
Main Supervisor:
Thormann, Esben (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Development of Porous Electrodes for Alkaline Electrolyzers

Department of Energy Conversion and Storage
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Reumert, Alexander Kappel (Intern)
Supervisor:
Cleemann, Lars Nilausen (Intern)
Kraglund, Mikkel Rykær (Intern)
Main Supervisor:
Jensen, Jens Oluf (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Efficient 3D Shape Optimization

Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Limkilde, Asger (Intern)
**Efficient and Scalable Market Design for Renewable-based Integrated Energy Systems**

Department of Electrical Engineering  
Period: 01/09/2017 → 31/08/2020  
Number of participants: 3  
PhD Student: Schwele, Anna (Intern)  
Supervisor: Kazempour, Jalal (Intern)  
Main Supervisor: Pinson, Pierre (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

**Engineering of Polyketide Synthases for Production of Polyketides in Saccharomyces cerevisiae**

Technical University of Denmark  
Period: 01/09/2017 → 31/08/2020  
Number of participants: 4  
PhD Student: Romero Suarez, David (Intern)  
Supervisor: Keasling, Jay (Intern)  
Weber, Tilmann (Intern)  
Main Supervisor: Jensen, Michael Krogh (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Forskningsrådsfinansiering  
Project: PhD

**Error Reconciliation Protocols for Continuous-Variable Quantum Key Distribution**

Department of Physics  
Period: 01/09/2017 → 31/08/2020  
Number of participants: 4  
PhD Student: Mani, Hossein (Intern)  
Supervisor: Gehring, Tobias (Intern)  
Pacher, Christoph (Ekstern)  
Main Supervisor: Andersen, Ulrik Lund (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Fonde  
Project: PhD
Explainability of uncertainty for neutral networks
Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student: Rieger, Laura (Ekstern)
Supervisor: Nielsen, Finn Årup (Intern)
Main Supervisor: Hansen, Lars Kai (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Flexible operations research methods for health care
Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student: Bodvarsdottir, Elin Bjørk (Intern)
Supervisor: Pisinger, David (Intern)
Main Supervisor: Stidsen, Thomas Jacob Riis (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Fully-nonlinear Wave Interaction with Moored Floating marine Structures
Department of Mechanical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student: Xu, Yan (Intern)
Supervisor: Shao, Yanlin (Intern)
Main Supervisor:
Bingham, Harry B. (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

**Functional Polysilazanes for Coating Applications**
Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Kristiansen, Thomas (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Daugaard, Anders Egede (Intern)
Main Supervisor:
Skov, Anne Ladegaard (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Future Feeder Line Operations - Intermodal Transportation and Network Design under Uncertainty**
Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Sacramento Lechado, David (Intern)
Supervisor:
Vilhelmsen, Charlotte (Intern)
Main Supervisor:
Pisinger, David (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Growth of Hexogonal-boron Nitride (h-BN) for Large-scale Graphene Devices**
Department of Micro- and Nanotechnology
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Chen, Xin (Intern)
Supervisor:
Booth, Tim (Intern)
Main Supervisor:
Bøggild, Peter (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
High-Speed Time-stretch Optical coherence tomography
Department of Photonics Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
PhD Student:
Jensen, Mikkel (Intern)
Supervisor:
Israelsen, Niels Møller (Intern)
Main Supervisor:
Bang, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

High Reynolds Number Rotor Design
Department of Wind Energy
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
PhD Student:
Kiefer, Janik (Intern)
Supervisor:
Bak, Christian (Intern)
Hultmark, Marcus (Ekstern)
Main Supervisor:
Hansen, Martin Otto Laver (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Inducible growth decoupling systems for improved production og biochemicals
Technical University of Denmark
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
PhD Student:
Landberg, Jenny Marie (Intern)
Supervisor:
Nørholm, Morten (Intern)
Main Supervisor:
Nielsen, Alex Toftgaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

In situ Structural Characterization of Multilayer Formation during Large-scale Processing of 3rd Generation Solar Cells
Department of Energy Conversion and Storage
Period: 01/09/2017 → 26/10/2017
Number of participants: 3
PhD Student:
Rogowska, Melania (Intern)
Supervisor:
Kuhn, Luise Theil (Intern)
Main Supervisor:
Andreasen, Jens Wenzel (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

**Interconnected Activities and Functions of Matrix Metalloproteinases at the Wound Edge**
Department of Systems Biology
Period: 01/09/2017 → 31/08/2020
Number of participants: 2
Phd Student:
Savickas, Simonas (Ekstern)
Supervisor:
Svensson, Birte (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Interconnected Activities and Functions of Matrix Metalloproteinases at the Wound Edge**
Department of Systems Biology
Period: 01/09/2017 → 31/08/2020
Number of participants: 2
Phd Student:
Savickas, Simonas (Intern)
Supervisor:
Svensson, Birte (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Kinetics of Scale Formation in Oil and Gas Production**
Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Lomsøy, Petter (Intern)
Supervisor:
Ambat, Rajan (Intern)
Fosbøl, Philip Loldrup (Intern)
Main Supervisor:
Thomsen, Kaj (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

**Management of product and production data**
Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Battistello, Loris (Intern)
Membrane-based in-situ product removal
Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Jaksland, Anders (Intern)
Supervisor:
Pinelo, Manuel (Intern)
Wan, Yinhua (Ekstern)
Main Supervisor:
Woodley, John (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering m/virksomhed
Project: PhD

Metal-organic frameworks derived non-noble metal catalysts for proton exchange membrane fuel cells
Department of Chemistry
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Huang, Wei (Intern)
Supervisor:
Mølhave, Kristian (Intern)
Sun, Hongyu (Intern)
Main Supervisor:
Zhang, Jingdong (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Modelling of Public Transport Systems
Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Eltved, Morten (Intern)
Supervisor:
Rasmussen, Thomas Kjær (Intern)
Main Supervisor:
Nielsen, Otto Anker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Multimodal Biophotonics Imaging of Biomarkers for Bladder Cancer

Department of Photonics Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Meyer, Björn-Ole (Intern)
Supervisor:
Broeng, Jes (Intern)
Marti, Dominik (Intern)
Main Supervisor:
Andersen, Peter E. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

NOx control in combustion of alternative fuels

Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Krum, Kristian Røhe Kongsted (Intern)
Supervisor:
Norman, Thomas (Intern)
Wu, Hao (Intern)
Main Supervisor:
Glarborg, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Numerical modelling of heat treatment and post processing of additive manufactured metal parts

Department of Mechanical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 5
Phd Student:
De Baere, David (Intern)
Supervisor:
Mohanty, Sankhya (Intern)
Thorborg, Jesper (Intern)
Tiedje, Niels Skat (Intern)
Main Supervisor:
Hattel, Jesper Henri (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Optimal Dispatch and Online Control of Integrated Energy Systems

Department of Electrical Engineering
Period: 01/09/2017 → 30/11/2017
Number of participants: 3
Phd Student:
Nie, Yinghui (Intern)
Supervisor:
Huang, Shaojun (Intern)
Main Supervisor:
Wu, Qiuwei (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Optimized Seamless Transfer System for DG Inverter
Department of Electrical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Sun, Bainan (Intern)
Supervisor:
Andersen, Michael A. E. (Intern)
Main Supervisor:
Zhang, Zhe (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Perfusion Ultrasound Imaging
Department of Electrical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Schou, Mikkel (Intern)
Supervisor:
Stuart, Matthias Bo (Intern)
Main Supervisor:
Jensen, Jørgen Arendt (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Polymer Optical Fiber Bragg Gratings for high sensitivity distributed biochemical sensors
Department of Photonics Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Inglev, Rune (Intern)
Supervisor:
Janting, Jakob (Intern)
Nielsen, Kristian (Intern)
Main Supervisor:
Bang, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Real-Time Multi-Core Communication and Synchronization
Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 31/08/2019
Number of participants: 3
Phd Student: Strøm, Tórur Biskopstø (Intern)
Supervisor: Sparsø, Jens (Intern)
Main Supervisor: Schoebel, Martin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Remote sensing of land ice
National Space Institute
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student: Andersen, Natalia Havelund (Intern)
Supervisor: Simonsen, Sebastian Bjerregaard (Intern)
Main Supervisor: Sørensen, Louise Sandberg (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Robust Congestion Management and Self-healing for Active Distribution Networks
Department of Electrical Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student: Shen, Feifan (Intern)
Supervisor: Huang, Shaojun (Intern)
Xu, Yan (Ekstern)
Main Supervisor: Wu, Qiuwei (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Robust Decision Making for the Management of Large Engineering Projects
Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student: Wied, Morten (Intern)
Supervisor:
Welo, Torgeir (Ekstern)
Main Supervisor:
Oehmen, Josef (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Security in Fog Computing
Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
De Donno, Michele (Intern)
Supervisor:
Probst, Christian W. (Intern)
Main Supervisor:
Dragoni, Nicola (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Smart Manufacturing Frameworks
Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 01/12/2020
Number of participants: 3
Phd Student:
Maier, Dana (Intern)
Supervisor:
Larsen, Jakob Eg (Intern)
Main Supervisor:
Bærentzen, Jakob Andreas (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Stochastic Dynamic Optimization and Control Theory
Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 31/08/2020
Number of participants: 4
Phd Student:
Brok, Niclas Laursen (Intern)
Supervisor:
Jørgensen, John Bagterp (Intern)
Poulsen, Niels Kjølstad (Intern)
Main Supervisor:
Madsen, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
Supporting water infrastructure investment planning with hydro-economic models

Department of Environmental Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 5
Phd Student:
Payet-burin, Raphaël (Intern)
Supervisor:
Cardenal, Silvio Javier Pereira (Intern)
Kromann, Mikkel Aabenhus (Ekstern)
Strzepek, Kenneth Marc (Ekstern)
Main Supervisor:
Bauer-Gottwein, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Synthetic Biology Strategies for Engineering of Human Microbiome Related Species for Therapeutic Applications

Technical University of Denmark
Period: 01/09/2017 → 31/08/2020
Number of participants: 2
Phd Student:
Tueros Farfan, Felipe Gonzalo (Intern)
Main Supervisor:
Sommer, Morten Otto Alexander (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Systems approach to the development of integrated solutions in the Nordic manufacturing industry

Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Ramirez Hernandez, Tabea (Intern)
Supervisor:
Pigosso, Daniela Cristina Antelmi (Intern)
Main Supervisor:
Kreye, Melanie (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Technology Foresight for Smart Specialisation Development: The case study in development countries context

Department of Management Engineering
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Poonjan, Amonpat (Intern)
Supervisor:
Tanner, Anne Nygaard (Intern)
The stochastic geometry of latent variable models
Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Jørgensen, Martin (Intern)
Supervisor:
Hansen, Lars Kai (Intern)
Main Supervisor:
Hauberg, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsstipendium
Project: PhD

Topology of Exotic Wakes
Department of Applied Mathematics and Computer Science
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Nielsen, Anne Ryelund (Intern)
Supervisor:
Heil, Matthias (Ekstern)
Main Supervisor:
Brøns, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

In-situ Ptychographic Studies of Lithium-Sulphur Micro-Batteries
PtychoBat exploits a novel battery geometry designed to capitalize on recent gains in high-resolution imaging offered by synchrotron X-ray ptychography. This will be used to explore degradation processes in potential next generation high capacity Li-S battery technology in-situ). It is expected that the kinetics and mechanisms of these processes will be observed for the first time and that the exploratory project will lay the groundwork for future full 3D in-situ imaging at MAXIV.

Department of Energy Conversion and Storage
Imaging and Structural Analysis

Chalmers University of Technology
Period: 15/08/2017 → 15/02/2018
Number of participants: 3
Acronym: PtychoBat
Project ID: DTU-022
Number of related Ph.D. students: 0
Project participant:
Matic, Aleksandar (Ekstern)
Project Manager, academic:
Bowen, Jacob R. (Intern)
Project applicant:  
De Angelis, Salvatore (Intern)

**Relations**  
Related projects:  
ESS & MAX IV: Cross border science and society  
Project  

---  

**An in vitro method for toxicity testing of inhaled particles**  
Department of Environmental Engineering  
Period: 15/08/2017 → 14/08/2020  
Number of participants: 4  
Phd Student:  
Da Silva, Emilie (Intern)  
Supervisor:  
Housgaard, Karin Sørig (Ekstern)  
Sørli, Jorid Birkeland (Intern)  
Main Supervisor:  
Baun, Anders (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

---  

**Big Data Processing and shaping in SeaStatus**  
Department of Applied Mathematics and Computer Science  
Period: 15/08/2017 → 14/08/2020  
Number of participants: 3  
Phd Student:  
Sengupta, Sayantan (Intern)  
Supervisor:  
Ersbøll, Bjarne Kjær (Intern)  
Main Supervisor:  
Stockmarr, Anders (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

---  

**Coatings for high pressure and high temperature**  
Department of Chemical and Biochemical Engineering  
Period: 15/08/2017 → 14/08/2020  
Number of participants: 4  
Phd Student:  
Ferrero, Gianni (Intern)  
Supervisor:  
Dam-Johansen, Kim (Intern)  
Erik Weinell, Claus (Intern)  
Main Supervisor:  
Kil, Søren (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD
Decision support tools for managing water resources in mixed land use catchments

Department of Environmental Engineering
Period: 15/08/2017 → 14/08/2020
Number of participants: 3
Phd Student:
Lemaire, Grégory Guillaume (Intern)
Supervisor:
McKnight, Ursula S. (Intern)
Main Supervisor:
Bjerg, Poul Legstrup (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Detection and evaluation of abnormal events in complex industrial processes

Department of Electrical Engineering
Period: 15/08/2017 → 14/08/2020
Number of participants: 3
Phd Student:
Hallgrimsson, Asgeir Daniel (Intern)
Supervisor:
Lind, Morten (Intern)
Main Supervisor:
Niemann, Hans Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Development of substantive topicals with high sweat resistance

Department of Chemistry
Period: 15/08/2017 → 14/08/2020
Number of participants: 4
Phd Student:
Keshavarzi, Fatemeh (Intern)
Supervisor:
Jafarzadeh, Shadi (Ekstern)
Lauemøller, Sanne Lise (Ekstern)
Main Supervisor:
Thormann, Esben (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Documentation and quantification of natural and enhanced degradation of chlorinated contaminants in the subsurface

Department of Environmental Engineering
Period: 15/08/2017 → 14/08/2020
Number of participants: 3
Phd Student:
Ottosen, Cecilie Bang (Intern)
Supervisor:
Bjerg, Poul Løgstrup (Intern)
Main Supervisor:
Broholm, Mette Martina (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Estimation of Surface Radiometry
Department of Applied Mathematics and Computer Science
Period: 15/08/2017 → 14/08/2020
Number of participants: 4
Phd Student:
Doest, Mads Emil Brix (Intern)
Supervisor:
Aanæs, Henrik (Intern)
Moeslund, Thomas (Ekstern)
Main Supervisor:
Frisvad, Jeppe Revall (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Light-matter interaction and laser dynamics in nanophotonic structures
Department of Photonics Engineering
Period: 15/08/2017 → 14/08/2020
Number of participants: 4
Phd Student:
Rasmussen, Thorsten Svend (Intern)
Supervisor:
Gregersen, Niels (Intern)
Yu, Yi (Intern)
Main Supervisor:
Mørk, Jesper (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Long distance quantum communication
Department of Photonics Engineering
Period: 15/08/2017 → 14/08/2020
Number of participants: 4
Phd Student:
da Lio, Beatrice (Intern)
Supervisor:
Bacco, Davide (Intern)
Ding, Yunhong (Intern)
Main Supervisor:
Rottwitt, Karsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD
How to improve the utilization of a Configuration Lifecycle Management (CLM) system
The aim of the post-doc project is to add to the theory on scoping and setting up Configuration Lifecycle Management (CLM) systems and to study the potential benefits of applying them. A CLM-system supports the management of multi model configurations, as it covers the application of product configuration in all the different life cycle phases of a complex and highly engineered product.

Department of Management Engineering
Management Science
Engineering Design and Product Development
Operations Management
Confitit A/S
Period: 14/08/2017 → 14/02/2020
Number of participants: 3
Project participant:
Myrodia, Anna (Intern)
Supervisor:
Hvam, Lars (Intern)
Randrup, Thomas (Ekstern)
Project

REBUS
Department of Civil Engineering
Section for Indoor Climate and Building Physics
Period: 01/08/2017 → ...
Number of participants: 1
Project participant:
Elarga, Hagar (Intern)
Project

3D electron microscopy of nanostructures in energy devices
Department of Energy Conversion and Storage
Period: 01/08/2017 → 31/07/2020
Number of participants: 4
Phd Student:
Colding-Jørgensen, Sofie (Intern)
Supervisor:
Schmidt, Søren (Intern)
Simonsen, Søren Bredmose (Intern)
Main Supervisor:
Kuhn, Luise Theil (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Active Deep Learning for Nano Sensor Systems
Department of Applied Mathematics and Computer Science
Period: 01/08/2017 → 01/09/2020
Number of participants: 3
Phd Student:
Vording, Maximillian Fornitz (Intern)
Supervisor:
Alstrøm, Tommy Sonne (Intern)
Main Supervisor:
Larsen, Jan (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Advanced wound care adhesives with new functional properties
Department of Chemical and Biochemical Engineering
Period: 01/08/2017 → 31/07/2020
Number of participants: 6
Phd Student:
Chiaula, Valeria (Intern)
Supervisor:
Mazurek, Piotr Stanislaw (Intern)
Nielsen, Anders Christian (Ekstern)
Tornøe, Jens (Intern)
Tornøe, Jens (Intern)
Main Supervisor:
Skov, Anne Ladegaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Advancing 2D Materials by Metal-Organic Framework Engineering
Department of Chemistry
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Voigt, Laura (Intern)
Supervisor:
Mossin, Susanne (Intern)
Main Supervisor:
Pedersen, Kasper Steen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Big Data Analysis on Food Supply Chain Data
Department of Applied Mathematics and Computer Science
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Svendsen, Kira Dynnes (Intern)
Supervisor:
Hansen, Lars Kai (Intern)
Main Supervisor:
Ersbøll, Bjarne Kjær (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Biosensor development and next-generation sequencing approaches for studying molecular evolution in bacteria
Technical University of Denmark
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Capucci, Silvia (Intern)
Supervisor:
Characterization of anti-obesity drug effects on gut microbiome function

Technical University of Denmark
Period: 01/08/2017 → 31/07/2020
Number of participants: 5
Phd Student:
Hallberg Lind, Rasmus (Ekstern)
Supervisor:
Björk Hansen, Henrik (Ekstern)
Licht, Tine Rask (Intern)
Secher, Thomas (Ekstern)
Main Supervisor:
Sommer, Morten Otto Alexander (Intern)

Collateral sensitivity cycling as a treatment for multi drug resistant chronic infections

Technical University of Denmark
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Quainoo, Scott (Intern)
Supervisor:
Imamovic, Lejla (Intern)
Main Supervisor:
Sommer, Morten Otto Alexander (Intern)

Comparison of Tokamak Plasma Midplane with Divertor Conditions and Consequences for Modelling

Department of Physics
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Nem, Raheesty Devi (Ekstern)
Supervisor:
Eich, Thomas Hubert (Ekstern)
Main Supervisor:
Naulin, Volker (Intern)
Comparison of Tokamak Plasma Midplane with Divertor Conditions and Consequences for Modelling

Department of Physics
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Nem, Raheesty Devi (Intern)
Supervisor:
Eich, Thomas Hubert (Ekstern)
Main Supervisor:
Naulin, Volker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Ecology of Atlantic Salmon

National Institute of Aquatic Resources
Period: 01/08/2017 → 31/07/2020
Number of participants: 4
Phd Student:
Flávio, Hugo de Moura (Intern)
Supervisor:
Jepsen, Niels (Intern)
Koed, Anders (Intern)
Main Supervisor:
Aarestrup, Kim (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Electrolysis of Water: New Catalyst for the Oxygen Evolution Reaction

Department of Physics
Period: 01/08/2017 → 31/07/2020
Number of participants: 4
Phd Student:
Moon, Choongman (Ekstern)
Supervisor:
Kibsgaard, Jakob (Intern)
Stephens, Ifan (Intern)
Main Supervisor:
Chorkendorff, Ib (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Electrolysis of Water: New Catalyst for the Oxygen Evolution Reaction

Department of Physics
Period: 01/08/2017 → 31/07/2020
Number of participants: 4
Phd Student:
Moon, Choongman (Intern)
Supervisor:
Kibsgaard, Jakob (Intern)
Stephens, Ifan (Intern)
Main Supervisor:
Chorkendorff, Ib (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Evergreen methods for phylogeny
Department of Bio and Health Informatics
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Szarvas, Judit (Intern)
Supervisor:
Aarestrup, Frank Møller (Intern)
Main Supervisor:
Lund, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Fatigue behaviour of polymer composite materials at the sub-structural and structural scale
Department of Civil Engineering
Period: 01/08/2017 → 31/07/2020
Number of participants: 4
Phd Student:
Quinlan, Alex (Intern)
Supervisor:
Berggreen, Christian (Intern)
Branner, Kim (Intern)
Main Supervisor:
Stang, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Gas-filled Hollow-Core Photonic Crystal Fibers for sensing applications and ultrafast non-linear optics
Department of Photonics Engineering
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Adamu, Abubakar Isa (Intern)
Supervisor:
Markos, Christos (Intern)
Main Supervisor:
Bang, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD
Hej med dig igen

Technical University of Denmark
Period: 01/08/2017 → 31/07/2020
Number of participants: 2
Phd Student:
Mejse (testperson), Fugl (Ekstern)
Main Supervisor:
Pontoppidan, Maj-Britt (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Immune activation status as predictive marker for cancer progression

National Veterinary Institute
Period: 01/08/2017 → 31/07/2020
Number of participants: 4
Phd Student:
Snejbjerg, Dorthe Blirup (Intern)
Supervisor:
Kirschner, Benny (Ekstern)
Kjær, Susanne Krüger (Ekstern)
Main Supervisor:
Hadrup, Sine Reker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Impact of cellular stress recombinant monoclonal antibody produced by high yielding Chinese Hamster overy(CHO) cell cultures in bioreactors

Department of Systems Biology
Period: 01/08/2017 → 31/07/2020
Number of participants: 2
Phd Student:
Chevallier, Valentine (Ekstern)
Main Supervisor:
Andersen, Mikael Rørdam (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Impact of cellular stress recombinant monoclonal antibody produced by high yielding Chinese Hamster overy(CHO) cell cultures in bioreactors

Department of Systems Biology
Period: 01/08/2017 → 31/07/2020
Number of participants: 2
Phd Student:
Chevallier, Valentine (Intern)
Main Supervisor:
Andersen, Mikael Rørdam (Intern)

Financing sources
Impact of secondary metabolites on the ecology of Bacillus subtilis

Department of Systems Biology
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Kiesewalter, Heiko T. (Intern)
Supervisor:
Gram, Lone (Intern)
Main Supervisor:
Kovács, Ákos T. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Influence of Parasite Load on the Growth and Bioenergetics of Baltic cod

National Institute of Aquatic Resources
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Plambech, Marie (Intern)
Supervisor:
Skov, Peter Vilhelm (Intern)
Main Supervisor:
Behrens, Jane (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

New thin solar cell films makes silicon cells better

Department of Photonics Engineering
Period: 01/08/2017 → 31/07/2020
Number of participants: 4
Phd Student:
Martinho, Filipe Mesquita Alves (Intern)
Supervisor:
Schou, Jørgen (Intern)
Stamate, Eugen (Intern)
Main Supervisor:
Canulescu, Stela (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Next generation SDN/NFV-based Management of Service

Department of Photonics Engineering
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Ollora Zaballa, Eder (Intern)
Supervisor:
Christiansen, Henrik Lehmann (Intern)
Main Supervisor:
Soler, José (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Prospective Motion Correction in Magnetic Resonance Imaging**
Department of Electrical Engineering
Period: 01/08/2017 → 31/07/2020
Number of participants: 4
Phd Student:
Laustsen, Malte (Intern)
Supervisor:
Madsen, Kristoffer Hougaard (Intern)
Xue, Rong (Ekstern)
Main Supervisor:
Hanson, Lars G. (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Resource Management in Fog Computing for Industrial Applications**
Department of Applied Mathematics and Computer Science
Period: 01/08/2017 → 30/09/2017
Number of participants: 3
Phd Student:
Raagaard, Michael Lander (Intern)
Supervisor:
Madsen, Jan (Intern)
Main Supervisor:
Pop, Paul (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Stochastic grey-box models for marine ecosystems**
Department of Applied Mathematics and Computer Science
Period: 01/08/2017 → 31/07/2020
Number of participants: 4
Phd Student:
Moazzami, Hamidreza (Intern)
Supervisor:
Carstensen, Niels Jacob (Intern)
Møller, Jan Kloppenborg (Intern)
Main Supervisor:
Christiansen, Lasse Engbo (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Systems Genomic and Transcriptomics approaches for simultaneous improvement of feed efficiency and production in Danish Pigs

Department of Bio and Health Informatics
Period: 01/08/2017 → 31/07/2019
Number of participants: 3
Phd Student:
Carmelo, Victor Adriano Okstoft (Intern)
Supervisor:
Ekstrøm, Claus Thorn (Ekstern)
Main Supervisor:
Kadarmideen, Haja (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Theoretical studies of materials for water splitting

Department of Physics
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Garijo del Río, Estefanía (Intern)
Supervisor:
Thygesen, Kristian Sommer (Intern)
Main Supervisor:
Jacobsen, Karsten Wedel (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Using Biodiversity to Identify Superior Cell Factories for Therapeutic Peptide Production

Department of Systems Biology
Period: 01/08/2017 → 31/07/2020
Number of participants: 3
Phd Student:
Hansen, Sebastian Ro Toft (Intern)
Supervisor:
Olesen, Kjeld (Ekstern)
Main Supervisor:
Mortensen, Uffe Hasbro (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Computational studies of two-dimension materials and heterosstructures

Department of Physics
Period: 15/07/2017 → 14/07/2020
Number of participants: 3
Phd Student:
Riis-Jensen, Anders Christian (Intern)
Supervisor:
Jacobsen, Karsten Wedel (Intern)
Main Supervisor:
Thygesen, Kristian Sommer (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Synthesis and characterization of hydrogels to be used as dielectric elastomers
Department of Chemical and Biochemical Engineering
Period: 15/07/2017 → 14/07/2020
Number of participants: 3
Phd Student:
Vaicekauskaite, Justina (Intern)
Supervisor:
Yu, Liyun (Intern)
Main Supervisor:
Skov, Anne Ladegaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Improved light measurement system for the international market
Department of Photonics Engineering
Diode Lasers and LED Systems
Viso Systems
Period: 01/07/2017 → 01/07/2018
Number of participants: 2
Project participant:
Thorseth, Anders (Intern)
Dam-Hansen, Carsten (Intern)

Relations
Related projects:
Center for LED metrology
EMPIR 15SIB07 PhotoLED, Future photometry based on solid-state lighting products
Activities:
Light source characterization and air movement under CIE S 025
Publications:
Light source characterization and air movement under CIE S 025
Project

Operational monitoring and Forecasting system for Resilience of agriculture and forestry under intensification of the Water cycle: a Big Data approach
Department of Environmental Engineering
Water Resources Engineering
TSK
Period: 01/07/2017 → 01/09/2019
Number of participants: 1
Acronym: FORWARD
Project participant:
Garcia, Monica (Intern)
COPL - COnsortia based Production of biochemicals from Lignocellulosic biomass

Project:
Novo Nordisk Foundation Center for Biosustainability

Bacterial Cell Factory Optimization
Period: 01/07/2017 → 30/06/2020
Number of participants: 2
Acronym: COPL
Project participant: Ingemann Jensen, Sheila (Intern)
Other: Kjiproski, Darko (Intern)

Financing sources
Source: Public research programme (public)
Name of research programme: DFF - Teknologi og Produktion (FTP)

Karakterisering og kvantificering af producerede nanobobler i vand

Project:
Department of Environmental Engineering

Urban Water Systems

CM Aqua Technologies ApS

Water Technologies

CM Aqua Technologies ApS

Bbraneorganisationen AquaCirkle
Period: 01/07/2017 → 30/04/2018
Number of participants: 4
Acronym: NanoBobler
Project participant: Nielsen, Katrine (Intern)
Andersen, Henrik Rasmus (Intern)
Kaarsholm, Kamilla Marie Speht (Intern)
Droumpali, Ariadni (Intern)

3D micro/nanotopography and material cues for stem cell differentiation

Project:
Department of Micro- and Nanotechnology

Period: 01/07/2017 → 30/06/2020
Number of participants: 4
Phd Student: Asif, Afia (Intern)
Supervisor:
Keller, Stephan Sylvest (Intern)
Serrano, Alberto M. (Ekstern)
Main Supervisor:
Emnéus, Jenny (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Bioinspired Targeted Polymeric Nanomedicines for Atherosclerosis Therapy

Project:
Department of Micro- and Nanotechnology
Period: 01/07/2017 → 30/06/2020
Number of participants: 2
Phd Student:
Bazban-Shotorbani, Salime (Intern)
Main Supervisor:
Kamaly, Nazila (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: **Fonde**
Project: PhD

**Causal fingerprints of brain connectivity**
Department of Applied Mathematics and Computer Science
Period: 01/07/2017 → 30/06/2020
Number of participants: 4
Phd Student:
Krohne, Lærke Karen (Intern)
Supervisor:
Hansen, Lars Kai (Intern)
Main Supervisor:
Madsen, Kristoffer Hougaard (Intern)
Siebner, Hartwig R. (Ekstern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: **Samfinansieret - Andet**
Project: PhD

**Development of the next generation of Aquaporin Inside TM biomimetic membranes**
Department of Environmental Engineering
Period: 01/07/2017 → 30/06/2020
Number of participants: 4
Phd Student:
Górecki, Radoslaw Pawel (Intern)
Supervisor:
Spulber, Mariana (Ekstern)
Trzaskus, Krzysztof Wojciech (Ekstern)
Main Supervisor:
Hélix-Nielsen, Claus (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: **Industrial PhD**
Project: PhD

**Fast-tracking the identification of safe and effective probiotic bacteria by in silico prediction of bacterial genomic features**
Department of Bio and Health Informatics
Period: 01/07/2017 → 30/06/2020
Number of participants: 4
Phd Student:
Karlsen, Signe Tang (Ekstern)
Supervisor:
Bælum, Jacob (Intern)
Henderson, Gemma (Ekstern)
Main Supervisor:
Lund, Ole (Intern)

**Financing sources**
**High Power Frequency Converted Tapered Diode Lasers**

Department of Photonics Engineering  
**Period:** 01/07/2017 → 30/06/2020  
**Number of participants:** 4  
**Phd Student:** Jamal, Muhammad Tahir (Intern)  
**Supervisor:** Andersen, Peter E. (Intern)  
**Hansen, Anders Kragh (Intern)**  
**Main Supervisor:** Jensen, Ole Bjarlin (Intern)

**Financing sources**  
Source: Internal funding (public)  
**Name of research programme:** Marie Curie (EU-stipendium)  
**Project:** PhD

**Mesoscopic Simulation of Multi-Modal Urban Traffic**

Department of Management Engineering  
**Period:** 01/07/2017 → 30/06/2020  
**Number of participants:** 3  
**Phd Student:** Paulsen, Mads (Intern)  
**Supervisor:** Rasmussen, Thomas Kjær (Intern)  
**Main Supervisor:** Nielsen, Otto Anker (Intern)

**Financing sources**  
Source: Internal funding (public)  
**Name of research programme:** Samfinansieret - Andet  
**Project:** PhD

**Multiplex digital analysis of serum samples for Alzheimer's disease diagnostics**

Department of Micro- and Nanotechnology  
**Period:** 01/07/2017 → 30/06/2020  
**Number of participants:** 3  
**Phd Student:** Toppi, Arianna (Intern)  
**Supervisor:** Taboryski, Rafael J. (Intern)  
**Main Supervisor:** Dufva, Martin (Intern)

**Financing sources**  
Source: Internal funding (public)  
**Name of research programme:** Marie Curie (EU-stipendium)  
**Project:** PhD

**Numerical modelling of near wellbore flow**

Department of Applied Mathematics and Computer Science  
**Period:** 01/07/2017 → 30/06/2020  
**Number of participants:** 3  
**Phd Student:**
Portable Diagnostic Laboratory to Diagnose Thyroid Gland Related Disorders

Department of Applied Mathematics and Computer Science
Period: 01/07/2017 → 30/06/2020
Number of participants: 4
PhD Student:
Tanev, Georgi Plamenov (Intern)
Supervisor:
Schjøler, Karin (Ekstern)
Svendsen, Winnie Edith (Intern)
Main Supervisor:
Madsen, Jan (Intern)

Robust Identification

Department of Civil Engineering
Period: 01/07/2017 → 31/07/2020
Number of participants: 3
PhD Student:
Friis, Tobias (Intern)
Supervisor:
Katsanos, Evangelos (Intern)
Main Supervisor:
Brincker, Rune (Intern)

Thermochemical Heat Storage

Department of Energy Conversion and Storage
Period: 01/07/2017 → 30/06/2020
Number of participants: 3
PhD Student:
Karabanova, Anastasiia (Intern)
Supervisor:
Johnsen, Rune E. (Intern)
Main Supervisor:
Blanchard, Didier (Intern)
Typing and pheno typing based on direct sequencing of samples

Department of Bio and Health Informatics
Period: 01/07/2017 → 30/06/2020
Number of participants: 3
Phd Student:
Clausen, Philip Thomas Lanken Conradsen (Intern)
Supervisor:
Aarestrup, Frank Møller (Intern)
Main Supervisor:
Lund, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Utilization of Wood Ash in Mortar and Concrete

Department of Civil Engineering
Period: 01/07/2017 → 30/06/2020
Number of participants: 5
Phd Student:
Sigvardsen, Nina Marie (Intern)
Supervisor:
Geiker, Mette Rica (Intern)
Jensen, Pernille Erland (Intern)
Kirkelund, Gunvor Marie (Intern)
Main Supervisor:
Ottosen, Lisbeth M. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Velocity-space tomography from KeV MeV-range ions in fusion plasmas

Department of Physics
Period: 01/07/2017 → 30/06/2020
Number of participants: 3
Phd Student:
Madsen, Birgitte (Intern)
Supervisor:
Huang, Juan (Ekstern)
Main Supervisor:
Salewski, Mirko (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

3D perfusion LOCs with integrated bioreactorisand sensors for modelling neuronal disorders

Department of Micro- and Nanotechnology
Period: 15/06/2017 → 14/06/2020
Number of participants: 3
Phd Student:
Khan, Muhammad Salman (Intern)
Supervisor:
Heiskanen, Arto (Intern)
Main Supervisor:
Emnéus, Jenny (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Designing Sustainable Circular Business Models on Product/Service-Systems

Department of Mechanical Engineering
Period: 15/06/2017 → 14/06/2020
Number of participants: 4
Phd Student:
de Pádua Pieroni, Marina (Intern)
Supervisor:
Hildenbrand, Jutta (Ekstern)
McAloone, Tim C. (Intern)
Main Supervisor:
Pigosso, Daniela Cristina Antelmi (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Genomics, epigenetic and metabolomics analysis of production and welfare in Danish cattle and pigs

Department of Bio and Health Informatics
Period: 15/06/2017 → 14/06/2020
Number of participants: 3
Phd Student:
Wang, Xiao (Intern)
Supervisor:
Ekstrøm, Claus Thorn (Ekstern)
Main Supervisor:
Kadarmideen, Haja (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Multi-Scale 3D Imaging of Heterogeneous Nucleation in Ferroelectrics

Department of Physics
Period: 15/06/2017 → 14/06/2020
Number of participants: 4
Phd Student:
Ormstrup, Jeppe (Intern)
Supervisor:
Matheiesen, Ragnvald (Ekstern)
Simons, Hugh (Intern)
Main Supervisor:
Poulsen, Henning Friis (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
The role of coating composition on the development of the optics for the Athena X-ray Observatory

National Space Institute
Period: 15/06/2017 → 14/06/2020
Number of participants: 3
Phd Student: Svendsen, Sara (Intern)
Supervisor: Christensen, Finn Erland (Intern)
Main Supervisor: Della Monica Ferreira, Desiree (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

KOMET-projektet (Test af energiforbrug og måling af kostindtag med to metoder)

National Food Institute
Division of Risk Assessment and Nutrition
Period: 09/06/2017 → 15/10/2017
Number of participants: 1
Project participant: Christensen, Julia (Intern)

OLCA-Pest
The main objective of the OLCA-Pest project is to build on current advances in life cycle inventory and life cycle impact assessment to operationalise and harmonize the emission quantification and impact characterization of pesticides in life cycle assessment (LCA) and product environmental footprinting. In current LCA practice, quantifying pesticide emissions from agricultural fields is not aligned with characterising related potential toxicological impacts on humans and different types of ecosystems. Furthermore, the pathways from pesticide application via emissions to environmental media and treated field crops to toxicity impacts are currently only partly and inconsistently covered and many relevant pesticides are currently not included. This leads to LCA results that are incomplete and often misleading and hard to interpret and this makes it impossible to assess and compare the environmental performance profiles of different pest management systems and practices.

Department of Management Engineering
Quantitative Sustainability Assessment

National Research Institute of Science and Technology for Environment and Agriculture (IRSTEIA)
Institut de Recerca i Tecnologia Agroalimentaries (IRTA)
Swiss Confederation’s centre of excellence for agricultural research (Agroscope)
Ecole Supérieure d’Agricultures (ESA)
Centre International de Recherche Agronomique pour le Développement (CIRAD)
Comité Champagne (CIVC)
European Commission Joint Research Centre (JRC)
French National Institute of Agricultural Research (INRA)
Period: 08/06/2017 → 07/12/2020
Number of participants: 3
Life Cycle Assessment, Human toxicology, Ecotoxicity, Emission modelling, Impact assessment
Project participant: Birkved, Morten (Intern)
Melero, Carlos Manuel Moraleda (Intern)
Project Coordinator:
Fantke, Peter (Intern)

Relations
Activities:
Global pesticide application scenarios for use in life cycle assessment and in chemical substitution

Project

H2020-5GPPP - Next Generation Platform as a Service

Department of Photonics Engineering
Networks Technology and Service Platforms
Period: 01/06/2017 → 01/06/2019
Number of participants: 2
Acronym: NGPaaS
Project participant:
Soler, José (Intern)
Dittmann, Lars (Intern)

Project

Balancing Costs and Benefits of New Urban Water Management Objectives for Both Real Time Applications and Urban Planning

Department of Environmental Engineering
Period: 01/06/2017 → 31/05/2020
Number of participants: 4
Phd Student:
Skrydstrup, Julie (Intern)
Supervisor:
Gregersen, Ida Bülow (Intern)
Löwe, Roland (Intern)
Main Supervisor:
Ambjerg-Nielsen, Karsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Brain-Computer Interface Controlled Functional Electrical Stimulation as a Complete Neurorehabilitation Tool for Post-Stroke Patients

Department of Electrical Engineering
Period: 01/06/2017 → 31/05/2020
Number of participants: 4
Phd Student:
Møller, Jakob Skadkær (Intern)
Supervisor:
Iversen, Helle Klinkenberg (Ekstern)
Larsson, Henrik B.W. (Ekstern)
Main Supervisor:
Puthusserypady, Sadasivan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Capelin Migration and Stock Structure using Otolith Microchemistry

National Institute of Aquatic Resources
Period: 01/06/2017 → 31/05/2020
Number of participants: 3
Phd Student:
Fink-Jensen, Peter (Intern)
Supervisor:
Jansen, Teunis (Intern)
Main Supervisor:
Hüssy, Karin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Computer- and Smartphone-based Assessment of Cognitive Functioning in Affective Disorders in Young People
Department of Applied Mathematics and Computer Science
Period: 01/06/2017 → 31/05/2020
Number of participants: 3
Phd Student:
Hafiz, Pegah (Intern)
Supervisor:
Kessing, Lars Vedel (Ekstern)
Main Supervisor:
Bardram, Jakob Eyvind (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Design of innovative low-cost expanders for organic Rankine cycle power systems
Department of Mechanical Engineering
Period: 01/06/2017 → 31/05/2020
Number of participants: 5
Phd Student:
Geiselhart, Matthias (Intern)
Supervisor:
Almdal, Kristoffer (Intern)
Lenau, Torben Anker (Intern)
Schiffmann, Jürg Alexander (Ekstern)
Main Supervisor:
Haglind, Fredrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Development of polymer skin adhesives with a controlled moisture and sweat removal capacity
Department of Chemistry
Period: 01/06/2017 → 31/05/2020
Number of participants: 4
Phd Student:
Hansen, Daniel (Intern)
Supervisor:
Almdal, Kristoffer (Intern)
Hansen, Kristoffer Karsten (Intern)
Main Supervisor:
Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Development of Targeted Drug Delivery Systems for The Brain

Department of Micro- and Nanotechnology
Period: 01/06/2017 → 31/05/2020
Number of participants: 3
Phd Student:
Kostrikov, Serhii (Intern)
Supervisor:
Hempel, Casper (Intern)
Main Supervisor:
Andresen, Thomas Lars (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Fishery and Fisheries Ecosystem Impac Modelling

National Institute of Aquatic Resources
Period: 01/06/2017 → 31/05/2020
Number of participants: 5
Phd Student:
Rufener, Marie-Christine (Intern)
Supervisor:
Dinesen, Grete E. (Intern)
Kristensen, Kasper (Intern)
Nielsen, J. Rasmus (Intern)
Main Supervisor:
Bastardie, Francois (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

High performance immobilization of enzymes in inorganic membranes

Department of Chemical and Biochemical Engineering
Period: 01/06/2017 → 31/05/2020
Number of participants: 4
Phd Student:
Sigurdardóttir, Sigyn Björk (Intern)
Supervisor:
Della Negra, Michela (Intern)
Kaiser, Andreas (Intern)
Main Supervisor:
Pinelo, Manuel (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD
Improving the thermotolerance of the mesophilic starter
National Food Institute
Period: 01/06/2017 → 31/05/2020
Number of participants: 3
Phd Student: Dorau, Robin (Ekstern)
Supervisor: Jensen, Peter Ruhdal (Intern)
Main Supervisor: Solem, Christian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Miniaturized AC-DC offline converters for Solid State Lighting Applications
Department of Electrical Engineering
Period: 01/06/2017 → 31/05/2020
Number of participants: 3
Phd Student: Ammar, Ahmed Morsi (Intern)
Supervisor: Jørgensen, Ivan Harald Holger (Intern)
Main Supervisor: Knott, Arnold (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Multi-tone supercontinuum sources for food control applications with IR spectroscopy
Department of Photonics Engineering
Period: 01/06/2017 → 31/05/2020
Number of participants: 2
Phd Student: Kwarkye, Kyei (Intern)
Main Supervisor: Bang, Ole (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

New Concepts for Efficient Immobilization of Enzymes in Inorganic Membrane Reactors
Department of Energy Conversion and Storage
Period: 01/06/2017 → 31/05/2020
Number of participants: 4
Phd Student:
Lehmann, Jonas (Intern)
Supervisor:
Kaiser, Andreas (Intern)
Pinelo, Manuel (Intern)
Main Supervisor:
Della Negra, Michela (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Opportunities and Limits of New Trends in Hospital Architecture: The Case of Government Hospital, Thailand
Department of Management Engineering
Period: 01/06/2017 → 31/05/2020
Number of participants: 3
Phd Student:
Prugsiganont, Supuck (Intern)
Supervisor:
Nielsen, Susanne Balslev (Intern)
Main Supervisor:
Jensen, Per Anker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Optimization, Control, and Stability of AC-DC Grids under Uncertainty
Department of Electrical Engineering
Period: 01/06/2017 → 31/05/2020
Number of participants: 3
Phd Student:
Venzke, Andreas (Intern)
Supervisor:
Chatzivasileiadis, Spyros (Intern)
Main Supervisor:
Pinson, Pierre (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Perfusable 3D scaffold based drug and compound delivery systems for developmental patterning and regenerative medicine
Department of Micro- and Nanotechnology
Period: 01/06/2017 → 31/05/2020
Number of participants: 4
Phd Student:
Ghani, Mozhdeh (Intern)
Supervisor:
Alm, Martin (Ekstern)
Heiskanen, Arto (Intern)
Main Supervisor:
Emnéus, Jenny (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Eksternt EU-finansieret
Project: PhD

---

### Powder Technologies for Additive Manufacturing

Department of Mechanical Engineering
Period: 01/06/2017 → 31/05/2020
Number of participants: 3
Phd Student:
Andersen, Sebastian Aagaard (Intern)
Supervisor:
Pedersen, David Bue (Intern)
Main Supervisor:
Hansen, Hans Nørgaard (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

---

### Technology for CZTS-Silicon Tandem Solar Cells

Department of Micro- and Nanotechnology
Period: 01/06/2017 → 31/05/2020
Number of participants: 4
Phd Student:
Hajijafarassar, Alireza (Intern)
Supervisor:
Crovetto, Andrea (Intern)
Pedersen, Thomas (Intern)
Main Supervisor:
Hansen, Ole (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

---

### CRISPR-Cas9 toolkit development and application in actinomycetes for new antibiotics discovery

travel grant from Lundbeck Foundation
Novo Nordisk Foundation Center for Biosustainability

New Bioactive Compounds
Period: 17/05/2017 → 30/09/2017
Number of participants: 1
Project participant:
Tong, Yaojun (Intern)
Documents:
R260-2017-1820
Design and optimization of electrical infrastructures in offshore wind power clusters

Department of Wind Energy
Period: 15/05/2017 → 14/05/2020
Number of participants: 4
Phd Student: Pérez-Rúa, Juan-Andrés (Intern)
Supervisor: Das, Kaushik (Intern)
Sørensen, Poul Ejnar (Intern)
Main Supervisor: Cutululis, Nicolaos Antonio (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

High Performance Algorithms Enabling Real-Time Security Assessment of Sustainable Electric Power Systems

Department of Electrical Engineering
Period: 15/05/2017 → 14/05/2020
Number of participants: 4
Phd Student: Hildebrandt, Christina Berndt (Intern)
Supervisor: Jóhannsson, Hjörtur (Intern)
Sommer, Stefan Horst (Intern)
Main Supervisor: Nielsen, Arne Hejde (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Identification and exploration of neuronal protein fragments in serum as biomarkers for neurodegenerative diseases

Department of Systems Biology
Period: 15/05/2017 → 14/05/2020
Number of participants: 3
Phd Student: Tzara, Ourania (Intern)
Supervisor: Henriksen, Kim (Ekstern)
Main Supervisor: Svensson, Birte (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt EU-finansieret
Project: PhD

Using satellite altimetry to predict future sea level fingerprints

National Space Institute
Period: 15/05/2017 → 14/05/2020
Number of participants: 3
Phd Student:
**Innovative Methods for Optimal Operation of Multiple HVDC Connections and Grids**

Department of Electrical Engineering  
Center for Electric Power and Energy  
Electricity markets and energy analytics  
Energinet.dk  
ABB Power Technologies  
Svenska Kraftnat  
KTH - Royal Institute of Technology  
University of Liège  
Period: 01/05/2017 → 30/04/2021  
Number of participants: 2  
Acronym: MULTI-DC  
Number of related Ph.D. students: 3  
Project Coordinator:  
Chatzivasileiadis, Spyros (Intern)  
Østergaard, Jacob (Intern)  

**Financing sources**  
Source: Public research programme (public)  
Name of research programme: Innovation Fund Denmark  
Web address: https://innovationsfonden.dk  
Amount: 25,700,000.00 Danish Kroner  
Year of approval: 2017  

**Commercial project SOFC related**

Department of Energy Conversion and Storage  
Applied Electrochemistry  
Period: 01/05/2017 → 30/04/2018  
Number of participants: 1  
Project participant:  
Hagen, Anke (Intern)  

**Greenland seaweeds for human consumption**

PhD project  
National Food Institute  
Research Group for Analytical and Predictive Microbiology  
Research Group for Bioactives – Analysis and Application  
Department of Civil Engineering  
ARTEK, Section for Arctic Engineering and Sustainable Solutions
**Barrierer for og potentialer ved at etablere en rækklingeproduktion i Qeqartat i Qaanaaq distrikt**

Department of Civil Engineering

ARTEK, Section for Arctic Engineering and Sustainable Solutions

Period: 01/05/2017 → ...

Number of participants: 2

Project participant:

Hoffmann, Birgitte (Ekstern)

Project Manager, academic:

Hendriksen, Kåre (Intern)

**Krav til rensning af regnbetinget udledning i Danmark og EU**

Department of Environmental Engineering

Urban Water Systems

Teknologisk Institut

Københavns Universitet

Period: 01/05/2017 → 30/06/2018

Number of participants: 2

Acronym: VandKval

Project Manager, organisational:

Mikkelsen, Peter Steen (Intern)

Project Manager, academic:

Nielsen, Katrine (Intern)

**Nanocrafts - nano jewelry proof of concept**

At DTU Nanotech several nanotechnologies were intensively used for texturing, patterning, and protection of surfaces. Nanotechnology can provide a new space for creative design in jewelry with unique features and effects (for instance optical effects implied by nanostructures), bring the deep meaning of emotions and relations to a new level – the nanolevel.

With significant value to the jewelry industry nanotechnology can result in unique technical qualities such as improved durability of items and fraud protection and data encryption technology, and a new way of sensing the item. Micro and nanopatterning allow individual design fabrication on a single wafer. With nanoceramic layers, we can protect golden or other jewelry items from mechanical damage or natural degradation. In this project, we apply

- Surface nanostructuring for physical effects enhancement
- Optical coloring with thin film deposition
- Visual patterning with laser engraving and UV photolithography
- Nanosporadic coloring
- Laser engraving on surfaces for data encryption and individual design patterns at the scale of few micrometers

Department of Energy Conversion and Storage

Department of Micro- and Nanotechnology

Silicon Microtechnology
Period: 01/05/2017 → 30/09/2017
Number of participants: 1
Acronym: Nanocrafts
Project participant:
Plakhotnyuk, Maksym (Intern)

Project

**5G Mobile Networks Optimization using Cloud-RAN architecture**
Department of Photonics Engineering
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Hansen, Line Maria Pyndt (Intern)
Supervisor:
Berger, Michael Stübert (Intern)
Ruepp, Sarah Renée (Intern)
Main Supervisor:
Christiansen, Henrik Lehrmann (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Allosteric regulation of tryptophan hydroxylase isoform 2**
Department of Chemistry
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Skawinska, Natalia Teresa (Intern)
Supervisor:
Christensen, Hans Erik Mølager (Intern)
Harris, Pernille (Intern)
Main Supervisor:
Peters, Günther H.J. (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

**A Model of Big Data Utilisation in the Danish Healthcare System**
Department of Management Engineering
Period: 01/05/2017 → 30/04/2020
Number of participants: 3
Phd Student:
Ivan Rehfeld, Claus (Intern)
Supervisor:
Kondo Steffensen, Sam (Intern)
Main Supervisor:
Perunovic, Zoran (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD
Determination and assessment of critical material parameters for severely cracked alkali-silica reaction damaged concrete structures' function and load bearing capacity

Department of Civil Engineering
Period: 01/05/2017 → 10/03/2021
Number of participants: 5
Phd Student:
Thomsen, Hans Christian Brolin (Intern)
Supervisor:
Barbosa, Ricardo Antonio (Intern)
Grelk, Bent (Intern)
Larsen, Erik Stoklund (Ekstern)
Main Supervisor:
Hansen, Kurt Kielsgaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Development of continuous non-invasive monitoring system for early detection and prevention of serious morbidity and mortality after abdominal cancer surgery

Department of Electrical Engineering
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Olsen, Rasmus Munch (Intern)
Supervisor:
Aasvang, Eske Kvanner (Ekstern)
Meyhoff, Christian Sahlholt (Ekstern)
Main Supervisor:
Sørensen, Helge Bjarup Dissing (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Environmental Sustainability Assessment of Advanced Agricultural Waste Technologies and Agricultural Territories

Department of Management Engineering
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Vega, Giovanna Croxatto (Intern)
Supervisor:
Bruun, Sander (Ekstern)
Uellendahl, Hinrich (Intern)
Main Supervisor:
Birkved, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD
Phd Student:
Sohn, Joshua (Intern)
Supervisor:
Goldstein, Benjamin Paul (Intern)
Kalbar, Pradip (Intern)
Main Supervisor:
Birkved, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Greenland seaweeds for human consumption
National Food Institute
Period: 01/05/2017 → 30/04/2020
Number of participants: 3
Phd Student:
Kreissig, Katharina Johanna (Intern)
Supervisor:
Jensen, Pernille Erland (Intern)
Main Supervisor:
Hansen, Lisbeth Truelstrup (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Image Synthesis and Analysis of Engineered Surface Microstructure
Department of Applied Mathematics and Computer Science
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Falster, Viggo (Intern)
Supervisor:
Aanaes, Henrik (Intern)
Nielsen, Jannik Boll (Intern)
Main Supervisor:
Frisvad, Jeppe Revall (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Industry 4.0 Digital Technologies For High Added Value Zero Defect Manufacturing
Department of Mechanical Engineering
Period: 01/05/2017 → 10/09/2020
Number of participants: 5
Phd Student:
Charalambis, Alessandro (Intern)
Supervisor:
Calaon, Matteo (Intern)
Hansen, Hans Nørgaard (Intern)
Pedersen, David Bue (Intern)
Main Supervisor:
Tosello, Guido (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Market design and operations for Energy Collectives
Department of Electrical Engineering
Period: 01/05/2017 → 30/04/2020
Number of participants: 3
Phd Student:
Moret, Fabio (Intern)
Supervisor:
Papakonstantinou, Athanasios (Intern)
Main Supervisor:
Pinson, Pierre (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Mechanistic modelling of heat and mass transfer in processing of solid and semi-solid foods
National Food Institute
Period: 01/05/2017 → 30/04/2020
Number of participants: 3
Phd Student:
Rabeler, Felix (Intern)
Supervisor:
Feyissa, Aberham Hailu (Intern)
Main Supervisor:
Mohammadifar, Mohammad Amin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Mitigation Cultures of Mussels - Ecological Impact
National Institute of Aquatic Resources
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Taylor, Daniel (Intern)
Supervisor:
Nielsen, Pernille (Intern)
Saurel, Camille (Intern)
Main Supervisor:
Petersen, Jens Kjerulf (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

PhD Scholarship in Fish Stock Assessment and Population Dynamics Modelling
National Institute of Aquatic Resources
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Mildenberger, Tobias (Intern)
Supervisor:
Berg, Casper Willestofte (Intern)
Kokkalis, Alexandros (Intern)
Main Supervisor:
Nielsen, J. Rasmus (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Polymer and carbon based optoelectrical waveguides
Department of Micro- and Nanotechnology
Period: 01/05/2017 → 30/04/2020
Number of participants: 3
Phd Student:
Vasudevan, Shashank (Intern)
Supervisor:
Keller, Stephan Sylvest (Intern)
Main Supervisor:
Emnéus, Jenny (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Real time sound field control for outdoor concerts - silent zones, adaptation and objective-subjective performance
Department of Electrical Engineering
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Plewe, Daniel (Intern)
Supervisor:
Brunskog, Jonas (Intern)
Fernandez Grande, Efren (Intern)
Main Supervisor:
Agerkvist, Finn T. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Sensors on disc
Department of Micro- and Nanotechnology
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Rajendran, Sriram Thoppe (Intern)
Supervisor:
Rindzevicius, Tomas (Intern)
Zor, Kinga (Intern)
Main Supervisor:
Boisen, Anja (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Sustainable Process Synthesis and Design
Department of Chemical and Biochemical Engineering
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Al, Resul (Intern)
Supervisor:
Gernaey, Krist V. (Intern)
Zubov, Alexandr (Intern)
Main Supervisor:
Sin, Gürkan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Synthesis of heterogeneous base metal catalysis for C-H functionalization
Department of Chemistry
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Christensen, David Benjamin (Intern)
Supervisor:
Kramer, Søren (Intern)
Mielby, Jerrik Jørgen (Intern)
Main Supervisor:
Kegnæs, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Innovations in Interdisciplinary Research in Built Environment within the Baltic Sea Region
Funded by Federal Ministry of Education and Research (BMBF) of Germany / Inno-BSR. Project owner prof. Annette Boegle, HCU
Department of Civil Engineering
Section for Building Design
Period: 30/04/2017 → 01/02/2019
Number of participants: 1
Project participant:
Jensen, Lotte Bjerregaard (Intern)

Cryogenic Receiver Array Coils for Hyperpolarized Magnetic Resonance
Department of Electrical Engineering
Period: 15/04/2017 → 14/04/2020
Number of participants: 4
Phd Student:
Baron, Rafael Antonio (Intern)
Supervisor:
Grivel, Jean-Claude (Intern)
Zhurbenko, Vitaliy (Intern)
Main Supervisor:
Ardenkjæer-Larsen, Jan Henrik (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

---

**Fracture of Fiber Composites under Transient Loading**
Department of Mechanical Engineering
Period: 15/04/2017 → 14/04/2020
Number of participants: 6
PhD Student:
Pérez, Ignacio Vidal (Intern)
Supervisor:
Eriksen, Rasmus Normann Wilken (Intern)
Kepler, Jørgen Asbøll (Ekstern)
Riisgaard, Benjamin (Intern)
Toftegaard, Helmuth Langmaack (Intern)
Main Supervisor:
Berggreen, Christian (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

---

**GIANT-E: Microstructural forging of electromechanically active bulk ceria**
Department of Energy Conversion and Storage
Period: 15/04/2017 → 14/04/2020
Number of participants: 3
PhD Student:
Kabir, Ahsanul (Intern)
Supervisor:
Van Nong, Ngo (Intern)
Main Supervisor:
Esposito, Vincenzo (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

---

**The effect of hearing loss and noise on conversational dynamics**
Department of Electrical Engineering
Period: 15/04/2017 → 14/04/2020
Number of participants: 3
PhD Student:
Sørensen, Anna Josefine (Intern)
Supervisor:
Lunner, Thomas Fritiof (Ekstern)
Main Supervisor:
MacDonald, Ewen (Intern)

**Financing sources**
Source: Internal funding (public)
**Agricultural Water Innovations in the Tropics**

Department of Environmental Engineering

**Water Resources Engineering**
Period: 01/04/2017 → 01/05/2020  
Number of participants: 1  
Acronym: AgWIT  
Project participant:  
Garcia, Monica (Intern)  
Project

**Danske tangressourcer i spil- til fødevarer, foder og som en håndsrækning til havmiljøet**

WP leader of the food and feed safety issues

National Food Institute

**Research Group for Bioactives – Analysis and Application**  
Period: 01/04/2017 → 31/03/2021  
Number of participants: 1  
Acronym: Tang.nu  
Project participant:  
Holdt, Susan Løvstad (Intern)  
Project

**Across Continents Electric Vehicle Services**

ACES intends to holistically investigate technical and economic system benefits and impacts by large scale electric vehicles integration in Bornholm, augmented by real usage patterns, grid data and field testing for across continents replicability.

A full scale penetration scenario of EVs in Bornholm will be simulated in order to assess how new aggregating functionality can support both technically and economically the successful integration of electric vehicles into the energy system. It will also initiate a small scale pilot project involving up to 50 publicly and privately owned Nissan vehicles and V2G chargers for proving that EVs can be used for effectively balance the system.

The analysis, although focused on a Danish context, is enhanced also by comparing existing electricity market services in UK and in Japan, taking advantage by the strong collaboration established with the Japanese and UK based research centers of Nissan.

Department of Electrical Engineering  
Center for Electric Power and Energy  
Energy resources, services and control  
Energy system operation and management  
Nissan Motor Co.  
Bornholms Energi og Forsyning  
NUVVE Corporation  
Period: 01/04/2017 → 30/09/2020  
Number of participants: 8  
Acronym: ACES  
Number of related Ph.D. students: 1  
Project participant:  
Træholt, Chresten (Intern)  
Sørensen, Thomas Meier (Intern)  
Andersen, Peter Bach (Intern)  
Hu, Junjie (Intern)
Smart Load
The increasing capacity of container vessels is pressuring container terminals worldwide to improve their performance. Simple improvements of work practices are no longer a viable option even for the medium and small container terminals we find in Denmark. With this project we wish to initiate a pilot study on the possibility of improving terminal performance by exploiting the flexibility that arises from a possible collaboration between the terminal planners and the ship owners. A preliminary study, done in collaboration with APM Terminals – Cargo Service A/S (APMT) in Aarhus, has shown that giving the terminal some decision power over the arrangement of the containers in the vessel can result in improved vessel handling times. With this research application we wish to initiate a pilot project that can demonstrate the potential of this collaboration on an industrial scale. In order to do so, APMT has agreed to provide data and domain expertise to the research team at the Technical University of Denmark (DTU), and be an active partner in this project. The research team envision the use of operation research methods to optimize the new planning problems that arise from this collaboration.

Department of Management Engineering
Management Science
Transport DTU
Period: 01/04/2017 → 01/04/2018
Number of participants: 2
Acronym: SMARTLOAD
Project participant:
Larsen, Rune (Intern)
Project Manager, academic:
Pacino, Dario (Intern)

SOFC stack project II
Department of Energy Conversion and Storage
Electrofunctional materials
Period: 01/04/2017 → 01/04/2018
Number of participants: 1
Project participant:
Wulff, Anders Christian (Intern)
Project

An experimental assessment of how trees affect the wind field
Department of Wind Energy
Period: 01/04/2017 → 31/03/2020
Number of participants: 3
Phd Student:
Angelou, Nikolas (Intern)
Supervisor:
Mann, Jakob (Intern)
Main Supervisor:
Dellwik, Ebba (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD
**Characterization of protein solution structure using light scattering techniques and SAXS**

Department of Chemistry  
Period: 01/04/2017 → 31/03/2020  
Number of participants: 4  
Phd Student:  
Pohl, Christin (Intern)  
Supervisor:  
Nørgaard, Allan (Intern)  
Peters, Günther H.J. (Intern)  
Main Supervisor:  
Harris, Pernille (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Eksternt EU-finansieret  
Project: PhD

**Design of pervasive systems for chronic sleep/brain disorders**

Department of Electrical Engineering  
Period: 01/04/2017 → 31/03/2020  
Number of participants: 4  
Phd Student:  
Olsen, Mads (Intern)  
Supervisor:  
Jennum, Poul (Ekstern)  
Mignot, Emmanuel (Ekstern)  
Main Supervisor:  
Sørensen, Helge Bjarup Dissing (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**Determining the influence of benthic substrate on Biodiversity-Ecosystem Function relationships in coral reef ecosystems**

National Institute of Aquatic Resources  
Period: 01/04/2017 → 31/03/2020  
Number of participants: 4  
Phd Student:  
Maginnis, Neil (Intern)  
Supervisor:
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Discovery and engineering of new enzymes for efficient enzymatic conversion of CO2 to CH2OH

Department of Chemical and Biochemical Engineering
Period: 01/04/2017 → 31/03/2020
Number of participants: 4
Phd Student:
Nielsen, Christian Førgaard (Intern)
Supervisor:
Christensen, Jakob Munkholt (Intern)
Lange, Lene (Intern)
Main Supervisor:
Meyer, Anne S. (Intern)

Efficient mid-IR supercontinuum generation in quadratic nonlinear waveguides

Department of Photonics Engineering
Period: 01/04/2017 → 31/03/2020
Number of participants: 4
Phd Student:
Li, Gaoyuan (Intern)
Supervisor:
Moselund, Peter M. (Intern)
Zhou, Binbin (Intern)
Main Supervisor:
Bache, Morten (Intern)

Electrochemical N2 reduction under ambient conditions

Department of Physics
Period: 01/04/2017 → 31/03/2020
Number of participants: 5
Phd Student:
Andersen, Suzanne Zamany (Intern)
Supervisor:
Chorkendorff, Ib (Intern)
Kibsgaard, Jakob (Intern)
Vesborg, Peter Christian Kjærgaard (Intern)
Main Supervisor:
Vesborg, Peter Christian Kjærgaard (Intern)

Financing sources
Engineering of high-temperature and inhibitor in Kluyveromyces marxianus for simultaneous saccharification and fermentation (SSF) process

Technical University of Denmark
Period: 01/04/2017 → 31/03/2020
Number of participants: 3
Phd Student:
Nurani, Wasti (Intern)
Supervisor:
Stovicek, Vratislav (Intern)
Main Supervisor:
Borodina, Irina (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Fabrication and electrical properties of advanced thin film materials for resistive switching memories

Department of Energy Conversion and Storage
Period: 01/04/2017 → 31/03/2020
Number of participants: 4
Phd Student:
Li, Yang (Intern)
Supervisor:
Esposito, Vincenzo (Intern)
Traulsen, Marie Lund (Intern)
Main Supervisor:
Pryds, Nini (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Improving customer experience and retention with Big Data analytics

Department of Applied Mathematics and Computer Science
Period: 01/04/2017 → 31/03/2020
Number of participants: 5
Phd Student:
Kowalczyk, Damian (Intern)
Supervisor:
Derungs, Jörg (Ekstern)
Hansen, Lars Kai (Intern)
Kjall, Uffe (Ekstern)
Main Supervisor:
Larsen, Jan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Integrated process chains based on additive manufacturing precision processes and technologies for production of high accuracy mould components
Department of Mechanical Engineering  
Period: 01/04/2017 → 31/03/2020  
Number of participants: 5  
Phd Student:  
Moshiri, Mandaná (Intern)  
Supervisor:  
Hansen, Hans Nørgaard (Intern)  
Harder, Ronen (Ekstern)  
Høvsgaard, Per (Ekstern)  
Main Supervisor:  
Tosello, Guido (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Eksternt finansieret virksomhed  
Project: PhD

Investigating learning effectiveness in virtual simulations by cognition-driven design  
Technical University of Denmark  
Period: 01/04/2017 → 31/03/2020  
Number of participants: 3  
Phd Student:  
Wismer, Philip (Intern)  
Supervisor:  
Córdoba, Ainara López (Ekstern)  
Main Supervisor:  
Sommer, Morten Otto Alexander (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Ansat eksternt  
Project: PhD

Metal-Catalyzed Dehydrogenation of Alcohols  
Department of Chemistry  
Period: 01/04/2017 → 31/03/2020  
Number of participants: 3  
Phd Student:  
Samuelsen, Simone Vestermann (Intern)  
Supervisor:  
Clausen, Mads Hartvig (Intern)  
Main Supervisor:  
Madsen, Robert (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

Modelling and Control of Multi-Energy System for Wind Power Integration  
Department of Electrical Engineering  
Period: 01/04/2017 → 31/03/2020  
Number of participants: 4  
Phd Student:  
Chyhryn, Serafym (Intern)  
Supervisor:  
You, Shi (Intern)  
Zong, Yi (Intern)
Main Supervisor:
Bindner, Henrik W. (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Forskningsrådsfinansiering  
Project: PhD

**Nanophotonics devices for ultra-fast nonlinear processes in the infrared**
Department of Photonics Engineering  
Period: 01/04/2017 → 31/03/2020  
Number of participants: 4  
Phd Student:  
Christensen, Simon (Intern)  
Supervisor:  
Torres-Company, Victor (Ekstern)  
Zhou, Binbin (Intern)  
Main Supervisor:  
Bache, Morten (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

**New thin solar cell films makes silicon cells better**
Department of Photonics Engineering  
Period: 01/04/2017 → 31/03/2020  
Number of participants: 3  
Phd Student:  
Ganskukh, Mungunshagai (Intern)  
Supervisor:  
Schou, Jørgen (Intern)  
Main Supervisor:  
Canulescu, Stela (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

**Numerical Modelling and Experimental Characterization of the Resin Injection Pultrusion Process**
Department of Mechanical Engineering  
Period: 01/04/2017 → 05/05/2020  
Number of participants: 4  
Phd Student:  
Rasmussen, Filip Salling (Intern)  
Supervisor:  
Sonne, Mads Rostgaard (Intern)  
Spangenberg, Jon (Intern)  
Main Supervisor:  
Hattel, Jesper Henri (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD
OLED Academy - prospects for energy saving and design
The project will, through training in and testing of OLEDs (organic light-emitting diodes) prepare the ground for a
development where the OLED can be a driver for energy savings from innovative design solutions created by Danish
lighting technology companies. OLED Academy kick-starts the exploration of the possibilities the OLED technology brings
about.

Department of Photonics Engineering
Diode Lasers and LED Systems
Dansk Center for Lys
Period: 01/04/2017 → 31/03/2019
Number of participants: 4
OLED, Lighting, Education
Acronym: OLED Academy
Project ID: 71012
Project participant:
Dam-Hansen, Carsten (Intern)
Thorseth, Anders (Intern)
Corell, Dennis Dan (Intern)
Project Manager, organisational:
Lindén, Johannes (Intern)

Relations
Activities:
Værdisætning af nordisk lys
Project

Optimisation of future mobile communication systems using Deep Learning

Department of Photonics Engineering
Period: 01/04/2017 → 31/03/2020
Number of participants: 3
Phd Student:
Thrane, Jakob (Intern)
Supervisor:
Zibar, Darko (Intern)
Main Supervisor:
Christiansen, Henrik Lehrmann (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Quantum Communication with non-Gaussian states

Department of Physics
Period: 01/04/2017 → 31/03/2020
Number of participants: 3
Phd Student:
Breum, Casper Rubæk (Intern)
Supervisor:
Neergaard-Nielsen, Jonas Schou (Intern)
Main Supervisor:
Andersen, Ulrik Lund (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
Reduction of Fatigue Damage Estimation based on Actual Fatigue Stress

Department of Civil Engineering
Period: 01/04/2017 → 31/03/2020
Number of participants: 3
Phd Student:
Silva Nabuco, Bruna (Intern)
Supervisor:
Georgakis, Christos T. (Intern)
Main Supervisor:
Brincker, Rune (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Simulation of Three-Wave Interactions in Microwave Heated Fusion Plasmas

Department of Physics
Period: 01/04/2017 → 31/03/2020
Number of participants: 4
Phd Student:
Senstius, Mads Givskov (Intern)
Supervisor:
Madsen, Jens (Intern)
Vann, Roddy (Ekstern)
Main Supervisor:
Nielsen, Stefan Kragh (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Synthesis and characterization of Tubular Oxygen transport membranes

Department of Energy Conversion and Storage
Period: 01/04/2017 → 31/03/2020
Number of participants: 4
Phd Student:
Martinez Aguilera, Lev (Intern)
Supervisor:
Bjørnetun Haugen, Astri (Intern)
Kaiser, Andreas (Intern)
Main Supervisor:
Kiebach, Wolff-Ragnar (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Vibrations for Estimating Bolted Joint Integrity (VEBJI)

Department of Mechanical Engineering
Period: 01/04/2017 → 31/03/2020
Number of participants: 4
Phd Student:
Brøns, Marie (Intern)
Supervisor:
Fidlin, Alexander (Ekstern)
Tcherniak, Dmitri (Intern)
Main Supervisor:
Thomsen, Jon Juel (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

2-Dimensional Materials as Substrate and base materials for catalytic reactive centers
Department of Physics
Period: 15/03/2017 → 14/03/2020
Number of participants: 3
Phd Student:
Secher, Niklas Mørch (Intern)
Supervisor:
Kibsgaard, Jakob (Intern)
Main Supervisor:
Chorkendorff, Ib (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

BEAM-ME
The project aims at speeding up GAMS-based energy system models. The System Analysis group takes part in the project with the open source energy system model Balmorel.
Department of Management Engineering
Systems Analysis
Management Science
Operations Research
RAM-lose
German Aerospace Center (DLR)
Period: 15/03/2017 → 30/09/2018
Number of participants: 2
Balmorel, Energy System Modelling, Speed-up Models
Project ID: 82552
Project participant:
Wiese, Frauke (Intern)
Buchholz, Stefanie (Intern)

Big Data Analytics with special emphasis on Food Supply Chain Data
Department of Applied Mathematics and Computer Science
Period: 15/03/2017 → 14/03/2020
Number of participants: 3
Phd Student:
Vermue, Laurent (Intern)
Supervisor:
Hansen, Lars Kai (Intern)
Main Supervisor:
Ersbøll, Bjarne Kjær (Intern)

Financing sources
Source: Internal funding (public)
Development of novel drug delivery systems for cancer immunotherapy

Department of Micro- and Nanotechnology
Period: 15/03/2017 → 14/03/2020
Number of participants: 3
Phd Student: Stavnbsbjerg, Camilla (Intern)
Supervisor: Hansen, Anders Elias (Intern)
Main Supervisor: Andresen, Thomas Lars (Intern)

Financing sources
Source: Internal funding (public)

Drug delivery of cancer immunotherapeutics

Department of Micro- and Nanotechnology
Period: 15/03/2017 → 14/03/2020
Number of participants: 3
Phd Student: Weywadt, Matilda Felicia de Val (Intern)
Supervisor: Hansen, Anders Elias (Intern)
Main Supervisor: Andresen, Thomas Lars (Intern)

Financing sources
Source: Internal funding (public)

Induction-heated catalytic hydrogen production - amagnetic investigation

Department of Physics
Period: 15/03/2017 → 14/03/2020
Number of participants: 3
Phd Student: Almind, Mads Radmer (Intern)
Supervisor: Chorkendorff, Ib (Intern)
Main Supervisor: Frandsen, Cathrine (Intern)

Financing sources
Source: Internal funding (public)

Micromachined 2D Transducers and Phantoms for 3D Super-resolution Ultrasound Imaging

Department of Micro- and Nanotechnology
Period: 15/03/2017 → 14/03/2020
Number of participants: 4
Phd Student: Ommen, Martin Lind (Intern)
The Correlation of Reactivity and Activity of Mass Selected Nanoparticles
Department of Physics
Period: 15/03/2017 → 14/03/2020
Number of participants: 3
Phd Student:
Sørensen, Jakob Ejler (Intern)
Supervisor:
Kibsgaard, Jakob (Intern)
Main Supervisor:
Chorkendorff, Ib (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Studies of Polynuclear Clusters for Biomass Conversion
Department of Chemistry
Centre for Catalysis and Sustainable Chemistry
Organic Chemistry
Period: 01/03/2017 → 31/08/2017
Number of participants: 1
Project ID: 12-134779
Project participant:
Nielsen, Martin (Intern)

Risk Based Asset Management of subsurface wells against corrosion and scale
Centre for oil and gas – DTU
Aalborg University
Period: 01/03/2017 → …
Number of participants: 1
Project participant:
Miraglia, Simona (Intern)

Growing Food CPH
Øge antal af job og skabe vækst i region Hovedstaden gennem stimulering af entreprenørskab fra universiteterne i hovedstadsområdet indenfor fødevareområdet
National Food Institute
Period: 01/03/2017 → 29/02/2020
Number of participants: 4
Project participant:
Jensen, Henning Høgh (Intern)
Vierick, Nanna (Ekstern)
**Nanofluids as working fluids for organic Rankine cycles**
The project is funded by the European Union’s Horizon 2020 research and innovation programme with a Marie Sklodowska-Curie Fellowship.

Department of Mechanical Engineering

**Thermal Energy**
Period: 01/03/2017 → 01/03/2019
Number of participants: 2
Acronym: NanoORC
Project ID: 704201
Project participant:
Montagud, Maria E. Mondejar (Intern)
Haglind, Fredrik (Intern)

**Wind Farm Control Trials**
Offshore demonstration project of wind farm control optimisation (induction & wake steering)

Department of Wind Energy

**Meteorology & Remote Sensing**

Integration & Planning
Test and Measurements
Period: 01/03/2017 → 31/12/2020
Number of participants: 6
wake steering, windfarm control, scanning lidar, optimization
Acronym: WFCT
Project participant:
Simon, Elliot (Intern)
Hasager, Charlotte Bay (Intern)
Giebel, Gregor (Intern)
Kazda, Jonas (Intern)
Cutululis, Nicolaos Antonio (Intern)
Courtney, Michael (Intern)

**Science and Innovation with Thunderstorms**
SAINT is a Marie Curie project of 15 Ph.D. students and 19 academic and industrial partners funded by the EU H2020 programme. SAINT will study the physics of thunderstorm processes and their effects on the atmosphere, and new concepts of lightning detection and protection. SAINT will analyze data from the ASIM instruments on the International Space Station with observations of thunderstorm from the ground, laboratory experiments, and with modelling and simulations.

National Space Institute

**Astrophysics and Atmospheric Physics**
Period: 01/03/2017 → 01/03/2021
Number of participants: 10
Acronym: SAINT
Number of related Ph.D. students: 15
Project participant:
Ebert, Ute (Ekstern)
Füllekrug, Martin (Ekstern)
Østgaard, Nikolai (Ekstern)
Nijdam, Sander (Ekstern)
H2020-Shift2Rails-Safe Architecture for Robust Distributed Application Integration in Rolling Stock

Department of Photonics Engineering

Period: 01/03/2017 → 30/06/2018
Number of participants: 3
Acronym: Safe 4Rails

Safe quality improvement in healthcare - a human centred systems engineering approach


Department of Management Engineering

Management Science

Period: 01/03/2017 → 01/03/2020
Number of participants: 3

Measurement of lubricant film thicknesses by laser induced fluorescence

Department of Mechanical Engineering

Solid Mechanics

Period: 01/03/2017 → …
Number of participants: 3

Where does the green economy grow? The Geography Of Nordic Sustainability Transitions (GONST)

There is no one-size-fits-all approach to greening the growth path of an economy as this depends on place-based policy and institutional settings, level of development, resource endowments and particular environmental pressure points. This research proposal addresses the place-based, context-dependent nature of the shift to green growth in the Nordic countries by asking the question: where does the green economy grow? In addressing this question, we foreground the importance of innovation, new industry formation, and radical industry transformation.
The project is based on a mixed methods approach. Quantitative techniques will be applied to analyse the importance of human capital and technological specialisation for the greening of the economy. Qualitative case studies of Nordic regions will focus on the role of institutions and account for the diversity in Nordic regional green pathways.

Participating regions will benefit from a thorough analysis of current green growth processes and the opportunities for further greening. The project in particular seeks to engage pioneering green growth regions in the case study analysis, and a full work package in the project will be focusing on the possibilities for policy-learning between participating regions. An important element here will be to distinguish between those successful practices that can be transferred between regions, and those which are context dependent.

Department of Management Engineering
Technology and Innovation Management
Aalborg University
Lund University
NIFU Nordic Institute for Studies in Innovation, Research and Education
SINTEF
University of Tampere
Period: 01/03/2017 → 01/03/2020
Number of participants: 2
Green growth, Regional development, Technological change, Innovation policy, Innovation systems
Acronym: GONST
Project participant:
Tanner, Anne Nygaard (Intern)
Faria, Lourenco (Intern)

Regn med Thyborøn
Thyborøn is challenged by water from all sides. Rain from above, the North Sea and Limfjord from the sides and a rising groundwater level from below. Lemvig Municipality Lemvig and Water & Wastewater participate in Rain & Cities to develop their cooperation so that they together with the citizens can deal with the major challenges that the city face. The combination of more rainfall, higher sea levels, increasing groundwater levels and a flat terrain, makes floods a challenge. The existing storm water system has been functioning for many years, but due to climate change, the system is not sustainable in the future and there is a need for new thinking. The complexity requires close cooperation between the municipality of Lemvig and Lemvig Water & Wastewater. By participating in Rain & Cities will have the opportunity to develop their long-term cooperation, develop solutions to handle rain water on the surface and through the calculation tool 'splask' to build a common knowledge base on the economy in several different alternative projekter. In particular, Lemvig Municipality and Lemvig Water & Wastewater focus on a new large stormwater basin. The basin is strategically placed in the context of Thyborøn Fritidscenter, serves as focal point for the city's population, and close to the city campground. There is plenty of scope for thinking basin along with recreational functions and turn Thyborøn challenging location for an exciting story that can arouse interest among both residents, students and tourists. In addition to the specific project area by Thyborøn Fritidscenter, participation in Rain & Cities also form the basis for identifying other possible collaborative projects in Thyborøn where investments by the municipality and the water company can match. Project is developed in close cooperation with the Central Denmark Region's EU project Coast to Coast Climate Challenge , Klimatorium in Lemvig and Aqua Globe in Skanderborg. The collaboration provides, inter alia, good opportunities for communication and to involve students, researchers and technicians.

National Space Institute
Geodesy
Lemvig municipality
Lemvig Water and Wastewater
Region of Central Denmark
Ramboll Group AS
Agency for Data Supply and Efficiency (SDFE)
Skanderborg Utility
Period: 01/03/2017 → 31/12/2017
Number of participants: 2
Number of related Ph.D. students: 1
Project participant:
Sørensen, Carlo Sass (Intern)
Knudsen, Per (Intern)

Relations
Related projects:
Coastal flooding hazards due to storm surges and subsidence

Biomimetic and responsive adhesives for a challenging biological environment

Department of Chemistry
Period: 01/03/2017 → 29/02/2020
Number of participants: 3
Phd Student:
Jiang, Tao (Intern)
Supervisor:
Almdal, Kristoffer (Intern)
Main Supervisor:
Thormann, Esben (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Characterisation of T cell responses induced following immunotherapy

National Veterinary Institute
Period: 01/03/2017 → 29/02/2020
Number of participants: 3
Phd Student:
Hansen, Ulla Kring (Intern)
Supervisor:
Lassen, Ulrik (Ekstern)
Main Supervisor:
Hadrup, Sine Reker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Damage Tolerance of Sandwich Structures in Naval Operating in Arctic Regions Vessels

Department of Mechanical Engineering
Period: 01/03/2017 → 29/02/2020
Number of participants: 4
Phd Student:
Sabbadin, Pietro (Intern)
Supervisor:
Hayman, Brian (Intern)
Legarth, Brian Nyvang (Intern)
Main Supervisor:
Berggreen, Christian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: DTU-stipendium
Project: PhD
Development of 3-dimensional Graphene Biocatalysts for Enzymatic Biofuel Cells

Department of Chemistry
Period: 01/03/2017 → 29/02/2020
Number of participants: 3
Phd Student:
Tang, Jing (Intern)
Supervisor:
Engelbrekt, Christian (Intern)
Main Supervisor:
Zhang, Jingdong (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Fabrication of biodegradable microcontainers for oral drug delivery

Department of Micro- and Nanotechnology
Period: 01/03/2017 → 29/02/2020
Number of participants: 4
Phd Student:
Abid, Zarmeena (Intern)
Supervisor:
Boisen, Anja (Intern)
Petersen, Ritika Singh (Intern)
Main Supervisor:
Keller, Stephan Sylvest (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

High Dimensional Quantum Key Distribution Based on Space Division Multiplexing

Department of Photonics Engineering
Period: 01/03/2017 → 29/02/2020
Number of participants: 4
Phd Student:
Cozzolino, Daniele (Intern)
Supervisor:
Bacco, Davide (Intern)
Rottwitt, Karsten (Intern)
Main Supervisor:
Oxenløwe, Leif Katsuo (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Integration of Informatics and Metabolic Engineering for the discovery of Novel Antibiotics

Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Network Reconstruction in Silico Biology
Research Groups

Bacterial Cell Factory Optimization

Fundación MEDINA

Korea Advanced Institute of Science and Technology (KAIST)
Period: 01/03/2017 → 31/03/2023
Number of participants: 12
Acronym: iimena
Project participant:
Weber, Tilmann (Intern)
Palsson, Bernhard (Intern)
Charusanti, Pep (Intern)
Jiang, Xinglin (Intern)
Damborg, Mie (Intern)
Durczak, Oliwia (Intern)
Kontou, Eftychia Eva (Intern)
Lizak, Dawid Mariusz (Intern)
Beck, Charlotte (Intern)
Kjiproski, Darko (Intern)
Rasmussen, Birte Kastrup (Intern)
Project Manager, organisational:
Lohmann, Ricarda (Intern)

Financing sources
Source: Forsk. Private danske - Fonde
Name of research programme: Novo Nordisk Foundation Challenge Program
Web address: http://www.novonordiskfonden.dk
Amount: 58,832,942.00 Danish Kroner
Year of approval: 2017

Relations
Activities:
In silico and experimental approaches to understand and engineer the biosynthesis of antibiotics
Generation of click-able kirromycin derivatives by exploiting the substrate promiscuity of the discrete acyl transferase KirCII
Lectures on antibiotics biosynthesis: polyketides, aminoglycosides, RiPPs and others
In silico and experimental approaches to understand and engineer the biosynthesis of antibiotics
Publications:
Dissemination of antibiotic resistance genes from antibiotic producers to pathogens
Press / Media items:
Video and Blog-post / interview at sciencenews.dk on iimena project (NNF Challenge Grant)

Project

Microfabrication Technology for X-ray Optical Elements

Department of Micro- and Nanotechnology
Period: 01/03/2017 → 29/02/2020
Number of participants: 3
Phd Student:
Silvestre, Chantal (Intern)
Supervisor:
Jansen, Henri (Intern)
Main Supervisor:
Hansen, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Optimization of antibiotic therapy in mink - MIC values and consumption
National Veterinary Institute
Period: 01/03/2017 → 29/02/2020
Number of participants: 5
Phd Student: Nikolaisen, Nanett Kvist (Intern)
Supervisor: Chriél, Mariann (Intern)
Larsen, Peter Foged (Intern)
Struve, Tina (Intern)
Main Supervisor: Pedersen, Karl (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: ErhvervsPhD-ordningen VTU
Project: PhD

Physiological characterization of the impact of gradients on fermentation processes
Department of Chemical and Biochemical Engineering
Period: 01/03/2017 → 29/02/2020
Number of participants: 4
Phd Student: Nadal Rey, Gisela (Intern)
Supervisor: Cornelissen, Sjef (Ekstern)
Eliasson Lantz, Anna (Intern)
Main Supervisor: Gernaey, Krist V. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Quantum emitters in Epsilon-Near-Zero Medium
Department of Photonics Engineering
Period: 01/03/2017 → 29/02/2020
Number of participants: 3
Phd Student: Vertchenko, Larissa (Intern)
Supervisor: Akopian, Nika (Intern)
Main Supervisor: Lavrinenko, Andrei (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Rheology of matrix and concrete with crushed aggregates
Department of Mechanical Engineering
Period: 01/03/2017 → 29/02/2020
Number of participants: 4
Phd Student:
Skare, Elisabeth Leite (Intern)
Supervisor:
Jacobsen, Stefan (Ekstern)
Mørtsell, Ernst (Ekstern)
Main Supervisor:
Spangenberg, Jon (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Joint degree
Project: PhD

Robust solutions of design of internal insulation in historic buildings with regards to hygrothermal performance
Department of Civil Engineering
Period: 01/03/2017 → 29/02/2020
Number of participants: 3
Phd Student:
Jensen, Nicolaj Feldt (Ekstern)
Supervisor:
Nielsen, Peter Rode (Intern)
Main Supervisor:
Bjarløv, Søren Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Surface Engineering of Bulk Metallic Glasses
Department of Mechanical Engineering
Period: 01/03/2017 → 29/02/2020
Number of participants: 3
Phd Student:
Haratian, Saber (Intern)
Supervisor:
Christiansen, Thomas Lundin (Intern)
Main Supervisor:
Somers, Marcel A. J. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Synthesis of heterogeneous nanoparticle catalysts

Department of Chemistry
Period: 01/03/2017 → 29/02/2020
Number of participants: 3
PhD Student:
Zacho, Simone Louise (Intern)
Supervisor:
Mielby, Jerrik Jørgen (Intern)
Main Supervisor:
Kegnæs, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Theory and modeling of acoustic streaming in microfluidic devices

Department of Physics
Period: 01/03/2017 → 29/02/2020
Number of participants: 3
PhD Student:
Bach, Jacob Søberg (Intern)
Supervisor:
Bohr, Tomas (Intern)
Main Supervisor:
Bruus, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Waste heat recovery on liquefied natural gas-fuelled ships

Department of Mechanical Engineering
Period: 01/03/2017 → 29/02/2020
Number of participants: 4
PhD Student:
Baldasso, Enrico (Intern)
Supervisor:
Larsen, Ulrik (Intern)
Montagud, Maria E. Mondejar (Intern)
Main Supervisor:
Haglind, Fredrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: DTU-stipendium
Project: PhD

Innovation Klimatilpasning med borgere

Department of Management Engineering
Period: 16/02/2017 → 16/02/2017
Number of participants: 2
Project participant:
Alsbjørn, Lene (Intern)
Project Manager, organisational:
Hoffmann, Birgitte (Intern)

**Financing sources**
Source: Sam.arb.aftaler - Statslige danske
Name of research programme: Sam.arb.aftaler - Statslige danske
Amount: 2,730,000.00 Danish Kroner

**Project**
Advanced Accurate and Computationally Efficient Numerical Methods for Wind Turbine Rotor Blade Design

Department of Wind Energy
Period: 15/02/2017 → 14/02/2020
Number of participants: 4
Phd Student:
Bertolini, Paola (Intern)
Supervisor:
Eder, Martin Alexander (Ekstern)
Lindby, Torben (Ekstern)
Main Supervisor:
Stolpe, Mathias (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Industrial PhD

**Project**
Advanced oil recovery processes: Modifications of injection water composition

Department of Chemical and Biochemical Engineering
Period: 15/02/2017 → 14/02/2020
Number of participants: 3
Phd Student:
Hao, Jiasheng (Intern)
Supervisor:
Shapiro, Alexander (Intern)
Main Supervisor:
Nielsen, Sidsel Marie (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)

**Project**
Augmenting metagenomic-wide association studies by grouping species that share a functional potential or ecological role

Department of Bio and Health Informatics
Period: 15/02/2017 → 14/02/2020
Number of participants: 3
Phd Student:
Petersen, Anders Østergaard (Intern)
Supervisor:
Nielsen, Henrik Bjørn (Intern)
Main Supervisor:
Rasmussen, Simon (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Creating the scientific foundation for alternative ways of managing North Sea sandeel

National Institute of Aquatic Resources
Period: 15/02/2017 → 14/02/2020
Number of participants: 3
Phd Student:
Henriksen, Ole (Intern)
Supervisor:
Christensen, Asbjørn (Intern)
Main Supervisor:
von Deurs, Mikael (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Decolorization, Desalination and Purification of Molasses by Nanofiltration

Department of Chemical and Biochemical Engineering
Period: 15/02/2017 → 15/09/2017
Number of participants: 4
Phd Student:
Tan, Sheng (Intern)
Supervisor:
Krühne, Ulrich (Intern)
Luo, Jianquan (Intern)
Main Supervisor:
Pinelo, Manuel (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Directed evolution of small-molecule receptors and enzymes

Technical University of Denmark
Period: 15/02/2017 → 14/02/2020
Number of participants: 4
Phd Student:
D’ambrosio, Vasil (Intern)
Supervisor:
Keasling, Jay (Intern)
Lassen, Lærke Marie Münter (Intern)
Main Supervisor:
Jensen, Michael Krogh (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Engineering of Kluyveromyces marxianus for production of bulk chemicals in biorefinery

Technical University of Denmark
Period: 15/02/2017 → 14/02/2020
Number of participants: 3
Phd Student:
Marella, Eko Roy (Intern)
Supervisor:
Rosgaard, Lisa (Ekstern)
Main Supervisor:
Borodina, Irina (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Evaluate and Establish Surveillance program of Salmonella in Imported and domestic Poultry Meat in Jordan

National Food Institute
Period: 15/02/2017 → 14/02/2020
Number of participants: 3
Phd Student:
Hantash, Tariq (Ekstern)
Supervisor:
Alali, Walid (Ekstern)
Main Supervisor:
Vigre, Håkan (Intern)

Financial sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Evaluate and Establish Surveillance program of Salmonella in Imported and domestic Poultry Meat in Jordan

National Food Institute
Period: 15/02/2017 → 14/02/2020
Number of participants: 3
Phd Student:
Hantash, Tariq (Ekstern)
Supervisor:
Alali, Walid (Ekstern)
Main Supervisor:
Vigre, Håkan (Intern)

Financial sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Fundamentals and Boundaries of Optical Time Lenses

Department of Photonics Engineering
Period: 15/02/2017 → 14/02/2020
Number of participants: 3
Phd Student:
Klejs, Frederik (Intern)
Supervisor:
Galili, Michael (Intern)
Main Supervisor:
Oxenløwe, Leif Katsuo (Intern)

Financial sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Giant-E - Ceria Thin Films Giant Electrostrictors

Department of Energy Conversion and Storage
Period: 15/02/2017 → 14/02/2020
Number of participants: 4
Phd Student:
Santucci, Simone (Intern)
Supervisor:
Lubomirsky, Igor (Ekstern)
Pryds, Nini (Intern)
Main Supervisor:
Esposito, Vincenzo (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Near Term Commercial Space Resource Operations and Utilisation
National Space Institute
Period: 15/02/2017 → 12/02/2019
Number of participants: 4
Phd Student:
Culton, John (Intern)
Supervisor:
Andersen, Niels (Intern)
Chytka, Trina (Ekstern)
Main Supervisor:
Jørgensen, John Leif (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Supercontinuum generation with rugged femtosecond fibre lasers
Department of Photonics Engineering
Period: 15/02/2017 → 14/02/2020
Number of participants: 4
Phd Student:
Rao Delanthabettu Shivarama, Shreesha (Intern)
Supervisor:
Moselund, Peter M. (Intern)
Zhou, Binbin (Intern)
Main Supervisor:
Bache, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

TBD
Department of Electrical Engineering
Period: 15/02/2017 → 14/02/2020
Number of participants: 3
Phd Student:
Jørgensen, Kasper Lüthje (Intern)
Supervisor:
Andersen, Michael A. E. (Intern)
Main Supervisor:
Zhang, Zhe (Intern)

**Financing sources**
- Source: Internal funding (public)
- Name of research programme: Samfinansieret - Andet
- Project: PhD

**The Thermodynamics and Transport Properties on Ionic-Liquids Based Compounds**

Department of Chemical and Biochemical Engineering
- Period: 15/02/2017 → 14/02/2020
- Number of participants: 3
- PhD Student: Cai, Yingjun (Ekstern)
- Supervisor: von Solms, Nicolas (Intern)
- Main Supervisor: Thomsen, Kaj (Intern)

**Financing sources**
- Source: Internal funding (public)
- Name of research programme: Stipendie fra udlandet
- Project: PhD

**Understanding the biodiversity-ecosystem functioning relationship in marine food webs through large-scale observations and modelling**

National Institute of Aquatic Resources
- Period: 15/02/2017 → 14/02/2020
- Number of participants: 3
- PhD Student: Maureaud, Aurore (Intern)
- Supervisor: Andersen, Ken Haste (Intern)
- Main Supervisor: Lindegren, Martin (Intern)

**Financing sources**
- Source: Internal funding (public)
- Name of research programme: Samfinansieret - Andet
- Project: PhD

**Monitoring of the Yucatan Peninsula with UAVs**

Deployment of Unmanned Aerial Vehicles (UAVs) to observe water level, bathymetry and temperature in the worldwide unique water bodies of the Yucatan peninsula (Mexico).
Department of Environmental Engineering

Water Resources Engineering
Period: 10/02/2017 → 05/04/2017
Number of participants: 4
cenote, lagoon, Yucatan, bathymetry, water level, temperature, UAVs
Project participant:
Bandini, Filippo (Intern)
Lopez, Alejandro (Ekstern)
Project Manager, organisational:
Merediz-Alonso, Gonzalo (Ekstern)
Project Manager, academic:
Bauer-Gottwein, Peter (Intern)
Documents:
Research contract

EFSA .Pilot Project on Data Quality with DENMARK
Research Group for Diagnostic Engineering
Division of Food Microbiology
National Food Institute
Division of Risk Assessment and Nutrition
European Food Safety Authority
Period: 10/02/2017 → …
Number of participants: 1
Project participant:
Christensen, Julia (Intern)

Manpower Planning at Danish Hospitals
Department of Management Engineering
Management Science
Operations Research
Region Sjælland, Produktion, Forskning og Innovation (PFI)
Period: 01/02/2017 → 31/12/2017
Number of participants: 1
Project participant:
Bagger, Niels-Christian Fink (Intern)

Environment in Manufacturing
Embedding sustainability metrics in the planning and operation of high volume production lines
Department of Management Engineering
Quantitative Sustainability Assessment
Lego Group
Period: 01/02/2017 → 15/12/2017
Number of participants: 2
Project participant:
Stotz, Philippe Maurice (Intern)
Supervisor:
Bey, Niki (Intern)
Investigation of metallic-ceramic 3D network-structures for solid oxide fuel cell technology
Investigation of metallic/ceramic Cu-Mn/Cu-Mn-O spinel foam structures and development of Cu-Mn/Cu-Mn-O spinel oxide nanofibers.

Department of Energy Conversion and Storage
Electrofunctional materials
Proton conductors

Mixed Conductors
Period: 01/02/2017 → 23/06/2017
Number of participants: 4
SOFC, oxide spinel, SEM-EDS, microstructure, thermal analysis, electrochemistry, Nanofibers, crystallography
Project participant:
Lund, Rasmus Kvist (Ekstern)
Supervisor:
Zhang, Wenjing (Angela) (Intern)
Main Supervisor:
Wulff, Anders Christian (Intern)
Project

Action Model Learning for Multi-agent Systems
Department of Applied Mathematics and Computer Science
Period: 01/02/2017 → 31/01/2020
Number of participants: 3
Phd Student:
Occhipinti Liberman, Andrés (Intern)
Supervisor:
Gierasimczuk, Nina (Intern)
Main Supervisor:
Bolander, Thomas (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Aero-acoustic wind tunnel tests
Department of Wind Energy
Period: 01/02/2017 → 31/01/2020
Number of participants: 4
Phd Student:
Lylloff, Oliver Ackermann (Intern)
Supervisor:
Bak, Christian (Intern)
Fernandez Grande, Efrén (Intern)
Main Supervisor:
Fischer, Andreas (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Airborne and satellite remote sensing for hydrologic modelling applications
Department of Environmental Engineering
**An open quantum systems approach to few photon scattering in photonic devices**

Department of Photonics Engineering  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 4  
Phd Student: Joanesarson, Kristoffer Bitsch (Intern)  
Supervisor: Gregersen, Niels (Intern)  
Iles-Smith, Jake (Intern)  
Main Supervisor: Mørk, Jesper (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Grundforskningsfonden  
Project: PhD

**Ballistic graphene devices for electron optics and switches**

Department of Micro- and Nanotechnology  
Period: 01/02/2017 → 18/06/2020  
Number of participants: 3  
Phd Student: Gejl, Aske Nørskov (Intern)  
Supervisor: Caridad, Jose (Intern)  
Main Supervisor: Bøggild, Peter (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**CFD Modelling of dynamic microfiltration for application in biotechnology processes**

Department of Chemical and Biochemical Engineering  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 4  
Phd Student: Marke, Henrik Sander (Intern)  
Supervisor: Hansen, Ernst (Intern)  
Pinelo, Manuel (Intern)  
Main Supervisor:
**Construction of Superior Cell Factories for Vanillin Glucoside Production using a Synthetic Biology based Approach**

Technical University of Denmark  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 2  
Phd Student: Olsson, Helén Emelie (Intern)  
Main Supervisor: Mortensen, Uffe Hasbro (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Industrial PhD  
Project: PhD

---

**Control of Flywheel energy storage in the role of peak power reduction**

Department of Electrical Engineering  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 3  
Phd Student: D'Ambrosio, Alessandro (Intern)  
Supervisor: Vikelgaard, Hans Henrik (Ekstern)  
Main Supervisor: Mijatovic, Nenad (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Marie Curie (EU-stipendium)  
Project: PhD

---

**Design of multifunctional heterogeneous catalysts**

Department of Chemistry  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 3  
Phd Student: Rasmussen, Kristoffer Hauberg (Intern)  
Supervisor: Mielby, Jerrik Jørgen (Intern)  
Main Supervisor: Kegnæs, Søren (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Forskningsrådsfinansiering  
Project: PhD

---

**Developing High Performance Aluminium Tube Alloys for heat exchange Applications**

Department of Mechanical Engineering  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 5  
Phd Student:
Zaffaroni, Giorgio Giovanni Battista (Intern)
Supervisor:
Gudla, Visweswara Chakravarthy (Intern)
Nordlien, Jan Halvor (Ekstern)
Sørensen, Jens Sandahl (Ekstern)
Main Supervisor:
Ambat, Rajan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Development of NanoBiosensor for Detection of Food Contaminants
Department of Micro- and Nanotechnology
Period: 01/02/2017 → 31/01/2020
Number of participants: 5
Phd Student:
Feng, Xiaotong (Intern)
Supervisor:
Bang, Dang Duong (Intern)
Wolff, Anders (Intern)
Zhang, Jingdong (Intern)
Main Supervisor:
Sun, Yi (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Engineering biomimicking microenvironments for functional drug-safety screening
Department of Micro- and Nanotechnology
Period: 01/02/2017 → 31/01/2020
Number of participants: 4
Phd Student:
Christensen, Rie Kjær (Intern)
Supervisor:
Skafte-Pedersen, Peder (Intern)
Wilson, Sandra (Ekstern)
Main Supervisor:
Larsen, Niels Bent (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

High-power visible-near-IR Supercontinuum sources for spectroscopic photoacoustic microscopy
Department of Photonics Engineering
Period: 01/02/2017 → 31/01/2020
Number of participants: 4
Phd Student:
Dasa, Manoj Kumar (Intern)
Supervisor:
Jain, Deepak (Intern)
Markos, Christos (Intern)
Main Supervisor:
Bang, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

High Pressure Phase Behavior of Asymmetric Mixtures for Oil Production

Department of Chemistry
Period: 01/02/2017 → 31/01/2020
Number of participants: 4
Phd Student:
Liu, Yiqun (Intern)
Supervisor:
Regueira Muñiz, Teresa (Intern)
Stenby, Erling Halfdan (Intern)
Main Supervisor:
Yan, Wei (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Privatist
Project: PhD

Investigation of oil production well corrosion issues and prevention

Department of Mechanical Engineering
Period: 01/02/2017 → 31/01/2020
Number of participants: 4
Phd Student:
Rizzo, Riccardo (Intern)
Supervisor:
Fosbøl, Philip Loldrup (Intern)
Thomsen, Kaj (Intern)
Main Supervisor:
Ambat, Rajan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Investigations of Compositions and Fluid-Fluid Association Mechanisms for Petroleum Fluids

Department of Chemistry
Period: 01/02/2017 → 31/01/2020
Number of participants: 4
Phd Student:
Mihrin, Dmytro (Intern)
Supervisor:
Henriksen, Jonas Rosager (Intern)
Larsen, René Wugt (Intern)
Main Supervisor:
Feilberg, Karen Louise (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
Multi-model bus Arrival Prediction with Intelligent Handling of Uncertainties

Department of Management Engineering
Period: 01/02/2017 → 30/01/2021
Number of participants: 3
Phd Student:
Petersen, Niklas Christoffer (Intern)
Supervisor:
Heckscher, Annette (Ekstern)
Main Supervisor:
Pereira, Francisco Camara (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Numerical simulation of modified brine water flooding in chalk reservoirs

Department of Applied Mathematics and Computer Science
Period: 01/02/2017 → 31/01/2020
Number of participants: 3
Phd Student:
Baghooee, Hadise (Intern)
Supervisor:
Eftekhari, Ali Akbar (Intern)
Main Supervisor:
Nick, Hamid (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Photonic quantum technologies in structured environments

Department of Photonics Engineering
Period: 01/02/2017 → 31/01/2020
Number of participants: 4
Phd Student:
Denning, Emil Vosmar (Intern)
Supervisor:
Iles-Smith, Jake (Intern)
Willatzen, Morten (Intern)
Main Supervisor:
Mørk, Jesper (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Production of the platform chemical 3-hydroxypropanoate in Bacillus subtilis

Technical University of Denmark
Period: 01/02/2017 → 31/01/2020
Number of participants: 3
Phd Student:
Stancik, Ivan Andreas (Intern)
Supervisor:
Jers, Carsten (Intern)
Main Supervisor:
Mijakovic, Ivan (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Quantum-optical networks with solid state spins and photons
Department of Physics
Period: 01/02/2017 → …
Number of participants: 3
Phd Student:
Yakovlev, George (Intern)
Supervisor:
Huck, Alexander (Intern)
Main Supervisor:
Andersen, Ulrik Lund (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Spin-valley physics and quantum transport in 2D materials
Department of Micro- and Nanotechnology
Period: 01/02/2017 → 31/01/2020
Number of participants: 4
Phd Student:
Handberg Juul Martiny, Johannes (Intern)
Supervisor:
Kaasbjerg, Kristen (Intern)
Thygesen, Kristian Sommer (Intern)
Main Supervisor:
Jauho, Antti-Pekka (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

TBD
Department of Electrical Engineering
Period: 01/02/2017 → 31/01/2020
Number of participants: 3
Phd Student:
Spliid, Frederik Monrad (Intern)
Supervisor:
Jørgensen, Ivan Harald Holger (Intern)
Main Supervisor:
Knott, Arnold (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
**Topology optimization of acoustic-mechanical interaction**

Department of Electrical Engineering  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 3  
Phd Student: Dilgen, Sümer Bartug (Intern)  
Supervisor: Aage, Niels (Intern)  
Main Supervisor: Jensen, Jakob Søndergaard (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansierede - Virksomhed  
Project: PhD

**Transient Optimization of Acoustic-Mechanical Interaction Problems**

Department of Mechanical Engineering  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 3  
Phd Student: Dilgen, Cetin Batur (Intern)  
Supervisor: Jensen, Jakob Søndergaard (Intern)  
Main Supervisor: Aage, Niels (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**Understanding the cellular and molecular cues of yo T cells**

National Veterinary Institute  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 3  
Phd Student: Agerholm, Rasmus (Intern)  
Supervisor: Lahl, Katharina (Intern)  
Main Supervisor: Bekiaris, Vasileios (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

**Use of Zeolites for Tar De-Oxygenation**

Department of Chemical and Biochemical Engineering  
Period: 01/02/2017 → 31/01/2020  
Number of participants: 5  
Phd Student: Eschenbacher, Andreas (Intern)  
Supervisor: Ahrenfeldt, Jesper (Intern)  
Henriksen, Ulrik Birk (Intern)  
Jensen, Peter Arendt (Intern)
Main Supervisor:
Jensen, Anker Degn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Enhanced Oil Recovery Methods targeting Danish North Sea Chalk Reservoirs

Department of Chemical and Biochemical Engineering
Period: 15/01/2017 → 14/01/2020
Number of participants: 3
Phd Student:
Taheriotaghsara, Mirhossein (Intern)
Supervisor:
Shapiro, Alexander (Intern)
Main Supervisor:
Nielsen, Sidsel Marie (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Micro particles in Aquaculture: cause and effects and ways to remove them

National Institute of Aquatic Resources
Period: 15/01/2017 → 14/01/2020
Number of participants: 4
Phd Student:
de Jesus Gregersen, Joao (Intern)
Supervisor:
Pedersen, Per Bovbjerg (Intern)
Pedersen, Lars-Flemming (Intern)
Main Supervisor:
Dalsgaard, Anne Johanne Tang (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Modelling of ultrafast scattering experiments probing electronic dynamics in solar cells

Department of Energy Conversion and Storage
Period: 15/01/2017 → 14/01/2020
Number of participants: 3
Phd Student:
Khalili, Khadijeh (Intern)
Supervisor:
Santra, Robin (Ekstern)
Main Supervisor:
Andreasen, Jens Wenzel (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD
Nonlinear Silicon Carbide Waveguide
Department of Photonics Engineering
Period: 15/01/2017 → 14/01/2020
Number of participants: 4
Phd Student:
Zheng, Yi (Intern)
Supervisor:
Hu, Hao (Intern)
Pu, Minhaod (Intern)
Main Supervisor:
Ou, Haiyan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Numerical Uncertainty Quantification for Stochastic Wave Loads
Department of Applied Mathematics and Computer Science
Period: 15/01/2017 → 14/01/2020
Number of participants: 4
Phd Student:
Sehic, Kenan (Intern)
Supervisor:
Bredmose, Henrik (Intern)
Sørensen, John Dalsgaard (Intern)
Main Supervisor:
Karamehmedovic, Mirza (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Yeast cell factories for production of diols from biomass hydrolyzates
Technical University of Denmark
Period: 15/01/2017 → 14/01/2020
Number of participants: 3
Phd Student:
Dahlin, Jonathan (Intern)
Supervisor:
Bengtsson, Oskar Jan Erik (Ekstern)
Main Supervisor:
Borodina, Irina (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Implementation in real SOFC Systems of monitoring and diagnostic tools using signal analysis to increase their lifetime
Department of Energy Conversion and Storage
Applied Electrochemistry
Period: 02/01/2017 → 31/12/2019
Number of participants: 1
Acronym: INSIGHT
Project ID: INSIGHT
Number of related Ph.D. students: 1
Project participant:
Hagen, Anke (Intern)

Commercial project SOFC related
Department of Energy Conversion and Storage
Applied Electrochemistry
Period: 02/01/2017 → 31/03/2017
Number of participants: 1
Project participant:
Hagen, Anke (Intern)

Introduction to ESEM microscopy for the characterization of the wetting behavior of nanotextured surfaces
Center for Electron Nanoscopy
DTU Danchip
Department of Micro- and Nanotechnology
Polymer Micro & Nano Engineering
Period: 02/01/2017 → 27/01/2017
Number of participants: 3
Project participant:
Lyck Smitshusyen, Thomas Erik (Ekstern)
Supervisor:
Taboryski, Rafael J. (Intern)
Main Supervisor:
Mateiu, Ramona Valentina (Intern)

Future risk assessment of chemicals (MiraculiX)
Development of Physiologically Based Kinetic (PBK) models for risk assessment of chemicals.
National Food Institute
Copenhagen Center for Health Technology
Research Group for Molecular Toxicology
Research Group for Reproductive Toxicology
Brunel University
Period: 02/01/2017 → 31/12/2018
Number of participants: 5
PBK modeling, Risk assessment
Project participant:
Bonomo, Silvia (Intern)
Project Manager, academic:
Taxvig, Camilla (Intern)
Svingen, Terje (Intern)
Boberg, Julie (Intern)
Project Coordinator:
Vinggaard, Anne Marie (Intern)

Relations
Activities:
Copenhagen Workshop on Endocrine Disrupters
**ALLEVIATE - A novel strategy for food allergy prevention and treatment**
Food allergy is an adverse effect to otherwise harmless proteins in the food, whereas oral tolerance is the default result from ingestion of food proteins. Food allergy is a major health problem of growing concern, affecting ~5-8% of young children and 2-4% of adults. No reliable strategy exists for prevention and treatment of food allergy, and strict avoidance of the offending food is presently the only viable management option. Living with food avoidance has a huge impact on the quality of life of food allergic patients, with daily fear of serious or even fatal reactions. The need for efficient methods for prevention and treatment is therefore evident and urgent.

The purpose of the project is to develop methods to prevent and treat food allergy using a novel strategy, recently invented. Our vision is to overcome limitations in current strategies for food allergy prevention and treatment; being efficient without inducing allergic reactions.

The specific goals of the project are:
1) To develop protein ingredients for a new generation of hypoallergenic (HA) infant formulas (IF) for cow’s milk allergy (CMA) prevention
2) To develop a drug candidate for use in immunotherapy (IT) for peanut allergy (PA) treatment

These products would have the capacity to enhance the quality of life for millions of patients in risk of developing CMA and of patients with an already established PA. The market potential is great for both product categories. In addition, the newly developed strategy may form the basis for prevention, treatment and diagnostic products targeting other food allergies.

National Food Institute
Research Group for Gut Microbiology and Immunology
Department of Chemistry
Organic Chemistry
Research Group for Microbial Biotechnology and Biorefining
Office for Innovation & Sector Services
Medical University of Vienna
University of Toronto
University of Leeds
Arla Foods Ingredients Group P/S
Period: 01/01/2017 → 31/12/2020
Number of participants: 7
Food Allergy, Immunotherapy, Infant formula, Allergy, Milk allergy, Peanut allergy
Acronym: ALLEVIATE
Project participant:
Madsen, Charlotte Bernhard (Intern)
Kryger, Karsten (Intern)
Qvortrup, Katrine (Intern)
Jensen, Peter Ruhdal (Intern)
Bang-Berthelsen, Claus Heiner (Intern)
Hulgaard, Egil (Intern)
Project Manager, academic:
Bagh, Katrine Lindholm (Intern)

---

**Reduktion af risiko for overtæmperatur i etageboliger i forbindelse med facaderenovering**
Department of Civil Engineering
Section for Building Energy
Period: 01/01/2017 → 01/01/2018
Number of participants: 4
Number of related Ph.D. students: 0
Project participant:
Zukowska-Tejsen, Daria (Intern)
Kolarik, Jakub (Intern)
Sarey Khanie, Mandana (Intern)
Project Coordinator:
Nielsen, Toke Rammer (Intern)
Financing sources
Source: Private funding (private)
Name of research programme: Grundejernes Investeringsfond
Web address: http://www.gi.dk
Amount: 990,000.00 Danish Kroner
Year of approval: 2016

Big Data Applications in Energy Optimization, Smart City and Agriculture
Goal of the project is to bring together employees, external partners and students in the exploitation of Big Data applications in a number of fields:
- Energy optimization (saving of energy)
- Smart city (traffic monitoring)
- Agriculture, weeding (automated mechanical weeding)
- Agriculture, weather forecast (weather stations)
In all the cases Big Data from many sensors, including historical data, can be applied in data fusion algorithms in the search for more efficient and cheaper solutions. The exploitation will end up in the definition of new research projects and possibly the submission of project proposals for attracting externals funds, e.g., Horizon 2020 proposals.

Center for Bachelor of Engineering Studies
Afdelingen for Informatik
Afdelingen for El-teknologi
Period: 01/01/2017 → 01/01/2018
Number of participants: 7
Project participant:
Blaszczzyk, Tomasz (Intern)
Kaur, Bipjeet (Intern)
Bridgwood, Ian (Intern)
Bechmann, Henrik (Intern)
Friesel, Anna (Intern)
Project Manager, academic:
Andersen, Birger (Intern)
Schultz, Ole (Intern)

The fabrication and testing of two terminal memristor device - Nano ionic Conducting Engineered materials for information application

Department of Energy Conversion and Storage
Ceramic Engineering & Science
Electrofunctional materials
Fundamental Electrochemistry
ETH Zurich
Period: 01/01/2017 → 31/01/2020
Number of participants: 3
Acronym: NICE
Number of related Ph.D. students: 1
Project participant:
Esposito, Vincenzo (Intern)
Traulsen, Marie Lund (Intern)
Project Manager, organisational:
Pryds, Nini (Intern)

Disease databases
The general purpose of the project is to explore the potential use and value of different data sources as a monitoring tool for detection of diseases in Danish swine herds. The project is a continuation of the PhD project “Veterinary Epidemiology with the focus on monitoring livestock disease using diagnostic databases”, in which different databases and monitoring methods were explored in the context of endemic diseases.
As a starting point, the project will be focused on methods to detect changes in mortality and to find possible links among diseases occurrence, antibiotic usage, and other data streams (such as meat inspection and laboratory diagnostic data).

National Veterinary Institute

Epidemiology
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Project participant:
Lopes Antunes, Ana Carolina (Intern)
Jensen, Vibeke Frøkjær (Intern)
Project Manager, academic:
Toft, Nils (Intern)

IEA Task Material and component development for thermal storage systems
The aims of the project are within the IEA (International Energy Agency) SHC (Solar Heating & Cooling) Programme Task project "Material and component development for thermal storage systems" to develop economically attractive compact long term heat storages and to elucidate the suitability of the heat storages for different applications. The project is the Danish part of the IEA Task project "Material and component development for thermal storage systems". Work will be carried out in the following fields: Component development Application areas Numerical simulation methods The expert meetings of the project will be attended so that knowledge on the results of the international partners is achieved. The Danish activities is focused on development of inexpensive compact heat storages based on salt hydrates, on optimization of energy systems based on these heat storages and on the interplay between the systems and the future energy system. In cooperation with interested companies development work is carried out. Among other things a heat storage module based on sodium acetate trihydrate from Nilan A/S will be investigated by means of experiments. Further, a combined solar heating/heat pump system with a PCM heat storage will be investigated.

Department of Civil Engineering
Section for Building Energy
Department of Applied Mathematics and Computer Science
Nilan A/S
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
PCM heat storage, supercooling, applications
Project participant:
Furbo, Simon (Intern)
Englmair, Gerald (Intern)
Dannemand, Mark (Intern)
Kong, Weiqiang (Intern)

PigLED - Optimal lighting system for pigs
Light and vitamin D are essential for human and animal well-being. In this project, researchers using specially developed LED lighting will reduce the mortality in piglets, improve the welfare of sows during gestation, and thus improve the pig farmer's economy.

The challenge of this project is to improve the statistics in pig production. Every year, approximately 9,000,000 piglets die during birth or before weaning - an alarmingly high figure, which is not compatible with sustainability or animal welfare. In addition, it costs about 1.8 billion Danish kroner in lost profits for the Danish pig producers.

Piglets need vitamin D. They are born with a low level of vitamin D and in the first three weeks the only receive the sow's milk, which contains minimal amounts of vitamin D. Vitamin D is often referred to as the sunshine vitamin, since animals and humans produce vitamin D in the skin. We cannot bring sunlight into the pig sheds, but we can develop a light source, which contains the portion of the sunlight which produces vitamin D in the skin of pigs.

For more information see attached document in Danish

National Food Institute
Research Group for Bioactives – Analysis and Application
Department of Photonics Engineering
Diode Lasers and LED Systems
University of Copenhagen
Kongsdal Multisite A/S
Photocat A7S
Period: 01/01/2017 → 30/09/2020
Number of participants: 3
Acronym: PigLED
Project participant:
Bang-Berthelsen, Iben (Intern)
Petersen, Paul Michael (Intern)
Project Coordinator:
Jakobsen, Jette (Intern)
Documents:
PigLED tekst til DTU Hjemmeside
Project

Bio-macromolecules from municipal solid bio-waste fractions and fish waste for high added value applications
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Yeast Metabolic Engineering
Period: 01/01/2017 → 31/12/2020
Number of participants: 3
biorefinery, cell factories, metabolic engineering, synthetic biology, municipal solid waste, bio-based chemicals
Acronym: DAFIA
Number of related Ph.D. students: 1
Project participant:
Borodina, Irina (Intern)
Darvishi Harzevili, Farshad (Intern)
Chekina, Ksenia (Intern)
Project

Videreudvikling af Campylobacter smittekilderegnskabet
National Food Institute
Division of Risk Assessment and Nutrition
Fødevarestyrelsen
Period: 01/01/2017 → …
Number of participants: 1
Project participant:
Christensen, Julia (Intern)
Project

Strengthen ISS Global A/S before negotiations through data analysis on Fleet LSI data
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Period: 01/01/2017 → 06/07/2017
Number of participants: 3
Other:
Samsøe, Pernille Lindvang (Ekstern)
Supervisor:
Thyregod, Camilla (Intern)
Main Supervisor:
Rootzén, Helle (Intern)
Demonstration of energy savings and indoor climate with sustainable adiabatic cooling using rainwater

Public buildings in Denmark do not have cooling systems, which often leads to uncomfortable high indoor temperatures in spring and summertime. The project will demonstrate that cooling by adiabatic cooling system using rainwater is a simple and cheap method for improving the indoor environment in public buildings without increasing the energy consumption.

Department of Civil Engineering
Section for Building Energy

Systemair A/S
Period: 01/01/2017 → 30/06/2019
Number of participants: 3
energy, cooling, buildings, sustainability
Project participant:
Hviid, Christian Anker (Intern)
Zukowska-Tejsen, Daria (Intern)
Nielsen, Vilhjálmur (Intern)

Financing sources
Source: Public research programme (public)
Name of research programme: Elforsk
Web address: http://www.elforsk.dk
Amount: 390,000.00 Danish Kroner
Year of approval: 2016

Danish Seaweed Organisation
Platform for the Danish seaweed Companies to go on the export market

National Food Institute
Research Group for Bioactives – Analysis and Application
Period: 01/01/2017 → …
Number of participants: 1
Acronym: DSO
Project participant:
Holdt, Susan Løvstad (Intern)

InVALUABLE - Insect value chain in a circular bioeconomy

Food production has been estimated to contribute with approximately 20-30% of the environmental impact of EU-citizens. In addition, the UN’s Food and Agriculture Organization (FAO) estimates that the global food production must increase 70% by 2050 to feed the growing world population, highlighting the importance of generating new and sustainable protein sources. FAO has recently placed food production from insects on the global agenda due to several advantages, e.g. high nutritional value (40-60% protein), high production efficiency (>5x), low land(<10x) and water (<1,000x) requirements, and low climate impact (<1,000x) as compared to conventional livestock. Moreover, insects may also be a solution to sourcing non-GMO and organic animal protein. The vision of inVALUABLE is to create a sustainable resource-efficient industry for animal protein production based on insects. The partners span the entire value chain and include entrepreneurs, experts in biology (entomology and nutrition), biotech, automation, processing and food tech and -safety, as well as an international leading insect producer. This interaction of competences is key to lifting insect production to an industrial level. The project operates at an applied research level with focus on three main areas: 1) biological knowledge of the production organisms (e.g. production environment, dietary needs and health); 2) automation and monitoring of production; and 3) product documentation of safety, nutrition and health. The goal is that inVALUABLE, 3-5 years post-project, can facilitate Danish industrial insect production and be an enabler of new market opportunities for insects as feed and food and other high-value components, with an overall value of 200-300M DKK annually and creating 100-200 related jobs.

National Food Institute
Research Group for Microbial Food Safety

Danish Technological Institute
A novel off-grid thermoelectric-photovoltaic desalination system

Desalination of brackish water/sea water is a sustainable way to meet water demand in arid locations. A number of humidification/dehumidification (HDH) devices based on conventional vapor compression technology are currently available. However, these devices have a number of inherent problems such as high noise levels, compressor vibration and excessive weight and size.

The overall objective of the project is to develop and demonstrate a novel off-grid desalination system using thermoelectric technology combined with a photovoltaic system.

The combination of photovoltaic (PV) and thermoelectric (TE) technologies will not only overcome the problems of a conventional desalination system, but it also brings many additional advantages such as being off-grid, having less moving parts, easy to install, less maintenance, and on top being environmentally friendly.

The outcome of the project will be:

(i) High performance thermoelectric-solar desalination prototype to cheaply produce potable water with a targeted coefficient of performance (COP) of more than 1.5.

(ii) Demonstration of a future environmentally friendly energy technological concept with high commercial potential.

In this project, DTU Energy, AquaDania A/S, SunPower Applications A/S, and All Things Considered A/S work closely together toward a goal to develop a novel off-grid desalination system using a thermoelectric module coupled with a PV system. We address the needs of people's drinking water in remote areas of the world, or the emergency needs of catastrophic situation especially people living in arid countries.
**Solid Oxide Electrolysis Cell stack II**

Department of Energy Conversion and Storage

Electrofunctional materials
Period: 01/01/2017 → 31/12/2017
Number of participants: 1
Acronym: SOEC II
Project participant: Wulff, Anders Christian (Intern)

**Advanced tailoring of 3D microstructures for superconducting magnets**
Superconducting magnets capable of producing large magnetic fields are indispensable for magnetic resonance imaging (MRI) for medical diagnostics. The higher the field is, the higher the spatial resolution achievable in the scanner is; this is crucial for the early detection of, e.g., cancer tumors. The present research project focuses on a new concept for the superconducting magnet which will enable an increase in the magnetic field by a factor of more than three. This is done by using ceramic superconductors in combination with a novel substrate configuration recently developed by the applicant. The substrate makes it possible to produce many thin superconducting 3D structured filaments instead of a single wide conductor, thus increasing the field produced and improving the resolution of the MRI device. The project aims to solve the scientific problems currently impeding the achievement of sufficiently small filaments. A major scientific problem is related to oxygen formation and spread during electro-etching of 3D profiles resulting in undesired structural filament variations.

Department of Energy Conversion and Storage

Electrofunctional materials
Imaging and Structural Analysis
Period: 01/01/2017 → 01/01/2019
Number of participants: 7
surface modification, electrochemistry, topography, Coated conductor, Superconductor, ceramic processing
Acronym: ATOMIS
Project ID: DFF – 6111-00252
Project participant: Insinga, Andrea Roberto (Intern), Grivel, Jean-Claude (Intern), Nielsen, Pernille Hedemark (Intern), Wichmann, Mike (Intern), Usoskin, Alexander (Ekstern), Gómöry, Fedor (Ekstern)
Project Manager, academic: Wulff, Anders Christian (Intern)

**Adhesive development for flexible thin film electronic encapsulation**

Department of Energy Conversion and Storage
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student: Kovrov, Aleksandnr (Intern)
Supervisor: Helgesen, Martin (Intern)
Main Supervisor: Søndergaard, Roar R. (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
Advanced Modelling, Simulation and Optimization for in Silivo Process Design

Department of Chemical and Biochemical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 6
Phd Student:
Öner, Merve (Intern)
Supervisor:
Abildskov, Jens (Intern)
Gernaey, Krist V. (Intern)
Shibabaw Molla, Getachew (Intern)
Stocks, Stuart M. (Ekstern)
Main Supervisor:
Sin, Gürkan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Advancing Numerical Analysis of Large Scale Crack Propagation in Plate Structures

Department of Mechanical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Andersen, Rasmus Grau (Intern)
Supervisor:
Niordson, Christian Frithiof (Intern)
Main Supervisor:
Nielsen, Kim Lau (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Alternative liquid fuels in burners optimized for low NOx emissions and high burn out

Department of Chemical and Biochemical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Cafaggi, Giovanni (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Glarborg, Peter (Intern)
Main Supervisor:
Jensen, Peter Arendt (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Analysis of protected areas in the North Sea and the Central Baltic (Beskyttede områder) (39425)
The project aims at delivering a report on the scientific basis and coherence of the current system of marine protected areas in the Danish North Sea, Skagerrak and central Baltic Sea EEZ’s. This will enable the Danish Nature Agency to decide whether the existing network of protected areas is coherent (representative, adequate and connected) with respect to the requirements of the MSFD art. 13 part 4.
The most important biodiversity elements, habitats and ecological processes of the North Sea/Skagerrak and the central Baltic Sea will be addressed including selected ecosystem components, oceanographic features and seabed habitats. The work will be based on available data, literature studies and results from recent investigations. Furthermore, ecologically valuable – “hot-spots” – and areas of economic value are to be identified.

The network of ecologically valuable areas will be analyzed based on data, distribution mapping, weighting of data and connectivity consideration using several types of software. Areas of economic value inside and outside the Natura2000 network will be identified based on existing data collected by the partners and located at the partner's database. Finally, areas of economic importance will be combined to suggest marine protected areas.

The project is coordinated by DTU Aqua.

The project is funded by Danish Agrifish Agency.

National Institute of Aquatic Resources
Section for Oceans and Arctic
DCE - Danish Centre for Environment and Energy
DHI Denmark
Geological Survey of Denmark and Greenland

Period: 01/01/2017 → 31/12/2017
Number of participants: 2
Research area: Ecosystem Based Marine Management
Project participant:
Gislason, Henrik (Intern)
Project Coordinator:
Edelvang, Karen (Intern)

Antibiotic Drug Development

Technical University of Denmark

Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Silva Matias, Carina Sofia (Intern)
Supervisor:
Ingmer, Hanne (Ekstern)
Main Supervisor:
Sommer, Morten Otto Alexander (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt EU-finansieret
Project: PhD

Antimicrobial Polymers for Catheter Coatings

Department of Chemical and Biochemical Engineering

Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Andersen, Christian (Intern)
Supervisor:
Madsen, Niels Jørgen (Ekstern)
Skov, Anne Ladegaard (Intern)
Main Supervisor:
Daugaard, Anders Egede (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Applying modular architecture and LEAN thinking to well head platforms

Department of Mechanical Engineering
Period: 01/01/2017 → 10/01/2017
Number of participants: 3
Phd Student: 
Hilstøm, Kristine Wille (Intern)
Supervisor: 
Bek-Pedersen, Erik (Intern)
Main Supervisor: 
Mortensen, Niels Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

A Probabilistic Framework for Tensor Methods with Applications in Life Sciences

Department of Applied Mathematics and Computer Science
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student: 
Hinrich, Jesper Løve (Intern)
Supervisor: 
Madsen, Kristoffer Hougaard (Intern)
Main Supervisor: 
Mørup, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Big Data Analytics with special emphasis on Food Supply Chain Data(2/2)

Department of Applied Mathematics and Computer Science
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student: 
Jørgensen, Philip Johan Havemann (Intern)
Supervisor: 
Hansen, Lars Kai (Intern)
Main Supervisor: 
Ersbøll, Bjarne Kjær (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Chiral Magnetism from Mean Field Theory

Department of Physics
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student: 
Torelli, Daniele (Intern)
Supervisor: 
Christensen, Niels Bech (Intern)
Coast to Coast Climate Challenge

The project is supported by the LIFE program by about 52 million kr. and has a total budget of approximately 90 million in addition to construction costs in connection with the realization of the many solutions developed during the project.

The overall objective

The project is led by Central Denmark Region, in close cooperation with the other 30 partners will work to create a climate resilient region by:

• formulating a shared vision among local players, and by
• implement local climate change adaptation plans targeted as the necessary analyzes and activities coordinated, and the
• Identify and improve the resources and capabilities among citizens, municipalities, utilities and companies in the water industry.

The project is implemented in a number of sub-projects (24 pcs.) And horizontal activities. Various partners have brought subprojects into the C2C CC.

Main contributions to subprojects C9, C17, C21.

National Space Institute
Geodesy
Region of Central Denmark
Lemvig municipality
Lemvig Water and Wastewater
Period: 01/01/2017 → 31/12/2022
Number of participants: 1
acronym: c2c cc
Project participant:
Sørensen, Carlo Sass (Intern)

Conceptual design of yeast propagation strategies for improved bioethanol production

Department of Chemical and Biochemical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Lopez, Pau Cabaños (Intern)
Supervisor:
Gernaey, Krist V. (Intern)
Main Supervisor:
Eliasson Lantz, Anna (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Density functional theory based modelling of materials for resistive switching memories
Department of Energy Conversion and Storage
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student: Pedersen, Christian Søndergaard (Intern)
Supervisor: Pryds, Nini (Intern)
Vegge, Tejs (Intern)
Main Supervisor: García Lastra, Juan Maria (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Developing a decision support tool for process optimization for fish product
National Food Institute
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student: Jordbrekk Blikra, Marthe (Intern)
Supervisor: Feyissa, Aberham Hailu (Intern)
Skipnes, Dagbjørn (Ekstern)
Main Supervisor: Jessen, Flemming (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Development of improved neoepitope vaccination through elucidation of patients naïve T-cell repertoire
National Veterinary Institute
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student: Petersen, Nadia Viborg (Intern)
Supervisor: Kringelum, Jens Vindahl (Intern)
Main Supervisor: Hadrup, Sine Reker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Development of Novel Anti-Cancer Drugs using Fragment-Based Drug Discovery
Department of Chemistry
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student: Andersen, Nikolaj Sten (Intern)
Supervisor: Gotfredsen, Charlotte Held (Intern)
Disruptive technologies in design

Department of Management Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Ernstsen, Sidsel Katrine (Intern)
Supervisor:
Larsen, Laurids Rolighed (Ekstern)
Thuesen, Christian (Intern)
Main Supervisor:
Maier, Anja (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

DronEL
The purpose of this project is to develop and bring to market an aerial drone based automated solution (DronEL) used for a full PV plant survey for more accurate survey in less time. The automatic drone-based inspection method combines IR, EL and PL imaging, and visual images.

Department of Photonics Engineering
Diode Lasers and LED Systems
Coding and Visual Communication
Centre of Excellence for Silicon Photonics for Optical Communications
Department of Energy Conversion and Storage
Organic Energy Materials
Aalborg University
Sky Watch
SiCon
Kenergy
Skive Kommune
Period: 01/01/2017 → 31/12/2019
Number of participants: 8
Project ID: 71001
Project participant:
Thorsteinsson, Sune (Intern)
Forchhammer, Søren (Intern)
Benatto, Gisele Alves dos Reis (Intern)
Riedel, Nicholas (Intern)
Thorseth, Anders (Intern)
Dam-Hansen, Carsten (Intern)
Mantel, Claire (Intern)
Project Manager, organisational:
Poulsen, Peter Behrensdorff (Intern)
Related projects:

PV LED ENGINE

PV BALCONY FENCE – a highly esthetic cost efficient PV integrated balcony

Activities:
7th International SpectroRadiometer Comparison (ISRC 2017)
Activities in the standardisation of light sources and spectroradiometer calibration

Publications:
QUANTIFICATION OF SOLAR CELL FAILURE SIGNATURES BASED ON STATISTICAL ANALYSIS OF ELECTROLUMINESCENCE IMAGES
Luminescence Imaging Strategies for Drone-Based PV Array Inspection
Indoor measurement of angle resolved light absorption by antireflective glass in solar panels
New Light Source Setup for Angle Resolved Light Absorption measurement of PV sample
Optimizing sensitivity of Unmanned Aerial System optical sensors for low zenith angles and cloudy conditions
Development of outdoor luminescence imaging for drone-based PV array inspection

Project

Engineering of Yeast Cell Factories for Biorefineries

Technical University of Denmark
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Chekina, Ksenia (Intern)
Supervisor:
Stovicek, Vratislav (Intern)
Main Supervisor:
Borodina, Irina (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Freeze casting to create micro-channel structures

Department of Energy Conversion and Storage
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Christiansen, Cathrine Deichmann (Intern)
Supervisor:
Nielsen, Kaspar Kirstein (Intern)
Main Supervisor:
Bjørk, Rasmus (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

From Passive to Controllable Gas Foil Bearings - Modelling & Control Design

Department of Mechanical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
von Osmanski, Alexander Sebastian (Intern)
Supervisor:
Larsen, Jon Steffen (Intern)
Main Supervisor:
Santos, Ilmar (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Innovativt design af ståldragere til kabelbårne broer
Department of Civil Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Baandrup, Mads Jacob (Intern)
Supervisor:
Olesen, John Forbes (Intern)
Sigmund, Ole (Intern)
Main Supervisor:
Poulsen, Peter Noe (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Integrated optimization of vehicle and driver scheduling in public transport
Department of Management Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 6
Phd Student:
Govinda Raja Perumal, Shyam Sundar (Intern)
Supervisor:
Lusby, Richard Martin (Intern)
Petersen, Jeanne Aslak (Ekstern)
Riis, Morten (Ekstern)
Sørensen, Kasper Stengaard (Ekstern)
Main Supervisor:
Larsen, Jesper (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Learning-based Model Predictive Control of Spray Dryers
Department of Electrical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 6
Phd Student:
Miklos, Robert (Intern)
Supervisor:
Jørgensen, John Bagterp (Intern)
Petersen, Lars Norbert (Intern)
Poulsen, Niels Kjølstad (Intern)
Utzen, Christer (Ekstern)
Main Supervisor:
Niemann, Hans Henrik (Intern)
Mechanical and photochemical stabilization of flexible organic solar cells

Department of Chemical and Biochemical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Ogliani, Elisa (Intern)
Supervisor:
Hvilsted, Søren (Intern)
Yu, Liyun (Intern)
Main Supervisor:
Skov, Anne Ladegaard (Intern)

Mechanistic approach to ocean ecology (39427)
The overarching goal of the proposed research is to develop a mechanistically underpinned, trait-based model of marine plankton ecosystems ranging across multiple trophic levels from bacteria to zooplankton. The rationale and methods and rooted in the trait-based approach developed by the Centre for Ocean Life. Zooplankton has a key role in the model, and the themes guiding model design are trait biogeography (i.e., spatio-temporal distributions of traits) and vertical material fluxes and carbon sequestration.

The work will be organized in four interlinked work packages (WPs), each guided by a particular research question. All models will be implemented in a physical setting, and WPs 1-3 represent an increasing degree of complexity from unicellular plankton in a 0D environment toward a full size-based model in 2D environment. WP1 and 2 develop the unicellular and multicellular components, WP3 the full size based model, and WP4 sets up the model for the California Current system and tests the model against field observations collected by the Zooglider and through the CalCOFI monitoring program.

The project is coordinated by DTU Aqua.

The project is funded by Gordon and Betty Moore Foundation.

National Institute of Aquatic Resources
Centre for Ocean Life
Scripps Institution of Oceanography
Period: 01/01/2017 → 30/06/2020
Number of participants: 4
Research areas: Oceanography & Marine Populations and Ecosystem Dynamics
Contact person:
Visser, Andre (Intern)
Project participant:
Andersen, Ken Haste (Intern)
Chakraborty, Subhendu (Intern)
Project Coordinator:
Kiørboe, Thomas (Intern)

Monolithic Thiol-ene Materials with Drastically Different Mechanical Properties
Department of Chemical and Biochemical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Shen, Peng (Intern)
Supervisor:
Daugaard, Anders Egede (Intern)
Main Supervisor:
Szabo, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

NOBLE - Non digestible oligosaccharides (NDOs) from food processing residues
The objective of the project is to use byproducts from the Brazilian food industry to develop non-digestible soluble fibers with specific health benefits for applications in food and feed. Non-digestible oligosaccharides (NDOs) have been established as food and feed supplements due to their beneficial effect on microbiota of the intestinal tract. NDOs vary in composition and structure depending on the source, and different NDOs also differ in their effect on the intestinal microbiota. We will take advantage of the specific properties of side streams from the Brazilian food industry to develop novel types of NDOs. We will use enzyme technology developed at Sao Paulo State University to produce the novel NDOs. The biological activity of the NDOs will be characterized by technology established and developed at the Technical University of Denmark. The research will be conducted in close collaboration with industrial partners and the project is expected to result in commercial applications that will bring food and feed with improved nutritional value on the market. The project will generate new bioactive food and feed ingredients from residues not currently utilized by the Brazilian food industry. The processing technology will be based on membrane reactors with immobilized enzymes. The technology will minimize generation of waste and minimize consumption of water and other resources. The technology developed represents in itself a major result of the project. We expect several of the NDOs developed in this project to be significantly different from currently available NDOs, due to the specific raw materials and due to our specific enzymes and process technology. The impact on human and animal health will be examined through state of the art microbiological and metagenomic analyses. In this aspect the project use nutrigenomics to analyze health aspects of novel ingredients.

For the participating universities and industries an important outcome will be a close collaboration around development of technology and products. The industries are expected to implement the research results without unnecessary delay, and the universities intend to continue and expand the collaboration around research and training of young scientists.

National Food Institute
Research Group for Gut Microbiology and Immunology
University of Sao Paolo
Period: 01/01/2017 → 30/06/2019
Number of participants: 2
oligosaccharides, enzymes
Acronym: NOBLE
Project ID: 5133-00006B
Project Manager, organisational:
Bang-Berthelsen, Iben (Intern)
Project Coordinator:
Hansen, Egon Bech (Intern)

Financing sources
Source: Public research council
Name of research programme: InnovationsFonden
Amount: 1,657,830.00 Danish Kroner
Year of approval: 2016
Project

NOPROBLEM - Novel tasty dairy products obtained through intelligent resource management
Diacetyl, an important contributor to the butty aroma of many fermented dairy products, is formed by lactic acid bacteria present in the starter culture. Mesophilic starters are efficient producers of diacetyl, but are unsuited for production of certain harder cheeses, because of the high temperatures needed to attain cheese firmness. Such cheeses are made using thermophilic starters, that unfortunately are poor diacetyl formers, and taste is thus compromised (pers. comm. Søren Lillevang, Arla Foods). Besides the butter flavour content, another important factor is butter flavour formation rate. There are several cheese products where butter flavour is formed very slowly, in the course of several weeks of storage, and for some dairy products, technical issues limit butter flavor formation. In the current project we wish to address these issues while at the same time create value from processed whey streams that currently are discarded as pig-feed. 1) We
want to make the mesophilic starter more thermotolerant, so that it can be used for making harder cheese variants. 2) Produce diacetyl from whey side-streams which can be added to various dairy products/sold. One way to make the mesophilic starter more thermotolerant is through adaptive evolution, an approach we previously have used with great success (Chen et al., 2015), and which will be applied in this project as well. We have optimized one of the starter culture bacteria into being extremely efficient at producing diacetyl from sugar (Liu et al., 2016). To attain a rich buttery flavor in dairy products, less than <10 mg/kg is needed. Our strain can generate 5-10 g/l under non-optimized conditions. This strain as well as its non-GMO version (to be constructed) will be used in the current project.

National Food Institute
Research Group for Microbial Biotechnology and Biorefining
Arla Foods
Arla Foods Ingredients Group P/S
Period: 01/01/2017 → 30/06/2020
Number of participants: 2
food, aroma
Acronym: NOPROBLEM
Project Manager, organisational:
Bang-Berthelsen, Iben (Intern)
Project Coordinator:
Solem, Christian (Intern)

Financing sources
Source: Public research council
Name of research programme: Innovation Fund Denmark
Amount: 5,629,948.00 Danish Kroner
Year of approval: 2016

Nuutaq: New concept for production of cod in Greenland - Best-practice with focus on quality and sustainability
National Food Institute
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Sørensen, Jonas Steenholdt (Intern)
Supervisor:
Bøknæs, Niels (Intern)
Jessen, Flemming (Intern)
Main Supervisor:
Dalgaard, Paw (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Optical Monitoring of Zooplankton
Department of Photonics Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Nielsen, Josefine Holm (Intern)
Supervisor:
Pedersen, Christian (Intern)
Prangsma, Jord (Ekstern)
Main Supervisor:
Rodrigo, Peter John (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

**Optimised Combinatorial Construction using Algorithms (OCCA)**

Department of Management Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Kollsker, Torkil (Intern)
Supervisor:
Røpke, Stefan (Intern)
Stolpe, Mathias (Intern)
Main Supervisor:
Stidsen, Thomas Jacob Riis (Intern)

**Financing sources**
Source: Internal funding (public)

---

**Optimization of favour formation in hard cheeses**

Hard cheeses are normally made using thermophilic starters because of the high cooking temperatures (>39°C) involved. Mesophilic starters cannot presently be used because the high temperature would affect the subsequent acidification and flavor formation. Thermophilic starters tolerate the high temperature, but are unable to produce some of the desirable flavor compounds produced by their mesophilic counterparts. In this project we wish to study whether this problem can be solved by changing process parameters and/or starter so that harder cheeses can be made using mesophilic starters.

National Food Institute
Research Group for Microbial Biotechnology and Biorefining
Arla Foods
Arla Foods Ingredients Group P/S
Period: 01/01/2017 → 21/12/2019
Number of participants: 1
Project Coordinator:
Solem, Christian (Intern)

**Financing sources**
Source: Public research council
Name of research programme: The Danish Dairy Research Foundation
Amount: 2,824,000.00 Danish Kroner

---

**Pre-clinical exploration of cancer neoepitope immunotherapy**

Department of Bio and Health Informatics
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Jappe, Emma Christine (Intern)
Supervisor:
Kringelum, Jens Vindahl (Intern)
Main Supervisor:
Nielsen, Morten (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD
Quantity of Interest Tomography
Department of Applied Mathematics and Computer Science
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Jensen, Bjørn Christian Skov (Intern)
Supervisor:
Adesokan, Bolaji James (Intern)
Andersen, Martin Skovgaard (Intern)
Main Supervisor:
Knudsen, Kim (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Surface engineering of Fe-C coatings
Department of Mechanical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Nielsen, Jacob Obitsø (Intern)
Supervisor:
Møller, Per (Intern)
Main Supervisor:
Pantleon, Karen (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Sustainable Catalytic Alcohol Synthesis from Hydrogen and Carbon Dioxide
Department of Chemical and Biochemical Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Schumann, Max (Intern)
Supervisor:
Grunwaldt, Jan-Dierk (Intern)
Jensen, Anker Degn (Intern)
Main Supervisor:
Christensen, Jakob Munkholt (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

The invasive round goby in Danish waters: Investigations of depth distributions in relation to a targeted, efficient fishery after the species for human consumption (39402)
Round goby is an invasive benthic fish, native to the Ponto-Caspian region. It has on several occasions been introduced to the Baltic region, and is now widespread here, with established populations in many areas. In some areas it dominates the local fish fauna, having out-competed native, and often commercially important, fish species.

Round goby is generally referred to as a coastal, shallow-water species. Yet, when temperatures drop at the onset of winter, the fish disappear from the shallow, cool waters, presumably to migrate to deeper, water waters. How deep they go, and how the onset of migration to deeper waters may relate to temperature (and hence season) however remains unknown. This information is nevertheless imperative in an evaluation of when, at what depths, and with what type of gear
a potential targeted fishery after round goby should occur.

The present project will use all available national and international survey data throughout the Baltic region to map depths distributions of round goby, and analyze the correlations between depth distributions and temperature.

The project is coordinated by DTU Aqua.

The project is funded by Direktør J.P. A. Espersen og hustru fru Dagny Espersens Fond.

National Institute of Aquatic Resources
Section for Marine Living Resources
Period: 01/01/2017 → 31/12/2017
Number of participants: 1
Research area: Marine Living Resources
Project Coordinator:
Behrens, Jane (Intern)

---

Theoretical investigations of the sudden death process in metal-air batteries

Department of Energy Conversion and Storage
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Tygesen, Alexander Sougaard (Intern)
Supervisor:
Vegge, Tejs (Intern)
Main Supervisor:
Garcia Lastra, Juan Maria (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

---

The Statistics of Estimated Surfaces

Department of Applied Mathematics and Computer Science
Period: 01/01/2017 → 31/12/2019
Number of participants: 4
Phd Student:
Jensen, Janus Nørtoft (Intern)
Supervisor:
Bærentzen, Jakob Andreas (Intern)
De Chiffre, Leonardo (Intern)
Main Supervisor:
Aanæs, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

---

Tools for Reliable Energy Performance Characterisation of Buildings

Department of Applied Mathematics and Computer Science
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Rasmussen, Christoffer (Intern)
Supervisor:
Rode, Carsten (Intern)
Main Supervisor:
Madsen, Henrik (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Wind turbine dynamics**
Department of Wind Energy
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Gözcü, Ozan (Intern)
Supervisor:
Hansen, Anders Melchior (Intern)
Main Supervisor:
Hansen, Morten Hartvig (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: DTU-stipendium
Project: PhD

**Risikovurdering af planter og andre råvarer fra den danske natur i forhold til anvendelse som fødevarer samt videnskabelig og populær formidling af den indsamlede viden**
National Food Institute
Research Group for Risk-Benefit
Division of Risk Assessment and Nutrition
Period: 31/12/2016 → 31/01/2018
Number of participants: 5
Project participant:
Pilegaard, Kirsten (Intern)
Ravn-Haren, Gitte (Intern)
Eriksen, Folmer Damsted (Intern)
Olesen, Pelle Thonning (Intern)
Egebjerg, Mikael Mandrup (Intern)

**Financing sources**
Source: Other public support (public)
Name of research programme: Miljø- og Fødevareministeriet
Year of approval: 2016
Project

**Innogy Idealab - Dashboard for evaluation of an ideation platform**
The purpose of the project is to support the development of a dashboard for the evaluation (measurement of outcomes) of an idea generation platform, i.e., Idealab by Innogy.

Department of Management Engineering
Management Science
Implementation and Performance Management
innogy
Period: 21/12/2016 → 21/12/2017
Number of participants: 1
Project ID: 82058
Project participant:
Nardelli, Giulia (Intern)
**Advanced neutron imaging of energy devices in 2D and 3D**

Department of Energy Conversion and Storage  
Period: 15/12/2016 → 14/12/2019  
Number of participants: 4  
Phd Student: Lacatusu, Monica-Elisabeta (Intern)  
Supervisor: Schmidt, Søren (Intern)  
Strobl, Markus (Ekstern)  
Main Supervisor: Kuhn, Luise Theil (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

---

**Biomedical Signal Processing for Improved Diagnosis of Sleep Disorders and Brain Diseases**

Department of Electrical Engineering  
Period: 15/12/2016 → 14/12/2019  
Number of participants: 4  
Phd Student: Olesen, Alexander Neergaard (Intern)  
Supervisor: Jennum, Poul (Ekstern)  
Mignot, Emmanuel (Ekstern)  
Main Supervisor: Sørensen, Helge Bjarup Dissing (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

---

**Conceptual research of a multi megawatt downwind turbine**

Department of Wind Energy  
Period: 15/12/2016 → 14/12/2019  
Number of participants: 5  
Phd Student: Wanke, Gesine (Ekstern)  
Supervisor: Buhl, Thomas (Intern)  
Hansen, Morten Hartvig (Intern)  
Madsen, Jens Ingemann (Ekstern)  
Main Supervisor: Larsen, Torben J. (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Industrial PhD  
Project: PhD

---

**Drug transport in in vitro intestine models**

Department of Micro- and Nanotechnology
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student: Jepsen, Morten Leth (Intern)
Supervisor: Boisen, Anja (Intern)
Nielsen, Line Hagner (Intern)
Main Supervisor: Dufva, Martin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Efficient low frequency room acoustic modelling
Department of Electrical Engineering
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student: Mondet, Boris Jean-Francois (Intern)
Supervisor: Christensen, Claus Lynge (Ekstern)
Jeong, Cheol-Ho (Intern)
Main Supervisor: Brunskog, Jonas (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Environmental sustainability assessment of the aquaculture sector at global and national scales
Department of Management Engineering
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student: Bohnes, Florence Alexia (Intern)
Supervisor: Hauschild, Michael Zwicky (Intern)
Schlundt, Jørgen (Intern)
Main Supervisor: Laurent, Alexis (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Feasibility of geothermal energy extraction from medium depth Danish limestone aquifers
Department of Civil Engineering
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student: Paci, Laura (Intern)
Supervisor: Niemi Sørensen, Stig (Ekstern)
Rocchi, Irene (Intern)
Main Supervisor:
Fabricius, Ida Lykke (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

**Genomic analysis of DNA from archived shark jaws**
National Institute of Aquatic Resources
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student:
Manuzzi, Alice (Intern)
Supervisor:
Hansen, Jakob Hemmer (Intern)
Ovenden, Jennifer (Ekstern)
Main Supervisor:
Eg Nielsen, Einar (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

**Improving the interface adherence in solid oxide fuel cell stacks**
Department of Energy Conversion and Storage
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student:
Ritucci, Ilaria (Intern)
Supervisor:
Agersted, Karsten (Ekstern)
Frandsen, Henrik Lund (Intern)
Main Supervisor:
Kiebach, Wolff-Ragnar (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Integration of Gas, District Heating and the Electric Power Systems - Integrated Simulation Framework**
Department of Electrical Engineering
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student:
Wang, Jiawei (Intern)
Supervisor:
You, Shi (Intern)
Zong, Yi (Intern)
Main Supervisor:
Træholt, Chresten (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Privatist
Project: PhD
Investigating the effects of barriers on fish in European streams and rivers

National Institute of Aquatic Resources
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student:
Birnie-Gauvin, Kim (Ekstern)
Supervisor:
Jepsen, Niels (Intern)
Koed, Anders (Intern)
Main Supervisor:
Aarestrup, Kim (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Investigations on deep UV and NIR transitions in feldspars for novel applications in luminescence dosimetry

Department of Physics
Period: 15/12/2016 → 14/12/2019
Number of participants: 3
Phd Student:
Kumar, Raju (Intern)
Supervisor:
Kook, Myung Ho (Intern)
Main Supervisor:
Jain, Mayank (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

mid-IR Si Photonic Chips for Optical Interconnects

Department of Photonics Engineering
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student:
Hui, Tak Lok (Intern)
Outdoor Sound Propagation and Monitoring for Sound Field Control Applications

Department of Electrical Engineering
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student:
Nozal, Diego Caviedes (Intern)
Supervisor:
Agerkvist, Finn T. (Intern)
Fernandez Grande, Efren (Intern)
Main Supervisor:
Brunskog, Jonas (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Productivity and agglomeration

Department of Management Engineering
Period: 15/12/2016 → 14/12/2019
Number of participants: 3
Phd Student:
Pedersen, Jesper Hybel (Intern)
Supervisor:
Mulalic, Ismir (Intern)
Main Supervisor:
Fosgerau, Mogens (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Reproductive Physiology of Female European Eel

National Institute of Aquatic Resources
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student:
Jørgensen, Michelle Grace Pinto (Intern)
Supervisor:
Kjørsvik, Elin (Ekstern)
Eg Nielsen, Einar (Intern)
Main Supervisor:
Tomkiewicz, Jonna (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Solid oxide fuel cells and biogas
Department of Energy Conversion and Storage
Period: 15/12/2016 → 14/12/2019
Number of participants: 3
Phd Student:
Langnickel, Hendrik (Intern)
Supervisor:
Olsen, Rasmus (Ekstern)
Main Supervisor:
Hagen, Anke (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Sound field control for outdoor concerts
Department of Electrical Engineering
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student:
Heuchel, Franz Maria (Intern)
Supervisor:
Brunskog, Jonas (Intern)
Fernandez Grande, Efren (Intern)
Main Supervisor:
Agerkvist, Finn T. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

THz-enabled electron emission devices
Department of Photonics Engineering
Period: 15/12/2016 → 14/12/2019
Number of participants: 4
Phd Student:
Lange, Simon Lehnskov (Intern)
Supervisor:
Broeng, Jes (Intern)
Iwaszczuk, Krzysztof (Intern)
Main Supervisor:
Jepsen, Peter Uhd (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Homology to peptide pattern for annotation of carbohydrate-active enzymes and prediction of function
Department of Chemical and Biochemical Engineering
Center for BioProcess Engineering
Period: 14/12/2016 → …
Number of participants: 5
**Development of biorefineries using brewer’s spent grains as feedstock**

Novo Nordisk Foundation Center for Biosustainability

Research Groups

Biomass Conversion and Bioprocess Technology

Period: 14/12/2016 → ...

Number of participants: 2

brewer's spent grains, biorefinery, proteins, extraction, fermentation, bioconversion

Acronym: BSG Refinery

Project participant:

Qin, Fen (Intern)

Project Coordinator:

Mussatto, Solange I. (Intern)

**Financing sources**

Source: Internal funding (public)

Name of research programme: -

Year of approval: 2016

Project

**Bioprocess development using non-conventional yeasts and biomass hydrolysates**

Novo Nordisk Foundation Center for Biosustainability

Research Groups

Biomass Conversion and Bioprocess Technology

Period: 14/12/2016 → ...

Number of participants: 2

fermentation, hydrolysate, biomass, non-conventional yeasts, pentoses, stress conditions

Project participant:

Yamakawa, Celina Kiyomi (Intern)

Project Coordinator:

Mussatto, Solange I. (Intern)

**Financing sources**

Source: Internal funding (public)

Name of research programme: -

Year of approval: 2016

Project

**H2020-Shift2Rails-Start-up activities for Advanced Signalling and Automation Systems**

Department of Photonics Engineering

Networks Technology and Service Platforms

Period: 01/12/2016 → 31/12/2018

Number of participants: 2

Acronym: X2Rail-1

Project participant:

Soler, José (Intern)

Dittmann, Lars (Intern)
Big Data Analytics with special emphasis on Food Supply Chain data

Department of Applied Mathematics and Computer Science
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student: Ipsen, Niels Bruun (Intern)
Supervisor: Hansen, Lars Kai (Intern)
Main Supervisor: Ersbøll, Bjarne Kjær (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Bycatch of seabirds in Danish gillnet fisheries - assessing scale and testing mitigation

National Institute of Aquatic Resources
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student: Glemarec, Gildas (Intern)
Supervisor: Kindt-Larsen, Lotte (Intern)
Main Supervisor: Larsen, Finn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Characterized Parts Libraries & Pathway Evolver

Technical University of Denmark
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student: Petersen, Søren Dalsgård (Intern)
Supervisor: Hillson, Nathan J. (Ekstern)
Keasling, Jay (Intern)
Main Supervisor: Jensen, Michael Krogh (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Circular Economy: Integrated sustainability assessment of resource recovery and cycling

Department of Environmental Engineering
Period: 01/12/2016 → 10/04/2020
Number of participants: 3
Phd Student: Andreasi Bassi, Susanna (Intern)
Supervisor:
Boldrin, Alessio (Intern)
Main Supervisor:
Astrup, Thomas Fruegaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Circular Economy: Life cycle assessment of chemicals in material cycles
Department of Environmental Engineering
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student:
Xanthopoulou, Larisa (Intern)
Supervisor:
Baun, Anders (Intern)
Main Supervisor:
Astrup, Thomas Fruegaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Computer Vision for Flexible Automation
Department of Applied Mathematics and Computer Science
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student:
Hannemose, Morten (Intern)
Supervisor:
Savarimuthu, Thusius Rajeeth (Ekstern)
Wilm, Jakob (Intern)
Main Supervisor:
Frisvad, Jeppe Revall (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Cultivation potential of brown and red macroalgae species integrated with open Salmond fish Aquaculture
National Institute of Aquatic Resources
Period: 01/12/2016 → 30/11/2020
Number of participants: 5
Phd Student:
Etter, Siv Anina (Ekstern)
Supervisor:
Håndå, Alexander (Ekstern)
Olsen, Yngvar (Ekstern)
Petersen, Jens Kjerulf (Intern)
Main Supervisor:
Petersen, Jens Kjerulf (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Cultivation potential of brown and red macroalgae species integrated with open Salmond fish Aquaculture

National Institute of Aquatic Resources
Period: 01/12/2016 → 30/11/2020
Number of participants: 5
Phd Student:
Etter, Siv Anina (Intern)
Supervisor:
Håndå, Alexander (Ekstern)
Olsen, Yngvar (Ekstern)
Reitan, Kjell Inge (Ekstern)
Main Supervisor:
Petersen, Jens Kjerulf (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Development of Strategies for Efficient Water Usage for Production of Safe Fresh and Ready-to-eat Seafood Products in Remote Communities

National Food Institute
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student:
Hvitved, Annemette (Intern)
Supervisor:
Jensen, Pernille Erland (Intern)
Main Supervisor:
Hansen, Lisbeth Truelstrup (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Efficient Operation of Energy Grids

Department of Applied Mathematics and Computer Science
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student:
Banis, Frederik (Intern)
Supervisor:
Guericke, Daniela (Intern)
Madsen, Henrik (Intern)
Main Supervisor:
Poulsen, Niels Kjølstad (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Exploration of knowledge sharing mechanism in maritime innovation networks

Department of Management Engineering
Exploring the Molecular Basis of Glycan Utilization by Health Relevant Members of the Human Gut Microbiota

Department of Systems Biology
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student: Pichler, Michael Jakob (Intern)
Supervisor: Westereng, Bjørge (Ekstern)
Main Supervisor: Abou Hachem, Maher (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Fabrication and Magnetic characterization of layered structures by means of election holography

Department of Physics
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student: Hyllested, Jes Ærøe (Intern)
Supervisor: Jensen, Flemming (Intern)
Wagner, Jakob Birkedal (Intern)
Main Supervisor: Kasama, Takeshi (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Formal methods for Secure Trust Infrastructures

Department of Applied Mathematics and Computer Science
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student: Birkedal, Rasmus (Intern)
Supervisor: Lluch Lafuente, Alberto (Intern)
Main Supervisor: Mödersheim, Sebastian Alexander (Intern)
Generic open science data platform for surveillance, exposure assessment and risk analysis

National Food Institute
Period: 01/12/2016 → 10/02/2020
Number of participants: 5
Phd Student:
Backhaus, Liv Louise Victoria (Intern)
Lund, Ole (Intern)
Pamp, Sünje Johanna (Intern)
Vigre, Håkan (Intern)
Main Supervisor:
Aarestrup, Frank Møller (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Impact of low-grade inflammation on influenza

National Veterinary Institute
Period: 01/12/2016 → 30/11/2019
Number of participants: 5
Phd Student:
Starbæk, Sofie Maiken Riisgård (Intern)
Heegaard, Peter Mikael Helweg (Intern)
Jungersen, Gregers (Intern)
Larsen, Lars Erik (Intern)
Main Supervisor:
Skovgaard, Kerstin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Impedance calibration and measurement techniques in hearing diagnostics

Department of Electrical Engineering
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student:
Nørgaard, Kren Rahbek (Intern)
Laugesen, Søren (Intern)
Laugesen, Søren (Intern)
Main Supervisor:
Fernandez Grande, Efren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD
Integrating operational knowledge in design of energy efficient facilities
Department of Management Engineering
Period: 01/12/2016 → 30/11/2019
Number of participants: 5
Phd Student: 
Rasmussen, Helle Lohmann (Intern)
Supervisor:
Gregg, Jay Sterling (Intern)
Hartmann, Tanja Schou (Ekstern)
Jakobsen, Arne (Intern)
Main Supervisor:
Jensen, Per Anker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Lean Risk Management in Engineering Projects
Department of Management Engineering
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student: 
Willumsen, Pelle Lundquist (Intern)
Supervisor:
Welo, Torgeir (Ekstern)
Main Supervisor:
Oehmen, Josef (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Life cycle assessment modelling of advanced (bio)energy technologies
Department of Environmental Engineering
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student: 
Lodato, Concetta (Intern)
Supervisor:
Tonini, Davide (Intern)
Main Supervisor:
Astrup, Thomas Fruergaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Mechanisms of action involved in chemically-induced effects on male reproductive health
National Food Institute
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student: 
Schwartz, Camilla Victoria Lindgren (Intern)
Supervisor:
Svingen, Terje (Intern)
Main Supervisor:
Vinggaard, Anne Marie (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

**Optimal and holistic implementation of central drinking water softening**
Department of Environmental Engineering
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student:
Tang, Camilla (Intern)
Supervisor:
Rygaard, Martin (Intern)
Wormslev, Erik C. (Ekstern)
Main Supervisor:
Albrechtsen, Hans-Jørgen (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

**Optimizing and refining 3D culturing of human stem cells for predictive toxicity**
National Food Institute
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student:
Lauschke, Karin (Intern)
Supervisor:
Emnéus, Jenny (Intern)
Taxvig, Camilla (Intern)
Main Supervisor:
Vinggaard, Anne Marie (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Piscine orthoreovirus in salmonids: geographic distribution, molecular characterization, pathogenesis under experimental conditions**
National Veterinary Institute
Period: 01/12/2016 → 30/11/2019
Number of participants: 3
Phd Student:
Vendramin, Niccolò (Intern)
Supervisor:
Rimstad, Espen (Ekstern)
Main Supervisor:
Olesen, Niels Jørgen (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
**Protein sorting in pathogenic unicellular eukaryotes**

Department of Bio and Health Informatics  
**Period:** 01/12/2016 → 30/11/2019  
**Number of participants:** 3  
**Phd Student:** Almagro Armenteros, Jose Juan (Intern)  
**Supervisor:** Winther, Ole (Intern)  
**Main Supervisor:** Nielsen, Henrik (Intern)

**Financing sources**  
**Source:** Internal funding (public)  
**Name of research programme:** Institut stipendie (DTU)  
**Project:** PhD

**Stability of Tungsten Plates during High Temperatures**

Department of Mechanical Engineering  
**Period:** 01/12/2016 → 30/11/2019  
**Number of participants:** 3  
**Phd Student:** Ciucani, Umberto Maria (Intern)  
**Supervisor:** Luo, Guangnan (Ekstern)  
**Main Supervisor:** Pantleon, Wolfgang (Intern)

**Financing sources**  
**Source:** Internal funding (public)  
**Name of research programme:** Anden EU-finansiering  
**Project:** PhD

**The Protein Corona of Liposomes for Drug Delivery**

Department of Micro- and Nanotechnologhy  
**Period:** 01/12/2016 → 30/11/2019  
**Number of participants:** 4  
**Phd Student:** Lassen, Rasmus Mikkel Münter (Intern)  
**Supervisor:** Kristensen, Kasper (Intern)  
**Main Supervisor:** Simonsen, Jens Bæk (Intern)  
**Main Supervisor:** Andresen, Thomas Lars (Intern)

**Financing sources**  
**Source:** Internal funding (public)  
**Name of research programme:** Institut stipendie (DTU)  
**Project:** PhD

**A Traceable 3D Scanning and Reconstruction Pipeline**

Department of Applied Mathematics and Computer Science  
**Period:** 15/11/2016 → 14/11/2019  
**Number of participants:** 3  
**Phd Student:** Gawrilowicz, Florian (Intern)
Measurements and modelling of Arctic coastal environments

National Space Institute
Period: 15/11/2016 → 14/11/2019
Number of participants: 4
PhD Student:
Monteban, Dennis (Intern)
Supervisor:
Ingeman-Nielsen, Thomas (Intern)
Lubbad, Raed (Ekstern)
Main Supervisor:
Pedersen, Jens Olaf Pepke (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Modelling of renewable energy under stressed power system stability conditions

Department of Wind Energy
Period: 15/11/2016 → 14/11/2019
Number of participants: 5
PhD Student:
Sarkar, Moumita (Intern)
Supervisor:
Altin, Müfit (Intern)
Hansen, Anca Daniela (Intern)
Jóhannsson, Hjörtur (Intern)
Main Supervisor:
Sørensen, Poul Ejnar (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Neutrals in the East Sol/Edge region and their impact on plasma operation

Department of Physics
Period: 15/11/2016 → 24/01/2020
Number of participants: 3
PhD Student:
Sindbjerg Poulsen, Aslak (Intern)
Supervisor:
Li, Jiangang (Ekstern)
Main Supervisor:
Naulin, Volker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Optimized utilization of transmission grid capacity - Dynamic rating versus grid performance

Department of Electrical Engineering
Period: 15/11/2016 → 14/11/2019
Number of participants: 3
Phd Student:
Viafora, Nicola (Intern)
Supervisor:
Kristensen, Anders Steen (Ekstern)
Main Supervisor:
Holbøll, Joachim (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Targeted adjuvant delivery to antigen presenting cells

Department of Micro- and Nanotechnology
Period: 15/11/2016 → 14/11/2019
Number of participants: 3
Phd Student:
Christensen, Esben (Intern)
Supervisor:
Parhamifar, Ladan (Intern)
Main Supervisor:
Andresen, Thomas Lars (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Advanced modeling, simulation and tools integration for in-silico process design and optimization

Department of Chemical and Biochemical Engineering
CAPEC-PROCESS
Period: 01/11/2016 → ...
Number of participants: 1
Project participant:
Shibabaw Molla, Getachew (Intern)

Advanced modeling, simulation and tools integration for in-silico process design and optimization

Department of Chemical and Biochemical Engineering
CAPEC-PROCESS
Period: 01/11/2016 → ...
Number of participants: 1
Project participant:
Shibabaw Molla, Getachew (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Vind i ROSkilde
Vind i ROSkilde (VIROS) projektet vil undersøge om man kan benytte en vindkraftstrategi, som er baseret på mellemstørrelses møller under 100 m totalhøjde og som dermed kan opstilles i mange flere områder end 125-150 m møller tidligere undersøgt for Roskilde kommune. Samtidigt undersøges det, om vindmøllerne via placering og udformning kan bruges som en ’grøn’ kunst installation på lige fod med forbrændingsanlægget for derved at signalere Roskilides grønne aftryk og udvikling. VIROS kommer med tre forslag til, hvorledes lokalt placeret vindkraft kan bidrage til energiforsyningen og dermed til reduktionen af CO2-udledningen i Roskilde kommune. 1) Mellemstore møller nær infrastruktur, hvor eksempelvis 10 møller placeres langs kommunens infrastruktur i form af motorvej, jernbane eller industri, 2) Erstatning af gamle møller med mellemstore møller (repowering) og 3) Mellemstore møller placeret i landzoner. Disse forslag er i overensstemmelse med Roskilde kommunes strategiske energiplan for 2015-2020 med overvejelser for vindkraft med borgere i centrum. For at øge medjejerskabet af møllerne vil der blive arrangeret en informationsmøde i samarbejde med Roskilde Festival og Musicon, hvor interesserede partnere i kommunen vil blive inviteret. Projektet vil til sidst evaluere om en vindstrategi baseret på møller af mellemstørrelse er en mulighed for Roskilde og skitsere hvordan den i givet fald kan implementeres

Department of Wind Energy
Ground clearance and power performance v2
The influence of the hub height on the power of a wind turbine and wind farm is investigated using Computational Fluid Dynamics

Department of Wind Energy
Aerodynamic design

Dong Energy Wind Power A/S
Period: 01/11/2016 → 01/01/2017
Number of participants: 1
Project participant:
van der Laan, Paul (Intern)

Documents:
Report_Groud_Clearance_public_2017-08-31

Thermal performance of tracking concentrating solar collectors
Theoretical calculations of thermal performance of tracking concentrating solar collectors. Different locations and temperature levels are considered.

Department of Civil Engineering
Section for Building Energy
Absolicon Solar Concentrator AB
DynaStow
The use of larger vessels is increasing the planning complexity of stowage coordinators. Stowage planning main goal is to find an arrangement of the containers such that time at port is minimised. In order to do so, stowage coordinators must ensure that situations where containers going to later ports are stowed on top of containers to be discharged earlier. Such containers are called overstowing containers. A worse situation appears when overstowing containers are in between hatch-covers (metallic structures dividing the upper and lower deck). In this situation, a container terminal is forced to remove all containers above the hatch, lift the hatch itself, to then finally discharge the needed containers. Such a situation is clearly undesirable. Aside from the minimization of container moves, it is also important that the stowage plans are designed for efficient port operations. Liner shippers and container terminals, often, agree on an expected cargo handling performance (often in terms of container moves per hour). Stowage coordinators must, to the best of their ability, generate stowage plans tailored to the agreed terminal performance. This is not an easy task since cargo loaded in earlier ports can have a large negative impact on handling operations in later ports. Even though those objectives in themselves are complex to achieve, stowage coordinators also need to ensure the sea-worthiness of the vessel. Weight balance, stress forces, handling of dangerous cargo and stacking constraints are but a few examples of the rules that a stowage plan must obey. The possibility of cost reduction, by use of optimisation techniques, are not small. Consider the number of containers Maersk has moved in this year’s first quarter (ca. 2.500 thousand FFU), and assume a total of just 5% of overstowing containers. A conservative price of 60,00 USD per re-stow will result in an estimated cost of 60 mils. USD. It is easy to see that even a small percent reduction of the overstowing containers would bring savings in the order of millions.

This project has two main goals:
1. Reinforce the Danish status of being the top research country for stowage planning 2. Produce research results that can have an impact on the Danish maritime industry
Wrt. to 1) we wish to become the main authority in terms of stowage planning research in the world. Our research results so far have granted us the respect of many maritime researchers. As the main researchers on stowage planning we have the responsibility of setting the correct research standard. The amount of knowledge on stowage planning of the applicants and of the Danish maritime industry places Denmark in a unique position to do so. Wrt. 2) we believe that applied research must have an impact. We, therefore, have engaged in a partnership with Optivation, and through them, Seago Line (part of the Maersk consortium), to help us in guiding the project toward solutions tailored for the industry.

Department of Management Engineering
Management Science
Transport DTU
Period: 01/11/2016 → 30/09/2017
Number of participants: 3
Acronym: DynaStow
Project participant:
Larsen, Rune (Intern)
Roberti, Roberto (Intern)
Project Manager, academic:
Pacino, Dario (Intern)
Project

Fuldautomatisk decentral rensning af partikler i regnbetingede udledninger
Department of Environmental Engineering
Urban Water Systems
Water Technologies
Teknologisk Institut
HydroSystems
Period: 01/11/2016 → 31/10/2018
Number of participants: 6
Acronym: FUPARU
Project participant:
Nielsen, Katrine (Intern)
Mikkelsen, Peter Steen (Intern)
Andersen, Henrik Rasmus (Intern)
Vezzaro, Luca (Intern)
Borup, Morten (Intern)
Chhetri, Ravi Kumar (Intern)

Activation and Migration characteristics of mucosal dendritic cell subsets
National Veterinary Institute
Period: 01/11/2016 → 31/10/2019
Number of participants: 3
Phd Student:
Garcia Lopez, Agnes (Intern)
Supervisor:
Bekiarias, Vasileios (Intern)
Main Supervisor:
Lahl, Katharina (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Analysis of reservoir water samples and injected sea water for enhanced oil recovery
Department of Chemistry
Period: 01/11/2016 → 31/10/2019
Number of participants: 3
Phd Student:
Nitsche Gottfredsen, Sofie (Intern)
Supervisor:
Yan, Wei (Intern)
Main Supervisor:
Feilberg, Karen Louise (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Architecture acoustics: an improved design process using integrated hybrid room acoustic simulations
Department of Electrical Engineering
Period: 01/11/2016 → 31/10/2019
Number of participants: 4
Phd Student:
Pind Jörgensson, Finnur Kári (Intern)
Supervisor:
Engsig-Karup, Allan Peter (Intern)
Strømann-Andersen, Jakob Bjørn (Intern)
Main Supervisor:
Jeong, Cheol-Ho (Intern)
**Biomarkers for prognosis and prediction of childhood ALL treatment outcome**

Department of Bio and Health Informatics  
Period: 01/11/2016 → 31/10/2019  
Number of participants: 5  
Phd Student: Nielsen, Rikke Linnemann (Intern)  
Supervisor: Pedersen, Anders Gorm (Intern)  
Schmiegelow, Kjeld (Ekstern)  
Wang, Xiujie (Ekstern)  
Main Supervisor: Gupta, Ramneek (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Industrial PhD  
Project: PhD

**Efficacy of multi-modal biomaterial scaffolds in a lab-on-a-chip model of Parkinson's Diseases**

Department of Micro- and Nanotechnology  
Period: 01/11/2016 → 31/10/2019  
Number of participants: 3  
Phd Student: Kajtez, Janko (Intern)  
Supervisor: Heiskanen, Arto (Intern)  
Main Supervisor: Emnéus, Jenny (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**Metagenomic Data Stratified using Artificial Intelligence**

Department of Bio and Health Informatics  
Period: 01/11/2016 → 31/10/2019  
Number of participants: 3  
Phd Student: Nissen, Jakob Nybo (Intern)  
Supervisor: Nielsen, Morten (Intern)  
Main Supervisor: Sicheritz-Pontén, Thomas (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Marie Curie (EU-stipendium)  
Project: PhD

**New approaches to chemical recovery and chelation of underdeveloped radiometals and application of their novel bioconjugates to PET**

Department of Chemistry
New Multi-Modal Registration Methods: Application in Fetal Image Reconstruction

Department of Applied Mathematics and Computer Science
Period: 01/11/2016 → 31/10/2019
Number of participants: 4
Phd Student:
Engberg, Astrid Margareta Elisabet (Intern)
Supervisor:
Cuadra, Meritxell Bach (Ekstern)
Thiran, Jean-Philippe (Ekstern)
Main Supervisor:
Van Leemput, Koen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Novel Anodes for Solid Oxide Fuel Cells

Department of Energy Conversion and Storage
Period: 01/11/2016 → 31/10/2019
Number of participants: 4
Phd Student:
Drasbæk, Daniel Beogh (Intern)
Supervisor:
Sudireddy, Bhaskar Reddy (Intern)
Traulsen, Marie Lund (Intern)
Main Supervisor:
Holtappels, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Novel Cobalt Free Oxygen Electrodes for Solid Oxide Electrolysis Cells

Department of Energy Conversion and Storage
Period: 01/11/2016 → 31/10/2019
Number of participants: 4
Phd Student:
Tong, Xiaofeng (Intern)
Supervisor:
Hendriksen, Peter Vang (Intern)
Ovtar, Simona (Intern)
Main Supervisor:
Chen, Ming (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Stipendie fra udlandet  
Project: PhD

**Phase Behavior of Inhomogeneous Fluids**  
Department of Chemical and Biochemical Engineering  
Period: 01/11/2016 → 31/10/2019  
Number of participants: 3  
Phd Student:  
Camacho Vergara, Edgar Luis (Intern)  
Supervisor:  
Liang, Xiaodong (Intern)  
Main Supervisor:  
Kontogeorgis, Georgios (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

**Plant Uptake of Environmental Chemicals**  
Department of Environmental Engineering  
Period: 01/11/2016 → 24/10/2020  
Number of participants: 4  
Phd Student:  
Jensen, Christian Kjær (Intern)  
Supervisor:  
Mikkelsen, Teis Nørgaard (Intern)  
Rein, Arno (Ekstern)  
Main Supervisor:  
Trapp, Stefan (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

**Predicting and mobilizing energy flexibility in intelligent buildings**  
Department of Electrical Engineering  
Period: 01/11/2016 → 31/10/2019  
Number of participants: 3  
Phd Student:  
Christensen, Morten Herget (Intern)  
Supervisor:  
Rønsberg, Søren (Ekstern)  
Main Supervisor:  
Pinson, Pierre (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Industrial PhD  
Project: PhD

**Production of aromatics from light alkanes using metal sulfide catalysts**  
Department of Chemistry
Quantification of trace gas emissions from waste management facilities

Department of Environmental Engineering
Period: 01/11/2016 → 31/10/2019
Number of participants: 3
Phd Student:
Duan, Zhenhan (Intern)
Supervisor:
Scheutz, Charlotte (Intern)
Main Supervisor:
Kjeldsen, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Synthetic Biology tool Development for Protein engineering and study of adaptive evolution in Bacteria

Technical University of Denmark
Period: 01/11/2016 → 31/10/2019
Number of participants: 3
Phd Student:
Lauritsen, Ida (Intern)
Supervisor:
Nielsen, Alex Toftgaard (Intern)
Main Supervisor:
Nørholm, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Transition Modeling for Wind Turbine Rotors/TRMOD

Department of Wind Energy
Period: 01/11/2016 → 31/10/2019
Number of participants: 4
Phd Student:
Özçakmak, Özge Sinem (Intern)
Supervisor:
Aagaard Madsen, Helge (Intern)
Sørensen, Jens Nørkær (Intern)
Main Supervisor:
Sørensen, Niels N. (Intern)

Financing sources
4D Seismics for Fracture Characterization

Department of Physics
Period: 15/10/2016 → 14/10/2019
Number of participants: 2
Phd Student:
Sören Dramsch, Jesper (Intern)
Main Supervisor:
Lüthje, Mikael (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Chemical & Biochemical Sustainable Process Synthesis - Intensification

Department of Chemical and Biochemical Engineering
Period: 15/10/2016 → 14/10/2019
Number of participants: 4
Phd Student:
Garg, Nipun (Intern)
Supervisor:
Gani, Rafiqul (Intern)
Kontogeorgis, Georgios (Intern)
Main Supervisor:
Woodley, John (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Design of Knowledge-Driven and Data-Driven Algorithms for Neurodegenerative Diseases

Department of Electrical Engineering
Period: 15/10/2016 → 14/10/2019
Number of participants: 3
Phd Student:
Cesari, Matteo (Intern)
Supervisor:
Jennum, Poul (Ekstern)
Main Supervisor:
Sørensen, Helge Bjarup Dissing (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Design, synthesis and development of biologically inspired polymeric nanomedicines for the treatment of advanced atherosclerosis

Department of Micro- and Nanotechnology
Period: 15/10/2016 → 14/10/2019
Number of participants: 4
Phd Student:
Basak, Suman (Intern)
Development of a Raman spectroscopy based control system for the U-Loop fermentor

Department of Chemical and Biochemical Engineering
Period: 15/10/2016 → 14/10/2019
Number of participants: 4
Phd Student:
Petersen, Leander Adrian Haaning (Intern)
Supervisor:
Christensen, Ib (Ekstern)
Eliasson Lantz, Anna (Intern)
Main Supervisor:
Gernaey, Krist V. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Investigations of high speed neutral particle injection into K-STAR plasmas

Department of Physics
Period: 15/10/2016 → 14/10/2019
Number of participants: 3
Phd Student:
Avdeeva, Galina (Ekstern)
Supervisor:
Choe, Wonho (Ekstern)
Main Supervisor:
Naulin, Volker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
Metrology for electrical characterization of advanced materials
Department of Micro- and Nanotechnology
Period: 15/10/2016 → 14/10/2019
Number of participants: 4
Phd Student:
Kalhauge, Kristoffer Gram (Intern)
Supervisor:
Hansen, Ole (Intern)
Jepsen, Peter Uhd (Intern)
Main Supervisor:
Petersen, Dirch Hjorth (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Modelling of Hydraulic Fracturing
Department of Mechanical Engineering
Period: 15/10/2016 → 14/10/2019
Number of participants: 4
Phd Student:
Lynggaard, Julie (Intern)
Supervisor:
Andreasen, Casper Schousboe (Intern)
Jørgensen, Ole (Intern)
Main Supervisor:
Niordson, Christian Frithiof (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Novel testing methods for intumescent coating
Department of Chemical and Biochemical Engineering
Period: 15/10/2016 → 14/10/2019
Number of participants: 3
Phd Student:
Zeng, Ying (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Main Supervisor:
Kiil, Søren (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Risk-based inspection Planning and Value of Information
Department of Civil Engineering
Period: 15/10/2016 → 14/10/2019
Number of participants: 4
Phd Student:
Agusta, Arifian (Ekstern)
Supporting the development of robust and comparable mitigation actions through the Mitigation Action Assessment Protocol.

The World Bank has developed the Mitigation Action Assessment Protocol (MAAP) tool, aimed at achieving transparency in how mitigation actions (MA) are designed and how they compare in terms of mitigation value. The long-term goal is to have the MAAP serve as an internationally accepted system for assessing how MA are robust and ambitious enough to contribute to achieving the mitigation targets of their relevant jurisdiction, and eventually, the trade potential and exchangeability of carbon credits. As an expansion of the MAAP tool and due to the fact that many MA that are planned to contribute to countries Nationally Determined Contributions still are at the design stage, the World Bank is in the process of developing the MAAP-Design, aimed at assessing MA at design stage. The MAAP-Design will therefore be an important tool to assess how MA at the design stage are robust and ambitious enough to contribute to the achievement of NDC goals, and national and regional climate and development strategies. In addition, in spite of numerous available MA designs, the number of implemented actions falls short of the expected and needed level of implementation. This has been attributed to a mismatch between the design of MA and expected design standards of international financiers, leading to a backlog in disbursement of readily available funds. Therefore, the MAAP-Design will also enable practitioners to compare their MA design with existing good practices, and will allow financiers to access pre-assessed quality MAs.
UDP will review the MAAP-Design and provide suggestions on how the tool can be more attuned to the design phase of mitigation actions (MAs). The peer review will be based on UDP's extensive knowledge and capacity building support on mitigation actions (MA) in developing countries. The MAAP tool and MAAP-Design will be piloted in an independent approach on 20 MAs, both at design and implementation stage. Out of the 20 MA, 5 will be selected for a full assessment including coordination and site visits with the country's MA representative. This initial product will be used to showcase the MAAP tool and MAAP-Design's utility through a set of outreach activities based on UDP's extensive network of partner countries and institutions, and on specific events in coordination with the World Bank. The outreach activities will also serve as a donor outreach process with the aim to fund future activities to develop and maintain a Mitigation Actions Database based on MA assessed through the MAAP tool, and to increase the MAAP Tool's application, ease of access and visibility.

Further, dependent on the donor outreach phase's success, UDP proposes to apply the tool to a selection of 50 MAs. Lastly, to increase the tool's utility and visibility, UDP proposes to create and maintain a database of MAs assessed with the MAAP tool and MAAP-Design and make the information publicly available in a user-friendly design on a dedicated website.

The following specifies how UDP intends to carry out the three tasks described in the Terms of Reference:
1. Support the development of a version of the MAAP Tool aimed at assessing mitigation actions at the design stage.
2. Design and implement an independent assessment process for mitigation actions using the MAAP Tool.
3. Enhance the comparability of mitigation actions by providing the relevant information to different stakeholders in the form of a publicly available database.

Department of Management Engineering
UNEP DTU Partnership
Period: 12/10/2016 → 30/12/2016
Number of participants: 1
Project Manager, organisational:
CANU, FEDERICO ANTONIO (Intern)

Design and operation optimization of constructed wetlands at rainbow trout farms (39430)
This project aims at improving the design and operation of constructed wetlands with respect to the removal of waste nutrients and organic matter deriving from model trout farm systems type I and III.

The project contains five work packages:
1. Selection of representative fish farms to be part of a user group and where testing and measurements will be carried out
2. Mapping and characterization of selected wetlands
3. Measuring the effects of flow velocity, water column depth, and hydraulic retention time on the removal of nutrients and organic matter
4. Data analysis
5. Project management, administration and dissemination of results.

The projects is coordinated by

The project is funded by Ministry of Environment and Food of Denmark and the European Maritime and Fisheries Fund (EMFF)

National Institute of Aquatic Resources
Section for Aquaculture
Danish Aquaculture Association
Period: 06/10/2016 → 11/01/2019
Number of participants: 3
Research area: Aquaculture
Project participant:
Pedersen, Per Bovbjerg (Intern)
Dalsgaard, Anne Johanne Tang (Intern)
von Ahnen, Mathis (Intern)

System solutions for demand-control and continuous-commissioning of room-based ventilation in dwellings
The objective of the project is to develop solutions for demand-control and continuous-commissioning of room-based ventilation in dwellings. The system will extend ventilation units with various sensors and wireless communication. The project will synergize monitoring and control of indoor climate to enable new investment models. Online monitoring will ensure that systems work as intended throughout their lifetime. The project will enable broad deployment by removing financial and structural barriers and will ensure optimal performance.
The project will target building owners, administrators, tenants and energy-service companies that seek a model for investment, installation and operation of effective ventilation systems. The system will add the most value for the tenant, who will experience personal controls, reduce or maintain their energy bill, improve sleep quality, avoid moisture issues, minimize pollutants and reduce discomfort due to over-heating. These items would address common issues in renovated buildings. The added value for the tenant implies a better product for building owners and administrators through higher rent and lower tenant turnover. Continuous commissioning would ensure greater longevity of the ventilation systems and building constructions, which would add future value for building owners.

Department of Civil Engineering

Section for Building Energy

Period: 01/10/2016 → 30/09/2019
Number of participants: 2
Acronym: RoomVent-Solutions
Number of related Ph.D. students: 0
Project participant:
Smith, Kevin Michael (Intern)

Project Coordinator:
Kolarik, Jakub (Intern)

IEA Task 55 Large scale solar district heating and cooling systems
Investigations on large solar heating plants

Department of Civil Engineering

Section for Building Energy

Solar Key Int.

Aalborg CSP
Period: 01/10/2016 → 31/12/2018
Number of participants: 4
Acronym: IEA Task 55
Project participant:
Furbo, Simon (Intern)
Perers, Bengt (Intern)
Tian, Zhiyong (Intern)
Huang, Junpeng (Intern)

Project

Supercontinuum broadband light sources covering UV to IR applications
SUPUVIR is the acronym for SUPercontinuum broadband light sources covering UV to IR applications. SUPUVIR will combine the efforts of 6 academic and 4 non-academic beneficiaries to train 15 early-stage researchers (ESRs) for the growing industry within SC broadband light sources, giving them extensive knowledge in silica and soft-glass chemistry, preform design and fibre drawing, linear and nonlinear fibre and waveguide characterization, nonlinear fibre optics, SC modelling, SC system design, patent protection, and in-depth knowledge of a broad range of the main applications of SC high-power broadband light sources. The strong blend of academic and non-academic sectors in the Consortium will give the ESRs a unique chance to develop a wide set of technical and transferrable skills, thus preparing them for long-time employment in the academic and industrial sectors.

Scientifically, SUPUVIR aims at solving current challenges preventing SC light sources from taking over key market shares or from being used for cutting-edge research. Specifically, the objectives are to reduce noise and increase pulse energy of SC modules, as well as investigate SC generation in emerging wavelength regimes (UV and mid-IR) including fabrication of novel fibres and waveguides, and finally using SC sources for applications as to gain valuable knowledge of application requirements. This research and development will provide improved SC sources and SC spectra, enabling new science and applications for optical imaging, spectroscopy, sensing and control. Specific fields benefiting from this include optical coherence tomography, IR multimodal spectroscopy, confocal and fluorescence microscopy, photoacoustic imaging, and food quality control.

Department of Photonics Engineering

Ultrafast Infrared and Terahertz Science
Fiber Sensors and Supercontinuum Generation

Administration
Period: 01/10/2016 → 30/09/2020
Number of participants: 3
Supercontinuum broadband light sources, UV to IR applications, silica and soft-glass chemistry, preform design and fibre drawing, linear and nonlinear fibre and waveguide characterization, nonlinear fibre optics, SC modelling, SC system design
Acronym: SUPUVIR
Number of related Ph.D. students: 15
Contact person:
Reippuert, Mie (Intern)
Project participant:
Bache, Morten (Intern)
Bang, Ole (Intern)

Financing sources
Source: EU research programme (public)
Name of research programme: H2020-MSCA-ITN-2016
Amount: 4,017,699.36 Euro
Year of approval: 2016

Multimodal, Functional Bio-Photonic Imaging
Department of Photonics Engineering
Diode Lasers and LED Systems
Technical University of Munich
Medical University of Vienna
Eindhoven University of Technology
Ecole Polytechnique Federale de Lausanne (EPFL)
NKT Photonics A/S
Femtolasers Produktion GmbH
Philips Electronics Nederland B.V.
EKSPLA UAB
iThera Medical GmbH
Period: 01/10/2016 → 01/10/2020
Number of participants: 4
Acronym: FBI
Project ID: 721766
Project participant:
Marti, Dominik (Intern)
Jensen, Ole Bjarlin (Intern)
Hansen, Anders Kragh (Intern)
Project Coordinator:
Andersen, Peter E. (Intern)

PV LED ENGINE 10
Ultra efficient converter electronics for solar powered lighting applications
Department of Photonics Engineering
Diode Lasers and LED Systems
Department of Electrical Engineering
Electronics
Office for Innovation & Sector Services
Period: 01/10/2016 → 30/09/2017
Number of participants: 4
Photovoltaics, LED, Power electronics
Acronym: PVLE10
Project participant:
Ploug, Rasmus Overgaard (Intern)
Thorsteinsson, Sune (Intern)
Kejlberg, Jørgen (Intern)
Project Manager, organisational:
Poulsen, Peter Behrensdorff (Intern)

Cost and energy effective all-black solar cell panel | Black Si BIPV | Phase 2
The objective of the EUDP project is to develop and manufacture a novel type of solar panel based on a new type of solar cell (black silicon solar cell), which – apart from a high and preferably improved efficiency and an implementable and cheaper production method – should have several significant advantages in terms of building integration. The black solar cells will be further processed to make the front conducting grid completely black through an electrochemical deposition technology. The tabbing wires interconnecting the cells in the panel will be processed into non-reflecting black strings in a scalable, inorganic electrochemical process step securing a completely black appearance of the solar panel later produced. A compatible panel production process with traditional PV panel process will be demonstrated for the total black silicon BIPV module.

Department of Photonics Engineering
Diode Lasers and LED Systems
Department of Micro- and Nanotechnology
Silicon Microtechnology
Experimental Surface and Nanomaterials Physics
Department of Energy Conversion and Storage
Organic Energy Materials
Gaia Solar A/S
Institute for Product Development
SoliTek
Nines Photovoltaics
Period: 01/10/2016 → 30/09/2018
Number of participants: 7
BIPV, Black Silicon
Acronym: BS2
Project participant:
Thorsteinsson, Sune (Intern)
Davidsen, Rasmus Schmidt (Intern)
Iandolo, Beniamino (Intern)
Hansen, Ole (Intern)
Riedel, Nicholas (Intern)
Benatto, Gisele Alves dos Reis (Intern)
Project Manager, organisational:
Poulsen, Peter Behrensdorff (Intern)

Predictive and Accelerated Metabolic Engineering Network
PAcMEN is a European training network, which offers excellent training in biotech research and innovation for 16 talented young scientists. PhD students will carry out cutting-edge research in metabolic engineering, modeling, systems and synthetic biology. In collaboration with industrial partners, they will create novel solutions for sustainable production of fuels and chemicals. The graduates will be prepared through research, business, and entrepreneurship training to launch
their careers in industry or academia.

Novo Nordisk Foundation Center for Biosustainability

Yeast Cell Factories

Research Groups

Yeast Metabolic Engineering

Synthetic Biology Tools for Yeast

Eukaryotic Molecular Cell Biology

Period: 01/10/2016 → 30/09/2020

Number of participants: 10

Biotechnology

Acronym: PAcMEN

Project participant:

Lohmann, Ricarda (Intern)

Phd Student:

Dahlin, Jonathan (Intern)
Petersen, Søren Dalsgård (Intern)
Olsson, Helén Emelie (Intern)
D’ambrosio, Vasil (Intern)
Marella, Eko Roy (Intern)

Supervisor:

Borodina, Irina (Intern)
Jensen, Michael Krogh (Intern)
Mortensen, Uffe Hasbro (Intern)

Project Coordinator:

Nielsen, Jens (Intern)

Financing sources

Source: EU research programme (public)

Name of research programme: MSCA-ITN - Marie Sklodowska-Curie actions – International Training Networks

Web address: http://www.pacmen-itn.eu

Relations

Publications:

Engineering microbial fatty acid metabolism for biofuels and biochemicals

Lighting up yeast cell factories by transcription factor-based biosensors

Project

Animal Influenza Viruses - Impacts of influenza virus in Danish swine herds

National Veterinary Institute

Period: 01/10/2016 → 30/09/2019

Number of participants: 5

Phd Student:

Ryt-Hansen, Pia (Intern)

Supervisor:

Plősz, Benedek G. (Intern)

Krog, Jesper Schak (Intern)

Larsen, Inge (Ekstern)

Main Supervisor:

Larsen, Lars Erik (Intern)

Financing sources

Source: Internal funding (public)

Name of research programme: Samfinansierede - Virksomhed

Project: PhD
Assessing cod growth and age by otolith microchemistry analysis
National Institute of Aquatic Resources
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
PhD Student:
Nielsen, Kristian Ege (Intern)
Supervisor:
Mosegaard, Henrik (Intern)
Main Supervisor:
Hüsey, Karin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Building clusters and their impact on flexibility when including the prosumer aspect
Department of Civil Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 2
PhD Student:
Larma, Marijana (Ekstern)
Main Supervisor:
Heller, Alfred (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Building clusters and their impact on flexibility when including the prosumer aspect
Department of Civil Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 5
PhD Student:
Larma, Marijana (Intern)
Supervisor:
Heller, Alfred (Intern)
Li, Rongling (Intern)
Pedersen, Allan Schrøder (Intern)
Main Supervisor:
Rode, Carsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

CFD Simulation of Heterogeneous Reacting Systems
Department of Chemical and Biochemical Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
PhD Student:
Luo, Hao (Intern)
Supervisor:
Wu, Hao (Intern)
Main Supervisor:
Dam-Johansen, Kim (Intern)
Control and stability of meshed offshore grids with diode rectifiers and VSC HVDC

Department of Wind Energy
Period: 01/10/2016 → 30/09/2019
Number of participants: 5
Phd Student:
Bidafar, Ali (Intern)
Supervisor:
Akhmatov, Vladislav (Intern)
Altin, Müfit (Intern)
Cutululis, Nicolaos Antonio (Intern)
Main Supervisor:
Sørensen, Poul Ejnar (Intern)

Data analysis methods for process understanding and improvement in injection moulding production

Department of Applied Mathematics and Computer Science
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
Phd Student:
Frumosu, Flavia Dalia (Intern)
Supervisor:
Aanæs, Henrik (Intern)
Tosello, Guido (Intern)
Main Supervisor:
Kulahci, Murat (Intern)

Design Approaches for Terahertz electronics using Active Device Configurations

Department of Electrical Engineering
Period: 01/10/2016 → 23/04/2017
Number of participants: 4
Phd Student:
Zhang, Yaxin (Intern)
Supervisor:
Tafur Monroy, Idelfonso (Intern)
Weimann, Nils (Ekstern)
Main Supervisor:
Johansen, Tom Keinicke (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD
Development and Validation of Mechanical Micro Polishing of 3D and Free Form Geometries for Application to Micro Forging Dies

Department of Mechanical Engineering  
Period: 01/10/2016 → 30/09/2019  
Number of participants: 3  
Phd Student: 
Ben Achour, Soufian (Intern)  
Supervisor: 
De Chiffre, Leonardo (Intern)  
Main Supervisor: 
Bissacco, Giuliano (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Doppler lidar scanning of flow over complex terrain

Department of Wind Energy  
Period: 01/10/2016 → 30/09/2019  
Number of participants: 3  
Phd Student: 
Menke, Robert (Intern)  
Supervisor: 
Vasiljevic, Nikola (Intern)  
Main Supervisor: 
Mann, Jakob (Ekstern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)
Project: PhD

End-to-end configuration

Department of Mechanical Engineering  
Period: 01/10/2016 → 30/09/2019  
Number of participants: 3  
Phd Student: 
Rasmussen, Jeppe Bredahl (Intern)  
Supervisor: 
Hvam, Lars (Intern)  
Main Supervisor: 
Mortensen, Niels Henrik (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet
Project: PhD

Fabrication and characterization of novel nanophotonic structures with electrical control

Department of Photonics Engineering  
Period: 01/10/2016 → 30/09/2019  
Number of participants: 4  
Phd Student: 
Marchevsky, Andrey (Intern)  
Supervisor: 
Mørk, Jesper (Intern)  
Ottaviano, Luisa (Intern)
Fabrication and electrical properties of correlated electron systems at the interfaces of complex oxides

Department of Energy Conversion and Storage
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
Phd Student:
Gan, Yulin (Intern)
Supervisor:
Pryds, Nini (Intern)
Main Supervisor:
Chen, Yunzhong (Intern)

Functional Modeling of water treatment system

Department of Electrical Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
Phd Student:
Nielsen, Emil Krabbe (Intern)
Supervisor:
Lind, Morten (Intern)
Sin, Gürkan (Intern)
Main Supervisor:
Ravn, Ole (Intern)

Future gas markets tariffs and regulation

Department of Management Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
Phd Student:
Amirkhizi, Tara Sabbagh (Intern)
Supervisor:
Rosager, Frank (Ekstern)
Main Supervisor:
Morthorst, Poul Erik (Intern)
Heat Pump Integration in the Greater Copenhagen District Heating System

Department of Mechanical Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
Phd Student:
Jørgensen, Pernille Hartmund (Intern)
Supervisor:
Markussen, Wiebke Brix (Intern)
Ommen, Torben Schmidt (Intern)
Main Supervisor:
Elmegaard, Brian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Heat pump solutions for integration with district heating in a renewable energy system

Department of Mechanical Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
Phd Student:
Meesenburg, Wiebke (Intern)
Supervisor:
Markussen, Wiebke Brix (Intern)
Ommen, Torben Schmidt (Intern)
Main Supervisor:
Elmegaard, Brian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Implementation of fiber-based continuous-variable quantum key distribution protocols

Department of Physics
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
Phd Student:
Nikolic, Dino Solar (Intern)
Supervisor:
Gehring, Tobias (Intern)
Main Supervisor:
Andersen, Ulrik Lund (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Learning to Read and Think

Department of Applied Mathematics and Computer Science
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
Phd Student:
Nørregaard, Jeppe (Intern)
Supervisor:
Larsen, Jan (Intern)
Main Supervisor:
Hansen, Lars Kai (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Metal Catalysts for Dehydrogenation and Decarbonylation of Primary Alcohois

Department of Chemistry
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
Phd Student:
Monda, Fabrizio (Ekstern)
Supervisor:
Clausen, Mads Hartvig (Intern)
Main Supervisor:
Madsen, Robert (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Models for estimation and analyses of emissions from chemical processes and products

Department of Chemical and Biochemical Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 5
Phd Student:
Jhamb, Spardha Virendra (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Kontogeorgis, Georgios (Intern)
Liang, Xiaodong (Intern)
Main Supervisor:
Gani, Rafiqul (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD
Models for real time warning and control strategies in urban drainage and wastewater systems

Department of Environmental Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
Phd Student:
Pedersen, Jonas Wied (Intern)
Supervisor:
Madsen, Henrik (Intern)
Vezzaro, Luca (Intern)
Main Supervisor:
Mikkelsen, Peter Steen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Nanomechanical Sensors

Department of Micro- and Nanotechnology
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
Phd Student:
Padmanabhan Rangacharya, Varadarajan (Intern)
Supervisor:
Larsen, Peter Emil (Intern)
Rindzevicius, Tomas (Intern)
Main Supervisor:
Boisen, Anja (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Nanomedicine Development for Combination with Ultrasound Mediated Brain Cancer Therapy

Department of Micro- and Nanotechnology
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
Phd Student:
Sereti, Viktoria (Intern)
Supervisor:
Urquhart, Andrew (Intern)
Main Supervisor:
Andresen, Thomas Lars (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Production performance of radial water-jet drilled wells: a modelling and laboratory study

Department of Applied Mathematics and Computer Science
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
Phd Student:
Medetbekova, Maiya (Intern)
Supervisor:
Christensen, Helle Torp (Intern)
Resonant Piezoelectric Shunt Damping of Structures

Department of Mechanical Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
PhD Student:
Toftekær, Johan Frederik (Intern)
Supervisor:
Benjeddou, Ayech (Ekstern)
Krenk, Steen (Intern)
Main Supervisor:
Høgsberg, Jan Becker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Situation-aware control solutions for enabling smart network services

Department of Electrical Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
PhD Student:
Cai, Hanmin (Intern)
Supervisor:
You, Shi (Intern)
Main Supervisor:
Bindner, Henrik W. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Systems-level evolutionary pathway engineering in yeast through growth-coupled selection

Technical University of Denmark
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
PhD Student:
Hansen, Anne Sofie Lærke (Intern)
Supervisor:
Jensen, Michael Krogh (Intern)
Sonnenschein, Nikolaus (Intern)
Main Supervisor:
Herrgard, Markus (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD
The effect of culture conditions on the bioactive potential of marine bacteria

Department of Systems Biology
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
Phd Student:
Paulsen, Sara Skøtt (Intern)
Supervisor:
Sonnenschein, Eva (Intern)
Main Supervisor:
Gram, Lone (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Thermodynamic Modeling of CO2 Gas Hydrate Formation Systems

Department of Chemical and Biochemical Engineering
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
Phd Student:
Sun, Li (Intern)
Supervisor:
Liang, Xiaodong (Intern)
Main Supervisor:
Kontogeorgis, Georgios (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Tunable and Responsive Properties of Surface Grafted Cross-linked Multilayer Films Containing Alginate Derivatives

Department of Chemistry
Period: 01/10/2016 → 30/09/2019
Number of participants: 3
Phd Student:
Huang, Junhao (Intern)
Supervisor:
Larsen, René Wugt (Intern)
Main Supervisor:
Thormann, Esben (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Advanced mathematical modeling related to comprehensive energy system models

Department of Management Engineering
Period: 15/09/2016 → 21/10/2019
Number of participants: 3
Phd Student:
Buchholz, Stefanie (Intern)
Supervisor:
Gamst, Mette (Intern)
Main Supervisor:
Pisinger, David (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

**Computational modelling and simulation of anaerobic biomass conversion to biogas, focusing on the effects of substrate characterisation, solid-liquid-gas phase interactions and microbial growth dynamics**

Department of Environmental Engineering
Period: 15/09/2016 → 14/01/2020
Number of participants: 3
Phd Student:
Kovalovszki, Adam (Intern)
Supervisor:
Alvarado-Morales, Merlin (Intern)
Main Supervisor:
Angelidaki, Irini (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Creativity workshop facilitation in the business context**

Department of Management Engineering
Period: 15/09/2016 → 14/09/2019
Number of participants: 3
Phd Student:
Wróbel, Agata Ewa (Intern)
Supervisor:
Lomberg, Carina (Intern)
Main Supervisor:
Cash, Philip (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Design, synthesis and development of hypoxia reactive drug delivery systems**

Department of Micro- and Nanotechnology
Period: 15/09/2016 → 14/09/2019
Number of participants: 3
Phd Student:
Björk Sigurardóttir, Sara (Intern)
Supervisor:
Kamaly, Nazila (Intern)
Main Supervisor:
Andresen, Thomas Lars (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

**Development of environmental footprints for large-scale systems**
Department of Management Engineering
Period: 15/09/2016 → 14/09/2019
Number of participants: 4
Phd Student:
Leclerc, Alexandra Segolene Corinne (Intern)
Supervisor:
Hauschild, Michael Zwicky (Intern)
Wood, Richard (Ekstern)
Main Supervisor:
Laurent, Alexis (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Development Reactors
Department of Chemical and Biochemical Engineering
Period: 15/09/2016 → 14/09/2019
Number of participants: 4
Phd Student:
Svith, Casper Stryhn (Intern)
Supervisor:
Lin, Weigang (Intern)
Wu, Hao (Intern)
Main Supervisor:
Dam-Johansen, Kim (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Electrocatalytic Materials
Department of Mechanical Engineering
Period: 15/09/2016 → 14/09/2019
Number of participants: 3
Phd Student:
Villadsen, Sebastian Nis Bay (Intern)
Supervisor:
Nielsen, Lars Pleth (Ekstern)
Main Supervisor:
Møller, Per (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

High Fidelity CFD-based Shape Optimization of Wind Turbine Blades
Department of Wind Energy
Period: 15/09/2016 → 14/09/2019
Number of participants: 4
Phd Student:
Madsen, Mads Holst Aagaard (Intern)
Supervisor:
Andersen, Søren Juhl (Intern)
Sørensen, Niels N. (Intern)
Main Supervisor:
Zahle, Frederik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Liposome based vaccines in cancer immunotherapy
Department of Micro- and Nanotechnology
Period: 15/09/2016 → 14/09/2019
Number of participants: 3
Phd Student:
Jæhger, Ditte Elisabeth (Intern)
Supervisor:
Parhamifar, Ladan (Intern)
Main Supervisor:
Andresen, Thomas Lars (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Market and Policy Design for Fossil-free Energy Systems
Department of Management Engineering
Period: 15/09/2016 → 28/12/2019
Number of participants: 3
Phd Student:
Sekamane, Jonas Khubute (Intern)
Supervisor:
Morthorst, Poul Erik (Intern)
Main Supervisor:
Skytte, Klaus (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Micromachined Integrated 2D Transducers for Ultrasound Imaging
Department of Micro- and Nanotechnology
Period: 15/09/2016 → 14/09/2019
Number of participants: 3
Phd Student:
Havreland, Andreas Spandet (Intern)
Supervisor:
Jensen, Jørgen Arendt (Intern)
Main Supervisor:
Thomsen, Erik Vilain (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Modelling of the gas system as an integrated part of the future energy system
Department of Management Engineering
Period: 15/09/2016 → 14/09/2019
Number of participants: 3
Phd Student:
Pedersen, Rasmus Bo Bramstoft (Intern)
Supervisor:
Ravn, Hans V. (Intern)
Main Supervisor:
Münster, Marie (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Mucoadhesive microcontainers for oral drug delivery**
Department of Micro- and Nanotechnology
Period: 15/09/2016 → 14/09/2019
Number of participants: 4
Phd Student:
Mosgaard, Mette Dalskov (Intern)
Supervisor:
Andersen, Alina Joukainen (Intern)
Müllertz, Anette (Ekstern)
Main Supervisor:
Boisen, Anja (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

**Statistics and Data Analytics on Smart Zero**
Department of Applied Mathematics and Computer Science
Period: 15/09/2016 → 14/09/2019
Number of participants: 2
Phd Student:
Wolf, Sebastian (Ekstern)
Main Supervisor:
Madsen, Henrik (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Statistics and Data Analytics on Smart Zero**
Department of Applied Mathematics and Computer Science
Period: 15/09/2016 → 14/09/2019
Number of participants: 3
Phd Student:
Wolf, Sebastian (Intern)
Supervisor:
Krogstie, John (Ekstern)
Main Supervisor:
Madsen, Henrik (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Tool Sets for System Operators in Future Market Setting

Department of Electrical Engineering
Period: 15/09/2016 → 14/09/2019
Number of participants: 3
Phd Student: Heinrich, Carsten (Intern)
Supervisor: You, Shi (Intern)
Main Supervisor: Bindner, Henrik W. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Experimental project in physics and nanotechnology: Cryo SEM Characterization of Food NMS Containing PUFA
Center for Electron Nanoscopy
DTU Danchip
National Food Institute
Research Group for Bioactives – Analysis and Application
Research Group for Nano-Bio Science
Period: 09/09/2016 → 01/12/2016
Number of participants: 5
Acronym: 33525
Project participant: Haaning, Katrine (Ekstern)
Supervisor: García Moreno, Pedro Jesús (Intern)
Jacobsen, Charlotte (Intern)
Chronakis, Ioannis S. (Intern)
Main Supervisor: Mateiu, Ramona Valentina (Intern)

Experimental project in physics and nanotechnology: Scanning Electron Microscopy Visualization of Nanoparticles in Bacteria
Center for Electron Nanoscopy
DTU Danchip
Period: 09/09/2016 → 01/12/2016
Number of participants: 2
Acronym: 33525
Project participant: Theofylaktopoulos, Vasileios (Ekstern)
Main Supervisor: Mateiu, Ramona Valentina (Intern)

Effects of seal-related liver worm on Baltic cod growth and mortality (39411)
The number of grey seals has increased markedly in the Baltic Sea within recent years. Grey seal is final host for the liver worm Contraceum osculatum, where cod is one of several transport hosts. Concurrent with the rise in number of grey seal, the prevalence (number of infected cod) and intensity of infection (number of liver worms per infected cod) with liver worm has increased, and up to 340 worms can now be found in single cod livers. Field studies have shown that intensity of infection correlates negatively with the condition of the fish, indicating that liver worm may have a negative effect on the
health status of the fish. Yet, from field investigations it is difficult to separate potentially negative effects of liver worms from that of reduced food availability or poor oxygen conditions.

In the present study we will perform controlled laboratory experiments to i) determine the potential costs of housing liver worm, ii) estimate the effects of liver worm on cod growth and mortality, and iii) use data generated in i) and ii) in bioenergetic modeling to calculate the effect of liver worm on the maximal food consumption and growth of individual cod. This will subsequently be scaled to the level of the population.

The projects is coordinated by University of Copenhagen.

The project is funded by Ministry of Environment and Food of Denmark and the European Maritime and Fisheries Fund (EMFF).

National Institute of Aquatic Resources
Section for Marine Living Resources
University of Copenhagen

Danish Fishermen's Association
Period: 08/09/2016 → 15/12/2018
Number of participants: 3
Research area: Marine Living Resources
Project participant:
Skov, Peter Vilhelm (Intern)
Andersen, Niels Gerner (Intern)

Behrens, Jane (Intern)

Production of alkali from cocoa husk ash and biological extraction of hydrocolloid from Sargassum sp.
Department of Chemical and Biochemical Engineering
Center for BioProcess Engineering
Period: 05/09/2016 → 06/02/2017
Number of participants: 4
Project participant:
Rhein-Knudsen, Nanna (Intern)
Bentil, Joseph Asankomah (Intern)

Supervisor:
Aie, Marcel Tutor (Intern)
Main Supervisor:
Meyer, Anne S. (Intern)

Production of alkali from cocoa husk ash for extraction of hydrocolloid from biologically pretreated red seaweed
Department of Chemical and Biochemical Engineering
Center for BioProcess Engineering
Period: 05/09/2016 → 06/02/2017
Number of participants: 4
Phd Student:
Rhein-Knudsen, Nanna (Intern)
Bentil, Joseph Asankomah (Intern)

Supervisor:
Aie, Marcel Tutor (Intern)
Main Supervisor:
Meyer, Anne S. (Intern)

Relations
Parent project:
Seaweed Biorefinery in Ghana
Project
Guidance note on assessment of transformational change
Department of Management Engineering
UNEP DTU Partnership
Mitigation and MRV Partnership
Period: 01/09/2016 → 30/06/2017
Number of participants: 1
Project participant:
Olsen, Karen Holm (Intern)

Cool PVT
The aim is to develop PVT panels which can be used for heat and electricity production during daytime and for cooling during night time.

Differently designed PVT panels will be tested experimentally in laboratory test facilities
Department of Civil Engineering
Section for Building Energy
Department of Applied Mathematics and Computer Science
RACELL SAPHIRE Technologies ApS
COWI A/S
Period: 01/09/2016 → 31/12/2016
Number of participants: 2
PVT panels, heating cooling
Project participant:
Furbo, Simon (Intern)
Dannemand, Mark (Intern)

Science Cloud for Cities
A Deic/Deff project developing a science cloud for research (in cities).
Centre for IT-Intelligent Energy Systems in Cities
Department of Civil Engineering
Department of Management Engineering
Aarhus University
University of Southern Denmark
Aalborg University
Period: 01/09/2016 → 16/12/2017
Number of participants: 3
Project participant:
Nielsen, Per Sieverts (Intern)
Madsen, Henrik (Intern)
Project Manager, academic:
Heller, Alfred (Intern)

Bekæmpelse af ESBL producerende, colistin og multiresistente Salmonella og E. coli
National Food Institute
Research Group for Genomic Epidemiology
EMPIR 15SIB07 PhotoLED, Future photometry based on solid-state lighting products

Solid-state lighting, which uses light-emitting diodes (LEDs), is globally replacing traditional incandescent lighting, due to lower power consumption and greater durability. Photometers are used to measure the performance of lights, and are calibrated using standard lamps to ensure the accuracy and consistency of measurements. However, the standard lamps used for calibration are currently based on incandescent lights, not LEDs. This project will develop new standard lamps based on LEDs and new measurement techniques for defining the properties of solid-state lights. The results will be used by National Measurement Institutes and test laboratories to accurately calibrate solid-state light photometers and will give European industry an advantage in the development of new commercial standard lamps. These outputs will result in a more reliable classification of the energy efficiency of solid-state lighting, increasing consumer confidence in this new greener technology.

Department of Photonics Engineering
Diode Lasers and LED Systems
VTT - Technical Research Centre of Finland
Aalto University
Swiss Federal Office of Metrology and Accreditation (METAS) (CH)
Physikalisches-Technische Bundesanstalt
National Institute of Standards and Technology
Czech Metrological Institute
Istituto Nazionale di Ricerca Metrologica
Philips
VSL
LMT Lichtmesstechnik GmbH Berlin
École nationale des travaux publics de l'État (ENTPE)
Metrosert
OSRAM GmbH
OSRAM Opto Semiconductors GmbH
Period: 01/09/2016 → 01/09/2019
Number of participants: 4
Acronym: PhotoLED
Project ID: 70983
Project participant:
Thorseth, Anders (Intern)
Lindén, Johannes (Intern)
Dam-Hansen, Carsten (Intern)
Corell, Dennis Dan (Intern)

Financing sources
Source: EU research programme (public)
Name of research programme: EMPIR
Web address: http://msu.euramet.org/calls.html
Year of approval: 2016

Relations
Related projects:
Center for LED metrology
Highly defective oxides – the next generation of electromechanical materials

Materials capable of changing shape in response to an electrical field work as muscles and have important applications as actuators in many different contexts. At present, the most widely used materials contain lead (Pb) which is highly toxic. Recently, an entirely new class of electromechanically active materials has been discovered: highly defective cerium oxides, i.e. ceria, with a large concentration of oxygen vacancies in the crystal lattice. Such materials contain no toxic elements and have a giant electromechanical response even under moderate electric fields. Governed by a still unexplored atomistic mechanism, the main underlying phenomenon seems to be the organization of the oxygen vacancies. This effect is observed so far only in thin films (below 1micron) in textured microstructures, but in order to replace the current lead-based actuator materials the properties have to be brought to the level of thick films and bulk components. To this scope, the GIANT-E project has 2 success criteria, namely: (1) Understanding the fundamental effect of the film thickness on the electrostrictive properties of highly defective oxides; (2) Identifying a methodology for stabilizing the electromechanical properties in bulk by tailoring microstructure and oxygen defects. Such results will lay the foundations for a new paradigm of bulk lead-free electromechanically active materials for multi-scale applications. The concept will be tested by a Danish industrial player, NOLIAC, for biomedical applications.

Department of Energy Conversion and Storage

Ceramic Engineering & Science

Weizmann Institute of Science
Period: 01/09/2016 → 31/08/2019
Number of participants: 1
Acronym: GIANT-E
Project participant:
Esposito, Vincenzo (Intern)

Postdoc

Department of Micro- and Nanotechnology

Silicon Microtechnology
Period: 01/09/2016 → 31/03/2017
Number of participants: 1
Acronym: Postdoc
Project participant:
Crovetto, Andrea (Intern)
Digital tools for landscape architects: A case study of digital tools used for analyzing and screening climate adaptation challenges in the early design phase

Danish Title: Undersøgelse af digitale værktøjer hos arkitekttegnestuer til beregning og screening af regnvand i den tidlige designfase

DTU Environment/European Regional Development Fund.

Department of Civil Engineering

Section for Building Design

Department of Environmental Engineering

Urban Water Systems

Period: 01/09/2016 → 31/12/2016

Number of participants: 3

Project participant:

Ambjerg-Nielsen, Karsten (Intern)

Mikkelsen, Peter Steen (Intern)

Project Manager, academic:

Jensen, Lotte Bjerregaard (Intern)

Abstract Interpretation for Secure Information Flow

Department of Applied Mathematics and Computer Science

Period: 01/09/2016 → 31/08/2019

Number of participants: 3

Phd Student:

Vasilikos, Panagiotis (Intern)

Supervisor:

Nielsen, Flemming (Intern)

Main Supervisor:

Nielsen, Hanne Riis (Intern)

Financing sources

Source: Internal funding (public)

Name of research programme: Samfinansieret - Andet

Project: PhD

Catalytic Oxidation of CH4

Department of Chemical and Biochemical Engineering

Period: 01/09/2016 → 31/08/2019

Number of participants: 4

Phd Student:

Zhang, Yu (Intern)

Supervisor:

Christensen, Jakob Munkholm (Intern)

Jensen, Anker Degn (Intern)

Main Supervisor:

Glarborg, Peter (Intern)

Financing sources

Source: Internal funding (public)

Name of research programme: Samfinansieret - Andet

Project: PhD

Cell diagnostics using new light sculpting

Department of Photonics Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Wei, Jingxuan (Intern)
Supervisor:
Bañas, Andrew Rafael (Intern)
Main Supervisor:
Glückstad, Jesper (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Privatist
Project: PhD

Characterisation of Materials based on Graphene and Gold
Department of Chemistry
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Nielsen, Frederick Stappen (Intern)
Supervisor:
Engelbrekt, Christian (Intern)
Main Supervisor:
Zhang, Jingdong (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

CO2 reduction on model catalyst surfaces
Department of Physics
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Vagn Hogg, Thomas (Intern)
Supervisor:
Seger, Brian (Intern)
Stephens, Ifan (Intern)
Main Supervisor:
Chorkendorff, Ib (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Cognitive modeling and electrophysiological characterization of audiovisual speech perception
Department of Applied Mathematics and Computer Science
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Lindborg, Alma Cornelia (Intern)
Supervisor:
Marup, Morten (Intern)
Main Supervisor:
Andersen, Tobias (Intern)

Financing sources
Combining functional modeling and reasoning with on-line event analytics

Department of Electrical Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Kirchhübel, Denis (Intern)
Supervisor:
Lind, Morten (Intern)
Main Supervisor:
Ravn, Ole (Intern)

Financing sources

Control and operation of offshore wind power plants connected via HVDC

Department of Wind Energy
Period: 01/09/2016 → 31/08/2019
Number of participants: 5
Phd Student:
Saborío-Romano, Oscar (Intern)
Supervisor:
Göksu, Ömer (Intern)
Sørensen, Poul Ejnar (Intern)
Zeni, Lorenzo (Intern)
Main Supervisor:
Cutululis, Nicolaos Antonio (Intern)

Financing sources

Damping of Torsional Beam Vibrations

Department of Mechanical Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Hoffmeyer, David (Intern)
Supervisor:
Krenk, Steen (Intern)
Main Supervisor:
Høgsberg, Jan Becker (Intern)

Financing sources

Development of biotechnological tools for modulating the microbiome of industrial sugarcane ethanol fermentations

Technical University of Denmark
Period: 01/09/2016 → 31/08/2019  
Number of participants: 3  
Phd Student:  
Senne de Oliveira Lino, Felipe (Intern)  
Supervisor:  
Molin, Søren (Intern)  
Main Supervisor:  
Sommer, Morten Otto Alexander (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Fonde

Relations  
Activities:  
novo nordisk foundation cluster days  
Project: PhD

Development of Surface-Enhanced Raman Scattering Sensors  
Department of Micro- and Nanotechnology  
Period: 01/09/2016 → 31/08/2019  
Number of participants: 4  
Phd Student:  
Viehrig, Marlitt (Intern)  
Supervisor:  
Rindzevicius, Tomas (Intern)  
Schmidt, Michael Stenbæk (Intern)  
Main Supervisor:  
Boisen, Anja (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Fonde  
Project: PhD

DNA repair pathway aberrations in personalized chemotherapy and immunotherapy of cancer  
Department of Bio and Health Informatics  
Period: 01/09/2016 → 31/08/2019  
Number of participants: 3  
Phd Student:  
Diossy, Miklos (Intern)  
Supervisor:  
Eklund, Aron Charles (Intern)  
Main Supervisor:  
Szallasi, Zoltan Imre (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

Downstream Processing of Biochemical Processes  
Department of Chemical and Biochemical Engineering  
Period: 01/09/2016 → 31/08/2019  
Number of participants: 3  
Phd Student:  
Meyer, Kristian (Intern)  
Supervisor:  
Huusom, Jakob Kjøbsted (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Fonde  
Project: PhD
Main Supervisor:
Abildskov, Jens (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Elucidating the mechanistic pathways of carbon dioxide electroreduction

Department of Physics
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Scott, Søren Bertelsen (Intern)
Supervisor:
Rossmeisl, Jan (Intern)
Stephens, Ifan (Intern)
Main Supervisor:
Chorkendorff, Ib (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Energy Efficiency Hybrid Separation Process with Ionic Liquid

Department of Chemical and Biochemical Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Liu, Xinyan (Intern)
Supervisor:
Kontogeorgis, Georgios (Intern)
Liang, Xiaodong (Intern)
Main Supervisor:
Gani, Rafiqul (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Flavor Tailoring for Future Brewing: Unleashing the Yeast Diversity Potential

National Food Institute
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Colomer, Marc Serra (Ekstern)
Supervisor:
Förster, Jochen (Intern)
Mortensen, Uffe Hasbro (Intern)
Main Supervisor:
Hobley, Timothy John (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD
Fluidized bed combustion of biomass
Department of Chemical and Biochemical Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Ulusoy, Burak (Intern)
Supervisor:
Lin, Weigang (Intern)
Wu, Hao (Intern)
Main Supervisor:
Dam-Johansen, Kim (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Genomics Driven Discovery and Engineering of Fungal Tetracyclines
Department of Systems Biology
Period: 01/09/2016 → 12/10/2019
Number of participants: 4
Phd Student:
Wolff, Peter Persson (Intern)
Supervisor:
Andersen, Mikael Rørdam (Intern)
Larsen, Thomas Ostenfeld (Intern)
Main Supervisor:
Mortensen, Uffe Hasbro (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Genomics Driven Discovery and Engineering of Fungal Tetracyclines
Department of Systems Biology
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Subko, Karolina (Intern)
Supervisor:
Frisvad, Jens Christian (Intern)
Larsen, Thomas Ostenfeld (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Hospital Staff Planning with Multi-Agent Goals
Department of Applied Mathematics and Computer Science
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Larsen, John Bruntse (Intern)
Identification of bacterial functional modules applicable for management of gut homeostasis

Technical University of Denmark
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Rosenkilde, Carola Elisa Heesemann (Intern)
Supervisor:
Nielsen, Henrik Bjørn (Intern)
Main Supervisor:
Sommer, Morten Otto Alexander (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Induction-Heated Hydrogen Production

Department of Physics
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Wismann, Sebastian Thor (Intern)
Supervisor:
Frandsen, Cathrine (Intern)
Mortensen, Peter Mølgaard (Intern)
Main Supervisor:
Chorkendorff, Ib (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

In-situ and Personalized Cognitive Behavioural Therapy for Mental Health

Department of Applied Mathematics and Computer Science
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Rohani, Darius Adam (Intern)
Supervisor:
Kessing, Lars Vedel (Ekstern)
Puthusserypady, Sadasivan (Intern)
Main Supervisor:
Bardram, Jakob Eyvind (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
In situ Electron Microscopy Characterization of Catalysts for Sustainable Energy

Department of Physics
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Nielsen, Monia Runge (Intern)
Supervisor:
08052011, Emma (Ekstern)
Wagner, Jakob Birkedal (Intern)
Main Supervisor:
Hansen, Thomas Willum (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Integrated SILP Catalysts - Membrane Separation Reaction Systems

Department of Chemistry
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Marinkovic, Jakob Maximilian (Intern)
Supervisor:
Fehrmann, Rasmus (Intern)
Garcia Suárez, Eduardo José (Intern)
Main Supervisor:
Riisager, Anders (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

LIGHTest foundation

Department of Applied Mathematics and Computer Science
Period: 01/09/2016 → 06/09/2016
Number of participants: 3
Phd Student:
Bjerregaard, Mathias Ormstrup (Intern)
Supervisor:
Lluch Lafuente, Alberto (Intern)
Main Supervisor:
Mödersheim, Sebastian Alexander (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Liposome based vaccines in cancer immunotherapy

Department of Micro- and Nanotechnology
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Hübbe, Mie Linder (Intern)
Supervisor:
Kaplinsky, Joseph John (Intern)
Main Supervisor:
Andresen, Thomas Lars (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

**Load Environment Modelling and Forecasting**
Department of Management Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 5
Phd Student:
Glavind, Sebastian Tølbøll (Intern)
Supervisor:
Nielsen, Bo Friis (Intern)
Sørensen, John Dalsgaard (Intern)
Thöns, Sebastian (Intern)
Main Supervisor:
Faber, Michael Havbro (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Marine Ecosystem Climate Services**
National Institute of Aquatic Resources
Period: 01/09/2016 → 31/08/2020
Number of participants: 3
Phd Student:
Miesner, Anna Katharina (Intern)
Supervisor:
MacKenzie, Brian (Intern)
Main Supervisor:
Payne, Mark (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Modeling audiovisual speech perception**
Department of Applied Mathematics and Computer Science
Period: 01/09/2016 → 31/08/2019
Number of participants: 2
Phd Student:
Gil Carvajal, Juan Camilo (Intern)
Main Supervisor:
Andersen, Tobias (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Modeling of degradation processes in high temperature electrolysis cells
Department of Energy Conversion and Storage
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Trini, Martina (Intern)
Supervisor:
Hauch, Anne (Intern)
Hendriksen, Peter Vang (Intern)
Main Supervisor:
Chen, Ming (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Model-optimized Screening of Checked-in Luggage
Department of Physics
Period: 01/09/2016 → 31/08/2019
Number of participants: 5
Phd Student:
Busi, Matteo (Intern)
Supervisor:
Frisvad, Jeppe Revall (Intern)
Bergbäck Knudsen, Erik (Intern)
Olsen, Ulrik Lund (Intern)
Main Supervisor:
Haldrup, Kristoffer (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Model Predictive Control strategies for real-time control of urban storm and wastewater systems
Department of Applied Mathematics and Computer Science
Period: 01/09/2016 → …
Number of participants: 5
Phd Student:
Tranos, Damianos (Intern)
Supervisor:
Falk, Anne Katrine Vinther (Intern)
Madsen, Henrik (Intern)
Niemann, Hans Henrik (Intern)
Main Supervisor:
Poulsen, Niels Kjølstad (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Nano-Editor: Development of nano-materials based printing media for all-ceramic solid oxide fuel cells manufacturing
Department of Energy Conversion and Storage
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Rosa, Massimo (Intern)
Supervisor:
Zielke, Philipp (Intern)
Main Supervisor:
Esposito, Vincenzo (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Novel methods for detection of contaminants in the environment
Department of Micro- and Nanotechnology
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Noori, Jafar Safaa (Intern)
Supervisor:
Dimaki, Maria (Intern)
Mortensen, John (Ekstern)
Main Supervisor:
Svendsen, Winnie Edith (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

On Parametric Decay of Electron Cyclotron Heating Beams in ASDEX Upgrade
Department of Physics
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Hansen, Søren Kjer (Ekstern)
Supervisor:
Pedersen, Morten Stejner (Intern)
Stober, Jörg Karl (Ekstern)
Main Supervisor:
Nielsen, Stefan Kragh (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Optimized water distribution using high-resolution data sources and novel data analysis methods
Department of Environmental Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Kirstein, Jonas Kjeld (Intern)
Supervisor:
Borup, Morten (Intern)
Høgh, Klavs (Ekstern)
Main Supervisor:
Rygaard, Martin (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Photonic Crystal Fano Lasers**
Department of Photonics Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
PhD Student:
Mathiesen, Kristoffer Skaftved (Intern)
Supervisor:
Yvind, Kresten (Intern)
Main Supervisor:
Mørk, Jesper (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

**Porcine coronavirus - pathogenesis and control**
National Veterinary Institute
Period: 01/09/2016 → 13/06/2020
Number of participants: 4
PhD Student:
Lazov, Christina Marie (Intern)
Supervisor:
Belsham, Graham (Intern)
Rasmussen, Thomas Bruun (Intern)
Main Supervisor:
Bøtner, Anette (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Process chains to manufacture micro structures on 3D surfaces by replication**
Department of Mechanical Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 5
PhD Student:
Li, Dongya (Intern)
Supervisor:
Bissacco, Giuliano (Intern)
Tang, Peter Torben (Intern)
Tosello, Guido (Intern)
Main Supervisor:
Zhang, Yang (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Privatist
Project: PhD
Processing and Generation of Photon Pairs using Nonlinear Effects in Optical Fibers
Department of Photonics Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Koefoed, Jacob Gade (Intern)
Supervisor:
Usuga Castaneda, Mario A. (Intern)
Main Supervisor:
Rottwitt, Karsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Production of Synthetic Fuels
Department of Mechanical Engineering
Period: 01/09/2016 → 31/07/2017
Number of participants: 3
Phd Student:
Warm, Christian (Intern)
Supervisor:
Nielsen, Lars Pleth (Ekstern)
Main Supervisor:
Møller, Per (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Quantum transport and thermoelectric effects in nanostructures and two-dimensional materials
Department of Micro- and Nanotechnology
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Walldorf, Nicklas (Intern)
Supervisor:
Kaasbjerg, Kristen (Intern)
Main Supervisor:
Jauho, Antti-Pekka (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Railway substructure system based on asphalt
Department of Civil Engineering
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Bose, Tulika (Intern)
Supervisor:
Levenberg, Eyal (Intern)
Main Supervisor:
Zania, Varvara (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

**Reduktion af lakseinfektioner**
National Institute of Aquatic Resources
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Kragesteen, Tróndur Jónsson (Intern)
Supervisor:
Simonsen, Knud (Ekstern)
Visser, Andre (Intern)
Main Supervisor:
Andersen, Ken Haste (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

**Smart Maritime: Norwegian Centre for improved energy efficiency and reduced harmful emissions**
Department of Transport
Transport optimisation and technique
Department of Management Engineering
Management Science
Period: 01/09/2016 → 31/08/2019
Number of participants: 1
Acronym: Smart Maritime
Project participant:
Psaraftis, Harilaos N. (Intern)

**The catalysis of the selective electrochemical oxidation of hydrocarbons**
Department of Physics
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Winiwarter, Anna (Intern)
Supervisor:
Seger, Brian (Intern)
Main Supervisor:
Chorkendorff, Ib (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

**Ultrafast electronic and coupled electronic-nuclear dynamics of solvated metal complexes**
Department of Physics
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Zederkof, Diana Bregenholt (Intern)
Supervisor:
Nielsen, Martin Meedom (Intern)
Thygesen, Kristian Sommer (Intern)
Main Supervisor:
Haldrup, Kristoffer (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Ultra-long term subcutaneous EEG monitoring of brain function and disease
Department of Applied Mathematics and Computer Science
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Gangstad, Sirin Wilhelmsen (Intern)
Supervisor:
Duun-Henriksen, Jonas (Intern)
Kjær, Troels Wesenberg (Ekstern)
Main Supervisor:
Hansen, Lars Kai (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

X-ray phase contrast nano-tomography of 3rd generation solar cells
Department of Energy Conversion and Storage
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Fevola, Giovanni (Intern)
Supervisor:
Carbone, Gerardina (Ekstern)
Dong, Yiqiu (Intern)
Main Supervisor:
Andreasen, Jens Wenzel (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Human Behavior of Track Pilot
Master Thesis Project
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Dynamical Systems
FORCE Technology
Period: 29/08/2016 → 29/01/2017
Number of participants: 2
Multivariate Time Series Modelling of Australian Data on Deaths from Homicide and Suicides

Department of Applied Mathematics and Computer Science

Statistics and Data Analysis
Period: 22/08/2016 → 01/01/2017
Number of participants: 2
Time Series Analysis, Multivariate, MARIMA, Australia

Supervisor:
Spliid, Henrik (Intern)
Main Supervisor:
Stockmarr, Anders (Intern)

Project participant:
Andersen, Suzanne Zamany (Intern)

Electrodeposition of Metallic 3D Surface-Profiles for Superconductor Tapes

Master thesis project by Suzanne Zamany Andersen. Thesis abstract: The work in this thesis is based on a recently introduced 3D surface-profile technique, i.e. the two-level undercut-profile substrate (2LUPS) concept [1]-[2], used for production of multi-laminate high-temperature coated conductor (CC) tapes. Reducing the superconductor lament width linearly reduces the alternating current hysteretic energy losses [3], and it enables manufacturing of stable high-temperature superconducting magnets [4]. A new process of tape masking and Ni-based electroplating on a Ni-W metal alloy substrate to form similar 3D surface profiles as those achieved by the 2LUPS concept [5], which is based on two levels of plateaus connected via an undercut-profile, is investigated. The undercut-profile should be large enough to enable a shading effect during subsequent physical vapor deposition (PVD) of layers, thereby creating self-formed and physically separated superconductor laments on the two plateaus, while still utilizing the full width of the CC. This will theoretically increase the engineering current density compared to current lament techniques utilizing e.g. laser striation or mechanical scribing. Inspection of the metal substrate cross-section using focused ion beam milling and scanning electron microscopy (FIBSEM) reveals that an undercut-profile is achieved by using kapton tape as a mask while electroplating nickel to create the upper plateaus. The arithmetic surface roughness of the electroplated nickel layer is determined via atomic force microscopy (AFM) to be suitable for CC fabrication. To verify if the undercut-profile is sufficient, an electrically insulating layer of SiO, simulating the buffer layers in CCs, followed by an electrically conductive layer of Ag, simulating the superconducting layer, is deposited using PVD, and four-point probe measurements to create I/V characteristics are used to measure resistance across plateaus. The plateaus are deemed electrically insulated from each other, as the resistances from each insulating layer adds up to the total resistance through both plateaus. Accordingly, it is expected that these new electroplated 3D surface-profiles will also enable lamentization of superconductors produced by PVD processes. A small caveat to these findings, is the lack of a suitable profile for the use in CC fabrication being manufactured in this project. The adhesive in the masking tape creates bulges or protrusions in the profile, so a further study on thinner adhesive layers or a different masking material altogether is needed. The possibility of texture transfer from the Ni-W metal substrates to the plated Ni layer is also investigated, for the use in the cheaper rolling assisted bi-axially textured substrate (RABiTS) fabrication process. The electrodeposited Ni would during annealing at low temperatures experience an abnormal grain growth stage, thereby rendering it incapable of attaining the texture needed for RABiTS fabrication. Furthermore, the thermal grooving during annealing of the pure Ni could also become a problem for the ion beam assisted deposition (IBAD) process, as a surface roughness of <5nm is desired. The author of this thesis therefore strongly recommends investigating the possibility of plating e.g. Ni-W instead.

Department of Energy Conversion and Storage
Electrofunctional materials

Department of Physics

Experimental Surface and Nanomaterials Physics

Imaging and Structural Analysis
Period: 22/08/2016 → 12/02/2017
Number of participants: 5
electrochemistry, electroplating, metal substrates, Coated conductor, Superconductor, topography, EBSD, FIB-SEM, texture

Project participant:
Andersen, Suzanne Zamany (Intern)
Closed-Loop Aluminum Post-consumer waste recycling

Department of Management Engineering

Quantitative Sustainability Assessment
Period: 15/08/2016 → 31/01/2017
Number of participants: 3
Acronym: CLAP
Project participant:
Niero, Monia (Intern)
Project Manager, organisational:
Bey, Niki (Intern)
Project Manager, academic:
Stotz, Philippe Maurice (Intern)

A Decision Support Tool for Screening Novel WWT Processes

Department of Chemical and Biochemical Engineering
Period: 15/08/2016 → 14/08/2019
Number of participants: 3
Phd Student:
Behera, Chitta Ranjan (Ekstern)
Supervisor:
Gernaey, Krist V. (Intern)
Main Supervisor:
Sin, Gürkan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Advanced structuring of adsorbents by electrospinning for gas cleaning and storage
Eastern Baltic cod - New knowledge of growth and mortality is the way to improved management advice (39366)

The aim of the project is to improve the knowledge and data basis for stock assessment and management for cod in the eastern Baltic Sea.

In later years, changes in growth and natural mortality of cod have presumably taken place and new knowledge on these parameters is essential for restoring analytical stock assessment for Eastern Baltic cod that is currently lacking. Improved knowledge on cod growth and mortality is therefore a prerequisite for being able to evaluate the stock status in relation to management targets and implement management plans that are built on quantitative stock assessment.

Ecological situation in the Baltic Sea has changed in later years, which requires updated biological information. This is done in the project using different approaches, bringing together expertise of different research areas. The approaches applied include molecular-genetic analyses of cod growth, bioenergetic modelling, and analyses of monitoring data on predation and condition/growth of cod. An important component of the project is cooperation with fishing industry to support tagging experiments of Baltic cod, to obtain updated estimates of cod growth.

Finally, the project combines the new knowledge on cod that becomes available from this and other relevant projects to ensure that the assessment of stocks status and management advice is based on best available scientific information.

This project is coordinated by DTU Aqua.

The project is funded by the Ministry of Environment and Food of Denmark and the European Maritime and Fisheries Fund (EMFF).

National Institute of Aquatic Resources
Section for Ecosystem based Marine Management
Danish Fishermen's Association
University of Copenhagen
Fiber-coupled scintillator dosimetry for proton therapy

Department of Physics
Period: 15/08/2016 → 14/08/2019
Number of participants: 3
PhD Student:
Christensen, Jeppe Brage (Intern)
Supervisor:
Grau, Cai (Ekstern)
Main Supervisor:
Andersen, Claus E. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Investigations of hatchery techniques and cultivation systems for cost-effective production of valuable seaweeds

National Institute of Aquatic Resources
Period: 15/08/2016 → 14/08/2019
Number of participants: 4
PhD Student:
Schmedes, Peter Søndergaard (Intern)
Supervisor:
Nielsen, Mette Møller (Intern)
Canal-Vergés, Paula (Intern)
Main Supervisor:
Petersen, Jens Kjerulf (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Long-range interfacial electron transfer between electrode and microorganisms

Department of Chemistry
Period: 15/08/2016 → 14/08/2019
Number of participants: 3
PhD Student:
Zheng, Zhiyong (Intern)
Supervisor:
Christensen, Hans Erik Mølager (Intern)
Main Supervisor: Zhang, Jingdong (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

**Modelling macroeconomic effects of energy saving investments**
Department of Management Engineering
Period: 15/08/2016 → 14/08/2019
Number of participants: 3
Phd Student: Bjerregaard, Casper (Intern)
Supervisor: Møller, Niels Framroze (Intern)
Main Supervisor: Klinge Jacobsen, Henrik (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Assessment of a biochemical platform based on two streams model (C6 and C5) for conversion of rice straw into ethanol**
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Biomass Conversion and Bioprocess Technology
Department of Biotechnology, Engineering School of Lorena, University of São Paulo
Period: 01/08/2016 → …
Number of participants: 1
Number of related Ph.D. students: 2
Project participant: Mussatto, Solange I. (Intern)

**NordSecMob Master's Programme in Security and Mobile Computing - 2 continuation**
Department of Applied Mathematics and Computer Science
Embedded Systems Engineering
Aalto University
KTH - Royal Institute of Technology
Norwegian University of Science and Technology
University of Tartu
Period: 01/08/2016 → 31/07/2018
Number of participants: 1
Acronym: NordSecMob
Project participant: Stassen, Flemming (Intern)
Project

**Comparison of ADDs used in VetStat with primary data on usage doses obtained at visits in 20 Danish pig herds**
Master project
National Food Institute
Research Group for Genomic Epidemiology
Period: 01/08/2016 → 06/01/2017
Number of participants: 1
antimicrobial usage, VetStat, Epidemiology, pigs
Main Supervisor:
Hald, Tine (Intern)

Proof of Concept development project for “New low-cost diabetes measuring device”.
Department of Chemistry
NanoChemistry
Organic Chemistry
Period: 01/08/2016 → 31/10/2016
Number of participants: 2
Project participant:
Halder, Arnab (Intern)
Chi, Qijin (Intern)

SMAP Soil Moisture Data To Improve Remotely Sensed Global Estimates of Evapotranspiration
Evapotranspiration is a key variable in the hydrological cycle, however it cannot be measured directly using remote sensing data. This project aims to integrate SMAP NASA soil moisture products directly into global remote sensing evapotranspiration algorithms to improve modelin and assess regional droughts.
Department of Environmental Engineering
Water Resources Engineering
Period: 01/08/2016 → 01/08/2018
Number of participants: 2
Project participant:
Garcia, Monica (Intern)
Fisher, Josh (Ekstern)

Parker project
The Parker project seeks to validate that series produced electric vehicles, as part of an operational vehicle fleet, can be made to participate in advanced, vertically integrated, smart grid services.
Department of Electrical Engineering
Center for Electric Power and Energy
Energy resources, services and control
NUVVE Corporation
Insero Energy
Frederiksberg Utility
Period: 01/08/2016 → 31/07/2018
Number of participants: 3
Electric vehicles, grid integration, enabling technologies, Ancillary services
Project participant:
Marinelli, Mattia (Intern)
Serensen, Thomas Meier (Intern)
Project Manager, organisational:
Andersen, Peter Bach (Intern)

Relations
Related projects:
Nikola - Intelligent electric vehicle integration
**STROBE-X: X-ray Timing and Spectroscopy Mission**

STROBE-X is a NASA probe-class observatory designed for X-ray timing and spectroscopy in the 0.2-30 keV band, with huge collecting area and good spectral resolution. It is optimized for the study of matter in the most extreme conditions found in the Universe and addresses several key science areas including:

- Probing matter spiraling into black holes (BHs) to explore the effects of strong-field general relativity and measure the masses and spins of BHs.
- X-ray reverberation mapping of BH accretion flows across all mass scales, from stellar-mass BHs in our Galaxy to supermassive BHs in active galactic nuclei.
- Fully determining the ultradense matter equation of state by measuring the neutron star (NS) mass-radius relation using > 20 pulsars over an extended mass range.
- Exploring cosmic chemical evolution by measuring bulk metallicity of ~100 high-redshift (z > 2) galaxy clusters. Continuously surveying the dynamic X-ray sky with large duty cycle and high spectral and time resolution to characterize source behavior over a vast range of time scales, and to enable multi-wavelength and multi-messenger studies through cross-correlation with high cadence surveys at other wavelengths and in gravitational waves and neutrinos.

National Space Institute

Astrophysics and Atmospheric Physics

Naval Research Laboratory

NASA Marshall Space Flight Center

NASA Goddard Space Flight Center

Massachusetts Institute of Technology

Texas Technical University

The Institute of Space Studies of Catalonia

Istituto di Astrofisica e Planetologia Spaziali Via Fosso del Cavaliere

MSSL

SRON

IAA-Tuebingen

University of Geneva

Period: 01/08/2016 → ...

Number of participants: 1

Acronym: STROBE-X

Project participant:

Brandt, Søren (Intern)

**Relations**

Activities:

- STROBE-X Science Definition Workshop
- STROBE-X Steering Committee (External organisation)

Publications:

- Large Observatory for x-ray Timing (LOFT-P): a Probe-class mission concept study
- STROBE-X: X-Ray Timing and Spectroscopy on Dynamical Timescales from Microseconds to Years

**Aided performance of hearing-aid users in realistic listening situations**

Department of Electrical Engineering

Period: 01/08/2016 → 31/03/2017

Number of participants: 4

Phd Student:
Pedersen, Anja Kofoed (Intern)
Supervisor: Bianchi, Federica (Intern)
Santurette, Sébastien (Intern)
Main Supervisor: Dau, Torsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

B-cell immunoinformatics
Department of Bio and Health Informatics
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student: Jespersen, Martin Closter (Intern)
Supervisor: Marcatili, Paolo (Intern)
Main Supervisor: Nielsen, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Characterization of protein solution structure using light scattering techniques and SAXS
Department of Chemistry
Period: 01/08/2016 → 31/12/2016
Number of participants: 4
Phd Student: Mann-Nüttel, Ritu (Intern)
Supervisor: Nørgaard, Allan (Intern)
Peters, Günther H.J. (Intern)
Main Supervisor: Harris, Pernille (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt EU-finansieret
Project: PhD

Computational design of catalysts for electroreduction of nitrogen into ammonia
Department of Energy Conversion and Storage
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student: Pan, Jaysree (Intern)
Supervisor: Hansen, Heine Anton (Intern)
Main Supervisor: Vegge, Tejs (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Density Functional Theory Studies of Water Electrolysis on Ceria

Department of Energy Conversion and Storage
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Wu, Tiantian (Intern)
Supervisor:
Hansen, Heine Anton (Intern)
Main Supervisor:
Vegge, Tejs (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Detailed Characterization of weak and strong protein-protein interactions and their structures in concentrated solutions

Department of Chemistry
Period: 01/08/2016 → 31/07/2019
Number of participants: 4
Phd Student:
Mahapatra, Sujata (Ekstern)
Supervisor:
Peters, Günther H.J. (Intern)
Streicher, Werner W. (Ekstern)
Main Supervisor:
Harris, Pernille (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt EU-finansieret
Project: PhD

Development of Immunoinformatics prediction methods for improved understanding of TCR-peptide-MHC interactions

Department of Bio and Health Informatics
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Jensen, Kamilla Kjærgaard (Intern)
Supervisor:
Marcatili, Paolo (Intern)
Main Supervisor:
Nielsen, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Economic incentives and policy design for energy savings

Department of Management Engineering
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Wiese, Catharina (Intern)
Supervisor:
Klinge Jacobsen, Henrik (Intern)
Main Supervisor:
Pade, Lise-Lotte (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Experimental and Numerical studies of water flow in choanocytes and choanoflagellates
Department of Mechanical Engineering
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Asadzadeh, Seyed Saeed (Ekstern)
Supervisor:
Meyer, Knud Erik (Intern)
Main Supervisor:
Walther, Jens Honore (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

From science to innovation in the Nephrops fishery to comply with the Common Fisheries Policy: development of an optimal and flexible selection system for trawl by use of new technology and underutilized fish behaviour (39375)
The aim of the VISION-project is to develop a new generation of trawl designs towards a targeted and controllable species and size selection in the mixed fisheries targeting Nephrops by improving vertical separation of the catch and gear selectivity. This will contribute to an economic viable fishery and sustainable use of resources under a landing obligation.

The mixed fisheries targeting Nephrops is one of the most economically important Danish fisheries. It is characterized by high proportions of discards and will have a low capitalization of the vessels’ quotas under a landing obligation.

In the VISION-project, a horizontally divided codend developed in the FishValue-project (vaerdifisk.dk) will be refined to increase the vertical separation of cod, flatfish and small fish in general from Nephrops. The project will combine new technology and knowledge of fish behavior in an innovative way to develop new selection principles and thus gear designs with an increased species and size selectivity. Also, the project seeks to provide solutions for a highly flexible fishery so fishermen can change their gear to match the selective properties with the current fishing situation.

This project is coordinated by DTU Aqua.

National Institute of Aquatic Resources
Section for Ecosystem based Marine Management

Euronete Scandinavia A/S

Strandby Net A/S

Danish Fishermen's Association
Period: 01/08/2016 → 08/08/2018
Number of participants: 4
Project participant:
Andersen, Niels Gerner (Intern)
Krag, Ludvig Ahm (Intern)
Melli, Valentina (Intern)

Project Coordinator:
Karlsen, Junita Diana (Intern)

Project

Generation of Macroscopic Squeezed States for Quantum Sensing

Department of Physics
Period: 01/08/2016 → …
Number of participants: 3
Phd Student:
Pedersen, Mikkel Maag (Intern)
Supervisor:
Gehring, Tobias (Intern)
Main Supervisor:
Andersen, Ulrik Lund (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Graph Coloring and Decomposition

Department of Applied Mathematics and Computer Science
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Lyngsie, Kasper Szabo (Intern)
Supervisor:
Gørtz, Inge Li (Intern)
Main Supervisor:
Thomassen, Carsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Integration of bycatch in mixed-fisheries management

National Institute of Aquatic Resources
Period: 01/08/2016 → 16/10/2019
Number of participants: 4
Phd Student:
Schreiber Plet-Hansen, Kristian (Intern)
Supervisor:
Mortensen, Lars O. (Intern)
Nielsen, J. Rasmus (Intern)
Main Supervisor:
Ulrich, Clara (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

**On-Chip quantum communication**
Department of Physics
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Kordts, Arne (Ekstern)
Supervisor:
Gehring, Tobias (Intern)
Main Supervisor:
Andersen, Ulrik Lund (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

**Optimized recycling in an integrated melting furnace for production of stone wool melt**
Department of Chemical and Biochemical Engineering
Period: 01/08/2016 → 31/07/2019
Number of participants: 5
Phd Student:
Schultz-Falk, Vickie (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Hansen, Lars Elmekilde (Ekstern)
Solvang, Mette (Ekstern)
Main Supervisor:
Jensen, Peter Arendt (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD
Process technologies for functional anisotropic surfaces generation in Quick Response Code applications

Department of Mechanical Engineering
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Regi, Francesco (Intern)
Supervisor:
Tosello, Guido (Intern)
Main Supervisor:
Zhang, Yang (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Radical improvements in sustainable building renovation based on new forms of collaboration and business models

Department of Management Engineering
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Berg, Jakob Brinke (Intern)
Supervisor:
Thuesen, Christian (Intern)
Main Supervisor:
Jensen, Per Anker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Resource efficiency in practice: from sugar beet waste to fish feed ingredient (Starfish) (39368)
Sugar beet is a commonly cultivated crop in Denmark and the waste pulp is primarily sold as cow feed. The pulp, however, contains a potential prebiotic compound (pectin) that, if added to fish feed at low concentrations is hypothesized to:
1) improve the feed utilisation by the fish allowing more fish to be produced per amount of feed applied
2) stabilize the structure of the faecal waste so that it may be easier collected and removed reducing the discharge of nitrogen- and phosphorous
3) improve the overall immunological system/health status of the fish whereby the use of medicine and therapeutics may be reduced.

The objective of the project is to test these potential, beneficial effects of pectin in rainbow trout (Oncorhynchus mykiss) and tilapia (Oreochromis niloticus) by adding different molecular sizes and concentrations to the feed and measuring the effects on feed utilisation, faecal structure and fish health.
The project is coordinated by DTU Aqua.
The project is funded by Ministry of Environment and Food of Denmark through the Green Development and Demonstration Program (GUDP).

National Institute of Aquatic Resources
Section for Aquaculture
CP Kelco ApS
BioMar A/S
Period: 01/08/2016 → 31/07/2019
Number of participants: 4
Research area: Aquaculture
Project participant:
Larsen, Bodil Katrine (Intern)
Skov, Peter Vilhelm (Intern)
Phd Student:
de Jesus Gregersen, Joao (Intern)

Project Coordinator:
Dalsgaard, Anne Johanne Tang (Intern)

**Structural Biology**
Department of Chemistry
Period: 01/08/2016 → 31/07/2019
Number of participants: 4
Phd Student:
Indrakumar, Sowmya (Intern)

Supervisor:
Harris, Pernille (Intern)
Streicher, Werner W. (Ekstern)
Main Supervisor:
Peters, Günther H.J. (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

**Systematic enzyme discovery, targeted to fungal and algal biomass**
Department of Chemical and Biochemical Engineering
Period: 01/08/2016 → 30/07/2020
Number of participants: 4
Phd Student:
Pilgaard, Bo (Intern)

Supervisor:
Busk, Peter Kamp (Intern)
Meyer, Anne S. (Intern)
Main Supervisor:
Lange, Lene (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**The frame set for Gabor systems generated by B-splines**
Department of Applied Mathematics and Computer Science
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Nielsen, Kamilla Haahr (Intern)

Supervisor:
Christensen, Ole (Intern)
Main Supervisor:
Lemvig, Jakob (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Zero Emission Neighbourhoods in Smart Cities**
Department of Applied Mathematics and Computer Science  
Period: 01/08/2016 → 30/07/2020  
Number of participants: 3  
Phd Student:  
Resch, Eirik (Ekstern)  
Supervisor:  
Andresen, Inger (Ekstern)  
Main Supervisor:  
Madsen, Henrik (Ekstern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Ansat eksternt  
Project: PhD

Research stay with Dr. Mary Gilbert, Perfluorinated Chemicals and Brain Development: Interaction with the Thyroid Axis  
Research stay with Dr. Mary Gilbert at the Toxicity Assessment Division, US Environmental Protection Agency, NC, U.S.  
The research stay is a central part of my PhD studies and the expertise of Dr. Mary Gilbert within neurobiology is key to the project by complementing my neurobehavioural studies. The research stay was, amongst others, supported by Society for Endocrinology.

National Food Institute  
Research Group for Reproductive Toxicology  
Period: 19/07/2016 → 19/07/2017  
Number of participants: 1  
Project participant:  
Ramhøj, Louise (Intern)  
Project: Identification of virulence markers in two Novirhabdoviruses causing serious diseases in fish

National Veterinary Institute  
Period: 15/07/2016 → 14/07/2019  
Number of participants: 4  
Phd Student:  
Alencar, Anna Luiza Farias (Intern)  
Supervisor:  
Bremont, Michel (Ekstern)  
Rasmussen, Thomas Bruun (Intern)  
Main Supervisor:  
Olesen, Niels Jørgen (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

Identification of virulence markers in two Novirhabdoviruses causing serious diseases in fish  
National Veterinary Institute  
Period: 15/07/2016 → 14/07/2019  
Number of participants: 4  
Phd Student:  
Alencar, Anna Luiza Farias (Intern)  
Supervisor:  
Bremont, Michel (Ekstern)  
Rasmussen, Thomas Bruun (Intern)  
Main Supervisor:  
Olesen, Niels Jørgen (Intern)  

Financing sources
SDE-modelling in CITIES
Department of Applied Mathematics and Computer Science
Centre for IT-Intelligent Energy Systems in Cities
Period: 15/07/2016 → 13/11/2019
Number of participants: 4
Phd Student:
Junker, Rune Grønborg (Intern)
Supervisor:
Jørgensen, John Bagterp (Intern)
Thygesen, Uffe Høgsbro (Intern)
Main Supervisor:
Madsen, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Forbedring af forvaltningsgrundlaget for bestande i det rekreative fiskeri (39370)
National Institute of Aquatic Resources
Section for Monitoring and Data
Section for Ecosystem based Marine Management
Section for Freshwater Fisheries Ecology
Institute Management
Period: 14/07/2016 → 14/07/2018
Number of participants: 16
Acronym: REKREA
Project participant:
Olesen, Hans Jakob (Intern)
Storr-Paulsen, Marie (Intern)
Støttrup, Josianne Gatt (Intern)
Skov, Christian (Intern)
Christoffersen, Mads (Intern)
Reeh, Line (Intern)
Clinical auditory profiling and hearing-aid fitting strategies
In audiological clinics, the choice of a hearing aid and the adjustment of its amplification and processing parameters are today mostly based on the audiogram, a measure of pure-tone hearing sensitivity at different frequencies. While adjusting the gain of a hearing aid based on the loss of sensitivity reflected by the audiogram can be successful in restoring audibility of soft sounds and improving speech intelligibility in quiet situations, it is well established that hearing-impaired listeners still experience difficulty with understanding speech in more complex listening situations that are typical of everyday life, such as noisy and reverberant environments (Moore, 2007). Despite amplification from the hearing aid, sounds are thus still perceived as distorted, and this “distortion loss” (Plomp, 1978) is still a challenge to compensate for in practice.

The idea of the present project is to improve the hearing-aid fitting process and suggest parameter adjustment rationales based on a more complete evaluation of each patient’s hearing profile that reflects distortion loss as well. It is hypothesized that hearing-aid benefit can be improved by directly relating outcomes from such an extended clinical hearing profile to the choice of hearing-aid fitting.

Department of Electrical Engineering
Hearing Systems
Period: 01/07/2016 → 01/07/2019
Number of participants: 1
Audiology, hearing aid, hearing science
Number of related Ph.D. students: 1
Project participant:
Sanchez Lopez, Raul (Intern)

Nationwide accurate wind prospecting models for Denmark & Turkey
To develop a new wind modelling concept and apply it nationwide to Denmark and Turkey. These nationwide models are proofs-of-concept and allow prediction of accurate long-term wind climate series and associated uncertainties any place in Denmark or Turkey. The model concept integrates three existing model components in a novel setup including large amounts of observational data; production data from >4000 wind turbines in Denmark and wind measurements from hundreds of masts in Turkey.

Department of Wind Energy
Resource Assessment Modelling
EMD International A/S
Üstün Energy Engineering LLC
Period: 01/07/2016 → 01/06/2018
Number of participants: 1
Windprosper, wind resources, Wind turbine, CFD
Acronym: Windprosper
Project participant:
Bechmann, Andreas (Intern)

Relations
Activities:
DTU Wind Energy Department: Danish/Turkish Collaboration and Funds
Development of sectorial drought indices in the Iberian Peninsula: improving monitoring and early warning of droughts in Spain (in Spanish)

Department of Environmental Engineering
Water Resources Engineering
Period: 01/07/2016 → 01/07/2018
Number of participants: 2
Project participant:
Garcia, Monica (Intern)
Vicente-Serrano, Sergio (Ekstern)

Arktisk vandforsyning II
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Period: 01/07/2016 → …
Number of participants: 1
Project Manager, academic:
Hendriksen, Kåre (Intern)

Cost-effective and flexible 3D printed SOFC stacks for commercial applications
A Solid Oxide Fuel Cell (SOFC) is a ceramic-based multilayer device that involves expensive and time-consuming multi-step manufacturing processes including tape casting, screen printing, firing, shaping and several high-temperature thermal treatments. In addition, these cells are manually assembled into stacks resulting in extra steps for joining and sealing that difficult the standardization and quality control of the final product while introducing weak parts likely to fail. Since current ceramics processing presents strong limitations in shape and extremely complex design for manufacturing (more than 100 steps), industrially fabricated SOFC cells and stacks are expensive and present low flexibility and long time to market. This is particularly relevant for the commercial segment of the stationary fuel cells market (5-400kW) that is highly heterogeneous in terms of the overall power and heat requirements and requires customization of the final product. The main goal of the Cell3Ditor project is to develop a 3D printing technology for the industrial production of SOFC stacks by covering research and innovation in all the stages of the industrial value chain (inks formulation, 3D printer development, ceramics consolidation and system integration). All-ceramic joint-free SOFC stacks with embedded fluidics and current collection will be fabricated in a two-step process (single-step printing and sintering) to reduce in energy, materials and assembly costs while simplifying the design for manufacturing and time to market. Compared to traditional ceramic processing, the Cell3Ditor manufacturing process presents a significantly shorter time to market (from years to months) and a cost reduction estimated in 63% with an initial investment below one third of an equivalent conventional manufacturing plant (production of 1000 units per year). The project is product-driven and involves SMEs (with proved technologies) in the entire value chain to ensure reaching TRL>6.

Department of Energy Conversion and Storage
Ceramic Engineering & Science
Period: 01/07/2016 → 31/12/2019
Number of participants: 2
Acronym: Cell3Ditor
Project participant:
Esposito, Vincenzo (Intern)
Rosa, Massimo (Intern)

Micro scale metal plasticity: fundamentals and applications
H.C. Ørsted Postdoctoral Fellowships. People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme (FP7/2007-2013) under REA grant agreement n° 609405 (COFUNDPost-docDTU)

Department of Mechanical Engineering
Solid Mechanics
Period: 01/07/2016 → 30/06/2018
Number of participants: 1
Acronym: MICROMETAL  
Project ID: 76931  
Project participant: Martínez Pañeda, Emilio (Intern)  
Project:

Remotely Adjustable Structural Plasmonic Colour
Department of Micro- and Nanotechnology  
Optofluidics  
Center for Nanostructured Graphene  
Department of Photonics Engineering  
Structured Electromagnetic Materials  
Period: 01/07/2016 → 30/06/2018  
Number of participants: 3  
Acronym: Smart Colour  
Project participant:  
Keshavarz Hedayati, Mehdi (Intern)  
Kristensen, Anders (Intern)  
Mortensen, N. Asger (Intern)  
Project:

CLAIRcity
Air pollution and citizen engagement  
Department of Management Engineering  
Systems Analysis  
DTU Climate Centre  
Period: 01/07/2016 → 31/08/2017  
Number of participants: 1  
Project participant:  
Anderson, Tessa Kate (Intern)  
Project:

Accelerated Probabilistic Response Modelling and Analysis  
Department of Management Engineering  
Period: 01/07/2016 → 31/03/2017  
Number of participants: 4  
Phd Student:  
Hundevadt, Drude Hargbøl (Intern)  
Supervisor:  
Sørensen, John Dalsgaard (Intern)  
Thöns, Sebastian (Intern)  
Main Supervisor:  
Faber, Michael Havbro (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

Beam Steering for Terahertz Signals by using Hybrid Photonic-Electronic Signals  
Department of Photonics Engineering  
Period: 01/07/2016 → 30/06/2017  
Number of participants: 2  
Phd Student:
Clinical auditory profiling and hearing-aid fitting strategies

Department of Electrical Engineering
Period: 01/07/2016 → 30/06/2019
Number of participants: 4
PhD Student:
Sanchez Lopez, Raul (Intern)
Supervisor:
Bianchi, Federica (Intern)
Santurette, Sébastien (Intern)
Main Supervisor:
Dau, Torsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Development and pressure testing of solid oxide electrolyser cells

Department of Energy Conversion and Storage
Period: 01/07/2016 → 30/09/2016
Number of participants: 4
PhD Student:
Gao, Ying (Intern)
Supervisor:
Graves, Christopher R. (Intern)
Hauch, Anne (Intern)
Main Supervisor:
Jensen, Søren Højgaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Development of electrochemically deposited surfaces based on copper and silver with bacterial effect

Department of Systems Biology
Period: 01/07/2016 → 30/06/2019
Number of participants: 4
PhD Student:
Ciacotich, Nicole (Ekstern)
Supervisor:
Bjarnsholt, Thomas (Intern)
Møller, Per (Intern)
Main Supervisor:
Gram, Lone (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: ErhvervsPhD-ordningen VTU
Project: PhD
Development of electrochemically deposited surfaces based on copper and silver with bacterial effect

Department of Systems Biology
Period: 01/07/2016 → 30/06/2019
Number of participants: 4
Phd Student:
Ciacotich, Nicole (Intern)
Supervisor:
Bjarnsholt, Thomas (Intern)
Møller, Per (Intern)
Main Supervisor:
Gram, Lone (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Effect of room acoustics and head movements on aided and unaided sound-field auditory steady state response (ASSR) measurements

Department of Electrical Engineering
Period: 01/07/2016 → 30/06/2019
Number of participants: 5
Phd Student:
Zapata Rodriguez, Valentina (Intern)
Supervisor:
Brunskog, Jonas (Intern)
Harte, James (Intern)
Laugesen, Søren (Intern)
Main Supervisor:
Jeong, Cheol-Ho (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Evaluation of Sustainable Exploitation of Major Baltic Fish Stocks under different Climate, Eutrophication and Fishing Pressures

National Institute of Aquatic Resources
Period: 01/07/2016 → 30/06/2019
Number of participants: 5
Phd Student:
Bossier, Sieme (Intern)
Supervisor:
Bastardie, Francois (Intern)
Christensen, Asbjørn (Intern)
Neuenfeldt, Stefan (Intern)
Main Supervisor:
Nielsen, J. Rasmus (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
**k.p Theory of Two-Dimensional Materials**
Department of Photonics Engineering  
Period: 01/07/2016 → 29/11/2019  
Number of participants: 3  
Phd Student:  
Jensen, Mathias Rosdahl (Intern)  
Supervisor:  
Mørk, Jesper (Intern)  
Main Supervisor:  
Willatzen, Morten (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Grundforskningsfonden  
Project: PhD

**Machine Learning as a Service**
Department of Applied Mathematics and Computer Science  
Period: 01/07/2016 → 30/06/2019  
Number of participants: 3  
Phd Student:  
Zdyb, Franciszek Olaf (Intern)  
Supervisor:  
Ersbøll, Bjarne Kjær (Intern)  
Main Supervisor:  
Hansen, Lars Kai (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**Omics-guided Discovery and Characterization of Enzymes Involved in Utilisation of Xyloglucans, Mannans and Mannooligosaccharides by probiotics and co commensal bacteria**
Department of Systems Biology  
Period: 01/07/2016 → 30/06/2019  
Number of participants: 5  
Phd Student:  
Bendsen, Sidsel Krogh (Ekstern)  
Supervisor:  
Abou Hachem, Maher (Intern)  
Hägglund, Per (Intern)  
Wu, Lin (Ekstern)  
Main Supervisor:  
Svensson, Birte (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**Omics-guided Discovery and Characterization of Enzymes Involved in Utilisation of Xyloglucans, Mannans and Mannooligosaccharides by probiotics and co commensal bacteria**
Department of Systems Biology  
Period: 01/07/2016 → 31/05/2017  
Number of participants: 5  
Phd Student:  
Bendsen, Sidsel Krogh (Intern)
Optimized real-time management of interacting water systems for a smarter city

Department of Environmental Engineering
Period: 01/07/2016 → 30/06/2019
Number of participants: 5
Phd Student: Lund, Nadia Schou Vormdran (Intern)
Supervisor: Borup, Morten (Intern)
Helwigh, Ole Mark (Ekstern)
Madsen, Henrik (Intern)
Main Supervisor: Mikkelsen, Peter Steen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Prediction Methods for the Environmental Fate of Organic Chemicals

Department of Environmental Engineering
Period: 01/07/2016 → 31/12/2018
Number of participants: 4
Phd Student: Brock, Andreas Libonati (Intern)
Supervisor: Kästner, Matthias (Ekstern)
Rein, Arno (Ekstern)
Main Supervisor: Trapp, Stefan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Theory of superradiance and quantum noise in few-emitter lasers

Department of Photonics Engineering
Period: 01/07/2016 → 30/06/2019
Number of participants: 3
Phd Student: André, Emil Cortes (Intern)
Supervisor: Mørk, Jesper (Intern)
Main Supervisor: Wubs, Martijn (Intern)
Combined flue gas cleaning for small scale wood combustion appliances

Department of Chemical and Biochemical Engineering

CHEC Research Centre

PHX innovation ApS
Period: 20/06/2016 → 19/06/2018
Number of participants: 2
Project participant:
Azizaddini, Seyednezamaddin (Intern)
Project Coordinator:
Illerup, Jytte Boll (Intern)

GN4-2 JRA1 Task 2: SDN/NFV capabilities in GEANT

Department of Photonics Engineering

Networks Technology and Service Platforms
Period: 16/06/2016 → 15/02/2019
Number of participants: 1
Project participant:
Soler, José (Intern)

Determination of wind load on high-rise buildings by applying Computational Fluid Dynamics

Department of Civil Engineering
Period: 15/06/2016 → 20/03/2020
Number of participants: 4
Phd Student:
Skytte Thordal, Marie (Intern)
Supervisor:
Bennetsen, Jens Christian (Intern)
Gudmand-Høyer, Tim (Intern)
Main Supervisor:
Koss, Holger (Intern)

Mixture Effects in Biodegradation Testing of Aromatic and Aliphatic Hydrocarbons

Department of Environmental Engineering
Period: 15/06/2016 → 13/12/2019
Number of participants: 4
Phd Student:
Hammershøj, Rikke Høst (Intern)
Supervisor:
Andersen, Henrik Rasmus (Intern)
Birch, Heidi (Intern)
Main Supervisor:
Mayer, Philipp (Intern)
Survival of Listeria monocytogenes in the food processing environment: Mechanisms and mitigation strategies

National Food Institute
Period: 15/06/2016 → 19/07/2019
Number of participants: 3
Phd Student:
Kragh, Martin Laage (Intern)
Supervisor:
Forslund, Anita (Intern)
Main Supervisor:
Hansen, Lisbeth Truelstrup (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

System-level simulation and automation of microscale acoustofluidics for biotechnology

Department of Physics
Period: 15/06/2016 → 14/06/2019
Number of participants: 4
Phd Student:
Skov, Nils Refstrup (Intern)
Supervisor:
Stokke, Bjørn Torger (Ekstern)
Wiklund, Martin (Ekstern)
Main Supervisor:
Bruus, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Food Modelling

National Food Institute
Research Group for Food Production Engineering

Company
Period: 01/06/2016 → 31/05/2017
Number of participants: 2
Project participant:
Feyissa, Aberham Hailu (Intern)
Rabeler, Felix (Intern)

Characterizing Porous Tool Materials for Impulse Drying Technology

Department of Applied Mathematics and Computer Science
Department of Mechanical Engineering
Manufacturing Engineering
Period: 01/06/2016 → 01/07/2017
Number of participants: 1
Project participant:
Improving bio-utilisation of marine algae as sustainable feed ingredients to increase efficiency and quality of aquaculture production

Global population growth and increase in living standards will push up the demand for fish-derived protein in the future. However, resource scarcity (feed, water and energy), environmental impacts, and changes in climate and growing conditions can seriously hamper aquaculture that supplies a significant proportion of human food. New sustainable protein and lipid sources and improved technologies to increase bio-availability of existing sources will be needed to ensure adequate supply of aquafeeds to ensure growth of aquaculture. On the other hand, the growth of the industry has caused environmental concerns. Interestingly, aquaculture effluents can be an excellent medium for algal growth, although they are not usually reused since they contain residual organic compounds, minerals and other micro-pollutants.

MARINALGAE4aqua is an innovative research project that targets the development of strategies to increase efficiency of important European farmed fish species (Atlantic salmon and European sea bass) and reduce the environmental impact using micro- & macro-algal biomass as feed ingredients by: I. Culturing marine algae under optimized technological processes to remove organic compounds and minerals from fish farm effluents, and producing high value products for aquafeeds while recycling nutrients; thus improving the water body quality and reducing the environmental impact. II. Identifying novel feed additives to improve fish digestive capacity and nutrient metabolism upon using the selected algae. III. Improving fish growth and end product quality, reducing time to slaughter and providing a safe and healthy food item with wide consumer acceptance. MARINALGAE4aqua aims to tackle the sustainability challenges of the aquafeed industry by developing cost-effective and resource-efficient alternatives to FM and FO by providing: a) efficient new processes to valorise selected marine algae that could reduce EU imports of protein and lipid sources and minimize over-exploitation of wild fish stocks, loss of biodiversity and environmental burden and b) high sensory quality, acceptable fish products that meet food safety standards and dietary needs for a healthy life. MARINALGAE4aqua will exploit cost-efficient and environmentally sustainable production and processing technologies to produce algal biomass suitable for inclusion in aquafeeds. MARINALGAE4aqua is innovative and cutting edge - it adopts a multidisciplinary approach, integrating molecular (genomics, proteomics) and traditional tools to address physiological, nutritional and environmental challenges in modern aquaculture – providing state-of-the-art knowledge to identify strategies to increase efficiency of farming important European fish species.

National Food Institute
Research Group for Food Production Engineering
Period: 01/06/2016 → 31/05/2019
Number of participants: 1
Acronym: MARINALGAE4Aqua
Project participant:
Jessen, Flemming (Intern)

Metrology for Additively Manufactured Medical Implants

Additive manufacturing, a technology used to manufacture parts layer-by-layer from a 3D digital model, offers an effective solution. Indeed, the key advantage of this technology, in the medical sector, is to produce on demand (without the need of a large inventory of different sizes or sterile storage) customised medical devices for specialities such as orthopaedic, spinal, cranial, maxillo-facial, and dental surgery, and to provide grafts that promote bone growth which match the patient's anatomy. The overall objective of this project is to provide a comprehensive basis to enable the safe and cost efficient use of additive manufacturing (AM) products within the medical sector. Therefore, within this project AM off-the-shelf medical devices as well as patient specific guides (PSG) and patient specific implants (PSI) manufactured from patient X-ray Computed Tomography (XCT) image data sets or computer aided design (CAD) will be qualified. This will guarantee their reliability to notified bodies and facilitate acceptance of this technology, which has proven clinical advantages in the medical sector.

Department of Mechanical Engineering
Manufacturing Engineering
Dark-field hyperlens: Superresolution imaging and label-free sensing device for biological applications

The ability to see and manipulate objects with ever decreasing size in a microscope is paramount to the ongoing development of many areas of modern science and technology, from microelectronics to biology and life sciences. The project goal is to demonstrate a technique enabling to image low-contrast nanoscale biological objects in real time without the need for scanning, fluorescent labelling, or fixation. Such a technique can have as great an impact as the invention of the optical microscope itself.

The project goal is achieved by using artificially engineered metal-dielectric nanostructures (hyperbolic metamaterials) with a unique ability to recover information contained in light waves coming from the object’s subwavelength features. This is contrary to conventional optical systems where the loss of this information limits the resolution. The central idea of the project is engineering the metamaterial so that only the subwavelength information is transmitted, while any other (background) radiation is filtered out, leading to contrast enhancement similar to the dark-field microscopy. As a result, we would combine superior image resolution (a property of hyperbolic metamaterials) and high image contrast (the result of “dark-field” background filtering). This will be highly desirable for label-free biological imaging scenarios, where faint, weakly scattering objects are abundant. The project aims to verify the concept through direct experimental realization.

Department of Photonics Engineering
Plasmonics and Metamaterials

DTU Danchip

A Live PV Testing Platform for Larger Adoption

Reliable solar photovoltaic (PV) generation technology has high potential to contribute significant electric energy to society. Thanks to modern power electronic technology, solar PV plants provide many opportunities to support the grid operation. However, grid operators are still reluctant to welcome more PV capacities to their grids.

The reason lies in the fact that most solar PV plants are relatively small in size compared with other RE sources, and their individual controllability is hard to be utilised by the system operators. This makes difficulties for the operators to accommodate PV plants in operation and planning.
This project aims to bridge the gap between the opportunities that solar PV can provide and the operators’ needs. An extended PV testing platform will be developed on the Campus of DTU incorporating with the facilities of PowerLab for the purpose of implementing the latest technologies and grid codes. Different control functions of PV plants will then tested. Finally the results will be verified in the real power system of Bornholm.

The project consortium is formed by DTU ELEK, DTU CAS, Bornholm Energi og Forsyning, Kenergy, EnergiMidt, and Solarconnectivity, which includes research institute, distribution system operators, PV project developers and practitioners.

Department of Electrical Engineering
Center for Electric Power and Energy

Kenergy
Bornholms Energi og Forsyning
Eniig
Solarconnectivity.eu

Period: 01/06/2016 → 30/09/2018
Number of participants: 1

Solar PV integration, Reactive power control, remote monitoring, distribution system operation, SCADA
Acronym: PVTP
Project participant:
Yang, Guangya (Intern)

Danish-Colombian Strategic Sector Cooperation on Veterinary and Food Safety within the Colombian pig meat sector

National Veterinary Institute
Section for Public sector service and commercial diagnostics
Section for Epidemiology
Fødevarestyrelsen

Colombian Agricultural Institute
National Institute of Surveillance of Medications and Food
The Danish Embassy to Colombia
The Colombian Pig Producers Organization
Fødevarestyrelsens laboratorium

Period: 01/06/2016 → 01/02/2018
Number of participants: 4
Project participant:
Petersen, Heidi Huus (Intern)
Lauritsen, Klara Tølbøl (Intern)
Andresen, Lars Ole (Intern)
Calvo Artavia, Francisco Fernando (Intern)

Biopsy equivalent Optical Fiber multifunctional Endoscope

The BiOp-FibEnd project aims to develop a functional optical fiber for in-vivo examination of suspect tissues. The information obtained is equivalent to that of a biopsy without removing samples from the living body. The main contribution of this technique is to detect earlier, without bringing distress and discomfort to the patient, diseases such as cancer, coronary obstructions, and many others. To this purpose a hyper-lens providing super-resolved imaging in the mid-IR, mid-IR spectroscopy and optical coherence tomography (OCT) will be combined. A fiber endoscope, ready for in-vivo tests, able to observe and get spectroscopy information of living tissues will be realized.

Department of Photonics Engineering
Fiber Sensors and Supercontinuum Generation
NordForsk topical network on Engineering, processes and real-space imaging

Department of Energy Conversion and Storage

Imaging and Structural Analysis

Period: 01/06/2016 → 31/05/2019
Number of participants: 1
Project participant:
Kuhn, Luise Theil (Intern)

3D image analysis methods for security X-ray screening

Department of Applied Mathematics and Computer Science

Period: 01/06/2016 → 31/07/2017
Number of participants: 3
Phd Student:
Kheirabadi, Mina (Intern)
Supervisor:
Olsen, Ulrik Lund (Intern)
Main Supervisor:
Dahl, Anders Bjorholm (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

3D Shape Analysis for Morphometric Evolutionary Modelling- based on 3D X-ray Tomography and Optical Scanning

Department of Applied Mathematics and Computer Science

Period: 01/06/2016 → 31/05/2019
Number of participants: 4
Phd Student:
Messer, Dolores (Intern)
Supervisor:
Dahl, Vedrana Andersen (Intern)
Orlando, Ludovic Antoine Alexandre (Ekstern)
Main Supervisor:
Dahl, Anders Bjorholm (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Aerodynamic Stability of Long Span Bridges

Department of Mechanical Engineering

Period: 01/06/2016 → 31/05/2019
Number of participants: 4
Phd Student:
Møller, Randi Nøhr (Ekstern)
Supervisor:
Pedersen, Claus (Ekstern)
Svendsen, Martin Nymann (Intern)
Main Supervisor:
Krenk, Steen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Application of solar district heating systems in urban buildings
Department of Civil Engineering
Period: 01/06/2016 → 31/05/2019
Number of participants: 4
Phd Student:
Huang, Junpeng (Intern)
Supervisor:
Furbo, Simon (Intern)
Li, Jing (Ekstern)
Main Supervisor:
Fan, Jianhua (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

A target diagnostic imaging system for ESS
Department of Physics
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Borghì, Nicolo (Intern)
Supervisor:
Zanini, Luca (Ekstern)
Main Supervisor:
Lauritzen, Bent (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Atomic-scale modelling of interfaces in electronic devices
Department of Physics
Period: 01/06/2016 → 03/02/2021
Number of participants: 5
Phd Student:
Jelver, Line (Intern)
Supervisor:
Stokbro, Kurt (Intern)
Stradi, Daniele (Intern)
Thygesen, Kristian Sommer (Intern)
Main Supervisor:
Jacobsen, Karsten Wedel (Intern)

Financing sources
Characterization and solution structure of multi-domain proteins and protein complexes

Department of Chemistry
Period: 01/06/2016 → 31/05/2019
Number of participants: 4
Phd Student:
Kulakova, Alina (Intern)
Supervisor:
Due, Anne Vindum (Ekstern)
Peters, Günther H.J. (Intern)
Main Supervisor:
Harris, Pernille (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Cutting Force Modelling and Error Compensation in Large Structure Machining

Department of Mechanical Engineering
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Checchi, Alessandro (Intern)
Supervisor:
Hansen, Hans Nørgaard (Intern)
Main Supervisor:
Bissacco, Giuliano (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Data-driven Condition Monitoring of Switches and Crossings

Department of Electrical Engineering
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Barkhordari, Pegah (Intern)
Supervisor:
Blanke, Mogens (Intern)
Main Supervisor:
Galeazzi, Roberto (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Development and characterisation of two animal models (osteomyelitis and exudative epidermitis) for testing a MRSA vaccine

National Veterinary Institute
Period: 01/06/2016 → 23/03/2020
Number of participants: 4
Phd Student:
Martinsen, Louise Otterstrøm (Intern)
Supervisor:
Andresen, Lars Ole (Intern)
Nielsen, Ole Lerberg (Ekstern)
Main Supervisor:
Jungersen, Gregers (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Electron microscopy of noble metal catalysts for automotive exhaust abatement**

Department of Physics
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Jespersen, Sebastian Pirel Fredsgaard (Intern)
Supervisor:
Helveg, Stig (Ekstern)
Main Supervisor:
Damsgaard, Christian Danvad (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

**Improving endurance of wind-turbine coatings for use in offshore environments**

Department of Mechanical Engineering
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Johansen, Nicolai Frost-Jensen (Intern)
Supervisor:
Bech, Jakob Isted (Intern)
Main Supervisor:
Møller, Per (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Information Theory and Coding in Regenerative and Non-linear Fiber Optical Communications**

Department of Photonics Engineering
Period: 01/06/2016 → 31/05/2019
Number of participants: 5
Phd Student:
Iqbal, Shajeel (Intern)
Supervisor:
Oxnøeve, Leif Katsuo (Intern)
Yankov, Metodi Plamenov (Intern)
Zibar, Darko (Intern)
Main Supervisor:
Forchhammer, Søren (Intern)
Interactions between fish probiotic roseobacters and the natural microbiota in aquaculture settings

Department of Systems Biology
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Dittmann, Karen Kiesbye (Intern)
Supervisor:
Bentzon-Tilia, Mikkel (Intern)
Main Supervisor:
Gram, Lone (Intern)

Large-scale analysis of the blood microbiome of non-communicable disease patients

Technical University of Denmark
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Misiakou, Maria-Anna (Intern)
Supervisor:
Panagiotou, Gianni (Intern)
Main Supervisor:
Sommer, Morten Otto Alexander (Intern)

Mechanics of steel beams and joints - Advanced modelling of beams and connection components

Department of Civil Engineering
Period: 01/06/2016 → 31/05/2019
Number of participants: 5
Phd Student:
Hansen, Anders Bau (Intern)
Supervisor:
Andreassen, Michael Joachim (Intern)
Hansen, Thomas (Intern)
P. Hansen, Johannes (Ekstern)
Main Supervisor:
Jönsson, Jeppe (Intern)

Modelling of the load carrying capacity of concrete bridges in conjunction with in-situ monitoring

Department of Civil Engineering
**Novel methods for 1 Tb/s signal transmission in large data centers**

Department of Photonics Engineering  
Period: 01/06/2016 → 31/05/2019  
Number of participants: 4
Phd Student: Echeverri, Santiago (Intern)  
Supervisor: Christiansen, Steen (Ekstern)  
Chung, Il-Sug (Intern)  
Main Supervisor: Tafur Monroy, Idelfonso (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Industrial PhD
Project: PhD

**Novel Two-dimensional Plasmonic Materials in Curved and Engineered Geometries**

Department of Photonics Engineering  
Period: 01/06/2016 → 31/05/2019  
Number of participants: 4
Phd Student: Dias Gonçalves, Paulo André (Intern)  
Supervisor: Jauho, Antti-Pekka (Intern)  
Peres, Nuno M. R. (Ekstern)  
Main Supervisor: Mortensen, N. Asger (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Grundforskningsfonden
Project: PhD

**PhD position in Valorization of Industrial Waste Streams from Tuber Processing - Sino Danish Center (SDC)**

Department of Chemical and Biochemical Engineering  
Period: 01/06/2016 → 31/05/2019  
Number of participants: 4
Phd Student: Barrett, Kristian (Intern)  
Supervisor: Busk, Peter Kamp (Intern)  
Meyer, Anne S. (Intern)
Main Supervisor:
Lange, Lene (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Sample preparation for screening analyses by high resolution mass spectrometry
National Food Institute
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Eyring, Philipp (Intern)
Supervisor:
Smedsgaard, Jørn (Intern)
Main Supervisor:
Frandsen, Henrik Lauritz (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Screening of unknown compounds for food monitoring by high resolution mass spectrometry
National Food Institute
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Wang, Tingting (Intern)
Supervisor:
Frandsen, Henrik Lauritz (Intern)
Main Supervisor:
Smedsgaard, Jørn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Social Spreading in Complex Networks
Department of Applied Mathematics and Computer Science
Period: 01/06/2016 → 31/05/2019
Number of participants: 3
Phd Student:
Mønsted, Bjarke Mørch (Intern)
Supervisor:
Mørup, Morten (Intern)
Main Supervisor:
Jørgensen, Sune Lehmann (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Thermodynamics, Design, Simulation and Benchmarking of Biofuel Processes
Department of Chemical and Biochemical Engineering
Period: 01/06/2016 → 31/05/2019  
Number of participants: 3  
Phd Student:  
Torli, Mauro (Intern)  
Supervisor:  
Kontogeorgis, Georgios (Intern)  
Main Supervisor:  
Fosbøl, Philip Loldrup (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD  

**Typing for Secure Composition of Distributed Systems**  
Department of Applied Mathematics and Computer Science  
Period: 01/06/2016 → 01/10/2019  
Number of participants: 3  
Phd Student:  
Laursen, Kasper (Intern)  
Supervisor:  
Probst, Christian W. (Intern)  
Main Supervisor:  
Mödersheim, Sebastian Alexander (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Forskningsrådsfinansiering  
Project: PhD  

**Validation and Improvement of Property and Process Modelling for Oleochemicals**  
Department of Chemical and Biochemical Engineering  
Period: 01/06/2016 → 31/05/2019  
Number of participants: 5  
Phd Student:  
Forero-Hernandez, Hector Alexander (Intern)  
Supervisor:  
Abildskov, Jens (Intern)  
Jensen, Anker Degn (Intern)  
Sarup, Bent (Ekstern)  
Main Supervisor:  
Sin, Gürkan (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Ansat eksternt  
Project: PhD  

**Engineering and structural characterization of perovskite-graphene interfaces for optimizing photovoltaic performance**  
Department of Chemistry  
NanoChemistry  
Organic Chemistry  
Period: 15/05/2016 → 14/02/2017  
Number of participants: 2  
Acronym: MAX4ESSFUN  
Phd Student:  
Halder, Arnab (Intern)
Datadriven models for energy advising leading to behavioural changes in SMEs and residences

Department of Applied Mathematics and Computer Science
Period: 15/05/2016 → 14/05/2019
Number of participants: 4
Phd Student:
Liisberg, Jon Anders Reichert (Intern)
Supervisor:
Bacher, Peder (Intern)
Madsen, Henrik (Intern)
Main Supervisor:
Møller, Jan Kloppenborg (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Development of Zeolite Catalysts and Processes for the Selective Conversion of Sugars to Bio-Polymer Monomers

Department of Chemistry
Period: 15/05/2016 → 14/05/2019
Number of participants: 3
Phd Student:
Tosi, Irene (Intern)
Supervisor:
Taarning, Esben (Intern)
Main Supervisor:
Riisager, Anders (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Enzymatic lignin biorefining by cleavage of lignin-carbohydrate complexes

Department of Chemical and Biochemical Engineering
Period: 15/05/2016 → 14/05/2019
Number of participants: 4
Phd Student:
Mosbech, Caroline (Intern)
Supervisor:
Wittrup Agger, Jane (Intern)
Busk, Peter Kamp (Intern)
Main Supervisor:
Meyer, Anne S. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Establishing sampling- and analytical procedures for the quantification of nanoparticles in aerosols and condensing conditions

Department of Micro- and Nanotechnology
Voltage Stability in RES based power systems
Department of Electrical Engineering
Period: 15/05/2016 → 14/05/2019
Number of participants: 3
PhD Student:
Karatas, Bahtiyar Can (Intern)
Supervisor:
Jóhannsson, Hjörður (Intern)
Main Supervisor:
Nielsen, Arne Hejde (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

CoolPower
An evaluation of scroll expanders for use in refrigeration cycles
Department of Mechanical Engineering
Thermal Energy
Innogie ApS
DELTA
Carrier
Period: 05/05/2016 → 04/05/2017
Number of participants: 2
Project participant:
Baldasso, Enrico (Intern)
Project Manager, academic:
Haglind, Fredrik (Intern)
Project:

Energieffektivisering i SMV motivation og barrierer
Department of Management Engineering
Centre for Facilities Management
Systems Analysis
DTU Climate Centre
Period: 04/05/2016 → 30/09/2016
Number of participants: 2
Acronym: NRGI SMV
Project Manager, organisational:
In September 2015, DriveNow - a free-floating car sharing service completely based on battery electric cars operated by Arriva - was introduced in Copenhagen and the Capital Region. In parallel, the charging infrastructure for electric cars is expanded.

Access to shared cars may facilitate living without a private car in the household, fewer private cars can pave the way for more sustainable transport patterns, while better opportunities to choose and combine transport modes may enhance multimodal transport chains.

Several international studies indicate positive environmental effects of car-sharing services but many of these studies are solely based on retrospective data or miss a control group.

Based on a longitudinal survey including both DriveNow users and non-users, the project will
(1) examine the effects of free-floating car-sharing in the Capital Region with regard to car use and ownership and related intentions and attitudes;
(2) monitor the awareness and use of the system; and
(3) examine possibilities for system improvements.

Efficient Co-Electrolyser for Efficient Renewable Energy Storage

Department of Energy Conversion and Storage

Management of Maritime operations under Emission Control Regulations (MANECO)

Brief summary of project:
Air pollution from ships such as NOx and SOx is currently at the center stage of discussion by the world shipping community and the tools of Operations Research (OR) and Management Science (MS) in reducing the environmental externalities of maritime transport will get increased attention. Therefore education and research in the area of maritime management under emission control regulations are needed. Both the education of engineers in maritime management and research in operations under emission control regulations are addressed in this project. In the research part of this project the focus will be on logistic-based (tactical and operational) measures such as routing, scheduling, and monitoring, however in the educational part other areas of operations may be included such as disruption management, stowage and planning. The project also includes an educational part creating a focus on maritime management which will give students insight into management of maritime operations in order to produce graduates who can not only manage maritime operations of companies, but also improve competitiveness. Development of courses and a project portfolio is needed in order to enhance the student competencies within the area of maritime management. The aim is to create a profile for maritime management to promote courses in maritime management to student and accommodate the industry need for engineers with maritime management skills.
Management Science

Transport optimisation and technique
Period: 02/05/2016 → 31/12/2018
Number of participants: 2
Acronym: MANECO
Project participant:
Kontovas, Christos A. (Intern)
Project Manager, academic:
Reinhardt, Line Blander (Intern)

Lubricant Transport across the Piston Ring with Flat and Triangular Lubrication Injection Profiles on the Liner in Large Two-Stroke Marine Diesel Engines.

Department of Mechanical Engineering

Solid Mechanics
Period: 02/05/2016 → 07/06/2017
Number of participants: 3
Project participant:
Overgaard, Hannibal Toxværd (Intern)
Supervisor:
Vølund, Anders (Intern)
Main Supervisor:
Klit, Peder (Intern)

GÉANT Project
The GÉANT project is a truly Pan-European collaboration between 41 National Research and Education Networks and their joint organisations NORDUnet and GÉAN, placing Europe at the forefront of high performance networking and AAI.

Department of Applied Mathematics and Computer Science

Algorithms and Logic
Period: 01/05/2016 → 31/12/2018
Number of participants: 1
High speed networking
Acronym: GN4-2
Project participant:
Olesen, Dorte (Intern)

Greater Copenhagen Food Innovation
CPH-Foods' goal is to increase the innovation grade and develop concrete solutions for SMEs primarily in Region Zealand. SMEs will be supported in developing new products, processes and concepts, which are considered to have a strong commercial future.

Projects must ensure that innovation and knowledge-sharing become an integral part of each company's everyday and strategy in the future.

CPH-Food makes use of its partners' combined competences in individually adapted and targeted development processes for innovation- and growth-oriented SMEs. This is to leverage value for SMEs and for the food sector in general. CPH-Food will also work on creating jobs in Zealand.

National Food Institute
Period: 01/05/2016 → 31/10/2019
Number of participants: 5
Acronym: CPH FOOD
Project participant:
Olsen, Lone Ryg (Ekstern)
PV LED ENGINE
PoC project | Business development of high efficient 3-port converter for solar lighting applications

Department of Photonics Engineering
Diode Lasers and LED Systems
Department of Electrical Engineering
Electronics

Period: 01/05/2016 → 30/04/2017
Number of participants: 2
Project participant:
- Poulsen, Peter Behrensdorff (Intern)
- Knott, Arnold (Intern)

Thermal Smart Grid - Innovation project under INNO-SE
First investigation on the development of a thermal smart grid for the company GeoDrilling. Innovation project under INNO-SE, CLEAN.

Department of Civil Engineering
Section for Building Energy
Centre for IT-Intelligent Energy Systems in Cities
GeoDrilling

Period: 01/05/2016 → 31/12/2016
Number of participants: 1
borehole heat exchanger, heat pumps, system, innovation
Project ID: 26549
Project participant:
- Heller, Alfred (Intern)

Innovative re-making of markets and business models in a renewable energy system based on wind power
The purpose of the I-REMB project is to assess and develop the technological, market and business options that can support the development of energy systems based predominantly on wind power. The project's aim is to mobilize expertise from renewable energy system engineering, business economics, and economic sociology to generate innovative design solutions to the new technical, regulatory and market contexts of fluctuating energy. For the many actors in the value chain – from generation, distribution to consumption – there are great uncertainties as to how to respond to the unclear commercial opportunities associated with the new variable RES. The conditions for facilitating a successful interaction of the technical and commercial steps towards a successful transition require new design solutions for regulations and market and non-market pricing, as well as an approach to involve existing and new actors in the energy system.

Systems Analysis
Department of Management Engineering
Energy Economics and Regulation
Aalborg University
Copenhagen Business School

Period: 01/05/2016 → 31/03/2019
Number of participants: 4
Acronym: I-REMB
Number of related Ph.D. students: 1
Project participant:
Morthorst, Poul Erik (Intern)
Skytte, Klaus (Intern)
Katz, Jonas (Intern)
Sekamane, Jonas Khubute (Intern)

Relations
Related projects:
Market and Policy Design for Fossil-free Energy Systems
Project

Advanced Design Methods for Active Distribution Networks
Department of Electrical Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
Phd Student:
Klyapovskiy, Sergey (Intern)
Supervisor:
You, Shi (Intern)
Main Supervisor:
Bindner, Henrik W. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Benchmarking Residential Energy Consumption In Indonesia
Department of Management Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
Phd Student:
Kewo, Angreine (Intern)
Supervisor:
Liu, Xiufeng (Intern)
Main Supervisor:
Nielsen, Per Sieverts (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

BlueSIROS – Satellite Integrated Route Optimisation Service
Department of Transport
Transport optimisation and technique
Department of Management Engineering
Management Science
Period: 01/05/2016 → 30/04/2017
Number of participants: 1
Acronym: BlueSiros
Project participant:
Psaraftis, Harilaos N. (Intern)
Project
Computational Fluid Dynamics (CFD) Study of Bio-Dust Combustion

Department of Chemical and Biochemical Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 4
Phd Student: Leth-Espensen, Anna (Intern)
Supervisor: Dam-Johansen, Kim (Intern)
Jensen, Peter Arendt (Intern)
Main Supervisor: Glarborg, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Development of an integrated lab-on-a-chip system for point-of-care molecular diagnosis

Department of Micro- and Nanotechnology
Period: 01/05/2016 → 30/04/2019
Number of participants: 4
Phd Student: Than Linh, Quyen (Intern)
Supervisor: Bang, Dang Duong (Intern)
Sun, Yi (Intern)
Main Supervisor: Wolff, Anders (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Development of catalytic reactions to prepare bio-based polymer building blocks

Department of Chemistry
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
Phd Student: Jessen, Bo (Intern)
Supervisor: Taarning, Esben (Intern)
Main Supervisor: Madsen, Robert (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Encapsulation of metal nanoparticles for heterogeneous catalysis

Department of Chemistry
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
Phd Student: Thumbayil, Rouzana Pulikkal (Intern)
Supervisor:
Mielby, Jerrik Jørgen (Intern)
Main Supervisor:
Kegnæs, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Energy system modelling and integrated future scenario analysis of the Nordic energy and transport system through the holistic energy system tool TIME S

Department of Management Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 4
Phd Student:
Salvucci, Raffaele (Intern)
Supervisor:
Gargiulo, Maurizio (Ekstern)
Uteng, Tanu Priya (Ekstern)
Main Supervisor:
Karlsson, Kenneth Bernard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Four-wave Mixing in Higher Order Mode Optical Fibers

Department of Photonics Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
Phd Student:
Christensen, Erik Nicolai (Intern)
Supervisor:
Usuga Castaneda, Mario A. (Intern)
Main Supervisor:
Rottwitt, Karsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Fundamental investigations of electrocatalytic H2O2 production

Department of Physics
Period: 01/05/2016 → 01/07/2016
Number of participants: 3
Phd Student:
Ebert, Kenneth (Intern)
Supervisor:
Chorkendorff, Ib (Intern)
Main Supervisor:
Stephens, Ifan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD
Greening the grid: A comparative policy analysis of South Africa and India

Department of Management Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 4
PhD Student: Bhamidipati, Padmasai Lakshmi (Intern)
Supervisor: Andersen, Per Dannemand (Intern)
Hansen, Ulrich Elmer (Intern)
Main Supervisor: Haselip, James Arthur (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Heat Transfer in dielectric elastomers

Department of Chemical and Biochemical Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
PhD Student: Madsen, Line Riis (Intern)
Supervisor: Hassager, Ole (Intern)
Main Supervisor: Skov, Anne Ladegaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

High precision tooling for heat assisted micro forging

Department of Mechanical Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 4
PhD Student: Cannella, Emanuele (Intern)
Supervisor: Bay, Niels Oluf (Intern)
Enggrob, Hans G. (Intern)
Main Supervisor: Nielsen, Chris Valentin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Hyperpolarized Parallel MRI

Department of Electrical Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
PhD Student: Hansen, Rie Beck (Intern)
Integrated micro product/process quality assurance in micro injection moulding production

Department of Mechanical Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
PhD Student:
Baruffi, Federico (Intern)
Supervisor:
Calaon, Matteo (Intern)
Main Supervisor:
Tosello, Guido (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Macroalgae biorefinery for value-added products (MAB4) (39372)

MAB4 will bridge the gap between research, innovation and market within the macroalgae (seaweed) sector. The goal is to establish seaweed cultivation as a Danish discipline for providing seaweed biomass for the business sectors of food and feed ingredients, and cosmetics. MAB4 will breed and mature sea-farmed crops of seaweed by improved and new cultivation methods in Danish and Faroese waters, with particular attention to seasonal development of algae bioactive substances and their conservation during harvesting and storage. The project will also develop sustainable enzymatic and Green Solvent extraction methods for development of new algae products i.e. antioxidants, fucoidan, laminarin, alginate, proteins, and minerals. The products will be tested as food and feed ingredients as well as in skincare products. Techno-economic feasibility and LCA will assess for the whole value chain from cultivation to final marketed seaweed products. MAB4 is a trans-disciplinary project running for 3½ years. The project consists of a strong consortium of national and international algae cultivators, biorefinery experts from universities, RTO’s, SMEs and relevant industrial end-users. The results from MAB4 will provide guidelines for stakeholders from industry and for future seaweed cultivation.

This project is coordinated by Danish Technological Institute.
The project is funded by Innovation Fund Denmark.
National Institute of Aquatic Resources
Danish Shellfish Centre
Aarhus University
University of Copenhagen
Ocean Rainforest
FermentationExperts
At Sea Technology
DTU Food
DTU Department of Chemical Engineering
Morgenfruerne på Læsø
Kattegatcentret
AgroKom
Melissa
Nordisk Tang
Hortimare
BHJ
Danish Technological Institute
Period: 01/05/2016 → 31/10/2019
Number of participants: 2
Research area: Shellfish and seaweed
Project participant:
Canal-Vergés, Paula (Intern)
Nielsen, Mette Møller (Intern)

Mainstreaming Climate Mitigation Actions in Sectoral and National Sustainable Development Strategies and Policies

Department of Management Engineering
Period: 01/05/2016 → 01/07/2019
Number of participants: 4
Phd Student:
Garcia Hernandez, Alma Lucia (Intern)
Supervisor:
Bolwig, Simon (Intern)
Reutemann, Tim (Intern)
Main Supervisor:
Hinostroza, Miriam L. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Metal-Catalyzed Dehydrogenation and Decarbonylation of Primary Alcohols

Department of Chemistry
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
Phd Student:
Bottaro, Fabrizio (Intern)
Supervisor:
Clausen, Mads Hartvig (Intern)
Main Supervisor:
Madsen, Robert (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Micro four-point probe based metrology

Department of Micro- and Nanotechnology
Period: 01/05/2016 → 08/06/2019
Number of participants: 3
Phd Student:
Witthøft, Maria-Louise (Intern)
Supervisor:
Hansen, Ole (Intern)
Main Supervisor:
Petersen, Dirch Hjorth (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Nonlinear fractional order derivative models of components and materials in hearing aids and transducers
Department of Electrical Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 4
Phd Student:
King, Alexander Weider (Intern)
Supervisor:
Brunskog, Jonas (Intern)
Jensen, Jakob Søndergaard (Intern)
Main Supervisor:
Agerkvist, Finn T. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Optimal integration of district heating, district cooling, heat sources and heat sinks
Department of Mechanical Engineering
Period: 01/05/2016 → 04/06/2019
Number of participants: 4
Phd Student:
Pieper, Henrik (Intern)
Supervisor:
Elmegaard, Brian (Intern)
Ommen, Torben Schmidt (Intern)
Main Supervisor:
Markussen, Wiebke Brix (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet

Relations
Activities:
Performance analysis of heat pumps utilizing different low temperature heat sources to supply district heating
Project: PhD

Process Parameters and Fatigue Properties of High Modulus Composites
Department of Wind Energy
Period: 01/05/2016 → 30/04/2019
Number of participants: 4
Phd Student:
Mortensen, Ulrich Andreas (Intern)
Supervisor:
Løgstrup Andersen, Tom (Intern)
Hansen, Birgitte Møller (Ekstern)
Main Supervisor:
Mikkelsen, Lars Pilgaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Proof of food authenticity by chemical methods

National Food Institute
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
Phd Student:
Wilde, Amelie Sina (Intern)
Supervisor:
Fromberg, Arvid (Intern)
Main Supervisor:
Smedsgaard, Jørn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Quantifying performance of Modularized Products in an ETO Company

Department of Management Engineering
Period: 01/05/2016 → 07/01/2020
Number of participants: 3
Phd Student:
Markworth Johnsen, Sara Helene (Intern)
Supervisor:
Mortensen, Niels Henrik (Intern)
Main Supervisor:
Hvam, Lars (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Stannosilicates in biomass conversion - a combined spectroscopic and computational study

Department of Chemistry
Period: 01/05/2016 → 30/04/2019
Number of participants: 3
Phd Student:
Elliot, Samuel Gilbert (Intern)
Supervisor:
Meier, Sebastian (Intern)
Main Supervisor:
Madsen, Robert (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Surface Characterization of Activated Chalcopyrite Particles

Department of Chemical and Biochemical Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 4
Phd Student:
Karcz, Adam Paul (Intern)
Supervisor:
Damø, Anne Juul (Intern)
Illerup, Jytte Boll (Intern)
Main Supervisor:
Dam-Johansen, Kim (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet

Relations
Activities:
Materials Science and Technology 2016
Project: PhD

Thermodynamic modelling and data evaluation for life sciences applications
Department of Chemical and Biochemical Engineering
Period: 01/05/2016 → 30/04/2019
Number of participants: 4
Phd Student:
Ruszczynski, Lukasz (Intern)
Supervisor:
Sin, Gürkan (Intern)
Zubov, Alexandr (Intern)
Main Supervisor:
Abildskov, Jens (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Design and optimization of selected oleochemical processes
Department of Chemical and Biochemical Engineering
Period: 15/04/2016 → 14/04/2019
Number of participants: 4
Phd Student:
Jones, Mark Nicholas (Intern)
Supervisor:
Gernaey, Krist V. (Intern)
Sarup, Bent (Ekstern)
Main Supervisor:
Sin, Gürkan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Diode laser based lighting
Department of Photonics Engineering
Period: 15/04/2016 → 14/04/2019
Number of participants: 3
Phd Student:
Krasnoshchoka, Anastasiia (Intern)
Supervisor:
Petersen, Paul Michael (Intern)
Main Supervisor:
Jensen, Ole Bjarlin (Intern)

Financing sources
Relations

Activities:
CIE DR 2-80, CIE Division 2 Reportership, on metrology of laser based lighting

Project: PhD

In-silico Process Design and Evaluation Tool for Pharmaceutical Manufacturing
Department of Chemical and Biochemical Engineering
Period: 15/04/2016 → 14/04/2019
Number of participants: 3
Phd Student:
da Conceicao Do Carmo Montes, Frederico (Intern)
Supervisor:
Gernaey, Krist V. (Intern)
Main Supervisor:
Sin, Gürkan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Protein structure and protein-protein interactions in formulation
Department of Chemistry
Period: 15/04/2016 → 14/04/2019
Number of participants: 4
Phd Student:
Ryberg, Line Abildgaard (Intern)
Supervisor:
Bukrinsky, Jens T. (Ekstern)
Harris, Pernille (Intern)
Main Supervisor:
Peters, Günther H.J. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Room temperature ballistic graphene devices
Department of Micro- and Nanotechnology
Period: 15/04/2016 → 14/04/2019
Number of participants: 3
Phd Student:
Zhao, Xiaojing (Intern)
Supervisor:
Caridad, Jose (Intern)
Main Supervisor:
Bøggild, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
**Smart Energy Systems and Sustainable Urban Development**

Department of Management Engineering  
Period: 15/04/2016 → 31/05/2017  
Number of participants: 3  
PhD Student: 
La Greca, Simone (Intern)  
Supervisor: 
Morales González, Juan Miguel (Intern)  
Main Supervisor:  
Halsnæs, Kirsten (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**Sustainable Process Synthesis and Design**

Department of Chemical and Biochemical Engineering  
Period: 15/04/2016 → 31/01/2017  
Number of participants: 3  
PhD Student: 
Maria Dragan, Johanna (Intern)  
Supervisor:  
Zubov, Alexandr (Intern)  
Main Supervisor:  
Sin, Gürkan (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Marie Curie (EU-stipendium)  
Project: PhD

**UNEP Emissions Gap Report 2016**

The emissions gap report by the United Nations Environment Programme is an annual scientific assessment of the shortfall between national emission reduction pledges under the United Nations Framework Convention on Climate Change and the levels required to keep global average temperature increases below 2°C, compared to pre-industrial levels.

Department of Management Engineering  
UNEP DTU Partnership  
Period: 04/04/2016 → 09/12/2016  
Number of participants: 2  
Project participant: 
Puig, Daniel (Intern)  
Bakhtiari, Fatemeh (Intern)  
Documents:  

**PVT/heat pump system**

Measurements on a PVT/heat pump system are carried out in a laboratory test facility.

Department of Civil Engineering  
Section for Building Energy  
Department of Applied Mathematics and Computer Science  
RACELL SAPHIRE Technologies ApS  
COWI A/S
Offentlig accept af VE teknologier (public acceptance of RE Technologies)
Backup from the local communities is essential for the expansion of renewable energy (RE) in Denmark – a key condition for the country to reach its climate goals.

Although the Danes generally support the green transition, actual plans to establish RE facilities are often met with local resistance, resulting in project delays. Local communities are often worried about how the new facility will impact their local area.

Environmental Impact Assessments (EIA) – a central instrument
In Denmark, the EIA is an important and well-established tool for evaluating and reducing environmental and social risks of larger construction projects. EIAs include technical analyses as well as public hearings in the local community.

However, there is a need to change the way social impacts are evaluated and discussed in the context of RE projects. Researchers and practitioners agree that this may often be vital in facilitating local communities to embrace RE.

Key project objectives
The project's direct objective is to develop knowledge and tools enabling professionals to:
1) Elucidate and address social impact of RE facilities, and
2) Facilitate a constructive dialogue with local citizens about possible social impacts.

A thorough and systematic elucidation of social impacts will provide a better basis for constructive dialogue with the local communities.

For example, this will enable the professional team to integrate approaches that minimize or compensate for negative impacts early in the planning process. In addition, developers and consultants will have better options for highlighting and strengthening positive social impacts.

Our thesis is that a systematic and proactive approach to social impacts in the planning phase will lead to enhanced local support to RE projects.

Department of Wind Energy
Integration & Planning
Aalborg University

Breaking the temperature limits of Solid Oxide Fuel Cells: Towards a new family of ultra-thin portable power sources
Solid Oxide Fuel Cells (SOFCs) are one of the most efficient and fuel flexible power generators. However, a great limitation on their applicability arises from temperature restrictions. Operation approaching room temperature (RT) is forbidden by the limited performance of known electrolytes and cathodes while typical high temperatures (HT) avoid their implementation in portable applications where quick start ups with low energy consumption are required.

The ULTRASOFc project aims breaking these historical limits by taking advantage of the tremendous opportunities arising from novel fields in the domain of the nanoscale (nanoionics or nano photochemistry) and recent advances in the marriage between micro and nanotechnologies. From the required interdisciplinary approach, the ULTRASOFc project addresses materials challenges to (i) reduce the operation to RT and (ii) technological gaps to develop ultra-low-thermal mass
structures able to reach high T with extremely low consumption and immediate start up.
A unique μSOFC technology fully integrated in ultrathin silicon will be developed to allow operation with hydrogen at room temperature and based on hydrocarbons at high temperature. Stacking these μSOFCs will bring a new family of ultrathin power sources able to provide 100 mW at RT and 5 W at high T in a size of a one-cent coin. A stand-alone device fuelled with methane at HT will be fabricated in the size of a dice.
Apart from breaking the state-of-the-art of power portable generation, the ULTRASOFc project will cover the gap of knowledge existing for the migration of high T electrochemical devices to room temperature and MEMS to high T. Therefore, one should expect that ULTRASOFc will open up new horizons and opportunities for research in adjacent fields like electrochemical transducers or chemical sensors. Furthermore, new technological perspectives of integration of unconventional materials will allow exploring unknown devices and practical applications.

Department of Energy Conversion and Storage

Ceramic Engineering & Science
Period: 01/04/2016 → 31/03/2021
Number of participants: 2
Acronym: ULTRA-SOFC.
Project participant:
Esposito, Vincenzo (Intern)
Project Manager, organisational:
Taracón, Albert (Ekstern)

In situ nanoscale investigation of microbial extracellular electron transfer

Department of Chemistry
NanoChemistry
Period: 01/04/2016 → 31/03/2018
Number of participants: 2
Supervisor:
Erik Mølager Christensen , Hans (Ekstern)
Main Supervisor:
Zhang, Jingdong (Intern)

GazeIT – Accessibility by Gaze Tracking

Copenhagen Center for Health Technology
Department of Management Engineering
Technology and Innovation Management
Period: 01/04/2016 → 31/03/2021
Number of participants: 1
Acronym: GazeIT
Project participant:
Hansen, John Paulin (Intern)

Otto Mønsted Guest Professorship: R. Budhani

Center for Electron Nanoscopy
DTU Danchip
IIT Kanpur
Period: 01/04/2016 → 30/06/2016
Number of participants: 1
Project participant:
Beleggia, Marco (Intern)
Human Brain Project
The Neurorobotics Platform (NRP) developed in the Human Brain Project (HBP) is an Internet-accessible simulation system that allows the simulation of robots controlled by spiking neural networks. It targets researchers of multiple fields. Prospected users include but are not limited to neuroscientists wanting to validate brain models in the context of closed action-perception loops as well as robotics researchers wanting to develop new neuro-inspired controllers.

Department of Electrical Engineering
Automation and Control
Centre for Playware
Copenhagen Center for Health Technology
Period: 01/04/2016 → 01/04/2018
Number of participants: 4
Acronym: HBP
Project participant:
Tolu, Silvia (Intern)
Lund, Henrik Hautop (Intern)
Baira Ojeda, Ismael (Intern)
Christensen, David Johan (Intern)

Visualization, Analysis and Modelling of On-street Parking Data
Master project
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
EasyPark
Period: 01/04/2016 → 28/09/2016
Number of participants: 3
Project participant:
Notarangelo, Rosaria (Ekstern)
Supervisor:
Thyregod, Camilla (Intern)
Main Supervisor:
Ersbøll, Bjarne Kjær (Intern)

NSON-DK - North Sea Offshore Network - Denmark
The focal point of the NSON-DK project is how the future massive offshore wind power and the associated offshore grid development will affect the Danish power system in the transition towards a future sustainable energy system. NSON-DK is a Danish part of the North Sea Offshore and Storage Network (NSON) project framework, which has emerged from the European Energy Research Alliance (EERA) as a pioneer project framework joining nationally funded research according to the European Commission’s Berlin model.
The objective of the NSON-DK project is to study how the future massive offshore wind power and the associated offshore grid development will affect the Danish power system on short term, medium term and long term towards of the transition towards a future sustainable energy system.
The following research questions will have special attention in the project:
- How will the offshore wind power development affect the variability and uncertainty of variable renewable generation in the Danish power system and neighboring systems?
- How will this increased variability and uncertainty from the offshore wind power development together with onshore renewable generation development influence the balancing and need for reserves in the Danish power system?
- How will the offshore wind power and offshore grid development influence the electricity markets in future systems with large scale energy storage and coordination of the electricity system with other energy systems (mainly heat and transport)?
- How will the scale and architecture of the offshore grid development influence the adequacy and security of supply in the Danish power system?
- Which polity instruments should be applied to support an effective and cost-efficient transition of the Danish power system combining the offshore development with energy storage and coordination between energy systems?

Department of Wind Energy
Integration & Planning

Department of Management Engineering

Energy Economics and Regulation

EA Energy Analysis A/S
Period: 01/04/2016 → 31/03/2020
Number of participants: 5
Wind power, Power systems, Offshore wind, Ancillary services, Variability, Renewables
Acronym: NSON-DK
Project participant:
Das, Kaushik (Intern)
Koivisto, Matti Juhani (Intern)
Pade, Lise-Lotte (Intern)
Skytte, Klaus (Intern)
Project Coordinator:
Sørensen, Poul Ejnar (Intern)

Related projects:
TWENTIES - Transmission system operation with large penetration of Wind and other renewable Electricity sources in Networks by means of innovative Tools and Integrated Energy Solutions
SIMBA - Simulation of balancing

Publications:
A Statistical Model for Hourly Large-Scale Wind and Photovoltaic Generation in New Locations
Multi-terminal Offshore Grid for the North Sea Region for 2030 and 2050 Scenarios
NSON-DK energy system scenario
Impacts of offshore grid developments in the North Sea region on market values by 2050: How will offshore wind farms and transmission lines pay?

Bovine abortions revisited

Every month, approximately 700 bovine abortions are registered in the national Danish "Kvægdatabasen" but the number is estimated to be significantly higher as abortion-registration is deficient. Our knowledge on the causes of bovine abortion is very limited and prophylactic measures are scarce. Out of more than 100 abortion cases analysed at DTU Vet during 2014, 35% were found to have an infectious cause (bacterial infections and neosporosis). In 44% of submissions, histopathologic lesions in the placenta and/or the foetus were found, that indicate infection however, no infectious agent was detected by routine diagnostic methods. In 22% of the submitted foetuses no specific pathological findings were made.

The aim of this project is to gain in-depth knowledge on the possible bacterial and viral infections of the bovine foetus and placenta by use of state of the art molecular methods for culture-independent identification of bacteria and viruses. Furthermore, placental and foetal infection is to be verified by in situ hybridization of the agents.

On the basis of the project's results, knowledge will be gained on bacterial and viral infections as causes of bovine abortions in Denmark. For example will the relevance of Chlamydia and Chlamydia-like bacteria be assessed, since those have lately been shown to play a role in swine production. The results of this study will complement knowledge-based counselling and prophylactic measures on herd-level.

National Veterinary Institute
Section for Bacteriology, Pathology and Parasitology

University of Copenhagen
Period: 01/04/2016 → 31/03/2019
Number of participants: 3
Phd Student:
Wolf-Jäckel, Godelind (Intern)
Supervisor:
Security Assessment of Renewable Power Systems

Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems
Department of Wind Energy
Integration & Planning
Period: 01/04/2016 → 31/03/2020
Number of participants: 5
Acronym: SARP
Project participant:
Sørensen, Poul Ejnar (Intern)
Phd Student:
Karatas, Bahtiyar Can (Intern)
Sarkar, Moumita (Intern)
Hildebrandt, Christina Berndt (Intern)
Project Coordinator:
Jóhannsson, Hjörtur (Intern)

Relations
Related projects:
Voltage Stability in RES based power systems
Modelling of renewable energy under stressed power system stability conditions
Secure Operation of Sustainable Power Systems
High Performance Algorithms Enabling Real-Time Security Assessment of Sustainable Electric Power Systems

Active Magnetic regenerator refrigeration with rotary multi-bed technology

Department of Energy Conversion and Storage
Period: 01/04/2016 → 20/09/2016
Number of participants: 7
Phd Student:
Eriksen, Dan (Intern)
Supervisor:
Bahl, Christian (Intern)
Bjørk, Rasmus (Intern)
Main Supervisor:
Engelbrecht, Kurt (Intern)
Examiner:
Jensen, Jens Oluf (Intern)
Kitanovski, Andrej (Ekstern)
Palm, Björn (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)

Relations
Publications:
Active magnetic regenerator refrigeration with rotary multi-bed technology
Project: PhD
Bovine Abortions Revisited
National Veterinary Institute
Period: 01/04/2016 → 31/03/2019
Number of participants: 4
Phd Student:
Wolf-Jäckel, Godelind (Intern)
Supervisor:
Agerholm, Jørgen Steen (Ekstern)
Schou, Kirstine Klitgaard (Intern)
Main Supervisor:
Jensen, Tim Kåre (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Classification and aggregation of energy components
Department of Electrical Engineering
Period: 01/04/2016 → 31/03/2019
Number of participants: 4
Phd Student:
Richert, Thibaut Pierre (Intern)
Supervisor:
Gehrke, Oliver (Intern)
Madsen, Henrik (Intern)
Main Supervisor:
Bindner, Henrik W. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering

Relations
Activities:
CITIES consortium 2016
Project: PhD

Commercial project SOFC related
Department of Energy Conversion and Storage
Applied Electrochemistry
Period: 01/04/2016 → 31/03/2017
Number of participants: 1
Project participant:
Hagen, Anke (Intern)

Electric Vehicle Integration in an Energy - Optimized Neighbourhood
Department of Electrical Engineering
Period: 01/04/2016 → 31/03/2019
Number of participants: 4
Phd Student:
Gjelaj, Marjan (Intern)
Supervisor:
Andersen, Peter Bach (Intern)
Financial sources
- Source: Internal funding (public)
- Name of research programme: Offentlig finansiering
- Project: PhD

Enhancement of therapeutic protein production in CHO cells: Coping with the ER stress
FTP post doc stipend

Novo Nordisk Foundation Center for Biosustainability

CHO Cell Line Engineering and Design
- Period: 01/04/2016 → 31/03/2019
- Number of participants: 2

Project participant:
- Kwang Ha, Tae (Intern)

Supervisor:
- Kildegaard, Helene Fastrup (Intern)

Fabrication and characterization of hyperbolic metamaterials

Department of Photonics Engineering
- Period: 01/04/2016 → 31/03/2019
- Number of participants: 4

PhD Student:
- Sukham, Johneph (Intern)

Supervisor:
- Lavrinenko, Andrei (Intern)
- Stenger, Nicolas (Intern)

Main Supervisor:
- Malureanu, Radu (Intern)

Financial sources
- Source: Internal funding (public)
- Name of research programme: Institut stipendie (DTU)
- Project: PhD

Highly efficient on-chip frequency comb generation

Department of Photonics Engineering
- Period: 01/04/2016 → 31/03/2019
- Number of participants: 4

PhD Student:
- Kamel, Ayman Nassar (Intern)

Supervisor:
- Pu, Minhao (Intern)

Thomsen, Jan Westenkær (Ekstern)

Main Supervisor:
- Rottwitt, Karsten (Intern)

Financial sources
- Source: Internal funding (public)
- Name of research programme: Grundforskningsfonden
- Project: PhD

Light-matter interactions in low-dimensional materials

Department of Photonics Engineering
Market Mechanisms for the integration of Distributed Energy Resources

Department of Applied Mathematics and Computer Science
Period: 01/04/2016 → 31/03/2019
Number of participants: 3
Phd Student:
De Zotti, Giulia (Intern)
Supervisor:
Madsen, Henrik (Intern)
Main Supervisor:
Morales González, Juan Miguel (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

NSON-DK - North Sea Offshore Network - Denmark
The focal point of the NSON-DK project is how the future massive offshore wind power and the associated offshore grid development will affect the Danish power system in the transition towards a future sustainable energy system. NSON-DK is a Danish part of the North Sea Offshore and Storage Network (NSON) project framework, which has emerged from the European Energy Research Alliance (EERA) as a pioneer project framework joining nationally funded research according to the European Commission’s Berlin model.
The objective of the NSON-DK project is to study how the future massive offshore wind power and the associated offshore grid development will affect the Danish power system on short term, medium term and long term towards of the transition towards a future sustainable energy system.
The following research questions will have special attention in the project:
- How will the offshore wind power development affect the variability and uncertainty of variable renewable generation in the Danish power system and neighboring systems?
- How will this increased variability and uncertainty from the offshore wind power development together with onshore renewable generation development influence the balancing and need for reserves in the Danish power system?
- How will the offshore wind power and offshore grid development influence the electricity markets in future systems with large scale energy storage and coordination of the electricity system with other energy systems (mainly heat and transport)?
- How will the scale and architecture of the offshore grid development influence the adequacy and security of supply in the Danish power system?
- Which polity instruments should be applied to support an effective and cost-efficient transition of the Danish power system combining the offshore development with energy storage and coordination between energy systems?

Department of Management Engineering
Systems Analysis
Period: 01/04/2016 → 31/03/2020
Number of participants: 1
Acronym: NSON-DK
Project participant:
Boscán Flores, Luis Rafael (Intern)
Personalizing Hearing Care and Enhancing User Experience by Adapting Devices to the Changing Mobile Context

Department of Applied Mathematics and Computer Science
Period: 01/04/2016 → 31/03/2019
Number of participants: 3
Phd Student:
Johansen, Benjamin (Intern)
Supervisor:
Petersen, Michael Kai (Intern)
Main Supervisor:
Larsen, Jakob Eg (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Promoting cost-optimal energy retrofits through improved energy labelling

Department of Civil Engineering
Period: 01/04/2016 → 30/03/2020
Number of participants: 3
Phd Student:
Cáceres, Alex Arnoldo González (Intern)
Supervisor:
Vik, Tor Arvid (Ekstern)
Main Supervisor:
Karlishøj, Jan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Security assessment and protection of cyber-physical energy systems

Department of Electrical Engineering
Period: 01/04/2016 → 31/03/2019
Number of participants: 4
Phd Student:
Rasmussen, Theis Bo (Intern)
Supervisor:
Dong, Z. Y. (Ekstern)
Nielsen, Arne Hejde (Intern)
Main Supervisor:
Yang, Guangya (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)

Relations
Activities:
12th IEEE Power and Energy Society PowerTech Conference
Federated Conference on Computer Science and Information Systems
EuroTech Summer School 2016 @ EPFL: Energy Systems
Functional modelling in the operation of a cyber physical energy system
University of New South Wales
Project: PhD
Thermodynamics of Petroleum Fluids relevant to Subsea Processing

Department of Chemical and Biochemical Engineering
Period: 01/04/2016 → 31/03/2019
Number of participants: 3
Phd Student:
Kruger, Francois (Intern)
Supervisor:
Kontogeorgis, Georgios (Intern)
Main Supervisor:
von Solms, Nicolas (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Tools development for DER aggregators providing concurrent services

Department of Electrical Engineering
Period: 01/04/2016 → 31/03/2019
Number of participants: 3
Phd Student:
Ziras, Charalampos (Intern)
Supervisor:
You, Shi (Intern)
Main Supervisor:
Bindner, Henrik W. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

3D Nanocarbon chips for microsupercapacitors and ultrasensitive detection

Department of Chemistry
NanoChemistry
Organic Chemistry
Department of Micro- and Nanotechnology
Period: 15/03/2016 → 14/05/2017
Number of participants: 2
Acronym: CapSens
Phd Student:
Halder, Arnab (Intern)
Hemanth, Suhith (Intern)
Project

A Bayesian Approach to Neural Networks

Department of Applied Mathematics and Computer Science
Period: 15/03/2016 → 14/03/2019
Number of participants: 3
Phd Student:
Jørgensen, Peter Bjørn (Intern)
Supervisor:
Marup, Morten (Intern)
Main Supervisor:
Schmidt, Mikkel Nørgaard (Intern)
A trait-based approach for predicting fish community structure, function and services under climate change and exploitation

National Institute of Aquatic Resources
Period: 15/03/2016 → 14/03/2019
Number of participants: 3
Phd Student:
Beukhof, Esther (Intern)
Supervisor:
Andersen, Ken Haste (Intern)
Main Supervisor:
Lindegren, Martin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Miniaturization of food safety analysis

National Food Institute
Period: 15/03/2016 → 14/03/2019
Number of participants: 3
Phd Student:
Zhai, Demi Shuang (Intern)
Supervisor:
Boisen, Anja (Intern)
Main Supervisor:
Smedsgaard, Jørn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Module Integrated Converter for Photovoltaic Systems

Department of Electrical Engineering
Period: 15/03/2016 → 14/03/2019
Number of participants: 3
Phd Student:
bin Abdul Rahman, Norjasmi (Intern)
Supervisor:
Ouyang, Ziwei (Intern)
Main Supervisor:
Andersen, Michael A. E. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Selective gut microbiome-immune interplays to identify major disease-driving bacteria and early life dynamics in microbiome establishment

Department of Systems Biology
Period: 15/03/2016 → 14/03/2019
Number of participants: 4
Phd Student: Eriksen, Carsten (Intern)
Supervisor: Arumugan, Manimozhiyan (Ekstern)
Kristiansen, Karsten (Ekstern)
Main Supervisor: Pedersen, Susanne Brix (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Seasonal heat storages in Denmark
Analyses of measurements and experience from operation of water pit heat storage in Gram solar heating plant

Department of Civil Engineering
Section for Building Energy
PlanEnergi
Period: 04/03/2016 → 31/07/2018
Number of participants: 1
water pit, seasonal heat storage
Project participant: Furbo, Simon (Intern)

Highly structured materials for upgraded biogas and storage
HiGradeGas will develop nanostructured materials for more efficient adsorption processes to remove CO₂ from biogas (upgrading) and to store the resulting biomethane.

Department of Energy Conversion and Storage
Ceramic Engineering & Science
SINTEF
Stockholm University
Syddansk Universitet
Danish Power Systems ApS
NeoZeo AB
Rambøll Oil and Gas
Lulea University of Technology
Period: 01/03/2016 → 29/02/2020
Number of participants: 1
Biogas upgrading, pressure swing adsorption, Nanofibers, gas adsorption
Acronym: HiGradeGas
Number of related Ph.D. students: 2
Project Coordinator: Kaiser, Andreas (Intern)

Development of novel genome engineering tools to improve CHO cell factories
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Period: 01/03/2016 → 28/02/2019
Number of participants: 3
Phd Student:
Julie la Cour Karottki, Karen (Intern)

Supervisor:
Lee, Jae Seong (Intern)

Main Supervisor:
Kildegaard, Helene Fastrup (Intern)

Project

**PEAKapp - Personal Energy Administration Kiosk application: an ICT-ecosystem for Energy Savings through Behavioural Change, Flexible Tariffs and Fun**

**Summary**

PEAKapp targets the development of an unprecedented ICT-to-Human ecosystem to trigger lasting energy savings through behavioural change and continuous engagement, to enable increased consumption of clean and low-priced electricity from the spot market for household customers, to connect them to social networks, to motivate them through serious gaming, and to boost the efficacy of Smart Home building energy management systems by integrating their functionalities into the PEAKapp solution. With this first close-to-market-ready attempt to provide households with a dynamic electricity tariff in the EU, the door is opened for the most significant impact on the household electricity market since its liberalisation.

The ICT ecosystem will be designed to require smart meters as only hardware with respect to in-house equipment, such that the system can be implemented almost immediately, given the EU targets for smart meter roll-out. These low hardware requirements allow for a fast market uptake, and thus a noticeable impact on EU energy consumption can be experienced with almost no delay and without the need of having to equip the 230 mio dwellings in the EU with any extra efficiency hardware.

Validation of the ICT ecosystem under real life conditions in the publicly owned social housing sector will be carried out in Austria, Estonia, Sweden and Finland, and analyses of the collected data will allow for ground-breaking insights into consumer behaviour, while outstanding EU energy market analyses will derive implications for regulatory practice to better support energy efficiency goals. An outstanding market uptake strategy makes >3 electricity utilities ready-to-sign the implementation of the ICT-system, advises the European social housing sector about its benefits, and fosters European and international market uptake by distinguished exploitation activities, where the leading US stakeholder EPRI takes responsibility without funding.

**DTU-MAN Focus**

*WP4: Customer engagement analysis and savings impact assessment*
Task 4.1 Modelling consumer behaviour through econometric time-series analysis (8 mm)

*WP5: Market Uptake and Transformation, Privacy and Regulatory Framework*
Task 5.2 Market transformation through dynamic electricity prices - assess effects of the market price and distribution costs of electricity from consumer load shifting via PEAKapp (7 mm)
Task 5.3 Regulatory framework (2 mm) - analyse and develop regulatory framework necessary to enable full exploitation of the PEAKapp

Department of Management Engineering

Systems Analysis

DTU Climate Centre

Energy Economics and Regulation

Johannes Kepler Universität Linz

Period: 01/03/2016 → 01/03/2019
Number of participants: 3

**Acronym:** PEAKapp

**Number of related Ph.D. students:** 0

**Project participant:**

Bolwig, Simon (Intern)
Møller Andersen, Frits (Intern)
Henningsen, Geraldine (Intern)

Project

**Integrated Baltic offshore wind electricity grid development**

The offshore wind energy sector in the Baltic Sea requires coordinated transnational grid planning to realise its full growth potential. Baltic InteGrid promotes the meshed grid approach by creating a professional network for the exchange of expertise and state-of-the-art interdisciplinary research.

Department of Management Engineering
The use of wind power capabilities to improve the operation of the distribution network

NetVind aims toward the green transition in Denmark, by rethinking the way of using wind power plants in distribution systems. NetVind analyses and demonstrates in a large experimental facility, which technical and financial potentials exist to improve the operation of distribution systems by using wind power plants support control capabilities.

The goal of NetVind is to improve the operation of distribution systems with high wind power penetration by using the wind power plants grid support capabilities. This is accomplished through:

- Digitizing the communication between grid devices (i.e. wind turbine’s inverter) and the net monitoring system in relation to IEC 61850.
- Minimizing grid losses in MV distribution systems with high wind power penetration by optimizing the reactive power flow.
- Making optimal use of the existing net and obtain a benefit of the green transition by using regulation rather than to reinforce the net.
- Exploring which business model can be applied between players.
  - Testing the IT security infrastructure for data communication in accordance with IEC 62351.
  - Building up know-how on modelling the condition of the MV net.
- Contributing to improvement and qualification of future technical regulations which are under preparation at Energinet.dk and which should bind together the political, technical and financial interests.

The project seeks to achieve effective integration of renewable energy, considering the overall system security by optimizing the wind power transmission upwards in the system so that unnecessary losses due to new production/consumption scenarios are minimized and optimized by using the control capabilities of power electronics in wind turbines.

Convergence of Electronics and Photonics Technologies for Enabling Terahertz Applications

CELTa aims to produce the next generation of researchers who will enable Europe to take a leading role in the multidisciplinary area of utilising Terahertz technology for applications involving components and complete systems for sensing, instrumentation, imaging, spectroscopy, and communications. All these technologies are keys to tackling challenges and creating solutions in a large number of focus areas relevant for the societal challenges identified in the Horizon 2020 programme. To achieve this objective, CELTa is comprised of 11 leading research institutions and has assembled a comprehensive research training programme for all the 15 early-stage researchers (ESRs). CELTa integrates multidisciplinary scientific expertise, complementary skills, and experience working in academia and industry to empower ESRs to work in interdisciplinary teams, integrate their activities, share expertise, and promote a vision of a converged co-design and common engineering language between electronics and photonics for Terahertz technologies.
CELTA will introduce the strategy of converged electronics and photonics co-design in its research programme and makes a special effort on establishing a common engineering language in its training programme across the electronics, photonics and applications disciplines. We believe this common engineering language and converged co-design is mandatory to make the next logical step towards efficient and innovative solutions that can reach the market. The detailed compendium of lectures on state-of-the-art technology, soft skills and entrepreneurship is accompanied by a research programme that focuses on THz key technologies. CELTA ESRs will develop three demonstrators: beam steering technology for communication applications, a photonic vector analyser for spectroscopy and materials characterisation, and a THz imager for sensing applications.

Department of Photonics Engineering
Administration
Metro-Access and Short Range Systems

Department of Electrical Engineering
Electromagnetic Systems
Period: 01/03/2016 → 29/02/2020
Number of participants: 3
Convergence of Electronics and Photonics Technologies for Enabling Terahertz Applications, sensing, instrumentation, imaging, spectroscopy
Acronym: CELTA
Number of related Ph.D. students: 15
Contact person:
Reippuert, Mie (Intern)
Project participant:
Tafur Monroy, Idelfonso (Intern)
Johansen, Tom Keinicke (Intern)

Financing sources
Source: EU research programme (public)
Name of research programme: H2020-MSCA-ITN-2015
Amount: 3,808,558.08 Euro

Bio4Self
Department of Wind Energy
Composites and Materials Mechanics
Period: 01/03/2016 → …
Number of participants: 5
Project ID: H2020
Project participant:
Beauson, Justine (Intern)
Mikkelsen, Lars Pilgaard (Intern)
Madsen, Bo (Intern)
Christensen, Jacob (Intern)
Mishnaevsky, Leon (Intern)

Porous Carbon Nanomaterials for Bioelectrochemistry
2-year postdoc project
Department of Chemistry
NanoChemistry
Organic Chemistry
Period: 01/03/2016 → 28/02/2018
Number of participants: 2
Project participant:
Zhao, Jianming (Intern)
**SDN-enabled Management of Heterogeneous Optical & Wireless Network Infrastructure**

Department of Photonics Engineering

Networks Technology and Service Platforms

*Period:* 01/03/2016 → 28/02/2019  
*Number of participants:* 3  
*Project participant:* Kentis, Angelos Mimidis (Intern)  
*Supervisor:* Soler, José (Intern)  
*Main Supervisor:* Berger, Michael Stübert (Intern)  

**Literature survey on migration and risk assessment of nanoparticles from food contact materials**

National Food Institute  
Division of Risk Assessment and Nutrition

Research Group for Nano-Bio Science

*Period:* 01/03/2016 → 01/12/2016  
*Number of participants:* 3  
*Project participant:* Pedersen, Gitte Alsing (Intern)  
Jokar, Maryam (Intern)  
Löschner, Katrin (Intern)  

**Reducing the rate and duration of re-admission among patients with unipolar and bipolar disorder using smartphone-based monitoring and treatment**

According to WHO, depression is becoming a leading cause of disability. The RADMIS project seeks to design smartphone-based monitoring and treatment technology for depressive patients. The goal is to establish the efficacy of this technology by measuring re-admission and clinical outcome.

Copenhagen Center for Health Technology  
Department of Applied Mathematics and Computer Science  
Embedded Systems Engineering  
Cognitive Systems

Psychiatric Center Copenhagen, Rigshospitalet

*Period:* 01/03/2016 → 01/09/2019  
*Number of participants:* 2  
*Acronym:* RADMIS  
*Number of related Ph.D. students:* 2  
*Project participant:* Bardram, Jakob Eyvind (Intern)  
Winther, Ole (Intern)  

**Financing sources**

*Source:* Public research programme (public)  
*Name of research programme:* Innovation Fund Denmark  
*Web address:* [http://innovationsfonden.dk/en](http://innovationsfonden.dk/en)  
*Amount:* 11,000,000.00 Danish Kroner  
*Year of approval:* 2016
Bioinformatics Services for Data-Driven Design of Cell Factories and Communities

Omics data is not leveraged effectively in the biotechnology industry due to lack of tools to rapidly access public and private data and to design cellular manipulations or interventions based on the data. With this project we aim to make a broad spectrum of omics data useful to the biotechnology industry covering application areas ranging from industrial biotechnology to human health. We will develop novel approaches for integrative model-based omics data analysis to enable 1) Identification of novel enzymes and pathways by mining metagenomic data, 2) Data-driven design of cell factories for the production of chemicals and proteins, and 3) Analysis and design of microbial communities relevant to human health, industrial biotechnology and agriculture. All research efforts will be integrated in an interactive web-based platform that will be available for the industrial and academic research and development communities, in particular enhancing the competitiveness of biotech SMEs by economizing resources and reducing time-to-market within their respective focus areas. The platform will be composed of standardized and interoperable components that service-oriented bioinformatics SMEs involved in the project can reuse in their own products. An important aspect of the platform will be implementation of different access levels to data and software tools allowing controlling access to proprietary data and analysis tools. Two end-user companies will be involved in practical testing of the platform built within the project using proprietary omics data generated at the companies.

Novo Nordisk Foundation Center for Biosustainability

Research Groups

iLoop
Period: 01/03/2016 → 29/02/2020
Number of participants: 8
Acronym: DD-DeCaF

Project participant:
Galkina, Svetlana (Intern)
Redestig, Nils Henning (Intern)
Beber, Moritz Emanuel (Intern)
Dannaher, Danny (Intern)
Project Manager, organisational:
Lohmann, Ricarda (Intern)
Rasmussen, Birte Kastrup (Intern)
Project Coordinator:
Herrgard, Markus (Intern)
Sonnenschein, Nikolaus (Intern)

Financing sources
Source: EU research programme (public)
Name of research programme: Horizon 2020 LEIT BIO

Relations
Publications:
Systems biology solutions for biochemical production challenges
OptiLang: An algebraic modeling language for mathematical optimization
Stoichiometric Representation of Gene–Protein–Reaction Associations Leverages Constraint-Based Analysis from Reaction to Gene-Level Phenotype Prediction

Warm or Cold, Lights influence on thermal comfort
Various indicators point out that a connection exists between the ambient temperature and the correlated color temperature that users prefer for the lit environment. In warm climate the use of cooler lighting is much more common than in a colder climate where people use much warmer light sources. Presumably the use of different colored light sources is due to the experience of cooler climate at cooler light sources and the impression of warmth follows a warmer looking light source. With new LED technology the correlated color temperature (warm white to cool white) is easily controllable.

The goal of the project is to demonstrate how controllable LED lighting can be used to expand the temperature interval that users find comfortable. The project is founded on previous research on colored light. It will lead to a decrease in the energy consumption of buildings.

Department of Photonics Engineering
Diode Lasers and LED Systems

Department of Civil Engineering

Section for Indoor Climate and Building Physics
Period: 01/03/2016 → 31/12/2018
Number of participants: 5
Project ID: 70963
Project participant:
Markvart, Jakob (Ekstern)
Thorseth, Anders (Intern)
Dam-Hansen, Carsten (Intern)
Toftum, Jørn (Intern)
Project Manager, organisational:
Logadóttir, Ásta (Ekstern)

Financing sources
Source: Public research council
Name of research programme: ELFORSK
Web address: http://www.elforsk.dk/
Year of approval: 2015

Relations
Related projects:
Combined daylight and Intelligent LED lighting : Getting the daylight into the buildings
Energibesparende LED farveblandings belysningssystem med høj lyskvalitet
Activities:
DALI Designer 5 programming
Danish national CIE committee (External organisation)
LED possibilities and challenges
Press / Media items:
Koldt LED-lys truer nordisk hygge
Project

Additive Manufacturing and Characterization of Mini Devices for Oral Drug Delivery

Department of Micro- and Nanotechnology
Period: 01/03/2016 → 28/02/2019
Number of participants: 4
Phd Student:
Vaut, Lukas (Intern)
Supervisor:
Jensen, Kristian Ejlebjærg (Intern)
Tosello, Guido (Intern)
Main Supervisor:
Boisen, Anja (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

A platform for microbial production of aromatic and cyclic compounds (PhD1)

Department of Systems Biology
Period: 01/03/2016 → 28/02/2019
Number of participants: 3
Phd Student:
Skovbjerg, Christine Alexandra Egaa (Intern)
Supervisor:
Larsen, Thomas Ostenfeld (Intern)
Main Supervisor:
Frandsen, Rasmus John Normand (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

A platform for microbial production of aromatic and cyclic compounds (PhD 2)

Department of Systems Biology
Period: 01/03/2016 → 28/02/2019
Number of participants: 3
Phd Student:
Olsen, Kresten Jon Kromphardt (Intern)
Supervisor:
Frandsen, Rasmus John Normand (Intern)
Main Supervisor:
Larsen, Thomas Ostenfeld (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Ballast water - Tool for supporting the delimitation of a "same risk area" (39348)
A project financed by the Danish Maritime Fund via the Danish Nature Agency, to develop a decision support tool for authorities and consultants involved with the ballast water convention and measures preventing the spread of marine invasive species. The tool will support decision makers in member nations of the International Maritime Organisation (IMO) to identify and delimit marine areas with high connectivity considering hydrography and species biology. Identification of marine areas with high connectivity can provide a basis for granting exemptions in relation to the ballast water convention and the requirement for ships to treat ballast water before being discharged into the sea. The tool development is based on existing freeware including “IBM Lib” (DTU Aqua’s own individual-based modeling system for linking individual-based models to hydrographical model data), Netlogo (a widely used IBM simulation system) and R (a statistical programming and data handling package).

This project is coordinated by DTU Aqua.

The project is funded by the Danish Maritime Fund via the Danish Nature Agency.

National Institute of Aquatic Resources
Section for Marine Living Resources
Danish Meteorological Institute
Anchor-Lab
Period: 01/03/2016 → 01/12/2016
Number of participants: 9
Research areas: Marine Living Resources & Observation Technology
Project participant:
Mosegaard, Henrik (Intern)
Stage, Bjarne (Intern)
Eg Nielsen, Einar (Intern)
Worsøe Clausen, Lotte (Intern)
van Deurs, Mikael (Intern)
Andersen, Niels Gerner (Intern)
Project Manager, organisational:
Pedersen, Eva Maria (Intern)
Project Manager, academic:
Hansen, Flemming Thorbjørn (Intern)
Project Coordinator:
Christensen, Asbjørn (Intern)
**Biomass Corrosion Management**

Department of Mechanical Engineering  
Period: 01/03/2016 → 28/02/2019  
Number of participants: 4  
Phd Student: Malede, Yohanes Chekol (Intern)  
Supervisor: Dahl, Kristian Vinter (Intern)  
Montgomery, Melanie (Intern)  
Main Supervisor: Hald, John (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**Blue whiting (Micromesistius poutassou): behaviour and distribution in Greenland waters**

National Institute of Aquatic Resources  
Period: 01/03/2016 → 28/02/2020  
Number of participants: 4  
Phd Student: Post, Søren Lorenzen (Intern)  
Supervisor: Balk, Helge (Ekstern)  
Hedeholm, Rasmus Berg (Ekstern)  
Main Supervisor: Jansen, Teunis (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Industrial PhD  
Project: PhD

**Bycatch of marine mammals and seabirds - Assessment and mitigation (39337)**  
The aim of the project is to develop innovative mitigation methods to reduce the unintended bycatch of marine mammals and seabirds in Danish gillnet fisheries.  
The project includes the following components:  
- determine the distribution in time and space of the bycatches;  
- identify the factors that determine the occurrence of the bycatch and its distribution;  
- identify behaviour that are correlated with bycatch;  
- conduct pilot trials of mitigation methods;  
- propose further mitigation methods to test in a continuation of the project.

The results of the project will contribute to a better management of protected species of marine mammals and seabirds, as well as placing Denmark in a better position with respect to its obligations in relation to the EU Habitats Directive, the EU Bird Directive, the EU Marine Strategy Framework Directive, the EU Council Resolution 812/2004 and the EU Action Plan for reduction of seabird bycatch.

This project is coordinated by DTU Aqua.

The project is funded by the Ministry of Environment and Food of Denmark and the European Maritime and Fisheries Fund (EMFF).

National Institute of Aquatic Resources  
Section for Ecosystem based Marine Management
Kolmården Wildlife Park  
Period: 01/03/2016 → 28/02/2018  
Number of participants: 5  
Research areas: Ecosystem based Marine Management & Coastal Ecology  
Project participant:
Serensen, Thomas Kirk (Intern)  
Rindorf, Anna (Intern)  
Wisz, Mary (Intern)  
Project Manager, academic:
Kindt-Larsen, Lotte (Intern)  
Project Coordinator:
Larsen, Finn (Intern)  
Project

Climate Change and European Aquatic Resources (CERES) (39344)  
CERES advances a cause-and-effect understanding of how climate change will influence Europe’s most important fish and shellfish resources and the economic activities depending on them. It will provide tools and develop adaptive strategies allowing fisheries and aquaculture sectors and their governance to anticipate and prepare for adverse changes or future benefits of climate change.

The project has 24 additional partners spread across Europe and is coordinated by University of Hamburg, Germany.

The project is funded by EU, Horizon 2020.

National Institute of Aquatic Resources  
Section for Oceans and Arctic  
University of Hamburg  
Period: 01/03/2016 → 29/02/2020  
Number of participants: 3  
Research areas: Marine Populations and Ecosystem Dynamics & Oceanography & Shellfish and seaweed  
Project participant:
Nielsen, J. Rasmus (Intern)  
Saurel, Camille (Intern)  
Project Manager, academic:
Payne, Mark (Intern)  
Project

Daylight as a Driver for Healthier Energy Optimization  
Renovations of existing buildings have primarily focused on the energy consumption and thermal comfort. This project involves health as a priority design parameter, and through an exemplary case study, the project examines how essential health aspects are better served. The project focuses on facade design. The project involves daylight quality as a design parameter and focuses on the clearest glass quality on the market. Through a major housing, the study documents how aspects of health and energy are influenced by the quality of daylight/glass quality.

Department of Photonics Engineering  
Diode Lasers and LED Systems  
Region Hovedstaden  
Statens Byggeforskningsinstitut  
Period: 01/03/2016 → 30/06/2018  
Number of participants: 5  
Project participant:
Petersen, Paul Michael (Intern)  
Thorseth, Anders (Intern)  
Markvart, Jakob (Ekstern)  
Martiny, Klaus (Ekstern)  
Project Manager, organisational:
Volf, Carlo (Ekstern)
**Relations**

Related projects:
- Combined daylight and intelligent LED lighting: Getting the daylight into the buildings
- Warm or Cold, Lights influence on thermal comfort

Activities:
- LED possibilities and challenges

Publications:
- Glass Quality and Health in Public Housing

---

**Designing a Real-time Tracking and Feedback System to use During Endoscopic Procedures**

Department of Applied Mathematics and Computer Science

**Period:** 01/03/2016 → 26/04/2019
**Number of participants:** 4

**PhD Student:**
- Norsk, David (Intern)

**Supervisor:**
- Clemmensen, Line Katrine Harder (Intern)
- Svendsen, Lars Bo (Ekstern)

**Main Supervisor:**
- Paulsen, Rasmus Reinhold (Intern)

**Financing sources**

- **Source:** Internal funding (public)
- **Name of research programme:** Samfinansieret - Andet
- **Project:** PhD

---

**Development of novel genome engineering tools to improve CHO cell factories**

Technical University of Denmark

**Period:** 01/03/2016 → 28/02/2019
**Number of participants:** 3

**PhD Student:**
- Julie la Cour Karottki, Karen (Intern)

**Supervisor:**
- Lee, Jae Seong (Intern)

**Main Supervisor:**
- Kildegaard, Helene Faustrup (Intern)

**Financing sources**

- **Source:** Internal funding (public)
- **Name of research programme:** Samfinansierede - Virksomhed
- **Project:** PhD

---

**Fermentation of Synthesis Gas**

Department of Chemical and Biochemical Engineering

**Period:** 01/03/2016 → 28/02/2019
**Number of participants:** 3

**PhD Student:**
- Grimalt Alemany, Antonio (Intern)

**Supervisor:**
- Skiadas, Ioannis V (Intern)

**Main Supervisor:**
- Gavala, Hariklia N. (Intern)

**Financing sources**

- **Source:** Internal funding (public)
- **Name of research programme:** Samfinansieret - Andet
- **Project:** PhD
**FishHab-II (39345)**
The aim of the project is to map fish habitats to improve data and information for Maritime Spatial Planning. The project focuses on mapping the habitats for 9 commercially important fish species and one invertebrate species in the inner Danish waters. Within the project methods will be developed to map habitats in data-poor as well as data-rich areas. Data derived from different sources; surveys, fisheries, citizen science will be used and combined with information derived from fisher interviews. The mapping will include coastal habitats to provide the basis for advice on management of coastal fish nursery areas.

This project is coordinated by DTU Aqua.

The project is funded by the Ministry of Environment and Food of Denmark and the European Maritime and Fisheries Fund (EMFF).

National Institute of Aquatic Resources
Section for Ecosystem based Marine Management
Danish Fishermen's Association
University of Copenhagen
Period: 01/03/2016 → 28/02/2018
Number of participants: 7
Research areas: Coastal Ecology & Ecosystem based Marine Management
Project participant:
- Wisz, Mary (Intern)
- Sørensen, Thomas Kirk (Intern)
- Vinther, Morten (Intern)
- Egekvist, Josefine (Intern)
- Svendsen, Jon Christian (Intern)
Phd Student:
- Brown, Elliot John (Intern)
Project Manager, academic:
- Støttrup, Josianne Gatt (Intern)

---

**Genomic patterns and processes of population divergence in marine fishes**
National Institute of Aquatic Resources
Period: 01/03/2016 → 28/02/2019
Number of participants: 3
Phd Student:
- Le Moan, Alan (Intern)
Supervisor:
- Bekkevold, Dorte (Intern)
Main Supervisor:
- Hansen, Jakob Hemmer (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

---

**InfantBrain - New infant formulas to promote optimal brain development**
Department of Systems Biology
Period: 01/03/2016 → 28/02/2019
Number of participants: 4
Phd Student:
- Heerup, Christine (Intern)
Supervisor:
- Müllertz, Anette (Ekstern)
Lipid Droplets in Green Cells

Department of Systems Biology
Period: 01/03/2016 → 31/01/2018
Number of participants: 4
Phd Student: Peramuna, Anantha Vithakshana (Intern)
Supervisor: Bae, Hansol (Intern)
Main Supervisor: Simonsen, Henrik Toft (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Machine learning for smartphone-based monitoring and treatment of unipolar and bipolar disorders

Department of Applied Mathematics and Computer Science
Period: 01/03/2016 → 28/02/2019
Number of participants: 3
Phd Student: Busk, Jonas (Intern)
Supervisor: Bardram, Jakob Eyvind (Intern)
Main Supervisor: Winther, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

New methodologies for an ecosystem approach to spatial and temporal management of fisheries and aquaculture in coastal areas (ECOAST) (38339)

ECOAST aims to identify, develop and test new methodologies for spatial and temporal management of fisheries and aquaculture in coastal areas. The overall approach will assess the impact of fisheries and aquaculture on coastal ecosystems, including essential fish habitats and conservation priority habitats, as well as synergies and conflicts between human activities.

Building on previous methodologies and experiences the project will evaluate marine spatial planning in seven coastal case study areas having different ecological and socio-economic characteristics: 1) Adriatic Sea (ADR), 2) Ionian Sea (ION), 3) Black Sea (BLK), 4) Tyrrhenian Sea (TYR), 5) Baltic Sea (BAL), 6) Norwegian Fjords (NOR) and 7) NE Atlantic Coasts (ATL).

The project outcomes will produce case specific evaluation of the ecological footprints of aquaculture and fisheries in coastal areas, maps of optimal areas for fisheries and aquaculture, evaluation of compatibility between fisheries, aquaculture and other human activities in coastal areas, as well as implementation of holistic methods and an operational modelling framework to evaluate and predict stakeholder responses to coastal spatial management options covering marine cross sector occupation of space. Several methodologies already exist to assess the impacts on the ecosystem and the socio-economic effects of some spatial management measures, as well as to spatially manage some cross sector marine activities, but none of them integrate all relevant management aspects for coastal areas. Therefore, the holistic
methodology will cover in a single system different approaches and management aspects, identifying realistic spatial and
temporal potentials and limitations for the integration of fisheries and aquaculture in coastal areas, in order to allow policy
makers and stakeholders to evaluate management measures from different points of view and share decisions in a
transparent manner on case specific basis. ECOAST results will support the EU and national policies through the
provision of tools and data for an ecosystem based allocation of space and sustainable use of marine resources in coastal
areas on case specific basis.

This project is coordinated by Institute of Marine Science of the National Research Council, Italy.

This project is funded by EU, COFASP, ERA-NET.

National Institute of Aquatic Resources
Section for Ecosystem based Marine Management
Institute of Marine Science of the National Research Council
Italian National Institute for Environmental Protection and Research
International Research Institute of Stavanger
Institute of Marine Research
Hellenic Centre for Marine Research
National Institute for Marine Research and Development “G. Antipa” Constata

University of Porto
Period: 01/03/2016 → 31/12/2018
Number of participants: 2
Research area: Fisheries Management
Contact person:
Bastardie, Francois (Intern)
Project participant:
Nielsen, J. Rasmus (Intern)

Novel Productivity Enhancement Concept for a Sustainable Utilization of a Geothermal Resource
Centre for oil and gas – DTU
Period: 01/03/2016 → 31/08/2019
Number of participants: 1
Acronym: SURE
Project ID: 654662
Project participant:
Nick, Hamid (Intern)

Financing sources
Source: EU research programme (public)
Name of research programme: H2020
Web address: http://cordis.europa.eu/project/rcn/199554_en.html

Perceptual consequences of noise-induced neural degeneration in humans
Department of Electrical Engineering
Period: 01/03/2016 → 28/02/2019
Number of participants: 4
Phd Student:
Holtegaard, Pernille (Intern)
Supervisor:
Dau, Torsten (Intern)
Mehraei, Golbarg (Intern)
Main Supervisor:
Epp, Bastian (Intern)

Financing sources
**Process integration into multispecies and ecosystem models: Resulting ecological, economic and social trade offs (PRIME TRADE OFFS) (39324)**

Extensive multispecies and ecosystem research has been done in the Baltic, North Sea, Barents Sea/Norwegian Sea, Bay of Biscay and the Black Sea in the past about 30 years. There has been invested substantially in the research on multispecies interactions, and ecosystem functioning.

In parallel, significant knowledge on the environmental impacts on recruitment processes, movements or migrations, and species interactions has been accumulated, but not yet consequently integrated in multispecies and ecosystem models and management concepts.

The major questions raised in PRIME TRADE OFFS are hence, (i) how the integration of environmentally-driven variability in population and ecosystem dynamics affects short- and long-term predictions of economically important fish species, and (ii) how the inclusion of environmental variability changes our perceptions of tradeoffs between utilization of different resources, including for example fuel cost due to changed resource distributions in space and effects on targeted species, as well as socio-economic efficiency.

There have been several initiatives to improve multispecies and ecosystem modelling in order to make it operational for both tactical and strategic assessment and ecosystem-based fisheries management. PRIME TRADEOFFS is the logical continuation of these initiatives and will make the concepts of multi-species maximum sustainable yield and environmental impact on biological key process such as distribution, growth and recruitment operational for ecosystem-based management of marine resources, as demanded in the Marine Strategy Framework Directive and the reformed Common Fisheries Policy.

This project is coordinated by DTU Aqua.

The project is funded the EU, COFASP, ERA-NET.

National Institute of Aquatic Resources
Section for Oceans and Arctic
IFREMER
Institute of Marine Research
AZTI Technalia
University of Hamburg
Period: 01/03/2016 → 28/02/2019
Number of participants: 4
Research areas: Marine Populations and Ecosystem Dynamics & Oceanography & Fisheries Management
Project participant:
Andersen, Niels Gerner (Intern)
Mariani, Patrizio (Intern)
Thygesen, Uffe Høgsbro (Intern)
Project Coordinator:
Neuenfeldt, Stefan (Intern)

**SDN-Enabled Management of Heterogeneous Optical and Wireless Network Infrastructure**

Department of Photonics Engineering
Period: 01/03/2016 → 28/02/2019
Number of participants: 3
PhD Student:
Kentis, Angelos Mimidis (Intern)
Supervisor:
Soler, Lucas (Ekstern)
Main Supervisor:
Berger, Michael Stübert (Intern)
Sustainable management of Kattegat cod; Improved knowledge about stock components and migration (39346)
The Kattegat cod has been categorized as a data limited stock, mainly due to a large unallocated mortality, which may be caused by migration between Kattegat and neighbouring areas. In this project, we aim to improve our understanding of migration patterns and mixing of different stock components within the Kattegat through a novel combination of genetic and micro-chemical signatures for individual fish. Results from the project will feed directly into the ICES advisory process, including a scheduled benchmark meeting in early 2017 where new procedures for stock assessment will be discussed. As cod are also caught as bycatch in other fisheries, a more robust stock assessment for cod will also be important to fisheries for other species under the landing obligation, which is scheduled for implementation in the Kattegat in 2017.

This project is coordinated by DTU Aqua.

The project is funded by the Ministry of Environment and Food of Denmark and the European Maritime and Fisheries Fund (EMFF).

Sustainable use of the invasive round goby in favour for the fishery and the environment (SORTMUND) (39336)
The overarching aim of SORTMUND is to establish a profitable and environmentally sustainable fishery after the invasive round goby in inner Danish waters. Round goby was first seen in south-eastern Danish waters in 2008 and have since then increased rapidly in abundance along the coastline where it has severe negative effects on local biodiversity and the traditional coastal fishery. We aim to launch the fish as a high-quality Nordic product for human consumption, in addition to fur animal feed. The project covers the entire value chain, and has broad participation, ranging from local fishermen and their trade organization, the processing industry, university institutes and a Michelin restaurant. Specific activities will be estimations of stock sizes, investigations of seasonal migrations of the fish, development of seal-safe of gear to avoid damages to the catch, test of methods to fillet the fish for human consumption, documentation of nutritional quality of the fish, development of a fermented fish sauce to add umami to the food, and optimization of logistics in relation to collection, cooling and transportation of fish from small harbors to processing.

This project is coordinated by DTU Aqua.

The project is funded by the Ministry of Environment and Food of Denmark through the Green Development and
Demonstration Program (GUDP).
National Institute of Aquatic Resources
Section for Marine Living Resources
National Food Institute
Danish Fishermen's Association
Gilleleje Fillet Factory
Enspire
NF340 Lasse III
Gemba Seafood Consulting
Period: 01/03/2016 → 28/02/2019
Number of participants: 4
Research areas: Fish Biology & Marine Living Resources
Project participant:
Christoffersen, Mads (Intern)
Kindt-Larsen, Lotte (Intern)
van Deurs, Mikael (Intern)
Project Manager, academic:
Behrens, Jane (Intern)

Synthesis of Polymer Bound Flourescent Hydrogen Peroxide Sensors for Biomedical Application
Department of Micro- and Nanotechnology
Period: 01/03/2016 → 28/02/2019
Number of participants: 4
Phd Student:
Tjell, Anders Ørts (Intern)
Supervisor:
Koren, Klaus (Ekstern)
Kühl, Michael (Intern)
Main Supervisor:
Almdal, Kristoffer (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Triple resonant electromagnetic structures for polarization transfer in DNP
Department of Electrical Engineering
Period: 01/03/2016 → 28/02/2019
Number of participants: 4
Phd Student:
Albannay, Mohammed (Intern)
Supervisor:
Bowen, Sean (Intern)
Zhurbenko, Vitaliy (Intern)
Main Supervisor:
Ardenkjær-Larsen, Jan Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD
URBAN
Transport policy and behaviour
Department of Management Engineering
Department of Transport
Traffic modelling and planning
University of Copenhagen
Transportministeriet
Vejdirektoratet
Dansk Industri
Kraks Fond
Incentive Partners
Period: 15/02/2016 → 15/02/2020
Number of participants: 6
Project participant:
Pilegaard, Ninette (Intern)
Mulalic, Ismir (Intern)
Hjorth, Katrine (Intern)
Mabit, Stefan Eriksen (Intern)
Ranjan, Abhishek (Intern)
Project Manager, academic:
Fosgerau, Mogens (Intern)

Financing sources
Source: Public research council
Name of research programme: Innovation Fund

Relations
Activities:
Rejsetidsvariabilitet
Publications:
Modelling the relation between income and commuting distance
Congestion in the bathtub
Press / Media items:
Detektor
Project

Cavity-modified dynamics of Nitrogen-Vacancy centers in Diamond
Department of Physics
Period: 15/02/2016 → 14/02/2019
Number of participants: 3
Phd Student:
Jensen, Rasmus (Intern)
Supervisor:
Huck, Alexander (Intern)
Main Supervisor:
Andersen, Ulrik Lund (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Formulation of Radionuclides and Organometallic Anticancer Compounds in Gels and Liposomes
Department of Micro- and Nanotechnology
Period: 15/02/2016 → 14/02/2019
Number of participants: 5
Phd Student:
Wang, Wenbo (Intern)
Supervisor:
Andresen, Thomas Lars (Intern)
Elema, Dennis Ringkjøbing (Intern)
Jensen, Andreas Tue Ingemann (Intern)
Main Supervisor:
Henriksen, Jonas Rosager (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Reconfigurable Modular Robotic System for Aquatic Environment
Department of Electrical Engineering
Automation and Control
Centre for Playware
National Institute of Aquatic Resources
Section for Oceans and Arctic
Department of Mechanical Engineering
Engineering Design and Product Development
Fluid Mechanics, Coastal and Maritime Engineering
Period: 01/02/2016 → 31/01/2018
Number of participants: 6
Acronym: REMORA
Project participant:
Christensen, David Johan (Intern)
Mariani, Patrizio (Intern)
Visser, Andre (Intern)
Özkil, Ali Gürcan (Intern)
Nielsen, Ulrik Dam (Intern)
Project Manager, academic:
Galeazzi, Roberto (Intern)

ThermoFactories - Thermophilic cell factories for efficient conversion of brown algae biomass to high-value chemicals
Novo Nordisk Foundation Center for Biosustainability
Applied Metabolic Engineering
Period: 01/02/2016 → 31/01/2019
Number of participants: 1
Acronym: ThermoFactories
Project participant:
Förster, Jochen (Intern)

COMPARE WG 1, Task 1.2: Development of a novel approach for food chain risk assessment based on NGS data
National Food Institute
Research Group for Genomic Epidemiology
**Danish Sound Innovation: Improved sound insulation for headsets**
Department of Electrical Engineering
Acoustic Technology
Terma A/S
Period: 01/02/2016 → 31/03/2016
Number of participants: 1
Project participant:
King, Alexander Weider (Intern)

**Understanding and Implementing Design for Biodegradability**
Bachelor thesis project about designing for biodegradability.
Department of Mechanical Engineering
Engineering Design and Product Development
Period: 01/02/2016 → 17/06/2016
Number of participants: 2
Supervisor:
Meijer, Ellen Brilhuis (Intern)
McAloone, Tim C. (Intern)

**Dynamic optimization of total value and environmental performance: Use of real time property data for improved Facilities Management**
Department of Management Engineering
Systems Analysis
Centre for Facilities Management
Quantitative Sustainability Assessment
Period: 01/02/2016 → 31/01/2019
Number of participants: 5
Phd Student:
Maslesa, Esmir (Intern)
Supervisor:
Birkved, Morten (Intern)
Hauschild, Michael Zwicky (Intern)
Hultén, Jannik (Ekstern)
Main Supervisor:
Nielsen, Susanne Balslev (Intern)
Documents:
PhD poster - KMD

**Implementering af forebyggende psykosociale indsatser**
Department of Management Engineering
Management Science
Implementation and Performance Management
Smart grid transitions and institutionalizations – market formations and consumers
This project is the Danish contribution to the International Energy Agency smart grid corporation ISGAN, Annex 7.

Smart Grid deployment is seen as a long term endeavour which should be informed by research from multiple disciplinary fields. The general objectives is to: (1) support the development of transition pathways and processes leading to electricity systems with distributed energy resources feeding into distribution grids and (2) to collect knowledge from various studies and make it palpable for policymakers and other stakeholders at multiple administrative levels from and across smart grid related policy fields.

The general Annex 7 activities are led by Senior Researcher Klaus Kubeczko, Austrian Institute of Technology (AIT), Innovation Systems Department. Additional partners are from: Belgium, The Netherlands, Sweden, France, Italy, Canada; and Germany.

The Danish project is made possible through financial support from EUDP.

Department of Management Engineering
Centre for Facilities Management
Systems Analysis
DTU Climate Centre
Energy Economics and Regulation

Future Gas
An effective and economically efficient integration of gas, renewable based gas as well as natural gas, requires three issues to be fulfilled: 1) In an overall system context, gas should be integrated where the system benefits are highest; 2) Gas should be used optimally, that is where the economic net gains are largest taking into account the cost of possible conditioning; and 3) If needed then conditioning of gas should be carried out in the most cost-efficient way. Conditioning here refers to cleaning, upgrading, mixing and/or pressurising to achieve a desired gas quality. Of course, this reflects that the high value areas for gas utilization depend on how gas enters into the energy system. Thus, to find the most efficient and cost-competitive solutions it is crucial in an energy system perspective to address the need, possibilities and cost-
effectiveness for conditioning gas to be injected into the gas grids and how different gases most economically and efficiently can be utilized. A central part of this project is therefore to model both renewables injected to the gas grid as well as alternative uses of gas in an overall system context.

The aim of the FutureGas project is twofold:
1) In an energy system context to facilitate the integration of the gas system with the power system, the district heating system and the transportation sector taking into account possible synergies. Despite the huge amounts of energy being transported through the gas grid, it is currently only loosely coupled to the rest of the energy system mainly through use of gas in CHP plants.
2) To facilitate a cost-efficient uptake of renewable gases, hereby in the longer term substituting natural gas and fossil fuels. A number of renewable gases exist, differing in their possible application in the energy system and in their costs and requirements for conditioning. The best and most cost-effective solutions for utilising and conditioning a variety of renewable gases depend on the development of the entire energy system.

In FutureGas these two issues will be looked into with regard to energy system integration, gas conditioning and, finally, economic/policy perspectives. To enable this, a novel modelling framework will be developed comprising the total energy system with an international market dimension and handling risk and uncertainty. Moreover, this new framework will facilitate combined modelling of the physical energy systems with markets and policy instruments. Thus this project has a truly interdisciplinary nature. The major part of the research will be concentrated on addressing the gas supply side on conditioning of RE gases and operation of the gas grid in combination with the demand side (CHP, industry and transport) all in a system context, on developing the gas dimension in advanced system modelling and, finally, on identifying the required policy and market structures for a successful implementation. Thus the overall vision of FutureGas is to pave the way for an effective and cost-efficient transition to an energy system independent of fossil fuels, ensuring a strong integration of gas with the entire energy system, an economically optimal conversion to renewable gases substituting natural gas in the long run and good access to gas markets for a wide range of gas producing technologies.

Department of Management Engineering
Systems Analysis
Energy Systems Analysis
Management Science
Operations Research
Energy Economics and Regulation
Novo Nordisk Foundation Center for Biosustainability
Aarhus University
Chalmers University of Technology
University of Exeter
Florence School of Regulation - European University Institute
Delft University of Technology
Danish Gas Technology Centre A/S
HMN Naturgas
Danish Energy Association
Dansk Gas Distribution
NGF Nature Energy
RAM-lose
EA Energy Analysis A/S
Hydrogen Denmark
PlanEnergi
Energinet.dk
Danish Energy Agency
Period: 01/02/2016 → 31/01/2020
Number of participants: 10
Project ID: 82524
Number of related Ph.D. students: 4
Project participant:
Pisinger, David (Intern)
Wiese, Frauke (Intern)
Sadegh, Negar (Intern)
Aryal, Nabin (Intern)
Phd Student:
Nielsen, Lise Skovsgaard (Intern)
Pedersen, Rasmus Bo Bramstoft (Intern)
Amirkhizi, Tara Sabbagh (Intern)
Buchholz, Stefanie (Intern)
Project Manager, academic:
Morthorst, Poul Erik (Intern)
Münster, Marie (Intern)

Financing sources
Source: Other public support (public)
Name of research programme: Innovation Fund Denmark

Forundersøgelser i Qaanaaq
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Section for Geotechnics and Geology
Period: 01/02/2016 → 01/05/2018
Number of participants: 3
Project participant:
Ingeman-Nielsen, Thomas (Intern)
Foged, Niels Nielsen (Intern)
Project Manager, academic:
Hendriksen, Kåre (Intern)

Advanced Waterflooding -rock mechanics and fluid saturation
Department of Civil Engineering
Period: 01/02/2016 → 31/01/2019
Number of participants: 3
Phd Student:
Meireles, Leonardo Teixeira Pinto (Intern)
Supervisor:
Welch, Michael (Intern)
Main Supervisor:
Fabricius, Ida Lykke (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed

Application of Architectures in SME’s
Department of Mechanical Engineering
Period: 01/02/2016 → 31/01/2019
Number of participants: 4
Phd Student:
Rask, Lars Christian (Ekstern)
Supervisor:
Hvam, Lars (Intern)
Vestergaard, Jørn (Ekstern)
Main Supervisor:
Mortensen, Niels Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Atomistic Mechanisms of Functional Molecules
Department of Chemistry
Period: 01/02/2016 → 31/01/2019
Number of participants: 4
Phd Student:
Abedi, Mostafa (Intern)
Supervisor:
Henriksen, Niels Engholm (Intern)
Main Supervisor:
Møller, Klaus Braagaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Computational Fluid Dynamics Simulations of electroosmotic phenomena
Department of Environmental Engineering
Period: 01/02/2016 → 31/01/2019
Number of participants: 3
Phd Student:
Aschmoneit, Fynn Jerome (Intern)
Supervisor:
Yde, Lars (Ekstern)
Main Supervisor:
Hélix-Nielsen, Claus (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Cryogenic Single and Array Coils for Magnetic Resonance Systems
Department of Electrical Engineering
Period: 01/02/2016 → 31/01/2019
Number of participants: 4
Phd Student:
Johansen, Daniel Højrup (Intern)
Supervisor:
Ardenkjær-Larsen, Jan Henrik (Intern)
Laustsen, Christoffer (Ekstern)
Main Supervisor:
Zhurbenko, Vitaliy (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
CT metal artifact reduction using MRI for radiotherapy

Department of Applied Mathematics and Computer Science
Period: 01/02/2016 → 31/01/2019
Number of participants: 3
Phd Student:
Nielsen, Jonathan Scharff (Intern)
Supervisor:
Edmund, Jens Morgenthaler (Intern)
Main Supervisor:
Van Leemput, Koen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Development of an electrochemical method to remove nitrate in RAS (Electro-nitrate) (39327)
This project is done in collaboration with two industrial partners, testing the nitrate removal potential of an innovative technique applied to aquaculture.

Nitrate is a dissolved N-waste product from fish production in recirculating aquaculture systems (RAS). The amount and concentration of nitrate in the effluent are determined by the daily feeding, biological filtration and the feed loading (kg feed pr. m3 water exchange) among others.

Discharged nitrate is a main factor affecting the recipient hence important to reduce in order to obtain sustainable production in RAS.

As an alternative to denitrification, electrochemical reduction of nitrate to N2 is considered in this project. Electrochemical water treatment rely on physio-chemically controlled redox processes that includes a flow cell with two electrodes connected to an external current source This aim of this project is preliminary test and screening of different types of electrode material and combinations and investigate factors affecting removal capacity. The effect of current density, flow rates, substrate concentrations and pH on nitrate removal will be tested and removal capacity will be evaluated.

This project is coordinated by DHI.

The project is funded by Innovation Network for Environmental Technologies (Inno-MT), Danish Agency for Science, Technology and Innovation.

National Institute of Aquatic Resources
Section for Aquaculture
DHI Denmark
Aquapri
Electrocell
Period: 01/02/2016 → 31/12/2016
Number of participants: 2
Research area: Aquaculture
Project participant:
Pedersen, Lars-Flemming (Intern)
Pedersen, Per Bovbjerg (Intern)
Project

Dynamic optimization of total value and environmental performance: Use of real time property data for improved Facilities Management

Department of Management Engineering
Period: 01/02/2016 → 31/01/2019
Number of participants: 6
Phd Student:
Efficient and innovative fish production via best available technology (RAS2020) (39328)

This project includes a full scale test and development of a conceptual recirculating aquaculture system (RAS) for king fish production. The innovative aspect of this modular RAS2020 concept regards the design—a one unit circular module designed to have a 1200 MT/Y capacity.

The aim of this project is to build and develop a RAS unit with small footprint, low cost and reduced construction time. The RAS2020 unit includes state of the art treatment units (Hydrotech drumfilters, Krüeger biofilters—nitrification and denitrification) and is built with flexible interconnected rearing sections. When the RAS2020 is built and stocked with kingfish, an extended sampling and monitoring program will be performed in order to assess system performance in particular N, P and organic matter removal.

This project is coordinated by Sashimi Royal.

The project is funded by the Danish Environmental Protection Agency.

National Institute of Aquatic Resources
Section for Aquaculture
Sashimi Royal
Aqua-Partners Aps
Dansk Akvakultur
Period: 01/02/2016 → 31/12/2018
Number of participants: 7
Research area: Aquaculture
Project participant:
Pedersen, Lars-Flemming (Intern)
Pedersen, Per Bovbjerg (Intern)
Jokumsen, Alfred (Intern)
Møller, Brian (Intern)
Sproegel, Ulla (Intern)
Frandsen, Dorthe (Intern)
Nielsen, Sara Møller (Intern)

Electrochemical Zone for Degradation of Chlorinated Solvents in Aquifers

Department of Civil Engineering
Period: 01/02/2016 → 31/01/2019
Number of participants: 4
Phd Student:
Hyldegaard, Bente Højlund (Intern)
Supervisor:
Jakobsen, Rasmus (Intern)
Jakobsen, Rasmus (Intern)
Main Supervisor:
Ottosen, Lisbeth M. (Intern)

Financing sources  
Source: Internal funding (public)  
Name of research programme: Industrial PhD  
Project: PhD

Facilitation for production of coated X-Ray mirror plates
National Space Institute  
Period: 01/02/2016 → 31/01/2019  
Number of participants: 4  
Phd Student: Massahi, Sonny (Intern)  
Supervisor: Collon, Maximilien J. (Ekstern) Hornstrup, Allan (Intern)  
Main Supervisor: Christensen, Finn Erland (Intern)

Financing sources  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

Fermentation of Synthesis Gas and Design of Bioreactors
Department of Chemical and Biochemical Engineering  
Period: 01/02/2016 → 31/01/2019  
Number of participants: 3  
Phd Student: Asimakopoulos, Konstantinos (Intern)  
Supervisor: Gavala, Hariklia N. (Intern)  
Main Supervisor: Skiadas, Ioannis V (Intern)

Financing sources  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

Highly Sensitive Magnetic Sensing of Neural Activity
Department of Electrical Engineering  
Period: 01/02/2016 → 31/01/2019  
Number of participants: 4  
Phd Student: Karadas, Mürsel (Intern)  
Supervisor: Andersen, Ulrik Lund (Intern) Hanson, Lars G. (Intern)  
Main Supervisor: Thielischer, Axel (Intern)

Financing sources  
Source: Internal funding (public)  
Name of research programme: Forskningsrådsfinansiering  
Project: PhD
Limits of lubrication in severe stamping operations
Department of Mechanical Engineering
Period: 01/02/2016 → 03/04/2019
Number of participants: 5
Phd Student:
Moghadam, Marcel (Intern)
Supervisor:
Bay, Niels Oluf (Intern)
Christiansen, Peter (Intern)
Møller, Per (Ekstern)
Main Supervisor:
Nielsen, Chris Valentin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

MHC-directed expansion of antigen responsive T cells
National Veterinary Institute
Period: 01/02/2016 → 31/01/2019
Number of participants: 3
Phd Student:
Rafa, Vibeke Mindahl (Intern)
Supervisor:
Donia, Marco (Ekstern)
Main Supervisor:
Hadrup, Sine Reker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Microproportioning with crushed sand: experiment and simulations of fine particles effect on rheology
Department of Mechanical Engineering
Period: 01/02/2016 → 17/11/2016
Number of participants: 4
Phd Student:
Ramenskiy, Evgeny (Ekstern)
Supervisor:
Hattel, Jesper Henri (Intern)
Spangenberg, Jon (Intern)
Main Supervisor:
Jacobsen, Stefan (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Nano-Imprinting on Chacogenide MIR-Fiber End-Facets to Reduce Coupling Losses
Department of Micro- and Nanotechnology
Period: 01/02/2016 → 31/01/2019
Number of participants: 3
Phd Student:
Lotz, Mikkel Rønne (Intern)
Supervisor:
New methods for fabrication of pyrolysed carbon microelectrodes

Department of Micro- and Nanotechnology
Period: 01/02/2016 → 31/01/2019
Number of participants: 4
Phd Student: Pedersen, Nina Ritter (Intern)
Supervisor: Kristensen, Anders (Intern)
Petersen, Dirch Hjorth (Intern)
Main Supervisor: Keller, Stephan Sylvest (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Next generation sepsis diagnosis

Sepsis is a potentially fatal condition that arises when the body’s response to an infection damages its own tissues and organs. It is mainly caused by bacteria and fungi, which spread through the blood circulation. It is one of the biggest public health issues in the EU and worldwide due to its high incidence, mortality, human and economic cost. Early diagnosis is crucial to the management of sepsis, as every hour of delay of appropriate antibiotic therapy increases mortality by 5-10%. Unfortunately, sepsis diagnosis remains one of the greatest clinical challenges in critical care. Current diagnostic methods, including blood culture and different nucleic acid based multiplex technologies, are impaired by the significant time-delay of 1-2 days and/or low sensitivity of 30-50%. Hence there is an urgent need to develop new diagnostic tools that can provide more accurate and earlier sepsis diagnosis, so that patients with sepsis can be administered with rapid and correct initial antimicrobial treatment.

The SMARTDIAGNOS project will advance sepsis diagnosis by simplifying clinical sample analysis methods and integrating the currently required numerous steps into a single streamlined device. This will be achieved by combining a number of innovative technologies: 1) 3-dimensional sample concentration to process large amount of raw sample; 2) direct PCR in the 3D microstructure to circumvent DNA extraction step; 3) solid-phase PCR to achieve unlimited multiplexing capability; 4) supercritical angle fluorescence (SAF) microlens array for enhanced fluorescence detection and precise quantification of sepsis-related pathogens.

The SMARTDIAGNOS system will go beyond the state of the art for shorter time (1-3 h), higher sensitivity (95%), higher selectivity (99%), multiplexing capability, antimicrobial resistance profiling, and automation. Fast and correct sepsis diagnosis will improve patient outcome, shorten intensive care stay and thus reduce health costs.

Department of Micro- and Nanotechnology

BioLabChip
Period: 01/02/2016 → 31/01/2020
Number of participants: 2
Acronym: Smartdiagnos
Project Manager, organisational: Christiansen, Mette (Intern)
**Nonlinear integrated photonics**

Department of Photonics Engineering  
Period: 01/02/2016 → 31/01/2019  
Number of participants: 4  
PhD Student:  
Stassen, Erik (Intern)  
Supervisor:  
Galili, Michael (Intern)  
Pu, Minhao (Intern)  
Main Supervisor:  
Yvind, Kresten (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Grundforskningsfonden  
Project: PhD

**Novel methods to quantify health in benefit risk assessment. A case study on fish**

National Food Institute  
Period: 01/02/2016 → 31/01/2019  
Number of participants: 4  
PhD Student:  
Persson, Inez Maria (Intern)  
Supervisor:  
Pires, Sara Monteiro (Intern)  
Poulsen, Morten (Intern)  
Main Supervisor:  
Nauta, Maarten (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**PhD project in Drone Video Communication**

Department of Photonics Engineering  
Period: 01/02/2016 → 07/03/2019  
Number of participants: 3  
PhD Student:  
Hossain, Kabir (Intern)  
Supervisor:  
Berger, Michael Stübert (Intern)  
Main Supervisor:  
Forchhammer, Søren (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

**Plantwide Monitoring and Control of Biochemical Processes**

Department of Chemical and Biochemical Engineering
Period: 01/02/2016 → 31/10/2019
Number of participants: 3
PhD Student:
David Bähner, Franz (Intern)
Supervisor:
Abildskov, Jens (Intern)
Main Supervisor:
Huusom, Jakob Kjøbsted (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Silicon Photonic Integrated Devices for Space Division Multiplexing
Department of Photonics Engineering
Period: 01/02/2016 → 31/01/2019
Number of participants: 4
PhD Student:
Baumann, Jan Markus (Intern)
Supervisor:
Ding, Yunhong (Intern)
Morioka, Toshio (Intern)
Main Supervisor:
Frandsen, Lars Hagedorn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Statistical Tools for Cybersecurity
Department of Applied Mathematics and Computer Science
Period: 01/02/2016 → 31/01/2019
Number of participants: 3
PhD Student:
Vejre, Philip Søgaard (Intern)
Supervisor:
Knudsen, Lars Ramkilde (Intern)
Main Supervisor:
Bogdanov, Andrey (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Activities:

Presentation - Energy and Building Technology - A look into the future
Period: 30 Sep 2019
Alfred Heller (Guest lecturer)
Department of Civil Engineering

Description
Presentation of ideas for the future of building automation, cloud services, IoT and more
Documents:
CKI Conference DTU - sept 2017 - Next gen Building Tec (v2)
Siemens-DTU CKI conference 2017
19/09/2017 → …
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Cerâmica (Journal)
Period: 2018
Vincenzo Esposito (Editor)
Department of Energy Conversion and Storage

Ocean Dynamics (Journal)
Period: 2018
David R. Fuhrman (Reviewer)
Department of Mechanical Engineering
Fluid Mechanics, Coastal and Maritime Engineering

Ocean Dynamics
1616-7341
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 1.74 SJR 0.987 SNIP 0.998, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed Yes
Central database
Activity: Research › Journal editor

5th International Vitamin Conference
Period: 8 Aug 2018 → 10 Aug 2018
Jette Jakobsen (Chairman)
National Food Institute
Research Group for Bioactives – Analysis and Application
Degree of recognition: International

Carbapenemase epidemiology in bacteria of animal and environmental origin: the One Health prospective
Period: 8 Jun 2018
Valeria Bortolaia (Guest lecturer)
National Food Institute
Research Group for Genomic Epidemiology
Degree of recognition: International

Related event
ASM Microbe 2018
07/06/2018 → 11/06/2018
Atlanta, United States
Activity: Talks and presentations › Conference presentations

Challenges of Data Availability for Analysing the Water-Energy Nexus
Period: 5 Feb 2018 → 7 Feb 2018
Morten Andreas Dahl Larsen (Guest lecturer)
Department of Management Engineering
Systems Analysis
Degree of recognition: International

Related event
climate change and water 2018
05/02/2018 → 07/02/2018
Tours, France
Activity: Talks and presentations › Conference presentations

Co-developing agile stage-gate in Danish SMEs
Period: 11 Jan 2018 → 13 Jan 2018
Giulia Nardelli (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Conference paper in conference proceedings and presentation in Track 5: "Quality of collaborative engagements" of Pin-C 2018, Eskiltuna (SVE)
Degree of recognition: International

Related event
Participatory Innovation Conference
01/01/2011 → …
Sønderborg
Activity: Talks and presentations › Conference presentations

Integrated hydrology in the COHERENT project
Period: 10 Jan 2018 → 12 Jan 2018
Morten Andreas Dahl Larsen (Guest lecturer)
Department of Management Engineering
Systems Analysis
Degree of recognition: International

Related event
33rd Nordic Geological Winter Meeting
10/01/2018 → 12/01/2018
Denmark
Activity: Talks and presentations › Conference presentations
A powerful tool to investigate speech perception is the use of speech intelligibility prediction models. Recently, a model was presented, termed correlation-based speech-based envelope power spectrum model (sEPSMcorr), that uses a correlation-based back end at the output of an audio-frequency and modulation-frequency selective auditory preprocessing (Relaño-Iborra et al., 2016). The use of the correlation back-end extended the predictive power of earlier versions of the sEPSM framework (e.g. Jørgensen et al. 2013) towards conditions of non-linear signal processing, such as phase jitter and ideal binary mask processing. Moreover, the model was shown to account for conditions with fluctuating interferers, unlike other correlation-based models.

Here, the back end of the sEPSMcorr was combined with a more realistic auditory pre-processing front end adopted from the computational auditory signal processing and perception model (CASP; Jepsen et al., 2008). The preprocessing contains outer- and middle-ear filtering and a non-linear auditory filterbank (DRNL, López-Poveda and Meddis, 2001), followed by inner hair-cell transduction, adaptation and a modulation filterbank. The predictions were compared to measured data in conditions of additive masking noise, phase jitter distortions, reverberation and noise-reduction algorithms. The effects of the back end as well as the different preprocessing stages on the predicted results were analyzed. The modelling framework could be useful for the design and evaluation of, e.g. speech transmission algorithms or hearing-instrument algorithms.

Documents:
spin_helia_final_v2

Related event
9th Speech in Noise Workshop
05/01/2017 → 06/01/2017
Oldenburg, Germany
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations
A correlation metric in the envelope power spectrum domain for speech intelligibility prediction

Period: 2017

Helia Relano Iborra (Guest lecturer)

Department of Electrical Engineering
Hearing Systems

Description
A speech intelligibility model, named sEPSMcorr, is presented, which uses a modulation-frequency selective processing based on the (multi-resolution) speech-based envelope power spectrum model (mr-sEPSM; Jørgensen et al. 2013) in combination with a cross-correlation based back end inspired by the short-time objective intelligibility measure (STOI; Taal et al., 2011). The model can accurately predict data obtained with normal-hearing (NH) listeners for a broad range of listening conditions, including effects of stationary and fluctuating additive interferers as well as effects of non-linear distortions, such as spectral subtraction, phase jitter and ideal binary mask (IBM) processing. The model has a larger predictive power than both the original mr-sEPSM (which fails in the phase-jitter and IBM conditions) and STOI (which fails to predict the influence of fluctuating interferers).

However the sEPSMcorr preprocessing does not provide a flexible framework to predict individual speech intelligibility data from hearing impaired listeners. Thus, the back end of the sEPSMcorr was combined with a more realistic auditory pre-processing front end adopted from the computational auditory signal processing and perception model (CASP; Jepsen et al., 2008). The preprocessing contains outer- and middle-ear filtering and a non-linear auditory filterbank (DRNL, López-Poveda and Meddis, 2001), followed by inner hair-cell transduction, adaptation and a modulation filterbank. The predictions of the sEPSM-based and the CASP-based models were compared with respect to measured data (NH) in conditions of additive masking noise, phase jitter distortions, reverberation and noise-reduction algorithms. The effects of the back end as well as the different preprocessing stages on the predicted results were analyzed. The resulting modelling framework could be useful for the design and evaluation of, e.g. speech transmission algorithms or hearing-instrument algorithms.

Documents:
ARCHES_poster_final3

Related event

ARCHES/ICANHEAR 2016: Audiological Research Cores in Europe (ARCHES) meeting and Improved Communication through Applied Hearing Research (ICanHear) conference
Zurich, Switzerland
Activity: Talks and presentations › Conference presentations

Boligselskabernes Landsforening (External organisation)
Period: 2017 → …
Per Anker Jensen (Member)
Department of Management Engineering
Management Science
Implementation and Performance Management

Related external organisation

Boligselskabernes Landsforening
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Censor for 7 specialeprojekter ved Københavns Erhvervsakademi
Period: 2017 → …
Per Anker Jensen (External examiner)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: National
Activity: Examinations and supervision › External examination
**Chaotic Mean Field Dynamics in Two Populations of Phase Oscillators with Heterogeneous Phase-Lag**

*Period: 2017*  
*Erik Andreas Martens (Speaker)*  
*Department of Applied Mathematics and Computer Science*  
*Dynamical Systems*

**Description**  
*Talk*  
*Degree of recognition: International*

**Related event**

**SIAM Conference on Applications of Dynamical Systems 2017**  
*21/05/2017 → 26/05/2017*  
*Snowbird, United States*  
*Activity: Talks and presentations › Conference presentations*

**Characterization of GaAs nanowires by electron holography**

*Period: 2017*  
*Elisabetta Maria Fiordaliso (Speaker)*  
*Center for Electron Nanoscopy*  
*DTU Danchip*

**Description**  
*invited talk at conference*  
*Degree of recognition: International*

**Related event**

**EMN nanowires**  
*04/05/2017 → 07/05/2017*  
*Dubrovnik, Croatia*  
*Activity: Talks and presentations › Conference presentations*

**Chimera states - mythological monsters from math arise in the real world**

*Period: 2017*  
*Erik Andreas Martens (Speaker)*  
*Department of Applied Mathematics and Computer Science*  
*Dynamical Systems*  
*Department of Electrical Engineering*

**Description**  
*Invited topical lecture*  
*Degree of recognition: International*

**Related event**

**ICMS Complexity Science Winter School 2017**  
*13/02/2017 → 17/02/2017*  
*Eindhoven, Netherlands*  
*Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities*

**CIB International Research Week 2017 (Event)**  
*Period: 2017 → …*  
*Giulia Nardelli (Reviewer)*  
*Department of Management Engineering*
Management Science
Implementation and Performance Management

Description
Review of research papers
Degree of recognition: International

Related event
CIB International Research Week 2017
11/09/2017 → 15/09/2017
Manchester, United Kingdom
Activity: Research › Peer review of manuscripts

Coastal Engineering (Journal)
Period: 2017 → …
David R. Fuhrman (Reviewer)
Department of Mechanical Engineering
Fluid Mechanics, Coastal and Maritime Engineering

Description
Advisory Editorial Board
Degree of recognition: International

Related journal
Coastal Engineering
0378-3839
Central database
Activity: Research › Journal editor

Co-Supervisor for Lucas Lima, PhD
Period: 2017 → 2020
Maj Munch Andersen (Supervisor)
Department of Management Engineering
Activity: Examinations and supervision › Supervisor activities

Danish Fish Levy Fond (External organisation)
Period: 2017
Charlotte Jacobsen (Participant)
National Food Institute
Research Group for Bioactives – Analysis and Application

Description
Board member

Related external organisation
Danish Fish Levy Fond
Denmark
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Danish Seaweed Organisation (DSO) (External organisation)
Period: 2017 → …
Susan Løvstad Holdt (Chairman)
National Food Institute
Research Group for Bioactives – Analysis and Application

**Description**
Board member, treasurer of the Danish Seaweed Organisation (DSO)
Degree of recognition: National

**Related external organisation**

**Danish Seaweed Organisation (DSO)**
Activity: Membership › Board duties in companies, associations, or public organisations

**DANSCATT Annual meeting 2017**
Period: 2017
Martin Meedom Nielsen (Organizer)
Department of Physics
Neutrons and X-rays for Materials Physics

**Related event**

**DANSCATT Annual meeting 2017**
01/06/2017 → 02/06/2017
Odense, Denmark
Activity: Attending an event › Participating in or organising a conference

**Dansk Teknologihistorisk Selskab (External organisation)**
Period: 2017 → …
Louise Karlskov Skyggebjerg (Chairman)
Department of Physics

**Description**
Bestyrelsesmedlem siden 2010
Degree of recognition: National

**Related external organisation**

**Dansk Teknologihistorisk Selskab**
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

**Department of Management Engineering (Organisational unit)**
Period: 2017 → …
Per Anker Jensen (Chairman)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
Formand for bedømmelsesudvalg for Rikke Brinkø's PhD
Degree of recognition: International

**Related organisation**

**Department of Management Engineering (Organisational unit)**
Jensen, P. A. (Chairman)
2017 → …
Activity: Membership › Membership in review committee
Edmuse Conference
Period: 2017 → …
Laila Zwisler (Speaker)
Department of Physics

Description
Conference
Degree of recognition: International
Links:
http://edmuse.eu/ (Link to Edmuse project)

Related event
Edmuse Conference: EdMuse project - Education and Museum: Cultural Heritage for science learning
26/06/2017 → 27/06/2017
Rome, Italy
Activity: Talks and presentations › Conference presentations

Energy Journal (Journal)
Period: 2017
Emilie Rosenlund Soysal (Reviewer)
Department of Management Engineering
Systems Analysis

Description
Review of submitted article
Degree of recognition: International

Related journal
Energy Journal
0195-6574
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 2.13 SJR 1.537 SNIP 1.305, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed Yes
Central database
Activity: Research › Peer review of manuscripts

EU CEN 454 standardisation of algae (External organisation)
Period: 2017 → …
Susan Løvstad Holdt (Chairman)
National Food Institute
Research Group for Bioactives – Analysis and Application

Description
Chair of the national mirror committee of the EU CEN 454 standardisation of algae
Degree of recognition: International

Related external organisation
EU CEN 454 standardisation of algae
Activity: Membership › Membership of commitees, commissions, boards, councils, associations, organisations, or similar

EUREKA expert (External organisation)
Period: 2017
Susan Løvstad Holdt (Chairman)
National Food Institute
Research Group for Bioactives – Analysis and Application
Extending a computational model of auditory processing towards speech intelligibility prediction

Period: 2017
Helia Relano Iborra (Guest lecturer)
Department of Electrical Engineering
Hearing Systems

Description
A speech intelligibility model is presented, based on the computational auditory signal processing and perception model (CASP; Jepsen et al., 2008). CASP has previously been shown to successfully predict psychoacoustic data of normal hearing (NH) listeners obtained in conditions of, e.g., spectral masking, amplitude-modulation detection, and forward masking (Jepsen et al., 2008). Furthermore, CASP can be tuned to model data from individual hearing-impaired listeners in different behavioral experiments (Jepsen and Dau, 2011). In this study, the CASP model is investigated as a predictor of intelligibility for Danish sentences for NH listeners.

The model receives the clean and degraded speech as input. The signals are processed through outer- and middle-ear filtering, a non-linear auditory filterbank (DRNL, López-Poveda and Meddis, 2001), adaptation loops, and a modulation filterbank. The internal representations produced at the end of these stages are analyzed using a correlation-based back end.

Here, predictions of speech intelligibility obtained with the speech-based CASP implementation are presented and compared to speech intelligibility data measured in conditions of additive noise, phase jitter, spectral subtraction, ideal binary mask processing and reverberation.

Related event
International Symposium on Auditory and Audiological Research
23/08/2017 → 25/08/2017
Nyborg, Denmark
Activity: Talks and presentations › Conference presentations

GREEN FIBER BOTTLE: TOWARDS A SUSTAINABLE PACKAGE

Period: 2017
Mattia Didone (Guest lecturer)
Department of Mechanical Engineering
Manufacturing Engineering
Documents:
GREEN FIBER BOTTLE TOWARDS A SUSTAINABLE PACKAGE_Didone

Related event
Fundamental Research Communication "Advances in Pulp and Paper Research"
03/09/2017 → 08/09/2017
Activity: Talks and presentations › Conference presentations

Green Fiber Bottle: Towards a Sustainable Package and a Manufacturing Process
Period: 2017
Mattia Didone (Speaker)
Department of Mechanical Engineering
Manufacturing Engineering
Documents:
Green Fiber Bottle Towards a Sustainable Package and a Manufacturing Process_Didone
Related event

28th IAPRI World Symposium on Packaging
09/05/2017 → 12/05/2017
Activity: Talks and presentations › Conference presentations

International Journal of Food Microbiology (Journal)
Period: 2017
Ana Sofia Ribeiro Duarte (Reviewer)
National Food Institute
Research Group for Genomic Epidemiology
Degree of recognition: International

Related journal

International Journal of Food Microbiology
0168-1605
Central database
Activity: Research › Peer review of manuscripts

Inverse Problems and Imaging (Journal)
Period: 2017
Tommi Olavi Brander (Reviewer)
Department of Applied Mathematics and Computer Science
Scientific Computing

Related journal

Inverse Problems and Imaging
1930-8337
Central database
Activity: Research › Peer review of manuscripts

ISMRM study group on Detection and Correction of Motion in MRI and MRS (External organisation)
Period: 2017 → 2018
Lars G. Hanson (Chairman)
Department of Electrical Engineering
Center for Magnetic Resonance
Center for Hyperpolarization in Magnetic Resonance

Description
Chairman, ISMRM study group on Detection and Correction of Motion in MRI and MRS
Degree of recognition: International

Related external organisation

ISMRM study group on Detection and Correction of Motion in MRI and MRS
Activity: Membership › Membership of research networks or expert groups

Journal of Applied Phycology (Journal)
Period: 2017
Susan Løvstad Holdt (Reviewer)
National Food Institute
Research Group for Bioactives – Analysis and Application

Description
Invited as guest editor of the issue on the proceedings of the International Seaweed Symposium, Copenhagen, June 2016
Degree of recognition: International

Related journal

Journal of Applied Phycology
0921-8971
Central database
Activity: Research › Peer review of manuscripts

Journal of Power Sources (Journal)
Period: 2017
Anke Hagen (Reviewer)
Department of Energy Conversion and Storage
Applied Electrochemistry

Related journal

Journal of Power Sources
0378-7753
Central database
Activity: Research › Peer review of manuscripts

Journal of Waterway, Port, Coastal, and Ocean Engineering (Journal)
Period: 2017 → …
David R. Fuhrman (Reviewer)
Department of Mechanical Engineering
Fluid Mechanics, Coastal and Maritime Engineering

Description
Associate Editor
Degree of recognition: International

Related journal

Journal of Waterway, Port, Coastal, and Ocean Engineering
0733-950X
Central database
Activity: Research › Journal editor

Late effects of early exposures to endocrine disrupting chemicals in rats
Period: 2017
Julie Boberg (Guest lecturer)
National Food Institute
Research Group for Molecular and Reproductive Toxicology

Description
Invited talk in session "Modes of action of non-genotoxic carcinogens: Recent advances in the light of human relevance"

Related event
Mapping dopant distributions in GaAs nanowires by electron holography
Period: 2017
Elisabetta Maria Fiordaliso (Speaker)
Center for Electron Nanoscopy
DTU Danchip

Description
conference talk

Related event
nanowire week
28/05/2017 → 02/06/2017
Lund, Sweden
Activity: Talks and presentations › Conference presentations

National Food Institute (Organisational unit)
Period: 2017 → …
Silvia Bonomo (Participant)
National Food Institute
Research Group for Molecular and Reproductive Toxicology

Description
Founder and Board Member of the Early Career Researcher (ECR) Network.

The ECR Network provides opportunities for ECRs to better equip themselves for challenges that lay ahead, being it a career in academia or private industry.

Related organisation
National Food Institute (Organisational unit)
Bonomo, S. (Participant)
2017 → …
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

NTNU, Trondheim, Norway (External organisation)
Period: 2017 → 2018
Per Anker Jensen (Member)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Medlem af bedømmelsesudvalg for Cristian Roberto Valle's PhD
Degree of recognition: International

Related external organisation
NTNU, Trondheim, Norway
Activity: Membership › Membership in review committee

Organizer and co-chair of the education course "Hormones and Brain Development"
Period: 2017
Marta Axelstad Petersen (Organizer)
National Food Institute
Research Group for Molecular and Reproductive Toxicology

**Related event**

Organizer and co-chair of the education course "Hormones and Brain Development" : European Teratology Society 2017
04/09/2017 → 04/09/2017
Budapest, Hungary
Activity: Attending an event › Participating in or organising a conference

**PLoS ONE (Journal)**
Period: 2017 → …
Silvia Bonomo (Reviewer)
National Food Institute
Research Group for Molecular and Reproductive Toxicology

**Related journal**

PLoS ONE
1932-6203
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 3.11 SJR 1.201 SNIP 1.092, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed yes
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

**Pre-examiner of PhD-thesis by Elina Sillanpää**
Period: 2017 → …
Per Anker Jensen (External examiner)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International
Activity: Examinations and supervision › External examination

**Production of alkali from cocoa husk ash and biological extraction of hydrocolloid from Sargassum sp.**
Period: 2017
Marcel Tutor Ale (Other)
Department of Chemical and Biochemical Engineering
Center for BioProcess Engineering
**Description**
Coordinated by Marcel Tutor Ale
Activity: Other

**Production of alkali from cocoa husk ash for extraction of hydrocolloid from biologically pretreated red seaweed**
Period: 2017
Marcel Tutor Ale (Other)
Department of Chemical and Biochemical Engineering
Center for BioProcess Engineering
**Description**
Coordinated by Marcel Tutor Ale
Activity: Other
Renovering på Dagsordenen (External organisation)
Period: 2017 → …
Per Anker Jensen (Member)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Faggruppe medlem for Hvidbog om bygningsdrift
Degree of recognition: National

Related external organisation
Renovering på Dagsordenen
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Robotics and Computer-Integrated Manufacturing (Journal)
Period: 2017
Alessandro Stolfi (Reviewer)
Department of Applied Mathematics and Computer Science
Department of Mechanical Engineering
Manufacturing Engineering

Related journal
Robotics and Computer-Integrated Manufacturing
0736-5845
Central database
Activity: Research › Peer review of manuscripts

Routledge, Taylor & Francis Group (Publisher)
Period: 2017 → …
Per Anker Jensen (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Review of a proposal for a new book on Facilities Management
Degree of recognition: International

Related Publisher
Routledge, Taylor & Francis Group
United Kingdom
Local database
Activity: Communication › Peer review of manuscripts

Scientific Committee of the European Congress of Medical Physics 2018 (External organisation)
Period: 2017 → 2018
Lars G. Hanson (Member)
Department of Electrical Engineering
Center for Magnetic Resonance
Center for Hyperpolarization in Magnetic Resonance
Degree of recognition: International

Related external organisation

Scientific Committee of the European Congress of Medical Physics 2018
Activity: Membership › Membership of research networks or expert groups

Scientific Reports (Journal)
Period: 2017 → …
Terje Svingen (Reviewer)
National Food Institute
Research Group for Molecular and Reproductive Toxicology

Description
Editorial Board Member
Degree of recognition: International

Related journal

Scientific Reports
2045-2322
Indexed in DOAJ
Central database
Activity: Research › Journal editor

Uvildige Ekspertpanel Deponering af radioaktivt affald i DK (External organisation)
Period: 2017 → …
Steffen Foss Hansen (Chairman)
Department of Environmental Engineering
Environmental Chemistry

Description
Member of the independent expert panel on deposit of radioactive waste in Denmark
Degree of recognition: National
Links:
http://ufm.dk/aktuelt/temaer/deponering-af-radioaktivt-affald-i-dk/det-uvildige-ekspertpanel-1/det-uvildige-ekspertpanel#cookieoptin

Related external organisation

Uvildige Ekspertpanel Deponering af radioaktivt affald i DK
Uddannelses- og Forskningsministeriet, Børsegade 4, 2135, København K, Denmark
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Wissenschaftsfonds FWF (Fonds zur Förderung der wissenschaftlichen Forschung) Österreichs (External organisation)
Period: 2017
Anke Hagen (Chairman)
Department of Energy Conversion and Storage
Applied Electrochemistry

Description
Evaluation of proposals

Related external organisation
Wissenschaftsfonds FWF (Fonds zur Förderung der wissenschaftlichen Forschung) Österreichs
Austria
Activity: Membership › Membership in review committee

International Journal of Management Science and Engineering Management (Journal)
Period: Dec 2017
Kasper Edwards (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Review paper
Degree of recognition: International

Related journal
International Journal of Management Science and Engineering Management
1750-9653
Scopus rating (2016): CiteScore 0 SJR 0.112, ISI indexed (2013): ISI indexed no
Central database
Activity: Research › Journal editor

Nordic Journal of Working Life Studies (Journal)
Period: Dec 2017
Kasper Edwards (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Paper review
Degree of recognition: International

Related journal
Nordic Journal of Working Life Studies
2245-0157
Local database
Activity: Research › Journal editor

Activities in the standardisation of light sources and spectroradiometer calibration
Period: 15 Dec 2017
Anders Thorseth (Invited speaker)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International

Related event
6th PV-Outdoor-Spectral Measurement Mini Workshop: Dissemination of the Spectroradiometer and Broadband Intercomparison 2017
15/12/2017 → …
Vienna, Austria
Activity: Talks and presentations › Conference presentations
Challenges in Communicating the Results of Public Health Benefit-risk Assessments
Period: 13 Dec 2017
Maarten Nauta (Panel member)
National Food Institute
Research Group for Risk-Benefit
Description
Roundtable discussion
Degree of recognition: International
Related event
Society for Risk Analysis Annual Meeting
10/12/2017 → 13/12/2017
Arlington, United States
Activity: Talks and presentations › Conference presentations

Challenges of Data Availability for Analysing the Water-Energy Nexus
Period: 13 Dec 2017
Morten Andreas Dahl Larsen (Guest lecturer)
Department of Management Engineering
Systems Analysis
Degree of recognition: International
Related event
ETSAP water energy nexus workshop
13/12/2017 → 13/12/2017
Zürich, Switzerland
Activity: Talks and presentations › Conference presentations

Consistency and Main Differences Between European Regional Climate Downscaling Intercomparison Results; From PRUDENCE and ENSEMBLES to CORDEX
Period: 12 Dec 2017
Morten Andreas Dahl Larsen (Other)
Department of Management Engineering
Systems Analysis
Degree of recognition: International
Related event
2017 AGU Fall Meeting
11/12/2017 → 15/12/2017
New Orleans, United States
Activity: Talks and presentations › Conference presentations

Predictive food microbiology
Period: 11 Dec 2017
Tina Beck Hansen (Guest lecturer)
National Food Institute
Research Group for Microbial Food Safety
Description
Forelæsning og øvelser om prædiktiv mikrobiologi for KU-studerende (3 timer)
Gæsteforelæser
Documents:
predictive_micro_111217_Tina Beck
How many EMA-workshops are needed to collect a representative sample of events in a hospital ward?

Period: 10 Dec 2017

Kasper Edwards (Speaker)

Department of Management Engineering
Management Science
Implementation and Performance Management

Related event

11th NOVO Symposium: Measures to meet Nordic challenges for sustainable health care organizations
09/11/2017 → 10/11/2017
Gothenburg, Sweden
Activity: Talks and presentations › Conference presentations

In silico and experimental approaches to understand and engineer the biosynthesis of antibiotics

Period: 8 Dec 2017

Tilmann Weber (Guest lecturer)

Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: National

Related event

CompLifeSci 2017 Annual Meeting at University of Turku
08/12/2017 → 08/12/2017
Turku, Finland
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Lessons from developing ICRA, a catalogue for risk assessments

Period: 7 Dec 2017

Maarten Nauta (Invited speaker)

National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

Related event

Approaches to Connecting, Sustaining and Advancing FDA-iRISK and a Community of Risk Assessment and Predictive Modeling Resources
07/12/2017 → 08/12/2017
Greenbelt, United States
Activity: Talks and presentations › Conference presentations

Predictive microbiology for the dairy industry at Shelf-life Mejeriprodukter Seminar for Mejeriteknisk Selskab on 7th December 2017, Billund.

Period: 7 Dec 2017

Veronica Martinez Rios (Invited speaker)

National Food Institute
Research Group for Analytical and Predictive Microbiology
Predictive food microbiology is a highly useful tool for risk assessment, product innovation, reformulation and documentation of food safety. However, the gap between scientific development and practical implementation in the dairy sector has been a challenge. Therefore, an overview of available predictive food microbiology models for dairy products and related software will be presented. Special focus will be on practical examples to show how these mathematical models can contribute to innovation in product formulation and distribution conditions within the dairy sector.

Related event

Shelf-life-Mejriprodukter
07/12/2017 → 07/12/2017
Billund, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Agile Stage Gate
Period: 6 Dec 2017
Kasper Edwards (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Præsentation af resultater fra Agile Stage-Gate projektet, med DI og GEMBA.
Degree of recognition: National

Related event

AGILE STAGE-GATE: En metode til accelereret produktudvikling
06/12/2017 → 06/12/2017
Aalborg, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Bioenergy conversion and storage systems: from conventional electrochemical cells to hybrid bioelectronic devices
Period: 6 Dec 2017
Dmitrii Pankratov (Invited speaker)
Department of Chemistry
NanoChemistry
Documents:
Abstract

Related event

DTU Sustain 2017
06/12/2017 → …
Activity: Talks and presentations › Conference presentations

DTU Sustain 2017
Period: 6 Dec 2017
Steffen Foss Hansen (Organizer)
Kristian Mølhave (Organizer)
Department of Environmental Engineering
Environmental Chemistry
Department of Micro- and Nanotechnology
Molecular Windows

Description
Steering group member of DTU Sustain 2017
Degree of recognition: National
Links:
http://www.sustain.dtu.dk (Conference website)

Related event

DTU Sustain 2017
06/12/2017 → …
Activity: Attending an event › Participating in or organising a conference

DTU Sustain 2017
Period: 6 Dec 2017
Stig Irving Olsen (Organizer)
Katrine Nielsen (Organizer)
Berit Godskesen (Organizer)
Viggo Aaberg Kærn (Organizer)
Department of Environmental Engineering
Urban Water Systems
Office for Innovation & Sector Services
Department of Management Engineering
Quantitative Sustainability Assessment
Degree of recognition: International

Related event

DTU Sustain 2017
06/12/2017 → …
Activity: Attending an event › Participating in or organising a conference

DTU Sustain 2017
Period: 6 Dec 2017
Stig Irving Olsen (Organizer)
Katrine Nielsen (Organizer)
Berit Godskesen (Organizer)
Viggo Aaberg Kærn (Organizer)
Department of Environmental Engineering
Urban Water Systems
Office for Innovation & Sector Services
Department of Management Engineering
Quantitative Sustainability Assessment
Degree of recognition: International

Related event

DTU Sustain 2017
06/12/2017 → …
Activity: Attending an event › Participating in or organising a conference

Natural antioxidants derived from seaweed material
Period: 6 Dec 2017
Ditte Baun Hermund (Other)
National Food Institute
Research Group for Bioactives – Analysis and Application
Photovoltaic subretinal implants for blind patients
Period: 6 Dec 2017
Rasmus Schmidt Davidsen (Guest lecturer)
Department of Micro- and Nanotechnology
Silicon Microtechnology

Description
Labtop presentation and abstract in proceedings at Sustain 2017 conference, DTU
Documents:
Sustain2017abstract

Sustain 2017
Period: 6 Dec 2017
Jing Tang (Participant)
Department of Chemistry
NanoChemistry

Sustain 2017
Period: 6 Dec 2017
Solange I. Mussatto (Organizer)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology
Degree of recognition: National
Biomass Conversion and Bioprocess Technology
Degree of recognition: National

Related event
Sustain 2017
06/12/2017 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

Sustain 2017
Period: 6 Dec 2017
Annette Nygaard Jensen (Participant)
National Food Institute
Research Group for Microbial Food Safety

Related event
Sustain 2017
06/12/2017 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

The COHERENT Project
Period: 6 Dec 2017
Morten Andreas Dahl Larsen (Guest lecturer)
Department of Management Engineering
Systems Analysis

Description
Coastal hazard risk reduction and management
Degree of recognition: Regional
Documents:
SUSTAIN poster

Related event
DTU Sustain 2017
06/12/2017 → …
Activity: Talks and presentations › Conference presentations

The WISE project
Period: 6 Dec 2017
Katrine Nielsen (Speaker)
Department of Environmental Engineering
Urban Water Systems
Degree of recognition: International

Related event
DTU Sustain 2017
06/12/2017 → …
Activity: Talks and presentations › Conference presentations

Agile Stage-Gate
Period: 5 Dec 2017
Kasper Edwards (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Related event

AGIL STAGE-GATE
: En metode til accelereret produktudvikling
05/12/2017 → 05/12/2017
Silkeborg, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Risk Powers Innovation
Period: 5 Dec 2017
Josef Oehmen (Invited speaker)
Department of Management Engineering
Engineering Systems
Description
From Stakeholder Values to Project Risk Management: Enabling Innovation in Engineering Organizations
Links:

Related event

International Risk Management Conference: IDA/RISK Conference
01/12/2011 → …
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Agile Stage Gate - morgenmøde København
Period: 4 Dec 2017
Kasper Edwards (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: National

Related event

AGIL STAGE-GATE : En metode til accelereret produktudvikling
04/12/2017 → 04/12/2017
København, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

DTU Sustain 2017
Period: 4 Dec 2017
Yingying Tang (Organizer)
Department of Chemistry
NanoChemistry
Degree of recognition: National
Documents:
Sustain DTU Abstract_Version 2_Yingying Tang

Related event
Controlling Chimeras
Period: 1 Dec 2017
Erik Andreas Martens (Guest lecturer)
Department of Applied Mathematics and Computer Science
Dynamical Systems

Description
Invited Talk
Degree of recognition: International

Related external organisation
Berlin Center for Studies of Complex Chemical Systems (BCSCCS), Technische Universität Berlin
Berlin, Germany
Activity: Talks and presentations › Conference presentations

Automation in Construction (Journal)
Period: Nov 2017
Toke Rammer Nielsen (Reviewer)
Department of Civil Engineering
Section for Building Energy
Degree of recognition: International

Related journal
Automation in Construction

International Journal of Heat and Mass Transfer (Journal)
Period: Nov 2017
Toke Rammer Nielsen (Reviewer)
Department of Civil Engineering
Section for Building Energy
Degree of recognition: International

Related journal
International Journal of Heat and Mass Transfer
0017-9310
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 3.75 SJR 1.623 SNIP 2.005, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

Participatory Innovation Conference (Event)
Period: Nov 2017 → …
Giulia Nardelli (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management
Description
Peer review of conference papers for Pin-C 2018, Eskiltuna (SVE)
Degree of recognition: International

Related event

Participatory Innovation Conference
01/01/2011 → …
Sønderborg
Activity: Research › Peer review of manuscripts

Speed of evolution in spatially extended habitats
Period: Nov 2017
Erik Andreas Martens (Guest lecturer)
Department of Applied Mathematics and Computer Science
Dynamical Systems
Degree of recognition: International

Related event

Workshop: Future Trends in Mathematical Biology: In vitro, in vivo, and in silico,
22/11/2017 → 23/11/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Analytical challenges for nanomaterials in risk assessment
Period: 30 Nov 2017
Katrin Löschner (Speaker)
National Food Institute
Research Group for Nano-Bio Science
Degree of recognition: International

Related event

Joint International Symposium: Global Past, Present and Future Challenges in Risk Assessment – Strengthening Consumer Health Protection
30/11/2017 → 01/12/2017
Berlin, Germany
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Fighting unknown chemicals: analytical strategies for risk prioritization
Period: 30 Nov 2017
Eelco Nicolaas Pieke (Guest lecturer)
National Food Institute
Research Group for Analytical Food Chemistry

Description
In chemical risk assessment, we have always relied on an availability or attainability of exposure and hazard assessments. Although this never was easy, it has nowadays become nigh impossible because relevant data is rarely and scarcely available, while the number of known chemicals is merely the tip of the iceberg of total available chemicals. To investigate, elucidate, and assess the poorly-understood potential risk of unknown chemicals, we need novel analytical methodologies and a change in the mind-set of risk assessment.
Degree of recognition: International

Related event

Global Past, Present and Future Challenges in Risk Assessment - Strengthening Consumer Health Protection: Joint International Symposium hosted by the NIFDS, ANSES, DTU and BfR
30/11/2017 → 01/12/2017
Berlin, Germany
Power curve measurement using $V_{\infty}$ estimates from nacelle lidars and its uncertainty
Period: 30 Nov 2017
Antoine Borraccino (Guest lecturer)
Department of Wind Energy
Meteorology & Remote Sensing
Degree of recognition: International
Documents:
PCV_naclidars_Vinfty_ABorraccino_WindEurope2017

Related event
WindEurope 2017
28/11/2017 → 30/11/2017
Amsterdam, Netherlands
Activity: Talks and presentations › Conference presentations

Risk-Benefit Assessment of foods
Period: 30 Nov 2017
Maarten Nauta (Invited speaker)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

Related event
Joint International Symposium: Global Past, Present and Future Challenges in Risk Assessment – Strengthening Consumer Health Protection
30/11/2017 → 01/12/2017
Berlin, Germany
Activity: Talks and presentations › Conference presentations

The choice of staying in Academia
Period: 29 Nov 2017
Christine Ipsen (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related event
5th Scandinavian Academy of Industrial Engineering and Management
27/11/2017 → 29/11/2017
Trondheim, Norway
Activity: Talks and presentations › Conference presentations

Annual meeting of the EFSA Network on Nanotechnologies
Period: 28 Nov 2017 → 29 Nov 2017
Katrin Lôschner (Participant)
National Food Institute
Research Group for Nano-Bio Science
Degree of recognition: International

Related event
**Annual meeting of the EFSA Network on Nanotechnologies**
28/11/2017 → 29/11/2017
Parma, Italy
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Hvad spærer for god opklaring, læring og forebyggelse af ulykker**
Period: 28 Nov 2017
Frank Huess Hedlund (Guest lecturer)
Department of Applied Mathematics and Computer Science
Dynamical Systems
Statistics and Data Analysis

**Description**
What is blocking good accident investigation, learning and prevention of occupational accidents
Degree of recognition: National
Documents:
Workshop 411 - Frank Hedlund, Hvad spærer opklaring

**Related event**
**Arbejdsmiljøkonferencen AM:2017**
27/11/2017 → 28/11/2017
Nyborg, Denmark
Activity: Talks and presentations › Conference presentations

**Member of the Technical Committee (TC) of 2018 IEEE International Future Energy Challenge (IFEC)**
Period: 28 Nov 2017 → 19 Jul 2018
Zhe Zhang (Organizer)
Department of Electrical Engineering
Electronics

**Description**
Member of the Technical Committee (TC) of 2018 IEEE International Future Energy Challenge (IFEC)
Degree of recognition: International

**Related event**
**Member of the Technical Committee (TC) of 2018 IEEE International Future Energy Challenge (IFEC)**
28/11/2017 → 21/07/2018
Activity: Attending an event › Participating in or organising a conference

**Quality in coding of qualitative data**
Period: 28 Nov 2017
Giulia Nardelli (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
Teaching track presentation

**Related event**
**5th Scandinavian Academy of Industrial Engineering and Management**
27/11/2017 → 29/11/2017
Trondheim, Norway
Activity: Talks and presentations › Conference presentations
Quality in coding of qualitative data: Atlas.ti and NVivo
Period: 28 Nov 2017
Giulia Nardelli (Speaker)
Signe Poulsen (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related event
5th Scandinavian Academy of Industrial Engineering and Management
27/11/2017 → 29/11/2017
Trondheim, Norway
Activity: Talks and presentations › Conference presentations

Towards solid oxide electrolysis plants in 2020
Period: 28 Nov 2017
Ming Chen (Other)
Department of Energy Conversion and Storage
Mixed Conductors

Description
Poster presentation
Degree of recognition: National

Related event
DEN DANSE BRINT- OG BRÆNDELSCELLEDAG 2017
28/11/2017 → 28/11/2017
Odense, Denmark
Activity: Talks and presentations › Conference presentations

3D Graphene-Glucose Oxidase Bioanodes for Enzymatic Biofuel Cells
Period: 27 Nov 2017 → 28 Nov 2017
Jing Tang (Speaker)
Rebecka Maria Larsen Werchmeister (Other)
Jingdong Zhang (Other)
Department of Chemistry
NanoChemistry
Organic Chemistry
Documents:
Program Luckenwalde 2017-final

Related event
PhD Workshop on Bioanalysis
27/11/2017 → 28/11/2017
Postdam, Germany
Activity: Talks and presentations › Conference presentations

5th Scandinavian Academy of Industrial Engineering and Management (Event)
Period: 27 Nov 2017
Giulia Nardelli (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
Senior discussant (including manuscript review) in Ph.D. workshop
Degree of recognition: International

**Related event**

5th Scandinavian Academy of Industrial Engineering and Management
27/11/2017 → 29/11/2017
Trondheim, Norway
Activity: Research › Peer review of manuscripts

**5th Scandinavian Academy of Industrial Engineering and Management (Event)**
Period: 27 Nov 2017
Christine Ipsen (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
PhD workshop - reviewing PhD projects
Degree of recognition: International

**Related event**

5th Scandinavian Academy of Industrial Engineering and Management (Event)
27/11/2017 → 29/11/2017
Trondheim, Norway
Activity: Research › Peer review of manuscripts

"Application of Scanning Probe Microscopy in Bioelectrochemistry"
Period: 27 Nov 2017 → 28 Nov 2017
Jingdong Zhang (Guest lecturer)
Department of Chemistry
NanoChemistry
Organic Chemistry

**Description**
PhD Workshop on Bioanalysis, University of Potsdam, Germany

**Related external organisation**
University of Potsdam
Germany
Activity: Talks and presentations › Conference presentations

How Quantitative Risk Assessment makes criteria risk-based
Period: 27 Nov 2017
Maarten Nauta (Speaker)
National Food Institute
Research Group for Risk-Benefit

**Description**
Presentation Institute Network for Microbiological Modelling, Epidemiology and Risk Assessment, theme: Does Risk Assessment make a difference? The case of the Campylobacter criterion
Degree of recognition: Local

Related organisation

How Quantitative Risk Assessment makes criteria risk-based
Nauta, M. (Speaker)
27 Nov 2017
Activity: Talks and presentations › Conference presentations

IEA 4E SSL Annex Conference
Period: 23 Nov 2017
Carsten Dam-Hansen (Participant)
Department of Photonics Engineering
Diode Lasers and LED Systems

Description
Participation in SSL Annex conference
Degree of recognition: International

Related event

IEA 4E SSL Annex Conference
: Promoting High Quality, Energy-Efficient Solid State Lighting
23/11/2017 → 23/11/2017
Sydney, Australia
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Wood stove combustion
Period: 23 Nov 2017
Jytte Boll Illerup (Lecturer)
Department of Chemical and Biochemical Engineering
CHEC Research Centre
Degree of recognition: National
Documents:
Annual Day 2017 Wood stove combustion_Jytte Illerup

Related event

CHEC Annual Day 2017
23/11/2017 → 23/11/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

IEA Wind TCP Report Launch Event (Wind Task 26)
Period: 22 Nov 2017
Lena Kitzing (Organizer)
Jonas Katz (Organizer)
David Fernando Mora Alvarez (Organizer)
Department of Management Engineering
Systems Analysis

Description
Full day event to launch the IEA Wind Task 26 report on impacts of wind turbinge technology on the system value of wind; Launch of data viewer on the IEA Wind website.

The IEA Wind TCP Task 26 presented its ongoing work and its members were there for network opportunities, including National Renewable Energy Laboratory (NREL), Lawrence Berkeley Institute (LBNL), Joint Research Centre (EC-JRC), Fraunhofer IWES, Deutsche WindGuard, Dublin Institute of Technology (DIT), Offshore Renewable Energy (ORE)
Catapult, Norwegian Water Resources and Energy Directorate (NVE), Swedish Energy Agency (SEA), Denmark Technical University (DTU) and Ea Energy Analyses.

Speakers include Maureen Hand (NREL), Ryan Wiser (LBNL), Thomas Korzeniewski (Vestas), Frank Obermüller (DNV GL), Johannes Thon (European Energy), Karsten Capion (Dansk Energi), Silke Lüers (Deutsche WindGuard), Alberto Dalla Riva (EA Energy Analysis), János Hethey (EA Energy Analysis), Pablo Hevia-Koch (DTU), Lena Kitzing (DTU).

Degree of recognition: International

Documents:

Agenda
Hand - IEA Wind Task 26 Overview-Report Launch Event
Dalla Riva, Hethey - Impacts of Wind Turbine Technology on the System Value of Wind
Capion - Reflections on the report
Obermueller_system optimal wind locations
Thon-Developer Perspective
Korzeniewski - Vestas perspective
Wiser_Wind_ValueMitigation
Wiser_Wind_elicitation
Hevia-Koch_Cost of Visual Impact
Kitzing-RES-Auctions

Related event
IEA Wind TCP Report Launch Event (Wind Task 26): Impacts of Wind Turbine Technology on the System Value of Wind
22/11/2017 → 22/11/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Collapse of genetic division of labor and evolution of autonomy in pellicle biofilms
Period: 21 Nov 2017
Ákos T. Kovács (Invited speaker)
Department of Biotechnology and Biomedicine

Description
Danish Biofilm Working Group meeting
Degree of recognition: Regional

Related event
Biofilm Working Group
21/11/2017 → 21/11/2017
Kgs Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

What is a risk?
Period: 21 Nov 2017
Josef Oehmen (Keynote speaker)
Department of Management Engineering
Engineering Systems

Description
Keynote on value-oriented risk management for large construction projects
Degree of recognition: National

Related event
Værdibyg Kick-Off Seminar on Risk Management
21/11/2017 → ...
Activity: Talks and presentations › Conference presentations
Coagulants et cultures pour le lait de chamelle
Period: 20 Nov 2017
Egon Bech Hansen (Guest lecturer)
National Food Institute
Research Group for Gut Microbiology and Immunology
Degree of recognition: International
Documents:
Coagulants et cultures pour lait de chamelle

Related event

3ème MGIBR Workshop International : "Le lait: Production, Conservation et Valorisation"
20/11/2017 → 20/11/2017
Tlemchen, Algeria
Activity: Talks and presentations › Conference presentations

External examiner on PhD defense by PhD student Farideh Javidi Niroumand
Period: 20 Nov 2017
Michael A. E. Andersen (External examiner)
Department of Electrical Engineering
Activity: Examinations and supervision › External examination

IEA 4E SSL Annex’s 15th Expert Meeting
Period: 20 Nov 2017 → 22 Nov 2017
Carsten Dam-Hansen (Participant)
Department of Photonics Engineering
Diode Lasers and LED Systems
Description
Partipation in meeting as Danish expert
Degree of recognition: International

Related event

IEA 4E SSL Annex’s 15th Expert Meeting
20/11/2017 → 22/11/2017
Canberra, Australia
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

University of California, San Diego
Period: 20 Nov 2017 → 15 Mar 2018
Ha Thi Nguyen (Visiting researcher)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems
Description
Visiting graduate student at Center for Energy Research (CER), University of California, San Diego, CA, USA
Activity: Visiting an external institution › Visiting another research institution

Using LCA as a screening tool for bioenergy options – case study of a meat processing plant
Period: 20 Nov 2017 → 21 Nov 2017
Tracey Anne Colley (Guest lecturer)
Department of Management Engineering
Quantitative Sustainability Assessment

Description
Overview of gate-to-gate LCA of a meat processing plant, looking at Integrated Food Energy System (IFES) using recycled treated effluent to grow biomass on farms for thermal energy supply at site, along with integration of renewable (solar and wind) and other bioenergy (biogas, tallow biodiesel).

Documents:
TAC MB MZH_BioE 2017_rev2

Links:

Related event
BIOENERGY2017: 'Bioenergy – the reliable renewable'
19/11/2017 → 22/11/2017
Sydney, Australia
Activity: Talks and presentations › Conference presentations

Circular economy in the meat processing sector – using life cycle assessment as a screening tool
Period: 17 Nov 2017
Tracey Anne Colley (Guest lecturer)
Department of Management Engineering

Description
Presentation at Academic Symposium, as part of a conference
Degree of recognition: Local

Documents:
TAC Circ Eco ppt

Links:
https://www.poweringthechange.org.au/symposiumfri17nov/ (Program for the Academic Symposium, which was held as part of the inaugural "Powering the change to a circular economy" conference.)

Related event
Powering the change to a circular economy
14/11/2017 → 16/11/2017
Adelaide, Australia
Activity: Talks and presentations › Conference presentations

High-throughput knockout of CHO host cell proteins to create a clean CHO cell
Period: 17 Nov 2017
Stefan Kol (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Core

Related event
PEGS Europe: protein and antibody engineering summit
02/11/2015 → 06/11/2015
Lisbon, Portugal
Activity: Talks and presentations › Conference presentations

Novel Treatment Strategies to Combat Antibiotic Resistance
Period: 17 Nov 2017
Mari Cristina Rodriguez de Evgrafov (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology

**Description**
DTU 23205 Fighting Infectious Diseases

**Related organisation**

**Novel Treatment Strategies to Combat Antibiotic Resistance**
de Evgrafov, M. C. R. (Guest lecturer)
17 Nov 2017
Activity: Talks and presentations › Conference presentations

Response prediction of vessel motions and sea state estimation from ships
Period: 17 Nov 2017
Ulrik Dam Nielsen (Guest lecturer)
Department of Mechanical Engineering
Fluid Mechanics, Coastal and Maritime Engineering

**Description**
Seminar at University of California - Berkeley @ Ocean Engineering.
Documents:
Response prediction and SSE (UCB Nov. 2017)

**Related external organisation**

University of California at Berkeley
United States
Activity: Talks and presentations › Conference presentations

Uncertainty and variability are different. This is of crucial importance for risk assessment
Period: 17 Nov 2017
Maarten Nauta (Lecturer)
National Food Institute
Research Group for Risk-Benefit

**Description**
Seminar for GDSI
Degree of recognition: Local

**Related organisation**

Uncertainty and variability are different. This is of crucial importance for risk assessment
Nauta, M. (Lecturer)
17 Nov 2017
Activity: Talks and presentations › Conference presentations

Developing an advanced bioeconomy through industrial biotechnology
Period: 16 Nov 2017
Solange I. Mussatto (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology
Degree of recognition: National

**Related event**

**Latitud, Fundación LATU**
16/11/2017 → ...
Montevideo, Uruguay
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations
Partiklers indflydelse på vandkvaliteten
Period: 16 Nov 2017
Katrine Nielsen (Invited speaker)
Department of Environmental Engineering
Urban Water Systems
Degree of recognition: National

Related event
Vand i Byer stormøde November 2017: Vandkvalitet
16/11/2017 → 16/11/2017
Taastrup, Denmark
Activity: Talks and presentations › Conference presentations

Vand i Byer stormøde November 2017
Period: 16 Nov 2017
Katrine Nielsen (Organizer)
Peter Steen Mikkelsen (Organizer)
Department of Environmental Engineering
Urban Water Systems
Degree of recognition: National

Related event
Vand i Byer stormøde November 2017: Vandkvalitet
16/11/2017 → 16/11/2017
Taastrup, Denmark
Activity: Attending an event › Participating in or organising a conference

Æggebakker, rustfrit stål og andre oversete aktører - historie i et hverdags- og materialitetsperspektiv
Period: 15 Nov 2017
Louise Karlskov Skyggebjerg (Lecturer)
Department of Physics
Degree of recognition: Local

Related external organisation
Idéhistorisk Forening
Aarhus
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Chairman PhD Assessment Committee
Period: 15 Nov 2017
Toke Rammer Nielsen (Internal examiner)
Department of Civil Engineering
Section for Building Energy
Degree of recognition: International
Activity: Examinations and supervision › Internal examination

DANMAP seminar: I anledning af Europæisk Antibiotikauge 2017
Period: 15 Nov 2017
Annette Nygaard Jensen (Participant)
National Food Institute
Simulating control of paratuberculosis in Danish dairy herds
Period: 15 Nov 2017
Carsten Thure Kirkeby (Guest lecturer)
National Veterinary Institute
Epidemiology

Description
Presentation for CPH Cattle
Documents:
Abstract CKIR CPH Cattle

Related event
Copenhagen Cattle 2017
15/11/2017 → …
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Interpreting wind energy resource visualisations for South Africa
Period: 14 Nov 2017
Andrea N. Hahmann (Speaker)
Niels Gylling Mortensen (Other)
Jens Carsten Hansen (Other)
Department of Wind Energy
Resource Assessment Modelling
Integration & Planning

Description
About the variety of ways of applying and interpreting wind resource data, with examples from the WASA project.
Documents:
WindAC2017_Hahmann

Related event
WindAc
14/11/2017 → 15/11/2017
Cape Town, South Africa
Activity: Talks and presentations › Conference presentations

Wilson K. S. Chiu
Start date: 14 Nov 2017
Jacob R. Bowen (Host)
Department of Energy Conversion and Storage
Imaging and Structural Analysis

Description
Synchrotron-based Hard X-Ray Microscopy: A Tool for 3-D Spectroscopic Imaging at the Nanoscale
Degree of recognition: International
Allelic Imbalance usage in functional genetics  
Period: 13 Nov 2017  
Lasse Westergaard Folkersen (Invited speaker)  
Department of Bio and Health Informatics  
Integrative Systems Biology  

Related event

World Gene Convention-2017  
12/11/2017 → 14/11/2017  
Macao, China  
Activity: Talks and presentations › Conference presentations  

Controls of N2O production pathways in nitritation-anammox biomass  
Period: 13 Nov 2017  
Marlene Mark Jensen (Invited speaker)  
Department of Environmental Engineering  
Water Technologies  
Degree of recognition: National  

Related event

Danish Microbiological Society 2017 Congress  
13/11/2017 → 13/11/2017  
Copenhague, Denmark  
Activity: Talks and presentations › Conference presentations  

Gerardina Carbone  
Start date: 13 Nov 2017  
Jacob R. Bowen (Host)  
Department of Energy Conversion and Storage  
Imaging and Structural Analysis  

Description  
Brilliant opportunities with X-ray Nanobeams  
Degree of recognition: International  
Documents:  
DTU_DCarbone_Nov17  
Activity: Hosting a guest lecturer  

Participation in workshop with two presentations  
Period: 13 Nov 2017 → 15 Nov 2017  
Mads Holten Rasmussen (Guest lecturer)  
Department of Civil Engineering  
Section for Building Design  

Description  
Participation in workshop with two presentations: "Recent Changes in the Building Topology Ontology" and "Web-based topology queries on a BIM model"  
Degree of recognition: International  
Documents:  
Presentation - Web-based topology queries on a BIM model  
Presentation - Recent changes in the Building Topology Ontology
Related event

**LDAC2017 – 5th Linked Data in Architecture and Construction Workshop**
13/11/2017 → 15/11/2017
Dijon, France
Activity: Talks and presentations › Conference presentations

**Permissiveness of Microbial Community from Wastewater Treatment Plant towards IncP-1 Plasmid**
Period: 13 Nov 2017
Liguan Li (Other)
Arnaud Dechesne (Other)
Barth F. Smets (Other)
Jonas Stenløkke Madsen (Other)
Søren J. Sørensen (Other)
Department of Environmental Engineering
Water Technologies
Degree of recognition: Local
Documents:
Abstract_LiguanLi

**Related external organisation**

**Danish Microbiology Society**
Activity: Talks and presentations › Conference presentations

**Principles and Applications of Dissolution Dynamic Nuclear Polarization**
Period: 13 Nov 2017 → 17 Nov 2017
Vitaliy Zhurbenko (Participant)
Department of Electrical Engineering
Center for Magnetic Resonance
Center for Hyperpolarization in Magnetic Resonance

**Description**
PhD level training school
Degree of recognition: International
Links:
http://www.conferencemanager.dk/dDNP-training-school/

**Related event**

**Principles and Applications of Dissolution Dynamic Nuclear Polarization**
13/11/2017 → 17/11/2017
Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Rui Liu**
Start date: 13 Nov 2017 → 1 Nov 2018
Andrey Sogachev (Host)
Department of Wind Energy
Resource Assessment Modelling

**Description**
High resolution numerical simulations of energy and water exchanges in oasis-desert area
Activity: Hosting a guest lecturer
Stress induced biofilms of Bacillus subtilis: the role of ppGpp
Period: 13 Nov 2017
Ákos T. Kovács (Invited speaker)
Department of Biotechnology and Biomedicine
Degree of recognition: National

Related event
The Annual Congress of The Danish Microbiological Society (DMS)
13/11/2017 → 13/11/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

The Annual Congress of The Danish Microbiological Society (DMS)
Period: 13 Nov 2017
Annette Nygaard Jensen (Participant)
National Food Institute
Research Group for Microbial Food Safety

Related event
The Annual Congress of The Danish Microbiological Society (DMS)
13/11/2017 → 13/11/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising a conference

The Annual Congress of The Danish Microbiological Society (DMS)
Period: 13 Nov 2017
Leonie Johanna Jahn (Participant)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology
Degree of recognition: National

Related event
The Annual Congress of The Danish Microbiological Society (DMS)
13/11/2017 → 13/11/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising a conference

The Annual Congress of The Danish Microbiological Society (DMS)
Period: 13 Nov 2017
Tina Beck Hansen (Participant)
National Food Institute
Research Group for Microbial Food Safety
Degree of recognition: National

Related event
The Annual Congress of The Danish Microbiological Society (DMS)
13/11/2017 → 13/11/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising a conference

University of New South Wales
Period: 13 Nov 2017 → 10 Feb 2018
Theis Bo Rasmussen (Visiting researcher)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems

Description
External research stay at the School of Electrical Engineering and Telecommunications under the supervision of Professor Joe Dong.
Activity: Visiting an external institution › Visiting another research institution

World Gene Convention-2017
Period: 13 Nov 2017
Lasse Westergaard Folkersen (Chairman)
Department of Bio and Health Informatics
Integrative Systems Biology
Links:
http://www.bitcongress.com/wgc2017/ProgramLayout.asp

Related event
World Gene Convention-2017
12/11/2017 → 14/11/2017
Macao, China
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Application of seaweeds in food and feed - analysis of toxic elements and implications for food/feed safety
Period: 9 Nov 2017
Jens Jørgen Sloth (Speaker)
Susan Løvstad Holdt (Other)
Max Hansen (Other)
Arne Duinker (Other)
National Food Institute
Research Group for Nano-Bio Science
Research Group for Bioactives – Analysis and Application
Division of Risk Assessment and Nutrition
Degree of recognition: International

Related event
8th International Symposium on Recent Advances in Food Analysis
07/11/2017 → 10/11/2017
Prague, Czech Republic
Activity: Talks and presentations › Conference presentations

Detection of lead nanoparticles in game meat by single particle ICP-MS following use of lead-containing bullets
Period: 9 Nov 2017
Katrin Löschner (Speaker)
National Food Institute
Research Group for Nano-Bio Science
Degree of recognition: International

Related event
8th International Symposium on Recent Advances in Food Analysis
07/11/2017 → 10/11/2017
Prague, Czech Republic
DOPS Annual Conference 2017
Period: 9 Nov 2017 → 10 Nov 2017
Ole Bjarlin Jensen (Organizer)
Department of Photonics Engineering
Diode Lasers and LED Systems

Description
Conference organized by the Danish Optical Society
Degree of recognition: National

Related event
DOPS Annual Conference 2017
09/11/2017 → 10/11/2017
Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

Obduktion af en betonkonstruktion – hvordan finder vi ud af (næsten) alt ?
Period: 9 Nov 2017
Per Goltermann (Other)
Department of Civil Engineering
Section for Structural Engineering

Description
Geolog Sara E. Hoffritz forklarede hvordan man med meget små prøver (0,06g pr stk) kan obducere en stor betonkonstruktion og ved denne obduktion finde ud af næsten alt om hvilke materialer der er anvendt og hvordan disse er blevet behandlede og måske senere også blevet nedbrudte

Related external organisation
Dansk Betonforening
Activity: Other

Predictive Microbiology – Food Spoilage and Safety Predictor (FSSP) software. Mini-course at Microbial Food Quality and Safety – Analytical Methods, 9 Nov. 2017, UC-HEALTH, Copenhagen (20 participants).
Period: 9 Nov 2017
Paw Dalgaard (Guest lecturer)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description
Degree of recognition: International

Related event
Microbial Food Quality and Safety – Analytical Methods, 9 Nov. 2017, UC-HEALTH, Copenhagen (20 participants).
09/11/2017 → 09/11/2017
Copenhagen, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Proof Assistants and Related Tools - The PART & PART 2 Projects 2017
Period: 9 Nov 2017
Anders Schlichtkrull (Participant)
Department of Applied Mathematics and Computer Science
Algorithms and Logic

Description
IsaFoL - Isabelle Formalization of Logic - A Brief Overview

Talk "IsaFoL - Isabelle Formalization of Logic - A Brief Overview"

Related event

Proof Assistants and Related Tools - The PART & PART 2 Projects 2017
07/09/2017 → …
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Biological features produced by additive manufacturing processes using vat photopolymerization method
Period: 8 Nov 2017
Ali Davoudinejad (Speaker)
Department of Mechanical Engineering

Description
Bio inspired surfaces have attracted great interest due to their potential applications in different industries by using a variety of structures. The fabrication of microstructures having complex shapes have been developed within the recent decades. This work realizes the direct fabrication of micro biological features by Additive Manufacturing (AM) processes. The study characterizes the additive manufacturing processes for polymeric micro part productions using the vat photopolymerization method. A specifically designed vat photopolymerization AM machine suitable for precision printing at the micro dimensional scale has been developed, built and validated. In order to evaluate the AM machine capability a Tokay gecko test part that contains microscale pillars with widened tips was used as benchmark sample. Two main printing parameters were selected for the study: exposure time and layer thickness. In order to select the optimal range of printing parameters, a sensitivity analysis was carried out prior to the final experiment. The print quality was assessed in terms of features heights, tip heights and tip diameters.
Degree of recognition: International

Related event

Special Interest Group Meeting: Micro/Nano Manufacturing
University of Strathclyde 8-9 November 2017. euspen
08/11/2017 → 09/11/2017
Glasgow , United Kingdom
Activity: Talks and presentations › Conference presentations

Journal of Chemical Theory and Computation (Journal)
Period: 8 Nov 2017
Sonia Coriani (Reviewer)
Department of Chemistry
Degree of recognition: International

Related journal

Journal of Chemical Theory and Computation
1549-9618
Central database
Activity: Research › Peer review of manuscripts

Muligheder ved digitalisering og Industri 4.0
Period: 8 Nov 2017
Christine Ipsen (Guest lecturer)
Department of Management Engineering
Pulsed laser deposition of multi-component oxide target for Cu2ZnSnS4 solar cells
Period: 8 Nov 2017 → 10 Nov 2017
Mungunshagai Gansukh (Guest lecturer)
Department of Photonics Engineering
Optical Microsensors and Micromaterials

Description
Pulsed laser deposition (PLD) is one of the most effective methods for fabricating and controlling the composition ratio of thin films. PLD is especially appropriate for the growth of oxides, since an oxygen background can be supplied during deposition to decrease the oxygen loss. In this paper, we report on the fabrication of the Cu2ZnSnS4 thin films by pulsed laser deposition from a multi-component oxide target of CZTO in vacuum followed by annealing in a sulfur atmosphere. The laser fluence was appropriately varied for controlling the composition of the oxide thin film precursors, following a similar approach as in the case of the sulfide precursors.

Links:

Related external organisation

STARCELL
Jardins de les dones de negre nº 1, Sant Adrià de Besòs , 08930, Barcelona, Spain
Activity: Talks and presentations › Conference presentations

Specimen design and instrumentation for monitoring fatigue crack growth initiating at ply drops
Period: 8 Nov 2017 → 9 Nov 2017
Stergios Goutianos (Speaker)
Leonardo Di Crescenzo (Speaker)
Malcolm McGugan (Speaker)
Bent F. Sørensen (Speaker)
Department of Wind Energy
Composites and Materials Mechanics
Degree of recognition: International
Documents:
ISMEM2017_gout

Related event

2nd International Symposium on Multiscale Experimental Mechanics: Multiscale Fatigue
08/11/2017 → 09/11/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations
Spray-coated ligand-free Cu2ZnSnS4 nanoparticle thin films
Period: 8 Nov 2017 → 10 Nov 2017
Sara Lena Josefin Engberg (Guest lecturer)
Department of Photonics Engineering
Optical Microsensors and Micromaterials

Related external organisation
European Kesterite Workshop
Activity: Talks and presentations › Conference presentations

Structural degradation of a large composite wind turbine blade in a full-scale fatigue test
Period: 8 Nov 2017
Xiao Chen (Speaker)
Wind Turbines
Department of Wind Energy

Description
Presented at 2nd International Symposium on Multiscale Experimental Mechanics: Multiscale Fatigue
Degree of recognition: International
Documents:
Xiao_Chen_ISMEM2017_3

Related organisation
Structural degradation of a large composite wind turbine blade in a full-scale fatigue test
Chen, X. (Speaker)
8 Nov 2017
Activity: Talks and presentations › Conference presentations

Folkeuniversitets kursus: Katalysatorer afgør den grønne fremtid
Period: 7 Nov 2017 → 28 Nov 2017
Jakob Kibsgaard (Guest lecturer)
Christian Danvad Damsgaard (Guest lecturer)
Peter Christian Kjærgaard Vesborg (Guest lecturer)
Sebastian Horch (Guest lecturer)
Anne Kirsten Frederiksen (Other)
Department of Physics
Experimental Surface and Nanomaterials Physics
Center for Electron Nanoscopy
DTU Danchip
Office for Research and Relations
Degree of recognition: National

Related external organisation
Folkeuniversitetet i København
Laderstræde 34, 2, 1201, København, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Integrated characterization of perchloroethene plume natural attenuation after thermal source zone remediation - molecular biology tools and dual isotope analysis
Period: 7 Nov 2017
Alexandra Marie Murray (Speaker)
Lærke Brabæk (Other)
Organohalide-respiring bacteria community competition dynamics: Experiments and model-based interpretations

Period: 7 Nov 2017
Alexandra Marie Murray (Speaker)
Massimo Rolle (Other)
Biao Jin (Other)
Julien Maillard (Other)
Mette Broholm (Other)
Christof Holliger (Other)
Department of Environmental Engineering
Water Resources Engineering

Description
Poster
Degree of recognition: International
Documents:
ISSMAbstract_AMurray20170421

Related event

The international Society for Subsurface Microbiology (ISSM) 2017 Conference
06/11/2017 → 10/11/2017
Rotorua, New Zealand
Activity: Talks and presentations › Conference presentations

Poster: Development of CZTSSe Thin Film Solar Cells with Inclusion of Selenium in the Precursor Stack
Period: 7 Nov 2017 → 10 Nov 2017
Filipe Mesquita Alves Martinho (Guest lecturer)
Department of Photonics Engineering

Description
Presentation of a Poster at the Kesterite Workshop in Barcelona, Spain
Degree of recognition: International
Documents:
Poster_Kesterite_Workshop_Filipe

Related external organisation

Catalonia Institute for Energy Research (IREC)
Barcelona, Spain
Activity: Talks and presentations › Conference presentations
Bioinformatics for microbiologists
Period: 6 Nov 2017 → 15 Nov 2017
Leonie Johanna Jahn (Organizer)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology
Degree of recognition: Local

Related event
Bioinformatics for microbiologists
06/11/2017 → 15/12/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Developing Theoretical Beamlines for Modern Experiments
Period: 3 Nov 2017
Sonia Coriani (Invited speaker)
Department of Chemistry

Related event
Fall Meeting of the Division for Theoretical Chemistry 2017 of the Danish Chemical Society
03/11/2017 → 03/11/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Do pesticides affect the intestinal bacterial community and does this have health implications?
Period: 3 Nov 2017
Martin Iain Bahl (Invited speaker)
National Food Institute
Research Group for Gut Microbiology and Immunology

Description
Talk at DSTF Annual Meeting
Degree of recognition: National
Documents:
v2 abstract template DSTF-annual meeting 2-3. Nov_MBAH.

Related event
Dansk Selskab for Toksikologi og Farmakologi Årsmøde
02/11/2017 → 03/11/2017
Activity: Talks and presentations › Conference presentations

Laura Punnett
Start date: 3 Nov 2017
Christine Ipsen (Host)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Process evaluation, organizational learning, and impact analysis: Work in progress at CPH-NEW
Degree of recognition: International
Activity: Hosting a guest lecturer
Description
Formalization of an Ordered Resolution Prover in Isabelle/HOL

Abstract:
This is joint work with Jasmin Christian Blanchette, Dmitriy Traytel and Uwe Waldmann. We present a formalization of the first half of Bachmair and Ganzinger's chapter on resolution theorem proving in Isabelle/HOL, culminating with a refutationally complete first-order prover based on ordered resolution with literal selection. We develop general infrastructure and methodology that can form the basis of completeness proofs for related calculi (e.g., superposition). Our work clarifies several fine points in the chapter's text, emphasizing the value of formal proofs in the field of automated reasoning.

Talk at the TCS and PAM seminar of the Theoretical Computer Science group at the Vrije Universiteit Amsterdam.
reviews some of the resulting challenges.
Degree of recognition: International
Documents:
SRA Nordic Chapter 2017

Related event
02/11/2017 → 03/11/2017
Espoo, Finland
Activity: Talks and presentations › Conference presentations

The effect of light rail construction on business: The case of Lyngby, Denmark
Period: 2 Nov 2017 → 5 Feb 2018
Jay Sterling Gregg (Main supervisor)
Department of Management Engineering
Systems Analysis

Description
Bachelor Project
Activity: Examinations and supervision › Supervisor activities

Droneinspektion af store anlæg
Period: 1 Nov 2017
Peter Behrensdoeff Poulsen (Guest lecturer)
Department of Photonics Engineering
Optical Microsensors and Micromaterials

Related event
Building Green 2017: Seminar om Solenergi
01/11/2017 → 02/11/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

Keramiske membraner til litblæst forgasning
Period: 1 Nov 2017
Astri Bjørnetun Haugen (Invited speaker)
Department of Energy Conversion and Storage
Ceramic Engineering & Science

Description
Arranger: IDA Mechanical
Degree of recognition: National
Links:

Related event
UDVIKLING AF FREMTIDIGE METODER TIL PRODUKTION AF BIOBRAÆNDSTOFFER OG GRØN ENERGI
01/11/2017 → …
Aarhus, Denmark
Activity: Talks and presentations › Conference presentations

Remote Sensing of Environment (Journal)
Period: 1 Nov 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
Meteorology & Remote Sensing

**Related journal**

**Remote Sensing of Environment**
0034-4257
Web of Science (2017): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

**Responsible Conduct of Research**
Period: 1 Nov 2017
Vitaliy Zhurbenko (Participant)
Department of Electrical Engineering
Electromagnetic Systems
Degree of recognition: Local

**Related event**

**Responsible Conduct of Research**
01/11/2017 → …
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Energy and Buildings (Journal)**
Period: Oct 2017
Toke Rammer Nielsen (Reviewer)
Department of Civil Engineering
Section for Building Energy
Degree of recognition: International

**Related journal**

**Energy and Buildings**
0378-7788
BFI (2017): BFI-level 2, Scopus rating (2016): CiteScore 4.64 SJR 2.093 SNIP 1.965, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

**IEEE Transactions on Sustainable Energy (Journal)**
Period: Oct 2017 → …
Theis Bo Rasmussen (Reviewer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems

**Related journal**

**IEEE Transactions on Sustainable Energy**
1949-3029
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 7.8 SJR 2.636 SNIP 2.883, ISI indexed (2013): ISI indexed no,
Web of Science (2017): Indexed yes
Central database
Activity: Research › Peer review of manuscripts
International Journal of Distributed Sensor Networks (Journal)
Period: Oct 2017 → …
Theis Bo Rasmussen (Reviewer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems

Related journal
International Journal of Distributed Sensor Networks
1550-1329
Scopus rating (2016): CiteScore 1.16 SJR 0.271 SNIP 0.696, Web of Science (2017): Indexed Yes
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

Linked Building Data
Period: 31 Oct 2017
Mads Holten Rasmussen (Guest lecturer)
Department of Civil Engineering
Section for Building Design
Degree of recognition: International
Documents:
171031_buildingSMART_MHRA_wRefs

Related external organisation
buildingSMART International Council
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Aquatic food - safety and microbial hazards. Invited keynote presentation at 5th Workshop in Food Safety. 30-31 October 2016, Florianopolis, Brazil (120 participants).
Period: 30 Oct 2017 → 31 Oct 2017
Paw Dalgaard (Keynote speaker)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description
Degree of recognition: International

Related event
5th Workshop in Food Safety, 30-31 October 2017, Florianopolis, Brazil (120 participants).
30/10/2017 → 31/10/2017
Florianopolis, Brazil
Activity: Talks and presentations › Conference presentations

CoLuAa 2017
Period: 30 Oct 2017
Folmer Fredslund (Participant)
Enzyme Engineering & Structural Biology

Related event
CoLuAa 2017
30/10/2017 → 31/10/2017
København, Denmark
Activity: Attending an event › Participating in or organising a conference

Food Spoilage and Safety Predictor (FSSP) software - application to food safety. Mini-course at 5th Workshop in Food Safety. 30-31 October 2016, Florianopolis, Brazil (60 participants).
Period: 30 Oct 2017
Paw Dalgaard (Organizer)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description
Dalgaard, P. (2017). Food Spoilage and Safety Predictor (FSSP) software - application to food safety. Mini-course at 5th Workshop in Food Safety. 30-31October 2016, Florianopolis, Brazil (60 participants).
Degree of recognition: International

Related event
Food Spoilage and Safety Predictor (FSSP) software - application to food safety. Mini-course at 5th Workshop in Food Safety. 30-31 October 2016, Florianopolis, Brazil (60 participants).
30/10/2017 → 30/10/2017
Florianopolis, Brazil
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Interconnected activities and functions of matrix metalloproteinases at the wound edge
Period: 29 Oct 2017
Simonas Savickas (Other)
Department of Biotechnology and Biomedicine

Related event
International Proteolysis Society Meeting
27/10/2017 → 02/11/2017
Banff, Canada
Activity: Talks and presentations › Conference presentations

116th International Titisee Conference
Period: 28 Oct 2017
Morten Otto Alexander Sommer (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology

Description
Can we use collateral sensitivity as a paradigm for limiting drug resistance evolution?
Degree of recognition: International

Related event
116th International Titisee Conference
25/10/2017 → 29/10/2017
Titisee, Germany
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

GEOMETRICAL CHARACTERISATION OF INDIVIDUAL FIBRES FROM X-RAY TOMOGRAMS
Period: 27 Oct 2017
Monica Jane Emerson (Speaker)
Department of Applied Mathematics and Computer Science
Image Analysis & Computer Graphics

Description
Numerous modelling possibilities are opened up by an advanced image analysis pipeline that can accurately extract individual fibres from X-ray tomograms
Degree of recognition: International

Related event

30th Nordic Seminar on Computational Mechanics (NSCM-30)
25/10/2017 → 27/10/2017
Copenhagen
Activity: Talks and presentations › Conference presentations

CIE Division 2 Annual Meeting 2017
Period: 26 Oct 2017
Anders Thorseth (Participant)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International

Related event

CIE Division 2 Annual Meeting 2017
26/10/2017 → …
Jeju, Korea, Republic of
Activity: Attending an event › Participating in or organising a conference

CIE DR 2-80, CIE Division 2 Reportership, on metrology of laser based lighting
Period: 26 Oct 2017 → …
Anders Thorseth (Advisor)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International

Related external organisation

International Commission on Illumination (CIE)
Activity: Public and private sector consultancy › Consultancy

Qualitative data analysis and interpretation (and the use of Atlas.ti)
Period: 25 Oct 2017
Giulia Nardelli (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Guest lecture as part of the M.Sc. course in Research methodology for the Social Entrepreneurship and Management study line
Degree of recognition: Local

Related external organisation

Roskilde Universitet
Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities
**sisl + TBtrans + TranSiesta workshop**


Nick Rübner Papior (Organizer)  
Mads Brandbyge (Organizer)  

Department of Micro- and Nanotechnology  
Theoretical Nanoelectronics  
Center for Nanostructured Graphene

**Description**  
This 3-day workshop concentrates on the TBtrans/TranSiesta implementation of the nonequilibrium Green function techniques. The focus will be tutorials and hands-on experience with the transport utility TBtrans and the self-consistent method TranSiesta.

Our workshop will start by introducing the Green function method to a required level of understanding for the remainder of the workshop. Tutorials start with simple tightbinding models created by Python scripts using Sisl. The input options for TBtrans will be explored and details regarding the TBtrans utility will be emphasised. Simultaneously, data-analysis will be presented using Python. Succeeding the TBtrans tutorials we will concentrate on self-consistent non-equilibrium calculations using TranSiesta. We will showcase how to perform N electrode calculations using TranSiesta.

Degree of recognition: International

Links:  
http://www.nanotech.dtu.dk/English/Transiesta (Workshop homepage)

**Related event**

**sisl + TBtrans + TranSiesta workshop**  
25/10/2017 → 27/10/2017  
Kgs. Lyngby, Denmark

Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

---

**Chairman PhD Assessment Committee**

*Period: 24 Oct 2017*

Toke Rammer Nielsen (Internal examiner)

Department of Civil Engineering  
Section for Building Energy  
Degree of recognition: International

Activity: Examinations and supervision › Internal examination

---

**Efficient use of low temperature heat sources: High performance heat pump cycles with zeotropic mixtures**

*Period: 24 Oct 2017*

Benjamin Zühlsdorf (Guest lecturer)

Department of Mechanical Engineering  
Thermal Energy

**Description**  
The intended phase out of fossil fuels and the according, inevitable shift to renewable energy sources increased the potential for heat supply with heat pumps. Despite these increasingly attractive conditions for heat pumps and the availability of efficient heat pumps for different applications, there are different hurdles, which hinder heat pumps being implemented more frequently. One of these hurdles is a limited integration of the heat pump into the boundary conditions of the system and the resulting decreased effectiveness, especially for applications with a large temperature glide in sink and source. Therefore, the project focused on the development of a procedure, which analyses the irreversibilities of the heat pump cycle, accounts the inefficiencies to the components and the working fluid and derives based on that recommendations for improvements. One approach to optimize the cycle and enable an improved integration into the boundary conditions is the consideration of zeotropic mixtures as working fluids. By matching the temperature glide in sink and source with the temperature glide of the working fluid during phase change, the exergy destruction due to heat transfer is decreased and the overall efficiency increased. Nevertheless, the identification of a beneficial working fluid mixture requires a comprehensive screening. Finally, it could be shown, that a good choice can improve heat pump cycles dependent on the boundary conditions by more than 10 % to 30 % without adding additional equipment. The presentation will give an overview of the procedure and expectable improvements in thermodynamic and economic performance.
resulting from the use of mixed working fluids. It will be demonstrated by applications to different industrial case studies. Furthermore, it will be discussed which possible additional benefits and difficulties result from the use of mixtures as working fluids.

Degree of recognition: International
Documents:
2017_10_24_EHPS_Zuehlsdorf_16_9

Related event

European Heat Pump Summit: Powered by Chilventa
24/10/2017 → 25/10/2017
Nürnberg, Germany
Activity: Talks and presentations › Conference presentations

Laser Driven White Light Source for BRDF Measurement
Period: 24 Oct 2017
Anders Thorseth (Guest lecturer)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International

Related event

CIE 2017 Mid-term meeting Jeju Island
20/10/2017 → 28/10/2017
Korea, Republic of
Activity: Talks and presentations › Conference presentations

Sample preparation is critical both for substances and products
Period: 24 Oct 2017
Katrin Löschner (Speaker)
National Food Institute
Research Group for Nano-Bio Science
Degree of recognition: International

Related event

2nd NanoDefine Industry-focused Workshop : “Measurement and classification of nanomaterials according to the EU definition”
24/10/2017 → 24/10/2017
Frankfurt/Main, Germany
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Satellite SAR measurements for offshore wind farm development
Period: 24 Oct 2017 → 26 Oct 2017
Tobias Torben Ahsbahs (Guest lecturer)
Merete Badger (Guest lecturer)
Charlotte Bay Hasager (Guest lecturer)
Kurt Schaldemose Hansen (Guest lecturer)
Patrick Volker (Guest lecturer)
Department of Wind Energy
Meteorology & Remote Sensing
Fluid Mechanics
Resource Assessment Modelling

Description
Satellite SAR wind maps are used to determine wakes and coastal wind speed gradients at the Anholt wind farm.
Related event

International Conference on Future Technologies for Wind Energy
WindTech 2017
24-26 Oct. 2017
24/10/2017 → 26/10/2017
Boulder, United States
Activity: Talks and presentations › Conference presentations

Wind field re-construction of 3D Wake measurements from a turbine-installed scanning lidar
Period: 24 Oct 2017 → 26 Oct 2017
Torben Krogh Mikkelsen (Guest lecturer)
Department of Wind Energy
Meteorology & Remote Sensing

Description
WindTech 2017 International Conference on Future Technologies for Wind Energy
Degree of recognition: International
Documents:
Extented Abstract WindTech 2017 Boulder Oct 24-26 - 3D wind field reconstruction from DTU SpinnerLidar wake measurements at SWIFT

Related event

International Conference on Future Technologies for Wind Energy
WindTech 2017
24-26 Oct. 2017
24/10/2017 → 26/10/2017
Boulder, United States
Activity: Talks and presentations › Conference presentations

Workshop contribution
Yutaka Yoshinaka (Speaker)
Department of Management Engineering
Technology and Innovation Management
Degree of recognition: International
Documents:

Related organisation

Workshop contribution
Yoshinaka, Y. (Speaker)
Activity: Talks and presentations › Conference presentations

Advances In Remote Sensing for Water Monitoring
Period: 23 Oct 2017
Peter Bauer-Gottwein (Guest lecturer)
Department of Environmental Engineering
Water Resources Engineering

Description
Invited lecture at G-STIC, https://www.gstic.org/
Related event

G-STIC
23/10/2017 → …
Activity: Talks and presentations › Conference presentations

Light source characterization and air movement under CIE S 025
Period: 23 Oct 2017
Anders Thorseth (Speaker)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International

Related event

CIE 2017 Mid-term meeting Jeju Island
20/10/2017 → 28/10/2017
Korea, Republic of
Activity: Talks and presentations › Conference presentations

Towards New Affect Integrated Interaction Design (Event)
Period: 23 Oct 2017
Anja Maier (External examiner)
Department of Management Engineering
Engineering Systems
Copenhagen Center for Health Technology

Description
Norwegian University of Science and Technology, Department of Engineering Design and Materials, TrollLabs
Censor for PhD project

Body type: PhD Assessment Committee
23 October 2017
Degree of recognition: International
Activity: Examinations and supervision › External examination

Evaluation of respiratory motion correction in PET/CT using a 3D printed phantom
Period: 22 Oct 2017
Josefine Holm Vilshøi (Speaker)
Hasler S. W. Hasler (Guest lecturer)
L. D. L. Duchstein (Guest lecturer)
Jens E. Wilthjelm (Guest lecturer)
M. N. Lonsdale (Guest lecturer)
Department of Electrical Engineering
Biomedical Engineering
Degree of recognition: International

Related event

EANM’17: 30th Annual Congress of the European Association of Nuclear Medicine
21/10/2017 → 25/10/2017
Vienna, Austria
Activity: Talks and presentations › Conference presentations
General Assembly of the CIE 2017 (Event)
Period: 22 Oct 2017
Anders Thorseth (Participant)
Department of Photonics Engineering
Diode Lasers and LED Systems

Description
General Assembly of the CIE 2017
Degree of recognition: International

Related event
General Assembly of the CIE 2017
22/10/2017 → ...
Jeju, Korea, Republic of
Activity: Membership › Board duties in companies, associations, or public organisations

CIE 2017 Mid-term meeting Jeju Island
Anders Thorseth (Participant)
Department of Photonics Engineering
Diode Lasers and LED Systems

Description
CIE 2017 Mid-term meeting Jeju Island, Republic of Korea
Degree of recognition: International

Related event
CIE 2017 Mid-term meeting Jeju Island
20/10/2017 → 28/10/2017
Korea, Republic of
Activity: Attending an event › Participating in or organising a conference

Generation of click-able kirromycin derivatives by exploiting the substrate promiscuity of the discrete acyl transferase KirCII
Period: 19 Oct 2017
Tilmann Weber (Speaker)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International

Related event
The 6th official conference of the International Chemical Biology Society: ICBS 2017
17/10/2017 → 20/10/2017
Shanghai, China
Activity: Talks and presentations › Conference presentations

The electrospinning of xanthan gum: from solution to nanofiber formation
Period: 18 Oct 2017 → 20 Oct 2017
Elhamalsadat Shekarforoush (Guest lecturer)
Adele Faralli (Guest lecturer)
Ana Carina Loureiro Mendes (Guest lecturer)
Ioannis S. Chronakis (Guest lecturer)
National Food Institute
Related event

**Applied NANOTECHNOLOGY and NANOSCIENCE International Conference**

18/10/2017 → 20/10/2017

Activity: Talks and presentations › Conference presentations

**Wind farm design in complex terrain - the FarmOpt methodology**

Period: 18 Oct 2017

Ju Feng (Invited speaker)

Wen Zhong Shen (Other)

Department of Wind Energy

Fluid Mechanics

**Description**

Invited speaker at the conference on 18th October in the session "Wind Farm Micro Siting".

**Degree of recognition:** International

**Documents:**

Wind farm design in complex terrain - the FarmOpt methodology _Ju Feng _DTU (2017)

Related event

**China Wind Power 2017**

17/10/2017 → 19/10/2017

Beijing, China

Activity: Talks and presentations › Conference presentations

**BRAZILIAN BIOENERGY SCIENCE AND TECHNOLOGY CONFERENCE**

Period: 17 Oct 2017 → 19 Oct 2017

Solange I. Mussatto (Organizer)

Novo Nordisk Foundation Center for Biosustainability

Biomass Conversion and Bioprocess Technology

**Description**

Member of Scientific Committee / Reviewer of works / Chairperson - oral session

**Degree of recognition:** International

**Related event**

**BRAZILIAN BIOENERGY SCIENCE AND TECHNOLOGY CONFERENCE**

17/10/2017 → 19/10/2017

Campos do Jordão, São Paulo, Brazil

Activity: Attending an event › Participating in or organising a conference

**BRAZILIAN BIOENERGY SCIENCE AND TECHNOLOGY CONFERENCE**

Period: 17 Oct 2017 → 19 Oct 2017

Solange I. Mussatto (Participant)

Novo Nordisk Foundation Center for Biosustainability

Biomass Conversion and Bioprocess Technology

**Degree of recognition:** International

**Related event**

**BRAZILIAN BIOENERGY SCIENCE AND TECHNOLOGY CONFERENCE**
17/10/2017 → 19/10/2017
Campos do Jordão, São Paulo, Brazil
Activity: Attending an event › Participating in or organising a conference

**Improving sugars utilization and inhibitors tolerance in yeast via adaptive laboratory evolution**
Period: 17 Oct 2017 → 19 Oct 2017
Solange I. Mussatto (Invited speaker)
Biomass Conversion and Bioprocess Technology
Degree of recognition: International

**Related event**
**BRAZILIAN BIOENERGY SCIENCE AND TECHNOLOGY CONFERENCE**
17/10/2017 → 19/10/2017
Campos do Jordão, São Paulo, Brazil
Activity: Talks and presentations › Conference presentations

**Ozonation of recirculating aquaculture system based on system’s demand**
Aikaterini Spiliotopoulou (Speaker)
Richard Martin (Other)
Lars-Flemming Pedersen (Other)
Henrik Rasmus Andersen (Other)
Department of Environmental Engineering
National Institute of Aquatic Resources
Section for Aquaculture
Water Technologies

**Related event**
**Aquaculture Europe 2017**
17/10/2017 → 20/10/2017
Dubrovnik, Croatia
Activity: Talks and presentations › Conference presentations

**Abundance of Cell-cell Communication Networks Governs Adaptation to Distinct Life-styles**
Period: 16 Oct 2017 → 19 Oct 2017
Ákos T. Kovács (Speaker)
Department of Biotechnology and Biomedicine
Degree of recognition: International

**Related event**
**6th ASM Conference on Cell-Cell Communication in Bacteria (CCCB)**
16/10/2017 → 19/10/2017
Athens, GA, United States
Activity: Talks and presentations › Conference presentations

**INTEGRAL 2017**
Period: 15 Oct 2017 → 20 Oct 2017
Søren Brandt (Organizer)
National Space Institute
Astrophysics and Atmospheric Physics

**Description**
The goal of this Symposium is to present and discuss the main results obtained during last decade in the field of high-energy astrophysics, with an emphasis on Time Domain Astrophysics.
Degree of recognition: International

Related event

**INTEGRAL 2017: Energetic Time Domain Astrophysics**
15/10/2017 → 20/10/2017
Venice, Italy
Activity: Attending an event › Participating in or organising a conference

**Nanoparticles in food – an overview**
Period: 13 Oct 2017
Katrin Löschner (Invited speaker)
National Food Institute
Research Group for Nano-Bio Science

Description
Meeting organized by the Danish Consumer Council (Tænk) for project leaders from other (mainly European) Consumer Councils - Focus: Testing of food
Degree of recognition: International

Related external organisation

**Danish Consumer Council (Tænk)**
Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

**Supercapacitive bioelectrochemical solar cells using thylakoid membranes and carbon nanotubes**
Period: 13 Oct 2017
Dmitrii Pankratov (Speaker)
Department of Chemistry
NanoChemistry
Degree of recognition: International
Documents:
Abstract GKS

Related event

**2nd Gerischer-Kolb Symposium: Modern Aspects of Bioelectrochemistry International Bunsen Discussion Meeting**
11/10/2017 → 13/10/2017
Günzburg/Donau , Germany
Activity: Talks and presentations › Conference presentations

**47th Conference of the West European Fish Technologists' Association**
Period: 12 Oct 2017
Brais Martinez Lopez (Participant)
National Food Institute
Research Group for Food Production Engineering
Degree of recognition: International

Related event

**47th Conference of the West European Fish Technologists' Association: WEFTA**
09/10/2017 → 12/10/2017
Dublin, Ireland
Activity: Attending an event › Participating in or organising a conference

**Enhancing the role of EVs as grid proactive DER - The Danish experience**
Period: 12 Oct 2017
**Enhance the Role of EVs and Make It an Integral of Smart Grids**

**Speakers:**
- Associate Prof. Mattia Marinelli (DTU)
- Associate Prof. Zechun Hun (Tsinghua University)
- Prof. Chunlin Guo (NCEPU)

**Degree of recognition:** National

**Documents:**
Enhancing the role of EVs - Mattia Oct 2017

---

**Surface characterization of activated chalcopyrite particles via the FLSmidth ROL process. Part 2: Surface spectroscopy investigations**

**Period:** 12 Oct 2017

**Adam Paul Karcz (Guest lecturer)**

**Department of Chemical and Biochemical Engineering**

**CHEC Research Centre**

**Description**
Due to its semiconductor properties, the world’s most abundant copper mineral, chalcopyrite (CuFeS$_2$), is refractory with respect to atmospheric leaching using traditional acidic ferric sulfate lixiviants. FLSmidth® has developed a novel Rapid Oxidative Leach (ROL) process that (a) manipulates the lattice and (b) mechano-chemically processes chalcopyrite with a Stirred Media Reactor (SMRt). This combination yields the benefit of increasing chemical reactivity and dissolution kinetics. By reducing surface passivation, this process is typically able to achieve copper recoveries exceeding 95% in under 6-8 hours. An important factor contributing to this extraordinary performance is a mineral preconditioning step, which uses 0.1-5 mol% of copper(II) to dope the lattice and thereby “activate” chalcopyrite. Previously, we reported the relationship between doping and deformation of the chalcopyrite lattice using electron microscopy. Now, we draw further insights into the electrochemical properties of the activated chalcopyrite particles through a variety of surface spectroscopy studies.

**Degree of recognition:** International

**Related event**
Materials Science and Technology 2017
08/10/2017 → 12/10/2017
Pittsburgh, United States

**Vartorvs Videnskab - Bakterierne i kroppen og sindet**

**Period:** 12 Oct 2017

**Henrik Munch Roager (Invited speaker)**

**National Food Institute**

**Research Group for Gut Microbiology and Immunology**

**Description**
Fortalte om samspillet mellem kost og tarmbakterier

**Degree of recognition:** Regional
Related organisation

**Vartorvs Videnskab - Bakterierne i kroppen og sindet**  
Roager, H. M. (Invited speaker)  
12 Oct 2017  
Activity: Talks and presentations › Conference presentations

**4th Improvements in Organizations workshop**  
Period: 11 Oct 2017  
Signe Poulsen (Participant)  
Department of Management Engineering  
Management Science  
Implementation and Performance Management

Related event

**4th Improvements in Organizations workshop**  
10/10/2017 → 12/10/2017  
Copenhagen, Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Flexible Electricity Markets for decarbonized systems**  
Period: 11 Oct 2017  
Klaus Skytte (Guest lecturer)  
Department of Management Engineering  
Systems Analysis

Description  
Eurelectric, Market Design 2050 Workshop  
Bruxelles, 11 October 2017  
Degree of recognition: International  
Documents:  
EurElectric_market_design_klaus_111017

Related external organisation

**Eurelectric**  
Boulevard de l'Impératrice, 66, 1000, Brussels, Belgium  
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

**Food Labelling and Claims**  
Period: 11 Oct 2017  
Heddie Mejborn (Guest lecturer)  
National Food Institute  
Division of Risk Assessment and Nutrition  
Degree of recognition: Local

Related event

**Integreret produktudvikling i fødevareindustrien**  
11/10/2017 → …  
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

**Functional ingredients from S. latissima for cosmetic applications**  
Period: 11 Oct 2017 → 12 Oct 2017  
Ditte Baun Hermund (Speaker)  
National Food Institute
Research Group for Bioactives – Analysis and Application
Degree of recognition: International

Related event

7th Nordic seaweed conference: Seaweed and sustainability
11/10/2017 → 12/10/2017
Grenaa, Denmark
Activity: Talks and presentations › Conference presentations

High power diode lasers converted to the visible
Period: 11 Oct 2017
Ole Bjarlin Jensen (Invited speaker)
Anders Kragh Hansen (Invited speaker)
Peter E. Andersen (Guest lecturer)
Mathias Christensen (Guest lecturer)
André Müller (Invited speaker)
Mahmoud Tawfieq (Invited speaker)
Bernd Sumpf (Invited speaker)
Paul Michael Petersen (Invited speaker)
Department of Photonics Engineering
Diode Lasers and LED Systems
Copenhagen Center for Health Technology

Description
Invited talk at the conference including 2 page abstract to be published in IEEE Xplore.
Degree of recognition: International

Related event

2017 IEEE High Power Diode Lasers & Systems Conference
11/10/2017 → 12/10/2017
Coventry, United Kingdom
Activity: Talks and presentations › Conference presentations

Investigation of echogenic surface enhancements for improved needle visualization in ultrasonography: A PRISMA systematic review
Period: 11 Oct 2017
Caroline Harder Hovgesen (Speaker)
Jens E. Wilhjelm (Guest lecturer)
Peter Vilmann (Guest lecturer)
Evangelos Kalaitzakis (Guest lecturer)
Department of Electrical Engineering
Biomedical Engineering
Degree of recognition: National

Related event

DMTS Annual meeting
10/10/2017 → 12/10/2017
Vingsted, Denmark
Activity: Talks and presentations › Conference presentations

Is it possible to define a "Threshold of Concern for Allergic Sensitisation"?
Period: 11 Oct 2017
Charlotte Bernhard Madsen (Guest lecturer)
Related event

3rd ImpARAS Conference
10/10/2017 → 12/10/2017
Elsinore, Denmark
Activity: Talks and presentations › Conference presentations

Sustainability assessment of stormwater management systems and the importance of pollutants in runoff
Period: 11 Oct 2017
Sarah Brudler (Guest lecturer)
Karsten Ambjerg-Nielsen (Other)
Christian Ammitzøe (Other)
Michael Zwicky Hauschild (Guest lecturer)
Martin Rygaard (Guest lecturer)
Department of Environmental Engineering
Urban Water Systems
Department of Management Engineering
Quantitative Sustainability Assessment
Degree of recognition: International

Related event

NORDIWA Nordic Wastewater Conference 2017
10/10/2017 → 12/10/2017
Aarhus, Denmark
Activity: Talks and presentations › Conference presentations

The Au-S bond in biomolecular adsorption and electrochemical electron transfer
M.J. Ford (Other)
N.S. Hush (Other)
S. Marcuccio (Other)
J.R. Reimers (Other)
Jens Ulstrup (Invited speaker)
Jingdong Zhang (Other)
Department of Chemistry
NanoChemistry
Organic Chemistry

Description
2nd Gerischer-Kolb Symposium, Modern Aspects of Bioelectrochemistry, International Bunsen Discussion Meeting,
Schloss Reisensburg, Germany, October 11 - 13, 2017
Degree of recognition: International
Documents:
AbstractGerischer_KolbOct2017

Related external organisation

University of Ulm
Ulm, Germany
Activity: Talks and presentations › Conference presentations
3rd ImpARAS Conference
Period: 10 Oct 2017 → 12 Oct 2017
Charlotte Bernhard Madsen (Organizer)
Katrine Lindholm Begh (Organizer)

National Food Institute
Research Group for Gut Microbiology and Immunology

Description
Improving Allergy Risk Assessment Strategy for new food proteins (ImpARAS)
Degree of recognition: International

Related event
3rd ImpARAS Conference
10/10/2017 → 12/10/2017
Elsinore, Denmark
Activity: Attending an event › Participating in or organising a conference

4th Improvements in Organizations workshop
Period: 10 Oct 2017 → 12 Oct 2017
Kasper Edwards (Organizer)
Christine Ipsen (Participant)

Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related event
4th Improvements in Organizations workshop
10/10/2017 → 12/10/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

6th WFI Proto-Consortium Meeting
Period: 10 Oct 2017 → 12 Oct 2017
Søren Brandt (Participant)
Irfan Kuvvetli (Participant)
Denis Tcherniak (Participant)

National Space Institute
Astrophysics and Atmospheric Physics
Degree of recognition: International
Documents:
6th WFI Proto-Consortium Meeting Agenda

Related event
6th WFI Proto-Consortium Meeting
10/10/2017 → 12/10/2017
Warzaw, Poland
Activity: Attending an event › Participating in or organising a conference

Advanced Concepts in Photovoltaics
Period: 10 Oct 2017 → 13 Oct 2017
Peter Behrensdorff Poulsen (Organizer)
Gisele Alves dos Reis Benatto (Organizer)
Jørgen Schou (Organizer)

Department of Photonics Engineering
Optical Microsensors and Micromaterials
Organic Energy Materials

Description
Top Danish Researchers within photovoltaics was lecturing in this 4 day summer school along with Professor Peter Würfel, who is one of the international leading researchers within photovoltaics and author of the book Physics of Solar Cells: From Basic Principles to Advanced Concepts. The summer school was tailored towards PhD students within photovoltaics, but other interested in the program could join.
Degree of recognition: International

Related event

Advanced Concepts in Photovoltaics: A Summer School in Photovoltaics
10/10/2017 → 13/10/2017
Roskilde, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Camera Measurements in Cement Kilns – Impact of Alternative Fuels on Klin Flames
Period: 10 Oct 2017 → 11 Oct 2017
Morten Nedergaard Pedersen (Guest lecturer)
Mads Nielsen (Guest lecturer)
Sønnik Clausen (Guest lecturer)
Peter Arendt Jensen (Guest lecturer)
Lars Skaarup Jensen (Guest lecturer)
Kim Dam-Johansen (Guest lecturer)

Department of Chemical and Biochemical Engineering
CHEC Research Centre
The Hempel Foundation Coatings Science and Technology Centre (CoaST)

Description
Presentation and extended abstract given at Nordic Flame Days 2017
Documents:
Extended Abstract Nordic Flame Days 2017 - Morten Pedersen - v2

Related event
Nordic Flame Days
10/10/2017 → 11/10/2017
Stockholm, Sweden
Activity: Talks and presentations › Conference presentations

Combustion of Thermoplastic Particles in Single Particle Combustor
Period: 10 Oct 2017 → 11 Oct 2017
Mohammadhadi Nakhaei (Speaker)

Department of Chemical and Biochemical Engineering
CHEC Research Centre
Degree of recognition: International
Documents:
Session 1B, MH Nakhaei-NFD2017-11Oct2017

Related event
Nordic Flame Days
10/10/2017 → 11/10/2017
Improving CHO cell factories with CRISPR-mediated genome engineering. 4th Annual BioProNET Science Symposium, University of Warwick, UK
Period: 10 Oct 2017
Helene Fastrup Kildegaard (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: International

Local & ultrafast spectroscopies by coupled cluster methods
Period: 10 Oct 2017
Sonia Coriani (Invited speaker)
Department of Chemistry
Degree of recognition: International
Links:
http://www.anorg.chem.uu.nl/FXS2013/FXS2017participants.htm (Link to participant list and abstracts)

NORDIWA Nordic Wastewater Conference 2017
Period: 10 Oct 2017 → 12 Oct 2017
Katrine Nielsen (Organizer)
Department of Environmental Engineering
Urban Water Systems
Degree of recognition: International

Progress in Photovoltaic Research in Denmark 2017
Period: 9 Oct 2017
Peter Behrensedorff Poulsen (Organizer)
Gisele Alves dos Reis Benatto (Organizer)
Department of Photonics Engineering
Optical Microsensors and Micromaterials
Organic Energy Materials
Description
For the conference we had assembled all the top researchers in Denmark within Photovoltaics to tell about their latest results. Furthermore, some of the highly innovative companies within photovoltaics in Denmark did elaborate on their newest achievements.
Degree of recognition: International

Related event
Progress in Photovoltaic Research in Denmark 2017: Conference i Photovoltaics
09/10/2017 → …
Roskilde, Denmark
Activity: Attending an event › Participating in or organising a conference

'The minimum resting period for Atlantic cod (Gadus morhua) to regain pre-stressor status after pumping in a capture-based aquaculture operation'. Abstract and poster presentation at 47th Conference of the West European Fish Technologists' Association, in Dublin, Ireland.
Period: 9 Oct 2017 → 12 Oct 2017
Jonas Steenholdt Sørensen (Other)
Ole Mejlholm (Other)
Paw Dalgaard (Other)
Flemming Jessen (Other)
National Food Institute
Research Group for Analytical and Predictive Microbiology
Research Group for Food Production Engineering

Description
Sørensen, J.S., Mejlholm, O., Dalgaard, P., Jessen, F. (2017). The minimum resting period for Atlantic cod (Gadus morhua) to regain pre-stressor status after pumping in a capture-based aquaculture operation. Abstract and poster at 47th Conference of the West European Fish Technologists' Association, 9-12 October, Dublin, Ireland.
Degree of recognition: International

Related event
47th Conference of the West European Fish Technologists' Association: WEFTA
09/10/2017 → 12/10/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations

Workshop on Fundamental Aspects of X-ray Spectroscopies
Period: 9 Oct 2017 → 11 Oct 2017
Sonia Coriani (Participant)
Department of Chemistry
Degree of recognition: International
Links:
http://www.anorg.chem.uu.nl/FXS2013/FXS2017.htm (Conference website)

Related event
Workshop on Fundamental Aspects of X-ray Spectroscopies
09/10/2017 → 11/10/2017
Utrecht, Netherlands
Activity: Attending an event › Participating in or organising a conference

12th International SDEWES Conference
Period: 6 Oct 2017
Dominik Franjo Dominkovic (Speaker)
Department of Energy Conversion and Storage

Description
Held a presentation on: Integration of district cooling in smart energy systems: the case of Singapore
Degree of recognition: International

Related event

12th sdewes Conference
04/10/2017 → 08/10/2017
Dubrovnik, Croatia
Activity: Talks and presentations › Conference presentations

Guest speaker on Learning Lab workshop on assessment of large classes
Period: 6 Oct 2017
Signe Poulsen (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Activity: Other

World Association for the Advancement of Veterinary Parasitology (External organisation)
Period: 6 Oct 2017
Heidi Huus Petersen (Chairman)
National Veterinary Institute
Bacteriology & Parasitology
Degree of recognition: International

Related external organisation

World Association for the Advancement of Veterinary Parasitology
Activity: Membership › Membership of research networks or expert groups

Consistency and main differences between European regional climate downscaling intercomparison projects
Period: 5 Oct 2017
Morten Andreas Dahl Larsen (Guest lecturer)
Department of Management Engineering
Systems Analysis

Related event

EsacP meeting: Annual meeting
05/10/2017 → 06/10/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

International Journal of Healthcare Technology and Management (Journal)
Period: 5 Oct 2017 → 15 Nov 2017
Kasper Edwards (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Review of manuscript

Related journal
International Journal of Healthcare Technology and Management
Påvirker pesticider tarmens bakteriesamfund – og hvad kan det betyde for sundheden?
Period: 5 Oct 2017
Martin Iain Bahl (Invited speaker)
National Food Institute
Research Group for Gut Microbiology and Immunology
Degree of recognition: National

Related event
Temadag arrangeret af Sundhedsstyrelsens Rådgivende Videnskabelige Udvalg for Miljø og Sundhed
05/10/2017 → 05/10/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

Piezoelectric transformers: Control
Period: 5 Oct 2017
Tiberiu-Gabriel Zsurzsan (Guest lecturer)
Department of Electrical Engineering
Electronics
Degree of recognition: International
Documents:
Gabriel ZSURZSAN - ICAT2017

Related event
70th ICAT International Smart Actuator Symposium
04/10/2017 → 05/10/2017
State College, United States
Activity: Talks and presentations › Conference presentations

Temadag: Hvad betyder kroppens egne bakterier for sundheden?
Period: 5 Oct 2017
Henrik Munch Roager (Invited speaker)
National Food Institute
Research Group for Gut Microbiology and Immunology

Description
Sundhedsstyrelsens Rådgivende Videnskabelige Udvalg for Miljø og Sundhed
Degree of recognition: National

Related organisation
Temadag: Hvad betyder kroppens egne bakterier for sundheden?
Roager, H. M. (Invited speaker)
5 Oct 2017
Activity: Talks and presentations › Conference presentations

THESEUS Workshop
Period: 5 Oct 2017 → 6 Oct 2017
Søren Brandt (Organizer)
National Space Institute
Astrophysics and Atmospheric Physics
Degree of recognition: International
Links:
http://www.isdc.unige.ch/theseus/workshop2017-venue.html (THESEUS Workshop)
http://www.isdc.unige.ch/theseus/ (THESEUS mission overview)

Related event

THESEUS Workshop
05/10/2017 → 06/10/2017
Napoli, Italy
Activity: Attending an event › Participating in or organising a conference

Risk factors associated with spatio-temporal clusters of high mortality in Danish swine herds
Period: 4 Oct 2017
Ana Carolina Lopes Antunes (Guest lecturer)
National Veterinary Institute
Epidemiology

Description
Presented at the ECVPH AGM & Annual Scientific Conference 2017
Degree of recognition: International
Documents:
Proceedings -ECVPH-2017-v06

Related event

ECVPH AGM & Annual Scientific Conference 2017
02/10/2017 → 04/10/2017
Liege, Belgium
Activity: Talks and presentations › Conference presentations

Period: 4 Oct 2017 → 9 Oct 2017
Angreine Kewo (Speaker)
Department of Management Engineering
Degree of recognition: International

Related event

04/10/2017 → 09/10/2017
Dubrovnik, Croatia
Activity: Talks and presentations › Conference presentations

Conceptualization of contamination using depth-discrete monitoring of dynamic PCE concentration changes during pumping
Period: 3 Oct 2017
Mette Martina Broholm (Speaker)
Annika Sidelmann Fjordbøge (Other)
Klaus Mosthaf (Speaker)
Bentje Brauns (Other)
Philip John Binning (Other)
Poul Løgstrup Bjerg (Other)
Department of Environmental Engineering
Water Resources Engineering
Office for Study Programmes and Student Affairs
Degree of recognition: International

Related event

2017 NGWA Conference on Fractured Rock and Groundwater
02/10/2017 → 03/10/2017
Burlington, United States
Activity: Talks and presentations › Conference presentations

Gæsteforelæsor på kurset Parasitic zoonoses
Period: 3 Oct 2017
Heidi Huus Petersen (Guest lecturer)
National Veterinary Institute
Bacteriology & Parasitology

Related external organisation

University of Copenhagen
Bülowsvej 17, 1780, Copenhagen, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

How can we improve public health, food hygiene, and animal welfare in developing country slaughterhouses?
Period: 3 Oct 2017
Ana Carolina Lopes Antunes (Organizer)
National Veterinary Institute
Epidemiology
Degree of recognition: International

Related event

How can we improve public health, food hygiene, and animal welfare in developing country slaughterhouses?
03/10/2017 → …
Liege, Belgium
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Application of a computer-aided framework for the design of CO2 capture and utilization processes
Period: 2 Oct 2017
Rebecca Frauzem (Speaker)
Department of Chemical and Biochemical Engineering
KT Consortium

Description
A presentation of the PhD work being carried out at DTU.
Degree of recognition: International

Related event

27th European Symposium on Computer Aided Process Engineering
01/10/2017 → 05/10/2017
Barcelona, Spain
Activity: Talks and presentations › Conference presentations

ECVPH AGM & Annual Scientific Conference 2017
Period: 2 Oct 2017 → 4 Oct 2017
Ana Carolina Lopes Antunes (Organizer)
National Veterinary Institute
Forced-gradient tracer tests in a fractured limestone aquifer designed and interpreted by modeling

Period: 2 Oct 2017

Klaus Mosthaf (Speaker)
Bentje Brauns (Other)
Mette Martina Broholm (Other)
Annika Sidelmann Fjordbøge (Other)
Poul Legstrup Bjerg (Other)
Magnus Rohde (Other)
Henriette Kerrn-Jespersen (Other)
Philip John Binning (Other)

Department of Environmental Engineering
Water Resources Engineering

Description
The importance of fracture flow and transport in a fractured limestone was investigated with a hydraulic pumping test combined with 6 tracer tests. The pumping test was conducted in a PCE-contaminated fractured limestone aquifer over several weeks, with head observations being collected at a set of observation wells at several depth intervals in the aquifer. The pumping test was combined with six tracer tests. Fluorescent and ionic tracers were used for injections through the screens of the observation wells and monitored at the pumping well. Before the pumping test, the geology was carefully mapped using borehole cores, flow logs, geophysics etc. 3D modeling guided with the test design and helped with the interpretation of the of the pumping and tracer test results.

The pumping test and the geologic investigations showed that the limestone aquifer was highly permeable, with fracture flow dominating the hydraulic response. Most tracer tests resulted in a very fast tracer arrival, indicating a very good connectivity between wells at a similar depth as the pumping well. Strong diffusive interaction between fractures and matrix was revealed by significant tailing in the tracer breakthrough curves. In one tracer test, tracers were injected before starting to pump to allow the tracers to diffuse more into the matrix. This resulted in lower breakthrough concentrations and longer tailing, representing mainly the back-diffusion from the matrix. Deeper wells and crushed upper layers have less connectivity to the pumping well and show slower tracer breakthroughs.

The breakthrough curves from the tracer tests were used to test different model concepts. A discrete-fracture model could be fitted best to the observed breakthrough curves. It demonstrated the importance of including fracture flow and transport in the modeling of fractured limestone sites. The calibrated model was used to analyze the spreading behavior of the contaminant plume.

Degree of recognition: International

Related event

2017 NGWA Conference on Fractured Rock and Groundwater
02/10/2017 → 03/10/2017
Burlington, United States
Activity: Talks and presentations › Conference presentations

RDTU - Kompetenceudvikling i forskningsbaseret rådgivning
Period: 2 Oct 2017 → 30 Oct 2017
Annette Nygaard Jensen (Participant)

National Food Institute
Research Group for Microbial Food Safety

Description
A four day course
Related event

RDTU - Kompetenceudvikling i forskningsbaseret rådgivning
02/10/2017 → 30/10/2017
Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

In situ TEM study of the coarsening of carbon black supported Pt nanoparticles in hydrogen
Period: 1 Oct 2017 → 5 Oct 2017
Søren Bredmose Simonsen (Speaker)
Department of Energy Conversion and Storage

Imaging and Structural Analysis

Description
The control of sizes and shapes of nanostructures is of tremendous importance for the catalytic activity in electrochemistry and in catalysis more generally. However, due to relatively large surface free energies, nanostructures often sinter to form coarser and more stable structures that may not have the intended physicochemical properties.

Pt is known to be a very active catalyst in several chemical reactions and for example as carbon supported nanoparticles in fuel cells.

The presentation focusses on coarsening mechanisms of Pt nanoparticles supported on carbon black during exposure to hydrogen. By means of in situ transmission electron microscopy (TEM), Pt nanoparticle coarsening was monitored in 6 mbar 20 % H2/Ar while ramping up the temperature to ca. 900 °C. Time-resolved TEM images directly reveal that separated ca. 3 nm sized Pt nanoparticles in the pure hydrogen environment are stable during constant temperature ramping by 10°C/min up to ca. 800 °C. The coarsening above this temperature is fully dominated by the particle migration and coalescence mechanism. This is contrary to supported Pt nanoparticles in oxygen, where the coarsening is fully dominated by Ostwald ripening. For agglomerated Pt nanoparticles, coalescence events were observed already at ca. 200 °C. The temperature-dependency of particle sizes and the observed migration distances are consistent with simple early models for the migration and coalescence.

Degree of recognition: International

Related event

232nd ECS meeting
01/10/2017 → 05/10/2017
National Harbor, Washington, DC, United States
Activity: Talks and presentations › Conference presentations

International Journal of Workplace Health Management (Journal)
Period: 1 Oct 2017 → 1 Dec 2018
Christine Ipsen (Editor)
Department of Management Engineering
Management Science
Implementation and Performance Management

Degree of recognition: International

Related journal

International Journal of Workplace Health Management
1753-8351
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 1.24 SJR 0.485 SNIP 1.324, ISI indexed (2013): ISI indexed no Central database
Activity: Research › Journal editor

Scientific Reports (Journal)
Period: 1 Oct 2017 → …
Bent Petersen (Editor)
Department of Bio and Health Informatics
Metagenomics

**Description**
Editorial Board Member for Scientific Reports, a Nature Research journal. [http://www.nature.com/srep/](http://www.nature.com/srep/)

Degree of recognition: International

**Related journal**

**Scientific Reports**
2045-2322
Indexed in DOAJ

**Central database**
Activity: Communication › Journal editor

---

**University of North Carolina at Charlotte**
Period: 1 Oct 2017 → 30 Nov 2017
Danilo Quagliotti (Visiting researcher)

Department of Mechanical Engineering
Manufacturing Engineering

**Description**
Statistical modelling, surfaces generation and traceability for 3D Micro/Nano Optical Metrology at the Center for Precision Metrology

Activity: Visiting an external institution › Visiting another research institution

---

**International Association HySafe (External organisation)**
Period: 30 Sep 2017 → 30 Sep 2019
Frank Markert (Chairman)

Department of Civil Engineering
Section for Building Design

**Description**
IAHySafe- elected member of board (secretary of association)

Degree of recognition: International

**Related external organisation**

**International Association HySafe**
Activity: Membership › Board duties in companies, associations, or public organisations

---

**Tools for massive bacterial genome engineering**
Period: 30 Sep 2017
Morten Otto Alexander Sommer (Guest lecturer)

Novo Nordisk Foundation Center for Biosustainability

Bacterial Synthetic Biology
Degree of recognition: International

**Related event**

**EMBO Synthetic Biology in Action: Programming Bacteria to Do Amazing Things**
24/09/2017 → 01/10/2017
Heidelberg, Germany
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

---

**10th World Congress of Chemical Engineering (WCCE10)**
Period: 29 Sep 2017 → 2 Oct 2017
Rebecca Frauzem (Organizer)
Department of Chemical and Biochemical Engineering
KT Consortium

Description
Part of the Student Conference organizing committee with other students and faculty from universities around the world. The student conference had a ChemE Car competition, trips to industrial sites, visits to the EXPOQUIMIA and presentation and discussions for undergraduate and graduate students.
Degree of recognition: International

Related event
10th World Congress of Chemical Engineering (WCCE10)
01/10/2017 → 05/10/2017
Barcelona, Spain
Activity: Attending an event › Participating in or organising a conference

International Committee for Predictive Modelling Food (ICPMF) (External organisation)
Period: 29 Sep 2017 → …
Maarten Nauta (Member)
National Food Institute
Research Group for Risk-Benefit

Description
Member of committee
Degree of recognition: International
Links:
http://www.icpmf.org

Related external organisation
International Committee for Predictive Modelling Food (ICPMF)
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

PhD opponent
Period: 29 Sep 2017
Sonia Coriani (External examiner)
Department of Chemistry
Degree of recognition: International
Activity: Examinations and supervision › External examination

Space Management of Higher Education Facilities
Period: 29 Sep 2017
Per Anker Jensen (Invited speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Per Anker Jensen holdt indlæg om Space Management of Higher Education Facilities ved 2nd Annual Summit on Innovative Learning Spaces den 28.-29. september 2017 i Prag
Degree of recognition: International

Related event
Innovative Learning Spaces: 2nd annual summit
28/09/2017 → 29/09/2017
Prag
Can stochastic Consumer Phase Models in Microbial Risk Assessment be simplified to a single factor?
Period: 28 Sep 2017
Maarten Nauta (Speaker)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

Related event
10th International Conference on Predictive Modelling in Food: ICPMF10
26/09/2017 → 29/09/2017
Cordoba, Spain
Activity: Talks and presentations › Conference presentations

DRIP Annual seminar 2017
Period: 28 Sep 2017 → 29 Sep 2017
Berit Godskesen (Guest lecturer)
Hans-Jørgen Albrechtsen (Guest lecturer)
Department of Environmental Engineering
Urban Water Systems

Description
Annual seminar in the DRIP project (Danish Partnership for Resource and Water efficient industrial food production)
Degree of recognition: National

Related organisation
DRIP Annual seminar 2017
Godskesen, B. (Guest lecturer), Albrechtsen, H. (Guest lecturer)
28 Sep 2017 → 29 Sep 2017
Activity: Talks and presentations › Conference presentations

Sustainable processes and solutions for the development of a competitive bio-based economy
Period: 28 Sep 2017
Solange I. Mussatto (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology
Degree of recognition: International

Related event
2nd Joint Workshop of the PhD Programs in Applied and Environmental Microbiology and Molecular and Environmental Biology
25/09/2017 → 29/09/2017
Braga, Portugal
Activity: Talks and presentations › Conference presentations

A Highly Efficient CRISPR-Cas9 System For Actinomycetal Genome Editing
Period: 27 Sep 2017
Yaojun Tong (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International
Links:
http://vaamworkshop2017.ziemertlab.com
Related event

VAAM Workshop "Biology of Bacteria Producing Natural Products"
27/09/2017 → 29/09/2017
Tübingen, Germany
Activity: Talks and presentations › Conference presentations

IEA Wind Task 32 workshop
Period: 27 Sep 2017
Antoine Borraccino (Guest lecturer)
Rozenn Wagner (Other)
David Schlipf (Other)
Nicolai Gayle Nygaard (Other)
Department of Wind Energy
Meteorology & Remote Sensing

Description
Workshop on: "Power Performance Measurement Using Nacelle Lidars"
Degree of recognition: International
Documents:
2017_09_27_ABorraccino_IEA_wind32_naclidar_calib
2017_09_27_ABorraccino_IEA_wind32_naclidar_PCV_UniTTe

Related event

IEA Wind Task 32 workshop: Power performance measurement using nacelle lidars
27/09/2017 → 27/09/2017
Gentofte, Denmark
Activity: Talks and presentations › Conference presentations

Lidar Measurement for more Accurate Measurements and Higher Energy Yield
Period: 27 Sep 2017
Torben Krogh Mikkelsen (Invited speaker)
Department of Wind Energy
Meteorology & Remote Sensing

Description
Real time measurements of Wind Using Lidars
Turbine Control
Turbine Wakes
Data Basis for Model Comparison
Degree of recognition: International

Related event

3rd International Conference Digital Data Integration & Management From SCADA to Asset Optimization
26/09/2017 → 28/09/2017
Activity: Talks and presentations › Conference presentations

Searching for Plausible N-k Contingencies Endangering Voltage Stability
Period: 27 Sep 2017
Johannes Tilman Gabriel Weckesser (Guest lecturer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems
Description
Presentation of a novel search algorithm using time-domain simulations to identify plausible N-k contingencies endangering voltage stability. Starting from an initial list of disturbances, progressively more severe contingencies are investigated. After simulation of a N-k contingency, the simulation results are assessed. If the system response is unstable, a plausible harmful contingency sequence has been found. Otherwise, components affected by the contingencies are considered as candidate next event leading to N-(k+1) contingencies. This implicitly takes into account hidden failures of component protections. The performance of the proposed search algorithm is compared to a brute-force algorithm and demonstrated on the IEEE Nordic test system.

Degree of recognition: International

Documents:
ISGT - N-k search algorithm

Related event

2017 IEEE PES Innovative Smart Grid Technologies Conference Europe
26/09/2017 → 29/09/2017
Torino, Italy
Activity: Talks and presentations › Conference presentations

VAAM Workshop "Biology of Bacteria Producing Natural Products"
Period: 27 Sep 2017 → 29 Sep 2017
Kai Blin (Chairman)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International

Related event

VAAM Workshop "Biology of Bacteria Producing Natural Products"
27/09/2017 → 29/09/2017
Tübingen, Germany
Activity: Attending an event › Participating in or organising a conference

10th International Conference on Predictive Modelling in Food
Period: 26 Sep 2017 → 29 Sep 2017
Tina Beck Hansen (Participant)
National Food Institute
Research Group for Microbial Food Safety
Degree of recognition: International

Related event

10th International Conference on Predictive Modelling in Food: ICPMF10
26/09/2017 → 29/09/2017
Cordoba, Spain
Activity: Attending an event › Participating in or organising a conference

10th International Conference on Predictive Modelling in Food (Event)
Period: 26 Sep 2017 → 29 Sep 2017
Ana Sofia Ribeiro Duarte (Reviewer)
National Food Institute
Research Group for Genomic Epidemiology

Description
Member of Scientific Committee
Degree of recognition: International

Related event

Period: 26 Sep 2017 → 29 Sep 2017

Paw Dalgaard (Other)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description

Degree of recognition: International

Related event

10th International Conference on Predictive Modelling in Food: ICPMF10
26/09/2017 → 29/09/2017
Cordoba, Spain
Activity: Talks and presentations › Conference presentations

Joint EURL FV/CF/AO/SRM-Workshop for Pesticide Residues in Food and Feed
Period: 26 Sep 2017 → 29 Sep 2017

Susan Strange Herrmann (Organizer)
National Food Institute
Research Group for Analytical Food Chemistry

Description
Degree of recognition: International

Related event

Joint EURL FV/CF/AO/SRM-Workshop for Pesticide Residues in Food and Feed
26/09/2017 → 29/09/2017
Freiburg, Germany
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

'Modelling effects of food characteristics on interaction between lactic acid bacteria and Listeria monocytogenes' at 10th International Conference on Predictive Modelling in Food, Cordoba, Spain
Period: 26 Sep 2017 → 29 Sep 2017

L.M. Laursen (Other)
R.L. Pedersen (Other)
Ole Mejlholm (Other)
Paw Dalgaard (Speaker)

National Food Institute
Research Group for Analytical and Predictive Microbiology

Description

Degree of recognition: International

Related event

Period: 26 Sep 2017 → 29 Sep 2017
Paw Dalgaard (Other)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description

Degree of recognition: International

Related event
10th International Conference on Predictive Modelling in Food: ICPMF10
26/09/2017 → 29/09/2017
Cordoba, Spain
Activity: Talks and presentations › Conference presentations


Period: 26 Sep 2017 → 29 Sep 2017
Veronica Martinez Rios (Speaker)
Paw Dalgaard (Other)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description

Degree of recognition: International

Related event
10th International Conference on Predictive Modelling in Food: ICPMF10
26/09/2017 → 29/09/2017
Cordoba, Spain
Activity: Talks and presentations › Conference presentations

Scientific committee for 10th International Conference on Predictive Modelling in Food (Event)
Period: 26 Sep 2017 → 29 Sep 2017
Paw Dalgaard (Member)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description

Degree of recognition: International
Related event

Scientific committee for 10th International Conference on Predictive Modelling In Food
26/09/2017 → 29/09/2017
Cordoba, Spain
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Shipboard sea state estimation based on wave-induced response measurements
Period: 26 Sep 2017
Ulrik Dam Nielsen (Guest lecturer)
Department of Mechanical Engineering
Fluid Mechanics, Coastal and Maritime Engineering
Degree of recognition: International
Documents:
WaveEstim and DSS (MIT Sep. 2017)

Related external organisation

Massachusetts Institute of Technology
Cambridge, United States
Activity: Talks and presentations › Conference presentations

Vindenergi (Wind energy)
Period: 26 Sep 2017
Niels-Erik Clausen (Guest lecturer)
Department of Wind Energy
Integration & Planning
Degree of recognition: National
Documents:
Clausen Vindenergi Folkeuniversitetet 26 september 2017_red_size
Links:
https://fuau.dk/aarhus/program/naturvidenskab-og-teknologi/vedvarende-energi-1721-382 (Series of lectures on renewable energy (in Danish))

Related external organisation

Folkeuniversitetet i Aarhus
Ny Munkegade 118, 8000, Aarhus, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

2nd Joint Workshop of the PhD Programs in Applied and Environmental Microbiology and Molecular and Environmental Biology
Period: 25 Sep 2017 → 29 Sep 2017
Solange I. Mussatto (Participant)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology
Degree of recognition: International

Related event

2nd Joint Workshop of the PhD Programs in Applied and Environmental Microbiology and Molecular and Environmental Biology
25/09/2017 → 29/12/2017
Braga, Portugal
Activity: Attending an event › Participating in or organising a conference

Aalto University
Period: 25 Sep 2017
Tommi Olavi Brander (Visiting researcher)
Department of Applied Mathematics and Computer Science
Scientific Computing

Description
Research collaboration with Antti Hannukainen and Nuutti Hyvönen.
Degree of recognition: International
Activity: Visiting an external institution › Visiting another research institution

Cases of Lightweight Structures for Polar Areas
Period: 25 Sep 2017 → 28 Sep 2017
Julian Christ (Speaker)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Section for Structural Engineering

Description
Presented the Paper 'Cases of Lightweight Structures for Polar Areas' at the IASS Annual Symposium 2017 at HafenCity University Hamburg (Germany).
Degree of recognition: International

Related organisation
Cases of Lightweight Structures for Polar Areas
Christ, J. (Speaker)
25 Sep 2017 → 28 Sep 2017
Activity: Talks and presentations › Conference presentations

Chairman PhD Assessment Committee
Period: 25 Sep 2017
Toke Rammer Nielsen (Internal examiner)
Department of Civil Engineering
Section for Building Energy
Degree of recognition: International
Activity: Examinations and supervision › Internal examination

High-throughput knockout of CHO host cell proteins to create a clean CHO cell
Period: 25 Sep 2017
Stefan Kol (Lecturer)
Novo Nordisk Foundation Center for Biosustainability
CHO Core
Degree of recognition: International

Related event
PEACe Valencia: Conference on Protein Expression in Animal Cells
24/09/2017 → 28/09/2017
Valencia, Spain
Activity: Talks and presentations › Conference presentations

National Renewable Energy Laboratory
Period: 25 Sep 2017 → 31 Jan 2018
Jundi Jia (Visiting researcher)
Department of Electrical Engineering
Center for Electric Power and Energy

Electric power systems

Description
Academic guest at the National Wind Technology Center (NWTC) under the supervisor of Eduard Muljadi and Vahan Gevorgian
Activity: Visiting an external institution › Visiting another research institution

NOMAD Summer
Period: 25 Sep 2017 → 29 Sep 2017
Simon Loftager (Participant)
Department of Energy Conversion and Storage
Atomic scale modelling and materials
Degree of recognition: International

Related event
NOMAD Summer: A hands-on course on tools for novel-materials discovery
25/09/2017 → 29/09/2017
Berlin, Germany
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Visualizing Catalysts in Action
Period: 25 Sep 2017
Christian Danvad Damsgaard (Invited speaker)
Center for Electron Nanoscopy
DTU Danchip
Department of Physics
Experimental Surface and Nanomaterials Physics

Description
invited talk https://mcm2017.irb.hr/
Degree of recognition: International

Related event
13th Multinational Congress on Microscopy
25/09/2017 → 29/09/2017
Rovinj, Croatia
Activity: Talks and presentations › Conference presentations

13th Protein Expression in Animal Cells (PEACe) Conference
Period: 24 Sep 2017 → 28 Sep 2017
Helene Fastrup Kildegaard (Organizer)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: International

Related event
13th Protein Expression in Animal Cells (PEACe) Conference
24/09/2017 → 28/09/2017
Valencia, Spain
Activity: Attending an event › Participating in or organising a conference
Complex Motion in Fluids Summer School
Period: 24 Sep 2017 → 29 Sep 2017
Seyed Saeed Asadzadeh (Participant)
Jens Honore Walther (Participant)
Lasse Tor Nielsen (Participant)
Julia Dölger (Participant)
Thomas Kiørboe (Participant)
Anders Peter Andersen (Participant)

Department of Mechanical Engineering
Fluid Mechanics, Coastal and Maritime Engineering
National Institute of Aquatic Resources
Centre for Ocean Life
Department of Physics
Biophysics and Fluids

Description
The school will consist of 16 lectures in total, given by 8 speakers (90'+60' each), contributed talks, poster sessions and other activities.
Degree of recognition: International
Documents:
Asadzadeh

Related event

Complex Motion in Fluids Summer School
24/09/2017 → 30/09/2017
Cambridge, United Kingdom
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

PEACE Valencia
Period: 24 Sep 2017 → 28 Sep 2017
Daniel Ley (Participant)

Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design

Description
Reprogramming Amino Acid Catabolism in CHO Cells with CRISPR-Cas9 Genome Editing Improves Cell Growth and Reduces By-Product Secretion
Degree of recognition: International

Related event

PEACE Valencia: Conference on Protein Expression in Animal Cells
24/09/2017 → 28/09/2017
Valencia, Spain
Activity: Attending an event › Participating in or organising a conference

Combining X-ray and Electron Based in situ Characterization of Catalysts
Period: 23 Sep 2017
Christian Danvad Damsgaard (Invited speaker)

Center for Electron Nanoscopy
DTU Danchip
Department of Physics
Experimental Surface and Nanomaterials Physics
Description
invited talk @ https://coex.iom.cnr.it/
Degree of recognition: International

Related event

Combining electrons with X-rays for integrated in-operando experiments
23/09/2017 → 24/09/2017
trieste, Italy
Activity: Talks and presentations › Conference presentations

Inferring feeding in Southern bluefin tuna from visceral temperature data using a mechanistic model of digestion
Period: 22 Sep 2017 → 27 Sep 2017
Uffe Høgsbro Thygesen (Guest lecturer)
Department of Applied Mathematics and Computer Science
Dynamical Systems
Degree of recognition: International

Related event

Biologging Symposium 2017
25/09/2017 → 29/09/2017
Konstanz, Germany
Activity: Talks and presentations › Conference presentations

In silico and experimental approaches to understand and engineer the biosynthesis of antibiotics
Period: 22 Sep 2017
Tilmann Weber (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds

Description
Talk at the seminar of the Department of Veterinary and Animal Sciences, Copenhagen University

Related external organisation

University of Copenhagen
Bülowsvej 17, 1780, Copenhagen, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Norwegian University of Life Sciences (External organisation)
Period: 22 Sep 2017
Klaus Skytte (Participant)
Department of Management Engineering
Systems Analysis

Description
PhD evaluation committee, Philosophiae Doctor (PhD), Jon Gustav Kirkerud, Faculty of Environmental Sciences and Natural Resource Management, Norwegian University of Life Sciences
Degree of recognition: International

Related external organisation

Norwegian University of Life Sciences
Norway
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

26th International Meshing Roundtable
Period: 21 Sep 2017
Kristian Ejlebjærg Jensen (Organizer)
Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics
Department of Micro- and Nanotechnology
Nanoprobes
Documents:
IMR26_fixed

Related event

26th International Meshing Roundtable
18/09/2017 → 21/09/2017
Barcelona, Spain
Activity: Attending an event › Participating in or organising a conference

Dynamics of intra-mammary infections causing pathogens: A herd-, cow- and strain-specific model.
Period: 21 Sep 2017
Carsten Thure Kirkeby (Guest lecturer)
National Veterinary Institute
Epidemiology

Description
Presentation at the EMRW meeting 2017
Degree of recognition: International
Links:
http://cphcattle.ku.dk/seminarer/emrw/

Related external organisation

University of Copenhagen
Bülowsvej 17, 1780, Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Muligheder og overvejelser i Industri 4.0
Period: 21 Sep 2017
Christine Ipsen (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Præsentation ved direktørnetværksmøde om overvejelser i relation til
Valg af strategi
Ændringer i organisationen
Fokus på implementeringen
Samt erfaringer med digital ledelse vha. tele-presence robotter

Related external organisation

CFL - Center for Ledelse
Copenhagen, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Remote Sensing of Environment (Journal)
Period: 21 Sep 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
A nanofiltration technique for analyte extraction from complex matrix and surface enhanced Raman spectroscopy based sensing

Period: 20 Sep 2017

Onur Durucan (Guest lecturer)
Tomas Rindzevicius (Other)
Michael Stenbæk Schmidt (Other)
Oleksii Ilchenko (Other)
Anja Boisen (Other)

Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics
Department of Micro- and Nanotechnology
Nanoprobes

Description
Our novel proof-of-concept centrifugal microfluidics sensing platform (Fig.1), allows to perform fast and facile purification (nanofiltration) of the complex sample by incorporating inertial (centrifugal) and capillary forces. Furthermore, integrated in the platform, highly uniform Au capped Si nanopillar (NP) substrates for surface enhanced Raman spectroscopy (SERS) are capable to detect analyte molecules in trace amounts [1]. However, in most of the cases SERS based sensing applications are accompanied with complicated sample manipulation and external purification steps. This can be addressed to various experimental difficulties of SERS based measurements when handling real-life complex samples. Therefore, we believe that combination with the nanofiltration technique would sufficiently increase sensitivity and applicability of SERS based sensors. In addition to that, the nanofiltration of the sample and SERS based sensing of analyte is carried out on the same chip (Au NP surface) which provides robustness to the platform.

Degree of recognition: International

Related event
43rd International conference on Micro and Nano Engineering
18/09/2017 → 22/09/2017
Braga, Portugal
Activity: Talks and presentations › Conference presentations

A Simulation-based Markov Decision Process for the Scheduling of Operating Theatres

Period: 20 Sep 2017 → 22 Sep 2017

Anders Reenberg Andersen (Guest lecturer)

Department of Management Engineering
Management Science
Operations Research

Degree of recognition: International

Documents:
Abstract

Related event
European Conference on Stochastic Optimization 2017
20/09/2017 → 22/09/2017
Rom, Italy
Activity: Talks and presentations › Conference presentations
ECSO 2017  
Period: 20 Sep 2017 → 22 Sep 2017  
Ignacio Blanco (Guest lecturer)  
Daniela Guericke (Other)  
Department of Applied Mathematics and Computer Science  
Dynamical Systems

**Description**  
European Conference on Stochastic Optimization  
Links:  
http://ecso2017.inf.uniroma3.it/

**Related external organisation**  
**Università Roma Tre**  
Italy  
Activity: Talks and presentations › Conference presentations

**Første IT-workshop i projektet "Nye trends - nye modeller til vurdering af fødevaresikkerhed"**  
Period: 20 Sep 2017  
Tina Beck Hansen (Advisor)  
National Food Institute  
Research Group for Microbial Food Safety

**Description**  
Brainstorming workshop  
Degree of recognition: Local

**Related event**

1. **IT-workshop i projektet "Nye trends - nye modeller til vurdering af fødevaresikkerhed"**  
20/09/2017 → 20/09/2017  
Glostrup, Denmark  
Activity: Public and private sector consultancy › Public sector consultancy

**High Tech Summit**  
Period: 20 Sep 2017 → 21 Sep 2017  
Alfred Heller (Organizer)  
Department of Civil Engineering  
Centre for IT-Intelligent Energy Systems in Cities

**Description**  
Organizer Smart Cities and Smart Buildings Tracks

**Related event**

**High Tech Summit**  
20/09/2017 → 21/09/2017  
Kongnes Lyngby, Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Miniature converters**  
Period: 20 Sep 2017  
Michael A. E. Andersen (Invited speaker)  
Department of Electrical Engineering
High Tech Summit
20/09/2017 → 21/09/2017
Kongnes Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Risk as a feeling - Psychometric Risk Assessment
Period: 20 Sep 2017
Josef Oehmen (Keynote speaker)
Department of Management Engineering
Engineering Systems

Description
Master Class for the Executive Master in Risk Management, University of Twente
Degree of recognition: International

Related external organisation
University of Twente
Twente, Netherlands
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Succes med big data afhænger af dit digitale mindsæt
Period: 20 Sep 2017
Pernille Rydén (Guest lecturer)
Center for Bachelor of Engineering Studies
Afdelingen for Forretningsudvikling
Degree of recognition: Regional
Links:
https://handel.di.dk/arrangementer/kurserogarrangementer/Pages/Succesmedbigdataafhaengerafditdigitalemindsaet0718-1785.aspx (Workshop details)

Related external organisation
Dansk Industri
H.C.Andersens Boulevard 18, 1787, København V, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Teknik- och vetenskapshistoriska dagar 2017
Period: 20 Sep 2017
Louise Karlskov Skyggebjerg (Speaker)
Department of Physics
Degree of recognition: National
Documents:
Konferensschemaslutgiltig
Abstract_teknikhistoriska
Links:

Related event
Teknik- og vetenskapshistoriska dagar 2017
20/11/2017 → 22/11/2017
Norrköping, Sweden
Activity: Talks and presentations › Conference presentations

13th EAWE PhD seminar on Wind Energy in Europe
Period: 19 Sep 2017 → 22 Sep 2017
Elliot Simon (Organizer)
Department of Wind Energy
Meteorology & Remote Sensing

Description
Conference co-organiser and scientific committee chair for DTU
Degree of recognition: International

Related event
13th EAWE PhD seminar on Wind Energy in Europe
19/09/2017 → 22/09/2017
Cranfield, United Kingdom
Activity: Attending an event › Participating in or organising a conference

4th Engineering Systems Design & Data Science: EuroTech Alliance DTU-TUM Workshop in Munich
Period: 19 Sep 2017 → 20 Sep 2017
Anja Maier (Participant)
Department of Management Engineering
Engineering Systems
Copenhagen Center for Health Technology
Degree of recognition: International

Related event
4th Engineering Systems Design & Data Science: EuroTech Alliance DTU-TUM Workshop in Munich
19/09/2017 → 20/09/2017
Munich, Germany
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Collapse of genetic division of labor and evolution of autonomy in pellicle biofilms
Period: 19 Sep 2017 → 22 Sep 2017
Ákos T. Kovács (Invited speaker)
Department of Biotechnology and Biomedicine

Related event
EuroBiofilms 2017
19/09/2017 → 22/09/2017
Amsterdam, Netherlands
Activity: Talks and presentations › Conference presentations

Langsigtede strategiske partnerskab
Period: 19 Sep 2017
Per Anker Jensen (Invited speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description

Degree of recognition: National

**Related event**

**REBUS debatmøde**
20/10/2017 → …
Aarhus
Activity: Talks and presentations › Conference presentations

---

**NES 2017 "Joy at work"**
Period: 19 Sep 2017 → 23 Sep 2017
Kasper Edwards (Organizer)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

**Related event**

**NES 2017 "Joy at work"**
20/08/2017 → 23/08/2017
Lund, Sweden
Activity: Attending an event › Participating in or organising a conference

---

**Sampling and sample preparation is critical**
Period: 19 Sep 2017
Katrin Löschner (Speaker)
National Food Institute
Research Group for Nano-Bio Science
Degree of recognition: International

**Related event**

**NanoDefine Final Outreach Event: Classification of nanomaterials according to the EU definition**
19/09/2017 → 20/09/2017
Brussels, Belgium
Activity: Talks and presentations › Conference presentations

---

**TCbiomass 2017**
Period: 19 Sep 2017 → 21 Sep 2017
Magnus Zingler Stummann (Participant)
Department of Chemical and Biochemical Engineering

**Related event**

**TCbiomass 2017: The Global Future of Bioenergy**
19/09/2017 → 21/09/2017
Chicago, United States
Activity: Attending an event › Participating in or organising a conference

---

**Concave Grating Enabled Compact Mid-IR Upconversion Spectrometer**
Period: 18 Sep 2017 → 21 Sep 2017
Ajanta Barh (Guest lecturer)
Department of Photonics Engineering
Optical Sensor Technology
Degree of recognition: International
Links:

Related event

Frontiers in Optics 2017
18/09/2017 → 21/09/2017
Washington, D.C, United States
Activity: Talks and presentations › Conference presentations

Diverse Genetic Error Modes in Large-Scale Biological Production
Period: 18 Sep 2017
Peter Rugbjerg (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology
Degree of recognition: International

Related event

Commercializing Industrial Biotechnology 2017
18/09/2017 → 19/09/2017
San Diego, United States
Activity: Talks and presentations › Conference presentations

Inherent limitations in mid-wave and long-wave-IR upconversion detector
Period: 18 Sep 2017 → 21 Sep 2017
Ajanta Barh (Guest lecturer)
Department of Photonics Engineering
Optical Sensor Technology
Links:

Related event

Frontiers in Optics 2017
18/09/2017 → 21/09/2017
Washington, D.C, United States
Activity: Talks and presentations › Conference presentations

Scientific Computing for Life Scientists and Metabolic Modeling for Cell Factory Design
Period: 18 Sep 2017 → 22 Sep 2017
Kai Blin (Organizer)
Nikolaus Sonnenschein (Organizer)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
iLoop

Related event

Scientific Computing for Life Scientists and Metabolic Modeling for Cell Factory Design
18/09/2017 → 24/11/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
STROBE-X Science Definition Workshop
Period: 18 Sep 2017 → 20 Sep 2017
Søren Brandt (Participant)
National Space Institute
Astrophysics and Atmospheric Physics

Description
The STROBE-X Science Definition Workshop

Related event
STROBE-X Science Definition Workshop
18/09/2017 → 20/09/2017
Lubbock, Texas, United States
Activity: Attending an event › Participating in or organising a conference

Influence of tool texture on friction and lubrication in strip reduction
Period: 17 Sep 2017 → 22 Sep 2017
Mohd Hafis Bin Sulaiman (Guest lecturer)
Peter Christiansen (Guest lecturer)
Niels Oluf Bay (Guest lecturer)
Department of Mechanical Engineering
Manufacturing Engineering

Description
International Conference on the Technology of Plasticity, ICTP 2017, 17-22 September 2017, Cambridge, United Kingdom

Abstract:
Tool texturing is studied as a method to enhance lubrication and prevent the occurrence of galling. Strip reduction test tools manufactured with longitudinal, shallow pocket geometries oriented perpendicular to the sliding direction are tested. The pockets have small angles to the workpiece surface and varying distance. The experiments show an optimum distance between the pockets to exist that creates table mountain topography with flat plateaus and narrow pockets in between. If the flat plateaus are too narrow, an increase in drawing load and pick-up on the tool plateaus is observed. The same occurs for too wide plateaus. A theoretical friction model supports the experimental findings of an optimum distance between the pockets, where the contribution to friction by mechanical interlocking of the strip in the pockets is limited and lubrication of the plateaus is enhanced by micro-plasto-hydrodynamic lubrication.

Degree of recognition: International

Related external organisation
Universiti Malaysia Perlis
Malaysia
Activity: Talks and presentations › Conference presentations

Interconnected activities and functions of matrix metalloproteinases at the wound edge.
Period: 16 Sep 2017
Simonas Savickas (Other)
Department of Biotechnology and Biomedicine
Degree of recognition: International

Related event
16th Human Proteome Organisation World Congress
16/09/2017 → 21/12/2017
Ireland
Activity: Talks and presentations › Conference presentations

Bevilling - A.N. Neergaard og Hustrus Fond
Period: 14 Sep 2017
Ditte Baun Hermund (Other)
Current work related to hydrogen safety in infrastructures
Period: 14 Sep 2017
Frank Markert (Invited speaker)
Department of Civil Engineering
Section for Building Design
Degree of recognition: International
Documents:
Hamburg ws14092017-b

Related event
IEA Hydrogen task 37: Safety Stakeholder workshop
14/09/2017 → …
Hamburg, Germany
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

EURL - Campylobacter workshop 2017
Period: 14 Sep 2017 → 15 Sep 2017
Annette Nygaard Jensen (Participant)
National Food Institute
Research Group for Microbial Food Safety

Related event
EURL - Campylobacter workshop 2017
14/09/2017 → 15/09/2017
Nantes, France
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Facilities Management og Merværdi
Period: 14 Sep 2017
Per Anker Jensen (Invited speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description

Related event
Netværksmøde om Facilities Management i Maskinmesterforeningen
14/09/2017 → …
Lyngby
Activity: Talks and presentations › Conference presentations

Kroniske Sygdomme i Hovedstadsregionen – Borgerklynger, Storforbrugere og Socioøkonomiske Effekter
Period: 14 Sep 2017
Anders Stockmarr (Invited speaker)
Anne Frølich (Other)
Related event

Tredie workshop for forsker-og udviklernetværk om multisygdom i Region Hovedstaden
14/09/2017 → 14/09/2017
København, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Lysets dag 2017
Period: 14 Sep 2017
Anders Thorseth (Participant)

Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: National

Related event

Lysets dag 2017: LED møder virkeligheden
14/09/2017 → …
København, Denmark
Activity: Attending an event › Participating in or organising a conference

Plateau Sun Hub, Solar powered table for charging phones and playing music
Period: 14 Sep 2017
Peter Behrensdorff Poulsen (Guest lecturer)

Department of Photonics Engineering
Optical Microsensors and Micromaterials
Degree of recognition: International
Links:
http://www.4nanoenergy.fotonik.dtu.dk/news-and-events/5th-international-workshop-on-leds-and-solar-applications

Related event

5th internation workshop on LED and Solar Applications
13/09/2017 → 14/09/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Classification of District Heat Heat Exchange Stations Using Smart Meter Data
Period: 13 Sep 2017
Alexander Martin Tureczek (Guest lecturer)

Department of Management Engineering
Systems Analysis
Degree of recognition: International
Documents:
4DH_AT_Orbit

Related event

3rd international conference on smart energy systems and 4th generation district heating
12/09/2017 → 13/09/2017
København, Denmark
Activity: Talks and presentations › Conference presentations
Investigation of consumer’s behavior towards investments in household energy efficient appliances

Period: 13 Sep 2017 → 15 Sep 2017
Mattia Baldini (Speaker)
Alessio Trivella (Other)
Jordan William Halverson Wente (Other)
Department of Management Engineering
Systems Analysis
Management Science
Operations Research

Description
The previous EEDAL conferences have been very successful in attracting an international audience. EEDAL has established itself as an influential and recognised international event to discuss the progress achieved and latest developments in technologies, behavioural aspects and policies. EEDAL is the venue to establish new collaborations and synergies and build international partnerships among stakeholders.
Degree of recognition: International
Documents:
SAVEE
Links:
http://eedal2017.uci.edu/schedule/

Related event

9th International Conference on Energy Efficiency in Domestic Appliances and Lighting
13/09/2017 → 15/09/2017
Irvine, United States
Activity: Talks and presentations › Conference presentations

Tarmbakterierne hjælper dig: Sådan får du den bedste tarmflora
Period: 13 Sep 2017
Janne Marie Laursen (Other)
Department of Biotechnology and Biomedicine
Disease Systems Immunology
Links:
https://videnskab.dk/krop-sundhed/byd-dine-tarmbakterier-velkommen-de-hjaelper-dig
Activity: Other

Turkish Journal of Fisheries and Aquatic Sciences (Journal)
Period: 13 Sep 2017
Ditte Baun Hermund (Reviewer)
National Food Institute
Research Group for Bioactives – Analysis and Application

Related journal

Turkish Journal of Fisheries and Aquatic Sciences
1303-2712
Scopus rating (2016): CiteScore 0.67 SJR 0.282 SNIP 0.612, Web of Science (2017): Indexed yes
Central database
Activity: Research › Peer review of manuscripts
A local freshwater impact – proposing the groundwater indicator AGWaRe
Period: 12 Sep 2017
Ryle Nørskov Gejl (Guest lecturer)
Martin Rygaard (Guest lecturer)
Poul Løgstrup Bjerg (Guest lecturer)
Jens Rasmussen (Guest lecturer)
Department of Environmental Engineering
Urban Water Systems
Water Resources Engineering

Related event
4th Water Research Conference: The Role of Water Technology Innovation in the Blue Economy
10/09/2017 → 13/09/2017
Waterloo, Ontario, Canada
Activity: Talks and presentations › Conference presentations

Booster heat pump with zeotropic mixtures
Period: 12 Sep 2017
Benjamin Zühlsdorf (Guest lecturer)
Department of Mechanical Engineering
Thermal Energy

Description
This study analysed a booster heat pump, which was designed for district heating networks operating at 40 °C to elevate
the temperature of the forward stream to 60 °C, by using part of the stream as heat source while cooling it down to the
return temperature of 25 °C. The proposed optimization approach demonstrated an increase in the thermodynamic
performance, which was achieved by using mixed refrigerants.
The screening of working fluids considered 18 pure working fluids and all possible binary mixtures of these fluids. The
most promising solutions were analysed with respect to their performance under conditions deviating from design
conditions and their economic potential.
The best-performing mixture showed a COP of 9.01 and thereby outperformed R134a by 47 %. Although the mixed
working fluids resulted in higher investment cost, the economic performance was comparable to the pure fluids. The
mixtures showed similar behaviour as the pure fluids for varying operating conditions.
It was concluded that the mixtures 50 % Propylene / 50 % Butane or 50 % R1234yf / 50 % R1233zdE could considerably
improve the thermodynamic performance of the overall heat supply system while being sustainable and economically
competitive under the assumed economic boundary conditions.
Degree of recognition: International
Documents:
2017_09_12_4DH_BoosterHP_Zuehlsdorf_publication

Related event
3rd international conference on smart energy systems and 4th generation district heating
12/09/2017 → 13/09/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

Evaluation of regulation for flexibility – a methodology
Period: 12 Sep 2017
Daniel Møller Sneum (Guest lecturer)
Department of Management Engineering
Systems Analysis

Description
Regulatory changes for increased flexibility in the energy system entail socio-economic consequences, which must be
evaluated in addition to the consequences for flexibility, to provide a comprehensive analysis of the impacts. This study
proposes a methodology for such evaluation of regulation.
Related event

3rd international conference on smart energy systems and 4th generation district heating
12/09/2017 → 13/09/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

Nye - Assessing the environmental and economic sustainability
Period: 12 Sep 2017
Maria Faragò (Speaker)
Sarah Brudler (Other)
Martin Rygaard (Other)
Department of Environmental Engineering
Urban Water Systems

Related event

ATV Jord og Grundvand møde: Vand på tværs - alternativ vandhåndtering og helhedstænkning
12/09/2017 → 12/09/2017
Aarhus, Denmark
Activity: Talks and presentations › Conference presentations

Performance analysis of heat pumps utilizing different low temperature heat sources to supply district heating
Period: 12 Sep 2017
Henrik Pieper (Speaker)
Department of Mechanical Engineering
Thermal Energy
Degree of recognition: International
Documents:
Performance analysis of heat pumps utilizing different low temperature heat sources to supply district heating
Links:
http://www.4dh.eu/conferences/conference-2017/presentations

Related event

3rd international conference on smart energy systems and 4th generation district heating
12/09/2017 → 13/09/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

Better Training for Safer Foods
Period: 11 Sep 2017 → 15 Sep 2017
Heddie Mejborn (Speaker)
National Food Institute
Division of Risk Assessment and Nutrition

Description
Training coordinator and tutor
Degree of recognition: International

Related event

Better Training for Safer Foods
11/09/2017 → 15/09/2017
Tallinn, Estonia
Activity: Talks and presentations › Conference presentations

**Formal Methods for Software Development**
Period: 11 Sep 2017 → 14 Sep 2017
Anne Elisabeth Haxthausen (Guest lecturer)
Department of Applied Mathematics and Computer Science

**Description**
A PhD course.

**Related external organisation**
University of Florence
Italy
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

**International Workshop on High Temperature Heat Pumps**
Period: 11 Sep 2017
Brian Elmegaard (Organizer)
Benjamin Zühlsdorf (Organizer)
Reinholdt Lars Ove (Organizer)
Michael Bantle (Organizer)
Department of Mechanical Engineering

**Thermal Energy**
Degree of recognition: International

**Links:**
http://www.conferencemanager.dk/HighTemperatureHeatPumps (Workshop Homepage)

**Related event**
**International Workshop on High Temperature Heat Pumps**
11/09/2017 → 11/09/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Transferring knowledge from building operation to design - A literature review**
Period: 11 Sep 2017
Helle Lohmann Rasmussen (Speaker)
Department of Management Engineering

**Systems Analysis**
Degree of recognition: International

**Documents:**
CIB Helle Lohmann Rasmussen

**Related event**
**CIB World Congress 2017**
11/09/2017 → 15/09/2017
Salford, United Kingdom
Activity: Talks and presentations › Conference presentations

**14th IWA/IAHR International Conference on Urban Drainage 2017**
Period: 10 Sep 2017 → 15 Sep 2017
Katrine Nielsen (Participant)
Department of Environmental Engineering
Urban Water Systems
Degree of recognition: International

Related event

14th IWA/IAHR International Conference on Urban Drainage 2017
10/09/2017 → 15/09/2017
Prague, Czech Republic
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

CHRO 2017
Period: 10 Sep 2017 → 14 Sep 2017
Annette Nygaard Jensen (Other)
National Food Institute
Research Group for Microbial Food Safety

Description
Poster presentation

Related event

19th International Workshop on Campylobacter, Helicobacter and Related Organisms: CHRO 2017
10/09/2017 → 14/09/2017
Nantes, France
Activity: Talks and presentations › Conference presentations

International Workshop on Business Process Intelligence
Period: 10 Sep 2017 → 11 Sep 2017
Andrea Burattin (Organizer)
Department of Applied Mathematics and Computer Science
Software Engineering
Degree of recognition: International

Related event

International Workshop on Business Process Intelligence
10/09/2017 → 11/09/2017
Barcelona, Spain
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Particle-enhanced transportation of metal and PAH pollution reduces stormwater treatment efficiency based on settling and filtration
Period: 10 Sep 2017 → 15 Sep 2017
Katrine Nielsen (Speaker)
Department of Environmental Engineering
Urban Water Systems
Degree of recognition: International

Related event

14th IWA/IAHR International Conference on Urban Drainage 2017
10/09/2017 → 15/09/2017
Prague, Czech Republic
Activity: Talks and presentations › Conference presentations
Related event

DTU Sector Development Project on the Bioeconomy
07/09/2017 → 29/06/2018
Kongens Lyngby, Denmark
Activity: Membership › Board duties in companies, associations, or public organisations

EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 | Dublin, Ireland
Period: 7 Sep 2017
Sven-Erik Gryning (Chairman)
Department of Wind Energy
Degree of recognition: International

Related event

EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 | Dublin, Ireland
04/09/2017 → 08/09/2017
Dublin, Ireland
Activity: Attending an event › Participating in or organising a conference

European Meteorological Society (External organisation)
Period: 7 Sep 2017
Sven-Erik Gryning (Member)
Department of Wind Energy

Description
European Meteorological Society: Programme and Science Committee Meeting
Degree of recognition: International

Related external organisation

European Meteorological Society
Germany
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Interview for benchmarking the health cluster in Copenhagen - a study about the economic impact of the Meilahti campus health ecosystem in Helsinki
Period: 7 Sep 2017
Kasper Edwards (Consultant)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related external organisation

Nordic Healthcare Group
PACE – Proactive Care for Elderly People with Dementia
Period: 7 Sep 2017
Anders Stockmarr (Guest lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related event
Hillerød city council: committee meeting
07/09/2017 → 07/09/2017
Hillerød, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Proof Assistants and Related Tools - The PART & PART 2 Projects 2017
Period: 7 Sep 2017
Anders Schlichtkrull (Participant)
Department of Applied Mathematics and Computer Science
Algorithms and Logic
Description
Anders Schlichtkrull (joint work with Jasmin Christian Blanchette, Dmitriy Traytel and Uwe Waldmann): Formalization of an Ordered Resolution Prover in Isabelle/HOL
Talk "Formalization of an Ordered Resolution Prover in Isabelle/HOL" at PART

Related event
Proof Assistants and Related Tools - The PART & PART 2 Projects 2017
07/09/2017 → …
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

The microbiome of potable water producing biofilters: taxonomic insights and anomalies, metabolic potentials, biotechnological opportunities?
Period: 7 Sep 2017 → 8 Sep 2017
Barth F. Smets (Keynote speaker)
Department of Environmental Engineering
Water Technologies
Degree of recognition: International

Related event
2nd International Conference on Microbial Resource Management : MRM2
07/09/2017 → 08/09/2017
Gent, Belgium
Activity: Talks and presentations › Conference presentations

CFB annual seminar 2017
Period: 6 Sep 2017 → 7 Sep 2017
Abida Sultan (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Signal Transduction
Description
Bacterial phosphoproteomics
Degree of recognition: International

Related external organisation

Technical University of Denmark
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Design and optimization of sustainable process technologies
Period: 6 Sep 2017
Solange I. Mussatto (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology
Degree of recognition: International
Documents:
Abstract published at DTU Biosustain Annual Seminar 2017

Related event

DTU Biosustain Annual Seminar 2017
06/09/2017 → 07/09/2017
Elsinore, Denmark
Activity: Talks and presentations › Conference presentations

DTU Biosustain Annual Seminar 2017
Period: 6 Sep 2017 → 7 Sep 2017
Solange I. Mussatto (Participant)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology
Degree of recognition: International

Related event

DTU Biosustain Annual Seminar 2017
06/09/2017 → 07/09/2017
Elsinore, Denmark
Activity: Attending an event › Participating in or organising a conference

EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 |
Dublin, Ireland (Event)
Period: 6 Sep 2017
Sven-Erik Gryning (Chairman)
Department of Wind Energy

Description
Chairing two sessions
Degree of recognition: International

Related event

EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 |
Dublin, Ireland
04/09/2017 → 08/09/2017
Dublin, Ireland
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Maul- und Klauenseuche – verschiedene Bekämpfungsmethoden und ihre Auswirkungen
Period: 6 Sep 2017 → 8 Sep 2017
Carola Sauter-Louis (Other)
Christoph Staubach (Other)
Thomas Selhorst (Other)
Tariq Hisham Beshara Halasa (Guest lecturer)
Christine Pottgiese (Other)
Jorn Gethmann (Other)
Carolina Probst (Other)
Brend Haas (Other)
Franz J. Conraths (Other)

National Veterinary Institute
Epidemiology

**Description**
Poster presentation in the DVG-Epidemiologie Conference, DACH-Epi 2017, 6th - 8th September 2017, Hall in Tirol, Austria
Degree of recognition: International

**Related event**

the DVG-Epidemiologie Conference,
06/09/2017 → 08/09/2017
Activity: Talks and presentations › Conference presentations

**New developments on actinomyces CRISPR tools**
Period: 6 Sep 2017
Yaojun Tong (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability

**New Bioactive Compounds**

**Description**
DTU Biosustain annual seminar 2017
Degree of recognition: International

**Related organisation**

**New developments on actinomyces CRISPR tools**
Tong, Y. (Invited speaker)
6 Sep 2017
Activity: Talks and presentations › Conference presentations

**Using OR + AI to predict the optimal production of offshore wind parks: a preliminary study**
Period: 6 Sep 2017
Martina Fischetti (Guest lecturer)
Department of Management Engineering
Management Science
Operations Research

**Description**
In this paper we propose a new use of Machine Learning together with Mathematical Optimization. We investigate the question of whether a machine, trained on a large number of optimized solutions, can accurately estimate the value of the optimized solution for new instances. We focus on instances of a specific problem, namely, the offshore wind farm layout optimization problem. In this problem an offshore site is given, together with the wind statistics and the characteristics of the turbines that need to be built. The optimization wants to determine the optimal allocation of turbines to maximize the park power production, taking the mutual interference between turbines into account. Mixed Integer Programming models and other state-of-the-art optimization techniques, have been developed to solve this problem. Starting with a dataset of 2000+ optimized layouts found by the optimizer,
we used supervised learning to estimate the production of new wind parks. Our results show that Machine Learning is able to well estimate the optimal value of offshore wind farm layout problems.

Documents:
ODS2017Fisch

Related event
International Conference on Optimization and Decision Science
04/09/2017 → 07/09/2017
Activity: Talks and presentations › Conference presentations

What determines the integration of heterologous genes?
Period: 6 Sep 2017
Andreas Porse (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology
Degree of recognition: International

Related event
CFB Annual Seminar
06/09/2017 → 07/09/2017
Helsingør, Denmark
Activity: Talks and presentations › Conference presentations

Sikker fremstilling af fermenterede fødevarer - pølser og kål som cases
Period: 5 Sep 2017
Tina Beck Hansen (Invited speaker)
National Food Institute
Research Group for Microbial Food Safety
Documents:
fermentering_food_050917

Related event
Afdelingsmøde Fødevare København
05/09/2017 → 05/09/2017
Gløstrup, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

UV-treatment of foods and animals as a vitamin D enrichment approach
Period: 5 Sep 2017
Jette Jakobsen (Invited speaker)
National Food Institute
Research Group for Bioactives – Analysis and Application
Degree of recognition: International

Related event
ODIN Vitamin D and Health in Europe: Current and future perspectives
05/09/2017 → 06/09/2017
Cork, Ireland
Activity: Talks and presentations › Conference presentations

26th International Conference of World Association for the Advancement of Veterinary Parasitology (WAAVP)
Period: 4 Sep 2017 → 8 Sep 2017
Heidi Huus Petersen (Organizer)
National Veterinary Institute
Bacteriology & Parasitology
Degree of recognition: International

Related event

26th International Conference of World Association for the Advancement of Veterinary Parasitology (WAAVP): Combating Zoonoses: Strength in East-West Partnership
04/09/2017 → 08/09/2017
Kuala Lumpur, Malaysia
Activity: Attending an event › Participating in or organising a conference

An emerging European Doppler lidar network for meteorological applications
Period: 4 Sep 2017 → 8 Sep 2017
Ewan J. O'Connor (Speaker)
Anne Hirsikko (Other)
Christos Halios (Other)
Sven-Erik Gryning (Other)
Ronny Leinweber (Other)
Antti Manninen (Other)
Tobias Marke (Other)
Nina Petersen (Other)
Jana Preissler (Other)
Eileen Päschke (Other)
Umar Saeed (Other)
Jan Sween (Other)
Yang Shu (Other)
Irene Suomi (Other)
Minttu Tuononen (Other)
Ville Vakkari (Other)
Ludovic Thobois (Other)
Guy Pearson (Other)
Alain Dabas (Other)
Johannes Buehl (Other)

Department of Wind Energy
Degree of recognition: International
Documents:
EMS2017-745

Related event

EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 | Dublin, Ireland
04/09/2017 → 08/09/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations

Doppler lidar horizontal wind retrievals from a meteorological perspective
Period: 4 Sep 2017 → 8 Sep 2017
Ewan O'Connor (Speaker)
Anne Hirsikko (Other)
Christos Halios (Other)
Sven-Erik Gryning (Other)
Ronny Leinweber (Other)
Antti Manninen (Other)
Tobias Marke (Other)
Guðrún Nina Petersen (Other)
Jana Preissler (Other)
Eileen Päschke (Other)
Umar Saeed (Other)
jan schween (Other)
Yang Shu (Other)
Irene Suomi (Other)
Minttu Tuononen (Other)
Ville Vakkari (Other)
Ludovic Thobois (Panel member)
Guy Pearson (Other)
Alain Dabas (Other)
Johannes Buehl (Other)

Department of Wind Energy
Degree of recognition: International
Documents:
EMS2017-763-1

Related event
EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 |
Dublin, Ireland
04/09/2017 → 08/09/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations

European Meteorological Society (External organisation)
Period: 4 Sep 2017
Sven-Erik Gryning (Member)

Department of Wind Energy

Description
Member of the EMS Council
Degree of recognition: International

Related external organisation
European Meteorological Society
Germany
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Marina wind profiles measured by a wind lidar - ability of WRF to predict marine wind profiles
Period: 4 Sep 2017 → 8 Sep 2017
Ekaterina Batchvarova (Speaker)
Sven-Erik Gryning (Other)

Department of Wind Energy
Degree of recognition: International
Documents:
EMS2017-775

Related event
EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 |
Dublin, Ireland
04/09/2017 → 08/09/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations
New methodologies to observe wind gusts: research aircraft and Doppler lidar measurements
Period: 4 Sep 2017 → 8 Sep 2017
Irene Suomi (Speaker)
Timo Vihma (Other)
Sven-Erik Gryning (Other)
Christof Lüpkes (Other)
Jörg Hartmann (Other)
Ewan O'Connor (Other)
Department of Wind Energy
Degree of recognition: International
Documents:
EMS2017-197

Related event
EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 | Dublin, Ireland
04/09/2017 → 08/09/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations

Performance of four PBL schemes in WRF at Villium Research Station, Station Nord, Greenland
Period: 4 Sep 2017 → 8 Sep 2017
Hristina Kirova (Other)
Ekaterina Batchvarova (Speaker)
Sven-Erik Gryning (Other)
Henrik Skov (Other)
Lise-Lotte Sørensen (Other)
Department of Wind Energy
Degree of recognition: International
Documents:
EMS2017-778-2

Related event
EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 | Dublin, Ireland
04/09/2017 → 08/09/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations

Ramp events in the marine boundary-layer investigated by a wind lidar
Period: 4 Sep 2017 → 8 Sep 2017
Sven-Erik Gryning (Speaker)
Ekaterina Batchvarova (Other)
Department of Wind Energy
Degree of recognition: International
Documents:
EMS2017-777

Related event
EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 | 4–8 September 2017 | Dublin, Ireland
04/09/2017 → 08/09/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations
Federated Conference on Computer Science and Information Systems  
**Period:** 3 Sep 2017 → 6 Sep 2017  
Theis Bo Rasmussen (Organizer)  
Department of Electrical Engineering  
Center for Electric Power and Energy  
Electric power systems

**Description**  
Oral presentation of conference paper

**Related event**  
Federated Conference on Computer Science and Information Systems  
04/09/2017 → 07/09/2017  
Prague, Czech Republic  
Activity: Attending an event › Participating in or organising a conference

International Ergonomics Association Board meeting  
**Period:** 2 Sep 2017 → 3 Sep 2017  
Kasper Edwards (Other)  
Department of Management Engineering  
Management Science  
Implementation and Performance Management

**Description**  
Participating as President of The Nordic Ergonomics and Human Factor Society  
Degree of recognition: International  
Activity: Other

Biotechnology and Bioengineering (Print) (Journal)  
**Period:** 1 Sep 2017 → 15 Sep 2017  
Yaojun Tong (Reviewer)  
Novo Nordisk Foundation Center for Biosustainability  
New Bioactive Compounds

**Description**  
invited reviewer for Biotechnology and Bioengineering-17-653  
Degree of recognition: International

**Related journal**  
Biotechnology and Bioengineering (Print)  
0006-3592  
Web of Science (2017): Indexed yes  
Central database  
Activity: Research › Peer review of manuscripts

Organizer of the Special Session "Components and protection of residential nano-grids with multiple power sources" in the IEEE International Conference on Intelligent Green Building and Smart Grid (IGBSG 2018)  
**Period:** 1 Sep 2017 → 25 Apr 2018  
Zhe Zhang (Organizer)  
Department of Electrical Engineering  
Electronics
The Life of Flow Injection Analysis and Academic Mass Innovation

Period: 1 Sep 2017

Laila Zwisler (Speaker)

Department of Physics

Description
The study I will present has taken its offset in a group of artefacts from the historical collection at the Technical University of Denmark (DTU). The artefacts stem from the emergence of the flow analysis platform FIA and the further development of FIA. At DTU this development started in 1974. A tale of academic innovation between chemical science, industry, engineering academia and political spheres spun from these artefacts. The stories have a number of typical traits of a recent technoscience development in academia and in the talk I will discuss these traits. The people involved had to negotiate their way between the ethos of science, patent systems, the cooperate world and funding systems. A number of coincidences as well as conscious efforts brought FIA forward onto the international scene. The uneven distribution of wealth in this world opened a path for a technology for mass chemical analysis on the cheap. The fight for resources and enrollment was on. Money was not a goal but a means to sustain continued work. Honour, novelty and opportunity were precious commodities. FIA was not an island; others were on the same trail. I will look into how and why it was perceived as new by some and not by others.

Degree of recognition: International

Related event

ICHC International Conference on the History of Chemistry: 11ICHC
29/08/2017 → 29/09/2017
Trondheim, Norway
Activity: Talks and presentations › Conference presentations

Natural Product Discovery

Activity: Visiting an external institution › Visiting another research institution

University of Salamanca

Period: 1 Sep 2017 → 31 Dec 2017

Helia Relano Iborra (Visiting researcher)

Department of Electrical Engineering

Hearing Systems

Description
4 months research stay at the Auditory Computation & Psychoacoustics group of the Institute of Neurosciences of the University of Salamanca with Professor Enrique A. Lopez-Poveda
Activity: Visiting an external institution › Visiting another research institution

Austrian Science Fund / Der Wissenschaftsfonds (External organisation)

Period: Aug 2017 → Oct 2017

Per Dannemand Andersen (Chairman)

Department of Management Engineering
Technology and Innovation Management
Transport DTU

**Related external organisation**

Austrian Science Fund / Der Wissenschaftsfonds
Wien, Austria
Activity: Membership › Membership in review committee

**Frontiers in Veterinary Science (Journal)**
Period: Aug 2017
Tim Kåre Jensen (Reviewer)
National Veterinary Institute
Pathology

**Description**
Review of manuscript for Frontiers in Veterinary Science
Degree of recognition: International

**Related journal**
Frontiers in Veterinary Science
2297-1769
BFI (2017): BFI-level 1
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

**Fuel Cells (Journal)**
Period: Aug 2017
Anke Hagen (Reviewer)
Department of Energy Conversion and Storage
Applied Electrochemistry
Links:

**Related journal**
Fuel Cells
1615-6846
Central database
Activity: Communication › Journal editor

**SOFC/battery powered electrical vehicle**
Period: Aug 2017 → Dec 2017
Anke Hagen (External examiner)
Department of Energy Conversion and Storage
Applied Electrochemistry

**Description**
European Master in Renewable Energy
Activity: Examinations and supervision › Supervisor activities
Sync patterns in phase oscillator in community network structure
Period: Aug 2017
Erik Andreas Martens (Guest lecturer)
Department of Applied Mathematics and Computer Science
Dynamical Systems

Description
Invited Lecture, Advanced Study Group "From Microscopic to Collective Dynamics in Neural Circuits"
Degree of recognition: International

Related external organisation
Max-Planck-Institute for the Physics of Complex Systems
Germany
Activity: Talks and presentations › Conference presentations

Trends in Hearing (Journal)
Period: Aug 2017
Helia Relano Iborra (Reviewer)
Department of Electrical Engineering
Hearing Systems

Related journal
Trends in Hearing
2331-2165
Scopus rating (2016): CiteScore 3.61, Web of Science (2017): Indexed Yes
Indexed in DOAJ
Local database
Activity: Research › Peer review of manuscripts

Bielefeld University (External organisation)
Period: 31 Aug 2017
Tilmann Weber (Member)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds

Description
External reviewer of PhD thesis at the Center for Biotechnology (CeBiTec) at Bielefeld University

Related external organisation
Bielefeld University
Germany
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Biorefine-2G: From Waste Biomass To Biopolymers Using Yeast Cell Factories
Period: 31 Aug 2017
Vratislav Stovicek (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Yeast Metabolic Engineering
Degree of recognition: International

Related event
28th International Conference on Yeast Genetics and Molecular Biology
27/08/2017 → 01/09/2017
Prague, Czech Republic
Activity: Talks and presentations › Conference presentations

Conference: 4S/EASST 2017 Boston
Period: 31 Aug 2017 → 2 Sep 2017
Meiken Hansen (Speaker)
Per Dannemand Andersen (Other)
Department of Management Engineering
Technology and Innovation Management
Documents:
Hansen Andersen abstract 4S

Related event
4S/EASST 2017 Boston: Annual Meeting of the Society for Social Studies of Science (4S)
30/08/2017 → 02/09/2017
Boston, United States
Activity: Talks and presentations › Conference presentations

"Developing Theoretical "Beamlines" for Modern Experiments"
Period: 31 Aug 2017
Sonia Coriani (Invited speaker)
Department of Chemistry
Degree of recognition: International
Documents:
WATOC_Abstract_Coriani
Links:
http://www.watoc2017.com (Conference website)

Related event
The 11th Triennial Congress of the World Association of Theoretical and Computational Chemists
27/08/2017 → 01/09/2017
Munich, Germany
Activity: Talks and presentations › Conference presentations

EAAP 2017 Annual Meeting
Period: 31 Aug 2017
Dorte Lau Baggesen (Invited speaker)
National Food Institute

Description
Legislation as framework conditions and challenges for the upcoming insect industry

Related event
EAAP 2017 Annual Meeting: Safety, regulatory issues and consumer acceptance of insects
26/08/2017 → 01/09/2017
Tallinn, Estonia
Activity: Talks and presentations › Conference presentations

EAAP 2017 Annual Meeting: One-day insect seminar
Period: 31 Aug 2017
Annette Nygaard Jensen (Speaker)
National Food Institute
Research Group for Microbial Food Safety

Description
European Federation of Animal Science (EAAP)

Related event
EAAP 2017 Annual Meeting: Safety, regulatory issues and consumer acceptance of Insects
26/08/2017 → 01/09/2017
Tallin, Estonia
Activity: Talks and presentations › Conference presentations

TRANSFORM YOUR BUSINESS WITH BIG DATA – BUT MIND THE MENTAL GAP
Period: 31 Aug 2017
Pernille Rydén (Guest lecturer)
Center for Bachelor of Engineering Studies
Afdelingen for Forretningsudvikling
Degree of recognition: International
Links:
http://www.efzg.unizg.hr/default.aspx?id=28640 (Even description)

Related external organisation
University of Zagreb
Croatia
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Anode Catalyst Layer Contributing to the Overall Impedance of Polymer Electrolyte Membrane Electrolysis Cells during Water Electrolysis - A Hypothesis
Period: 30 Aug 2017
Katrine Elsøe (Guest lecturer)
Department of Energy Conversion and Storage

Related event
68th Annual Meeting of the International Society of Electrochemistry : Electrochemistry without Borders
27/08/2017 → 01/09/2017
Providence, United States
Activity: Talks and presentations › Conference presentations

Data-Driven Security-Constrained OPF
Period: 30 Aug 2017
Florian Thams (Guest lecturer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems

Description
Presentation of the accepted paper.
Degree of recognition: International

Related event
10th Bulk Power Systems Dynamics and Control Symposium
27/08/2017 → 01/09/2017
Espinho, Portugal
Activity: Talks and presentations › Conference presentations
Girls' Day in Science event. Mærsk Mc-Kinney Møller Science Center, Sørø, Denmark.
Period: 30 Aug 2017
Helene Faustrup Kildegaard (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: National

Related organisation

Girls' Day in Science event. Mærsk Mc-Kinney Møller Science Center, Sørø, Denmark.
Kildegaard, H. F. (Guest lecturer)
30 Aug 2017
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Test of universality of roughness length and displacement height formulations regarding stability
Period: 30 Aug 2017
Andrey Sogachev (Speaker)
Mark C. Kelly (Other)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International
Documents:
ICOS Nordic 2017

Related event

1st Nordic ICOS Symposium
29/08/2017 → 31/08/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Chairman PhD Assessment Committee
Period: 29 Aug 2017
Toke Rammer Nielsen (Internal examiner)
Department of Civil Engineering
Section for Building Energy
Degree of recognition: International
Activity: Examinations and supervision › Internal examination

Children's genuine participation and development of social Capital in the school setting
Period: 29 Aug 2017 → 1 Sep 2017
Nanna Wurr Stjernqvist (Speaker)
Nicole Thualagant (Speaker)
National Food Institute
Division of Risk Assessment and Nutrition

Description
This presentation presents the findings from a exploratory qualitative research study
Documents:
Presentation - Children's genuine participation and development of social capital in the school setting

Related organisation

Children's genuine participation and development of social Capital in the school setting
Stjernqvist, N. W. (Speaker), Nicole Thualagant (Speaker)
29 Aug 2017 → 1 Sep 2017
Activity: Talks and presentations › Conference presentations

**Journal of Aquatic Food Product Technology (Journal)**
Period: 29 Aug 2017
Ditte Baun Hermund (Reviewer)
National Food Institute
Research Group for Bioactives – Analysis and Application

**Related journal**

Journal of Aquatic Food Product Technology
1049-8850
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 0.59 SJR 0.268 SNIP 0.582, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed Yes
Central database
Activity: Research › Peer review of manuscripts

**Mobilitetspotentiale for Aarhus Letbane**
Period: 29 Aug 2017
Michael Bruhn Barfod (Guest lecturer)
Department of Management Engineering
Management Science
Transport DTU
Operations Management
Degree of recognition: National

**Related event**

**Trafikdage**
01/01/2000 → …
AUC
Activity: Talks and presentations › Conference presentations

**International workshop on marine geomicrobiology - A matter of energy**
Period: 28 Aug 2017 → 1 Sep 2017
Marlene Mark Jensen (Participant)
Department of Environmental Engineering
Water Technologies
Degree of recognition: International

**Related event**

**International workshop on marine geomicrobiology - A matter of energy**
28/08/2017 → 01/09/2017
Sønderborg, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Adaptive Laboratory Evolution of Saccharomyces cerevisiae Diploid Strains for Mannitol Utilization as a Carbon Source**
Period: 27 Aug 2017 → 1 Sep 2017
Javier Porcayo Loza (Speaker)
Uffe Hasbro Mortensen (Other)
Novo Nordisk Foundation Center for Biosustainability
Department of Biotechnology and Biomedicine
Crude oil reserves are becoming increasingly scarce, and biorefinery systems that integrate biomass conversion processes and equipment to produce fuels, power, and chemicals from annually renewable resources are a promising technology to move away from a petroleum-based society to a biomass-based society. One interesting biomass that has not been extensively utilized is marine biomass such as brown macroalgae (kelp). The composition of brown macroalgae includes up to 55% dry weight of the carbohydrates laminarin, mannitol and alginate, and it does not contain lignin. Hence, macroalgae are a very promising feedstock for microbial conversion of all carbohydrates into biofuels and valuable chemicals. Despite the presence of this native catabolic pathway, many yeast strains cannot catabolize mannitol or require adaptation to do so.

In this study a screening of thirty six strains, isolated from different sources, was performed. The strains were grown on complex and minimal media with mannitol as a main carbon source. Fifteen strains showed growth on complex media-mannitol (CM-mannitol) and just three diploid strains were capable to growth on minimal media-mannitol (MM-mannitol). After a couple of months of Adaptive Laboratory Evolution (ALE) three Saccharomyces cerevisiae diploid strains (YPS606, RM11 and T7) were successfully adapted to grow on MM-mannitol. Despite the efforts, the laboratory CENPK113-7D strain was unable to utilize this sugar alcohol as a carbon source.

Degree of recognition: International
Documents:
Poster_jplo

**Related event**

28th International Conference on Yeast Genetics and Molecular Biology
27/08/2017 → 01/09/2017
Prague, Czech Republic
Activity: Talks and presentations › Conference presentations

**Poster Presentation:** "Pre-turbo SCR catalyst for NOx removal on Ships"
Period: 27 Aug 2017 → 31 Aug 2017
Steen Müller Christensen (Guest lecturer)
Brian Brun Hansen (Guest lecturer)
Keld Johansen (Guest lecturer)
Anker Degn Jensen (Guest lecturer)
Department of Chemical and Biochemical Engineering
CHEC Research Centre
Documents:
Abstract

**Related event**

13th European Congress on Catalysis (EUROPACAT 2017)
27/08/2017 → 31/08/2017
Florence, Italy
Activity: Talks and presentations › Conference presentations

**The 11th Triennial Congress of the World Association of Theoretical and Computational Chemists**
Period: 27 Aug 2017 → 1 Sep 2017
Sonia Coriani (Participant)
Department of Chemistry
Degree of recognition: International
Links:
http://www.watoc2017.com/ (Conference websit)

**Related event**

The 11th Triennial Congress of the World Association of Theoretical and Computational Chemists
27/08/2017 → 01/09/2017
Munich, Germany
Activity: Attending an event › Participating in or organising a conference
The 15th International Conference on Advanced Materials IUMRS-ICAM
Period: 27 Aug 2017 → 1 Sep 2017
Ngo Van Nong (Organizer)
Department of Energy Conversion and Storage
Electrofunctional materials

Related event

The 15th International Conference on Advanced Materials IUMRS-ICAM
27/08/2017 → …
Kyoto, Japan
Activity: Attending an event › Participating in or organising a conference

European Society of Cardiology
Period: 26 Aug 2017 → 30 Aug 2017
Signe Holm Nielsen (Organizer)
Department of Biotechnology and Biomedicine
Disease Systems Immunology
Degree of recognition: International

Related event

European Society of Cardiology
26/08/2017 → 30/08/2017
Barcelona, Spain
Activity: Attending an event › Participating in or organising a conference

"Exploring local and ultrafast spectroscopic effects by ab initio methods"
Period: 24 Aug 2017
Sonia Coriani (Invited speaker)
Department of Chemistry
Degree of recognition: International

Related event

COST EUSPEC Workshop and School "Xtram17 - XUV time resolved advanced methods" : experiments and ab-initio modeling
23/08/2017 → 28/08/2017
Erice, Italy
Activity: Talks and presentations › Conference presentations

Microscopy Conference 2017
Period: 24 Aug 2017
Christian Danvad Damsgaard (Chairman)
Center for Electron Nanoscopy
DTU Danchip
Department of Physics
Experimental Surface and Nanomaterials Physics
Description
co-chairing the MS 6 session Nanoparticles, 2D materials, nanocomposites and catalysts http://www.mc2017.ch/
Degree of recognition: International

Related event

Microscopy Conference 2017
Annual Danish Bioinformatics Conference 2017
Period: 23 Aug 2017 → 24 Aug 2017
Lasse Westergaard Folkersen (Organizer)
Department of Bio and Health Informatics
Integrative Systems Biology
Description
Organizer, Elixir-DK 2017
Links:
http://elixir-node.cbs.dtu.dk

Related event
Annual Danish Bioinformatics Conference 2017: Elixir
23/08/2017 → 25/08/2017
Odense, Denmark
Activity: Attending an event › Participating in or organising a conference

Data-driven approach for auditory profiling
Raul Sanchez Lopez (Guest lecturer)
Federica Bianchi (Guest lecturer)
Michal Fereczkowski (Guest lecturer)
Sébastien Santurette (Guest lecturer)
Torsten Dau (Guest lecturer)
Department of Electrical Engineering
Hearing Systems
Description
Nowadays, the pure-tone audiogram is the main tool used to characterize hearing loss and to fit
hearing aids. However, the perceptual consequences of hearing loss are typically associated not only with a loss of
sensitivity, but also with a clarity loss that is not captured by the audiogram. Detailed characterization of hearing loss has
to be simplified to efficiently investigate the specific compensation needs of individual listeners. We hypothesized that any
listeners' hearing can be characterized along two dimensions of distortion: type I and type II. While type I can be linked
to factors affecting audibility, type II reflects non-audibility-related distortions. To test our hypothesis, the individual
performance data from two previous studies was re-analyzed using archetypal analysis. Unsupervised learning was used
to identify extreme patterns in the data which form the basis for different auditory profiles.
Next, a decision tree was determined to classify the listeners into one of the profiles. The new analysis provides evidence
for the existence of four profiles in the data. The most significant predictors for profile identification were related to binaural
processing, auditory non-linearity, and speech perception. The current approach is promising for analyzing other existing
data sets in order to select the most relevant tests for auditory profiling.

Degree of recognition: International

Related event
International Symposium on Auditory and Audiological Research
23/08/2017 → 25/08/2017
Nyborg, Denmark
Activity: Talks and presentations › Conference presentations

The use of Risk Assessment to support control of Salmonella in pork
Period: 23 Aug 2017
Maarten Nauta (Keynote speaker)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International
Links:

Related event

SAFEPORK 2017
21/08/2017 → 24/08/2017
Foz do Iguacu, Brazil
Activity: Talks and presentations › Conference presentations

CRISPR Tools for CHO Cell Engineering. 9th Bioprocessing Summit, Boston, USA.
Period: 22 Aug 2017
Helene Fastrup Kildegaard (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: International

Related organisation

CRISPR Tools for CHO Cell Engineering. 9th Bioprocessing Summit, Boston, USA.
Kildegaard, H. F. (Invited speaker)
22 Aug 2017
Activity: Talks and presentations › Conference presentations

ESEB 2017
Period: 22 Aug 2017
Ákos T. Kovács (Chairman)
Department of Biotechnology and Biomedicine

Description
Symposium 15: Experimental evolution in complex environments
Degree of recognition: International

Related event

ESEB 2017: Congress of the European Society of Evolutionary Biology
20/08/2017 → 25/08/2017
Groningen, Netherlands
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

In situ microscopy of formation of nickel-based bimetallic nanoparticles
Period: 22 Aug 2017
Christian Danvad Damsgaard (Other)
Center for Electron Nanoscopy
DTU Danchip
Department of Physics
Experimental Surface and Nanomaterials Physics

Description
poster presentation http://www.mc2017.ch/
Degree of recognition: International

Related event

Microscopy Conference 2017
21/08/2017 → 25/08/2017
Lausanne, Switzerland
Activity: Talks and presentations › Conference presentations

**Sustainable solutions for risky problems in urban water management**
Period: 22 Aug 2017
Hjalte Jomo Danielsen Sørup (Speaker)
Department of Environmental Engineering
Urban Water Systems

**Related organisation**

**Sustainable solutions for risky problems in urban water management**
Sørup, H. J. D. (Speaker)
22 Aug 2017
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

**ICED17: 21st International Conference on Engineering Design**
Anja Maier (Chairman)
Department of Management Engineering
Engineering Systems
Copenhagen Center for Health Technology
Degree of recognition: International
Links:
http://www.iced17.org

**Related event**

**ICED17: 21st International Conference on Engineering Design**
21/08/2017 → 25/08/2017
Vancouver, Canada
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Toxoplasma gondii and the role of pork**
Period: 21 Aug 2017
Sara Monteiro Pires (Speaker)
National Food Institute
Research Group for Risk-Benefit

**Description**
Overview of the global and regional burden of disease of toxoplasmosis and the need for studies estimating the relative role of the most important sources of infection
Degree of recognition: International

**Related event**

**12th SafePork: 12th International Symposium on the Epidemiology and Control of Biological, Chemical and Physical Hazards in Pigs and Pork**
21/08/2017 → 24/08/2017
Foz de Iguacu, Brazil
Activity: Talks and presentations › Conference presentations

**25th Colloquium on High Resolution Molecular Spectroscopy**
Period: 20 Aug 2017 → 25 Aug 2017
René Wugt Larsen (Participant)
Department of Chemistry
Nowadays, the pure-tone audiogram is the main tool used to characterize the degree of hearing loss and to fit hearing aids. However, the perceptual consequences of a hearing loss are typically associated not only with a loss of sensitivity, but also with a loss of clarity (distortion loss) that is not captured by the audiogram. Detailed characterization of hearing deficits can be complex and it has to be simplified in order to efficiently investigate the specific compensation needs of individual listeners. The aim of this study is to characterize individual hearing deficits by means of a test battery that allows to capture the diverse aspects of hearing loss, considering not only the loss of sensitivity but also supra-threshold distortions.

It was hypothesized that any listeners’ hearing can be characterized along two dimensions: distortion type I and distortion type II. While distortion type I can be linked to factors affecting audibility, distortion type II is considered as a non-audibility-related distortion, or clarity loss. To evaluate our hypothesis, the data from two studies was re-analyzed using a data-driven approach. Both studies carried out an extensive battery of psychoacoustic tests on potential hearing-aid users. The new analysis was based on an archetypal analysis and uses unsupervised learning to identify extreme patterns in the data which provide the basis for different auditory profiles. Subsequently, a decision tree was obtained that enables a simple classification of the listeners into one of the profiles. This novel approach provided evidence for the existence of four different “auditory profiles” in the data. The most significant predictors for the profile identification were related to temporal processing, peripheral compression, and speech perception. The current approach is promising for identifying the most relevant tests for auditory profiling and considering new fitting strategies based on the individual’s deficits.
individual listeners. The aim of this study is to characterize individual hearing deficits by means of a test battery that allows to capture the diverse aspects of hearing loss, considering not only the loss of sensitivity but also supra-threshold distortions.

It was hypothesized that any listeners’ hearing can be characterized along two dimensions: distortion type I and distortion type II. While distortion type I can be linked to factors affecting audibility, distortion type II is considered as a non-audibility-related distortion, or clarity loss. To evaluate our hypothesis, the data from two studies was re-analyzed using a data-driven approach. Both studies carried out an extensive battery of psychoacoustic tests on potential hearing-aid users. The new analysis was based on an archetypal analysis and uses unsupervised learning to identify extreme patterns in the data which provide the basis for different auditory profiles. Subsequently, a decision tree was obtained that enables a simple classification of the listeners into one of the profiles.

This novel approach provided evidence for the existence of four different “auditory profiles” in the data. The most significant predictors for the profile identification were related to temporal processing, peripheral compression, and speech perception. The current approach is promising for identifying the most relevant tests for auditory profiling and considering new fitting strategies based on the individual’s deficits.

Degree of recognition: International

**Related event**

19/08/2017 → 19/08/2017
Stockholm, Sweden
Activity: Talks and presentations › Conference presentations

**Værdisætning af nordisk lys**
Period: 19 Aug 2017 → 20 Aug 2017
Anders Thorseth (Organizer)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: National

**Related event**

**Værdisætning af nordisk lys**
19/08/2017 → 20/08/2017
Roskilde, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Bacterial Electrocatalysis of K4[Fe(CN)6] Oxidation**
Period: 17 Aug 2017 → 20 Aug 2017
Zhiyong Zheng (Invited speaker)
Department of Chemistry
NanoChemistry

**Description**
The Sixteenth International Symposium on Electroanalytical Chemistry (16th ISEAC)
Degree of recognition: International
Documents:
Tentative Program-0719
Links:
http://iseac2017.csp.escience.cn/dct/page/1

**Related event**

**The Sixteenth International Symposium on Electroanalytical Chemistry**
17/08/2016 → 20/08/2017
Changchun, China
Activity: Talks and presentations › Conference presentations

**Nordisk Historikermøde**
Period: 17 Aug 2017
Louise Karlskov Skyggebjerg (Speaker)
Department of Physics
Degree of recognition: International
Documents:
Abstract
Links:
http://www.cgs.aau.dk/forskning/konferencer/nhm

Related event

Nordisk historikermøde
15/08/2017 → 18/08/2017
Aalborg, Denmark
Activity: Talks and presentations › Conference presentations

University of Florence
Period: 15 Aug 2017 → 14 Sep 2017
Anne Elisabeth Haxthausen (Visiting researcher)
Department of Applied Mathematics and Computer Science
Software Engineering

Description
Guest professor
Activity: Visiting an external institution › Visiting another research institution

Blockchain Summer School 2017
Period: 14 Aug 2017 → 18 Aug 2017
Dominik Franjo Dominkovic (Participant)
Department of Energy Conversion and Storage

Description
Successfully participated in the summer school
Degree of recognition: International

Related event

Blockchain Summer School 2017
14/08/2017 → 18/08/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Nordic Fire and Safety Days 2017
Period: 14 Aug 2017 → 15 Aug 2017
Frank Markert (Organizer)
Department of Civil Engineering
Section for Building Design
Degree of recognition: International

Related event

Nordic Fire and Safety Days 2017
17/08/2017 → 18/08/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising a conference

Petr Štěpánek
Start date: 14 Aug 2017 → 18 Aug 2017
Sonia Coriani (Host)
Plasmid Host Range (Permissiveness) in Microbial Communities across Urban Water Systems
Period: 13 Aug 2017 → 17 Aug 2017
Barth F. Smets (Invited speaker)
Arnaud Dechesne (Other)
Liguan Li (Other)
Søren Johannes Sørensen (Other)
Jonas S. Madsen (Other)

Department of Environmental Engineering
Water Technologies
Degree of recognition: International

Related event

4th International Symposium on the Environmental Dimension of Antibiotic Resistance
13/08/2017 → 17/08/2017
Lansing, MI, United States
Activity: Talks and presentations › Conference presentations

Indonesia Development Forum
Period: 9 Aug 2017 → 10 Aug 2017
Angreine Kewo (Invited speaker)

Department of Management Engineering
Systems Analysis

Description
The Indonesia Development Forum (IDF) is a platform for Indonesian leaders in government, private sector, academia, and other members of society to collaborate to shape Indonesia’s development agendas. This platform is initiated by Bappenas.
Degree of recognition: International

Related event

Indonesia Development Forum
09/08/2017 → 10/08/2017
Jakarta, Indonesia
Activity: Talks and presentations › Conference presentations

Period: 7 Aug 2017
Zhe Zhang (Invited speaker)

Department of Electrical Engineering
Electronics
Degree of recognition: International

Related event

07/08/2017 → 07/08/2017
Activity: Talks and presentations › Conference presentations
77th Annual Meeting of The Academy of Management (Event)
Period: 4 Aug 2017
Francesco Rosati (Participant)
Department of Management Engineering
Technology and Innovation Management

Description
AOM 2017 Joint SIM-ONE Junior Faculty Consortium
Degree of recognition: International

Related event
77th Annual Meeting of The Academy of Management: At the Interface
04/08/2017 → 08/08/2017
Atlanta, United States
Activity: Membership › Membership of research networks or expert groups

Academy of Management 2017 (Event)
Period: 3 Aug 2017
Pernille Rydén (Participant)
Center for Bachelor of Engineering Studies
Afdelingen for Forretningsudvikling
Degree of recognition: International

Related event
Academy of Management 2017: At the Interface
04/08/2017 → 08/08/2017
Atlanta, United States
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Coupled cluster beamlines for modern experiments
Period: 3 Aug 2017
Sonia Coriani (Invited speaker)
Department of Chemistry
Degree of recognition: International

Related event
New Developments in Coupled Cluster Theory
31/07/2017 → 04/08/2017
Telluride, United States
Activity: Talks and presentations › Conference presentations

Invited speech at Zhejiang University: New research progress in power electronics with wide bandgap devices
Period: 2 Aug 2017
Zhe Zhang (Invited speaker)
Department of Electrical Engineering
Electronics

Description
Invited speech at Zhejiang University
Degree of recognition: International

Related external organisation
Zhejiang University
China
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities
Ergonomics as a design discipline: Redesigning a local control room in an oil industry
Period: 1 Aug 2017
Daniel Braatz (Lecturer)
Ole Broberg (Lecturer)
Department of Management Engineering
Engineering Systems

Description
Workshop

Related event
12th International Symposium on Human Factors in Organizational Design and Management
31/07/2017 → 03/08/2017
Banff, Canada
Activity: Talks and presentations › Conference presentations

Genome dynamics of vancomycin-resistant Enterococcus faecium in clinical samples
Period: 1 Aug 2017 → 1 Feb 2018
Valeria Bortolaia (Supervisor)
National Food Institute
Research Group for Genomic Epidemiology

Description
Master project by Yasmin Kamel
Degree of recognition: International
Activity: Examinations and supervision › Supervisor activities

Energy Efficiency (Journal)
Period: Jul 2017
Toke Rammer Nielsen (Reviewer)
Department of Civil Engineering
Section for Building Energy

Related journal
Energy Efficiency
1570-646X
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 1.43 SJR 0.74 SNIP 0.816, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed Yes
Central database
Activity: Research › Peer review of manuscripts

Progress of SOFC/SOEC Development at DTU Energy: From Materials to Systems
Period: Jul 2017
Anke Hagen (Guest lecturer)
Peter Vang Hendriksen (Other)
Department of Energy Conversion and Storage
Applied Electrochemistry
Mixed Conductors

Related event
15th International Symposium on Solid Oxide Fuel Cells (SOFC-XV)
23/07/2017 → 28/07/2017
Density-Functional Theory and Beyond
Period: 31 Jul 2017 → 12 Aug 2017
Adam Paul Karcz (Participant)
Max Schumann (Participant)
Department of Chemical and Biochemical Engineering
CHEC Research Centre

Description
The discovery of novel materials is key on the route to face global challenges like quest for efficient and sustainable use of energy resources. Computational approaches play a central role here as they allow us to explore uncharted territory in chemical and materials space, for example in order to develop novel batteries, highly efficient solar cells, stable biocatalysts, or carbon dioxide fixation strategies.

Novel Materials Discovery by Learning from Electronic-Structure Theory is going to be a central theme of this summer school, we will educate young scientists in the basics and recent advances of electronic-structure theory. The focus will be in particular on density-functional theory (DFT), but also topics beyond DFT will be covered: ab initio thermodynamics and statistical mechanics, excited-state properties, nuclear quantum effects, multi-scale modeling, and machine learning approaches to potential parametrization, Big-Data dimensionality reduction, and property prediction. Such methods are widely applicable from biophysics to materials science and are a driving force for the discovery and design of molecules and materials. During this event, we will discuss the underlying concepts and thereby raise awareness for success stories, problems, and current challenges.

The workshop features morning lectures that introduce basics and advanced topics. In the afternoons, participants will gain experience in hands-on sessions guided by skilled tutors. The main computational workhorse for the afternoon sessions will be the FHI-aims all-electron code, which embodies all necessary methods. The overall workshop, however, is not designed to teach a single code, but rather to introduce scientific concepts.

Degree of recognition: International

Related event
Density-Functional Theory and Beyond: Accuracy, Efficiency and Reproducibility in Computational Materials Science
31/07/2017 → 12/08/2017
Berlin, Germany
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

New Developments in Coupled Cluster Theory
Period: 31 Jul 2017 → 4 Aug 2017
Sonia Coriani (Participant)
Department of Chemistry
Degree of recognition: International

Related event
New Developments in Coupled Cluster Theory
31/07/2017 → 04/08/2017
Telluride, United States
Activity: Attending an event › Participating in or organising a conference

International Congress of History of Science and Technology (ICHST)
Period: 29 Jul 2017
Louise Karlskov Skyggebjerg (Speaker)
Department of Physics
Degree of recognition: International
Documents:
Abstract
Links:
http://www.ichst2017.sbhc.org.br/

Related event
A Scalable Neuro-inspired Robot Controller Integrating a Machine Learning Algorithm and a Spiking Cerebellar-Like Network
Period: 28 Jul 2017
Silvia Tolu (Speaker)
Henrik Hautop Lund (Other)
Department of Electrical Engineering
Automation and Control
Centre for Playware
Centre for Playware

Description
Conference on Biomimetic and Biohybrid Systems
Living Machines 2017
Degree of recognition: International

Related event
Living Machines 2017
25/07/2017 → 28/07/2017
Stanford, United States
Activity: Talks and presentations › Conference presentations

Chairman PhD Assessment Committee
Period: 27 Jul 2017
Toke Rammer Nielsen (Internal examiner)
Department of Civil Engineering
Section for Building Energy
Degree of recognition: International
Activity: Examinations and supervision › Internal examination

Accuracy of coastal wind speed gradients from Synthetic Aperture Radar by comparisons with scanning lidars
Period: 26 Jul 2017 → 29 Jul 2017
Tobias Torben Ahsbahs (Speaker)
Merete Badger (Speaker)
Ioanna Karagali (Speaker)
Xiaoli Guo Larsén (Speaker)
Department of Wind Energy
Meteorology & Remote Sensing
Resource Assessment Modelling
Degree of recognition: International
Documents: presentation_WESC_2017_TTAH

Related event
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations
INFORMS Healthcare 2017
Period: 26 Jul 2017 → 28 Jul 2017
Anders Reenberg Andersen (Guest lecturer)
Department of Management Engineering
Management Science
Degree of recognition: International

Related event

INFORMS Healthcare 2017: Optimizing Operations & Outcomes
26/07/2017 → 28/07/2017
Rotterdam, Netherlands
Activity: Talks and presentations › Conference presentations

Metod for monitoring bacteria from air samples
Period: 26 Jul 2017
Julia Christensen (Speaker)
Research Group for Diagnostic Engineering
Division of Food Microbiology
National Food Institute
Division of Risk Assessment and Nutrition
Degree of recognition: Local

Related event

Metod for monitoring bacteria from air samples
26/07/2017 → 26/07/2017
København
Activity: Talks and presentations › Conference presentations

Presentation title: "A valence force field-Monte Carlo algorithm for quantum dot growth modeling".
Period: 24 Jul 2017 → 28 Jul 2017
Shima Kadkhodazadeh (Other)
Elizaveta Semenova (Other)
Morten Willatzen (Other)
Alessandro Pecchia (Other)
Matthias Auf de Maur (Other)
Daniele Barettin (Speaker)
Center for Electron Nanoscopy
DTU Danchip
Department of Photonics Engineering
Nanophotonic Devices
Centre of Excellence for Silicon Photonics for Optical Communications
Degree of recognition: International
Documents: nusod17paper59
Links:

Related event

17th International Conference on Numerical Simulation of Optoelectronic Devices (NUSOD17)
24/07/2017 → 28/07/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

**Quantifying Biochemical Activities in Living Cells with $^{13}$C dDNP NMR**
Period: 24 Jul 2017
Mathilde Hauge Lerche (Invited speaker)
Magnus Karlsson (Other)
Jan Henrik Ardenkjær-Larsen (Other)
Pernille Rose Jensen (Other)
Andrea Capozzi (Other)
Center for Hyperpolarization in Magnetic Resonance
Department of Electrical Engineering
Center for Magnetic Resonance
Degree of recognition: International
Documents:
ismar2017_Mathilde_Hauge_Lerche

**Related event**

International Society of Magnetic Resonance
23/08/2017 → 28/08/2017
Quebec City, Canada
Activity: Talks and presentations › Conference presentations

**ICoN5: 5th International Conference on Nitrification**
Period: 23 Jul 2017 → 27 Jul 2017
Carlos Domingo-Felez (Participant)
Department of Environmental Engineering
Water Technologies

**Related event**

ICoN5: 5th International Conference on Nitrification
23/07/2017 → 27/07/2017
Vienna, Austria
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**N2O dynamics of N-transforming microbial communities: from mechanistic insights to full-scale process control**
Period: 23 Jul 2017 → 27 Jul 2017
Barth F. Smets (Invited speaker)
Department of Environmental Engineering
Water Technologies
Degree of recognition: International
Links:
https://icon5.univie.ac.at/welcome/

**Related event**

ICoN5: 5th International Conference on Nitrification
23/07/2017 → 27/07/2017
Vienna, Austria
Activity: Talks and presentations › Conference presentations

**Thermoneutral Operation of Solid Oxide Electrolysis Cells in Potentiostatic Mode**
Period: 23 Jul 2017 → 28 Jul 2017
Ming Chen (Other)
Mixed Conductors

Related event

15th International Symposium on Solid Oxide Fuel Cells (SOFC-XV)
23/07/2017 → 28/07/2017
Hollywood, United States
Activity: Talks and presentations › Conference presentations

Functional modelling in the operation of a cyber physical energy system
Period: 19 Jul 2017
Theis Bo Rasmussen (Guest lecturer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems

Related event

2017 IEEE PES General Meeting
16/07/2017 → 20/07/2017
Chicago, United States
Activity: Talks and presentations › Conference presentations

Protection System Performance in Weak AC Grids through HIL Tests
Period: 19 Jul 2017
Jundi Jia (Guest lecturer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems

Related event

2017 IEEE PES General Meeting
16/07/2017 → 20/07/2017
Chicago, United States
Activity: Talks and presentations › Conference presentations

Retinoic acid signalling is required for the pathogenicity of effector CD4+ T cells during the development of intestinal inflammation.
Period: 19 Jul 2017
Aymeric Marie Christian Rivollier (Guest lecturer)
National Veterinary Institute
Mucosal Immunology

Description
18th International Congress of Mucosal Immunology (ICMI 2017), Washington DC, USA - July 2017
18th International Congress of Mucosal Immunology
19/07/2017 → 22/07/2017
Washington DC, United States
Activity: Talks and presentations › Conference presentations

IFORS 2017
Period: 17 Jul 2017 → 21 Jul 2017
Ignacio Blanco (Speaker)
Daniela Guericke (Other)
Department of Applied Mathematics and Computer Science
Dynamical Systems
Degree of recognition: International

Tramp ship routing and scheduling with voyage separation requirements
Period: 17 Jul 2017
Jesper Larsen (Guest lecturer)
Charlotte Vilhelmsen (Other)
Richard Martin Lusby (Other)
Department of Management Engineering
Management Science
Transport DTU
Operations Research

Description
This presentation addresses a tramp routing and scheduling problem. Tramp ships operate like taxies by following the available demand, as opposed to liner ships that operate like busses on a fixed route network according to a published timetable. Tramp operators determine some of the demand in advance by ensuring long-term contracts. The rest of the demand comes from optional voyages found in the spot market. Routing and scheduling a tramp feet to best utilize feet capacity according to the current demand is therefore an ongoing and complicated problem. We add further complexity by incorporating voyage separation requirements that enforce a minimum time spread between some voyages. We developed a new and exact Branch-and-Price procedure for this problem. A dynamic programming algorithm generates columns, while a novel time window branching scheme is used to enforce the voyage separation requirements. Computational results show that the algorithm finds optimal solutions very quickly for the vast majority of test instances. We compare the results with two earlier published methods and show that our Branch-and-Price approach outperforms both an a priori path generation method and an Adaptive Large Neighbourhood Search heuristic.
Degree of recognition: International

IFORS 2017: 21st Conference of the International Federation of Operations and Research
17/07/2017 → 21/07/2017
Québec City, Canada
Activity: Talks and presentations › Conference presentations

Ultrafast Nonlinear Response of Silicon Carbide to Intense THz Fields
Period: 17 Jul 2017
Abebe Tilahun Tarekegne (Guest lecturer)
Climate-KIC PhD Summer School Urban Transition Amsterdam-Bologna 2017
Period: 16 Jul 2017 → 30 Jul 2017
Dominik Franjo Dominkovic (Participant)
Department of Energy Conversion and Storage

Description
Successfully participated in the summer school.
Degree of recognition: International

Related event
Climate-KIC PhD Summer School Urban Transition Amsterdam-Bologna 2017
16/07/2017 → 30/07/2017
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Evolutionary Computation in Computational Biology (2017)
Period: 16 Jul 2017
Mostafa M Hashim Ellabaan (Organizer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Bacterial Synthetic Biology

Related event
Evolutionary Computation in Computational Biology (2017)
16/07/2017 → 16/07/2017
Berlin, Germany
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Gordons Research Seminar
Period: 16 Jul 2017 → 23 Aug 2017
Signe Holm Nielsen (Organizer)
Department of Biotechnology and Biomedicine
Disease Systems Immunology

Related event
Gordons Research Seminar: Collagens
16/07/2017 → 22/07/2017
New London, United States
Activity: Attending an event › Participating in or organising a conference

Molecular memetic optimization for biomolecular systems
Period: 16 Jul 2017
Mostafa M Hashim Ellabaan (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Bacterial Synthetic Biology

Related event

**Evolutionary Computation in Computational Biology (2017)**
Period: 16/07/2017 → 16/07/2017
Berlin, Germany
Activity: Talks and presentations › Conference presentations

The Genetic and Evolutionary Computation Conference (2017)
Period: 15 Jul 2017 → 19 Jul 2017
Berlin, Germany
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

1st Summer School on Complex Fluid-Flows in Microfluidics
Period: 14 Jul 2017
Kristian Ejlebjærg Jensen (Speaker)
Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics
Department of Micro- and Nanotechnology
Nanoprobes
Links:
http://galindorosales.com/SummerSchool2017/Programme.html

Related external organisation

Campus da Faculdade de Engenharia da Universidade do Porto
Portugal
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Networks: from physical entities to software processes in virtual environments
Period: 14 Jul 2017
José Soler (Speaker)
Department of Photonics Engineering
Networks Technology and Service Platforms

Description
Invited lecture at the postgraduate lectures session in the Computer Science Faculty at Complutense University of Madrid.Networks: from physical entities to software processes in virtual environments

Related event

Networks: from physical entities to software processes in virtual environments: Invited lecture at the Postgraduate lectures session.
14/07/2017 → 14/07/2017
Madrid, Spain
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities
4th antiSMASH hackathon
Period: 12 Jul 2017 → 13 Jul 2017
Tilmann Weber (Participant)
Kai Blin (Participant)
Simon Shaw (Participant)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International

Related event
4th antiSMASH hackathon
12/07/2017 → 13/07/2017
Wageningen, Netherlands
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

EU capacity building projects: ENGAGE and COMPARE
Period: 12 Jul 2017
Valeria Bortolaia (Guest lecturer)
National Food Institute
Research Group for Genomic Epidemiology
Degree of recognition: International

Related event
Genomics in foodborne pathogen surveillance and outbreak investigation: INNUENDO summer course
12/07/2017 → 13/07/2017
Vitoria-Gasteiz, Spain
Activity: Talks and presentations › Conference presentations

Innovation on Big Data for Healthy Living
Period: 12 Jul 2017
Lasse Westergaard Folkersen (Invited speaker)
Department of Bio and Health Informatics
Integrative Systems Biology

Description

Links:
http://www.biohealth-computing.eu/innovation-on-big-data-for-healthy-living/

Related event
IBD4Health
12/07/2017 → 12/07/2017
Geneva, Switzerland
Activity: Talks and presentations › Conference presentations

Phenotype prediction using WGS data: resistome and virulome
Period: 12 Jul 2017
Valeria Bortolaia (Guest lecturer)
National Food Institute
Research Group for Genomic Epidemiology
Degree of recognition: International
Related event

Genomics in foodborne pathogen surveillance and outbreak investigation: INNUENDO summer course
12/07/2017 → 13/07/2017
Vitoria-Gasteiz, Spain
Activity: Talks and presentations › Conference presentations

In situ Characterization of Heterogeneous Catalysts
Period: 11 Jul 2017
Christian Danvad Damsgaard (Invited speaker)
Department of Physics
Center for Electron Nanoscopy
DTU Danchip
Experimental Surface and Nanomaterials Physics

Description
Invited talk
Degree of recognition: International
Documents:
conference abstract for conference. Fimpart2017
Links:
http://www.fimpart.org/2017/wp/

Related event

Frontiers in Materials Processing Applications, Research and Technology: Enabling innovation
09/07/2017 → 12/07/2017
Bordeaux, France
Activity: Talks and presentations › Conference presentations

Microbial Population Biology
Period: 11 Jul 2017
Morten Otto Alexander Sommer (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology

Description
Collateral Sensitivity and Evolution of Antibiotic Resistance
Degree of recognition: International

Related event

Microbial Population Biology: Gordon Research Conference
09/07/2017 → 14/07/2017
Andover, NH, United States
Activity: Talks and presentations › Conference presentations

Friedrich-Schiller-Universität Jena (External organisation)
Period: 10 Jul 2017
Tilmann Weber (Member)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds

Description
External reviewer of PhD thesis at the Faculty of Biology and Pharmacy / Hans Knöll Institute

Related external organisation
Diversity, structure, and novel physiologies in microbial communities in rapid sand filters
Period: 9 Jul 2017 → 13 Jul 2017
Barth F. Smets (Invited speaker)
Arda Gülay (Other)
Alejandro Palomo (Other)
Jane Fowler (Other)
Thomas Sicheritz-Pontén (Other)
Department of Environmental Engineering
Water Technologies
Department of Bio and Health Informatics
Metagenomics
Degree of recognition: International

Related event
FEMS 2017
09/07/2017 → 13/07/2017
Valencia, Spain
Activity: Talks and presentations › Conference presentations

FEMS 2017
Period: 9 Jul 2017 → 13 Jul 2017
Lumeng Ye (Other)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology
Degree of recognition: International
Links:
http://www.fems-microbiology2017.kenes.com/

Related event
FEMS 2017
09/07/2017 → 13/07/2017
Valencia, Spain
Activity: Talks and presentations › Conference presentations

Induration and Biot's Coefficient of Palaeogene Limestone
Period: 9 Jul 2017 → 13 Jul 2017
Katrine Alling Andreassen (Speaker)
Department of Civil Engineering
Section for Geotechnics and Geology
Center for Energy Resources Engineering
Degree of recognition: International

Related event
6th Biot Conference on Poromechanics
09/07/2017 → 13/07/2017
Paris, France
Activity: Talks and presentations › Conference presentations
Functional diblock copolymers and ABC stars: synthesis, properties and potential applicability
Period: 7 Jul 2017
Kristoffer Almdal (Speaker)
Sergey Chernyy (Other)
Lars Schulte (Other)
Jacob Judas Kain Kirkensgaard (Other)
Kell Mortensen (Other)
Center for Nanostructured Graphene
Department of Micro- and Nanotechnology
Amphiphilic Polymers in Biological Sensing
Self-Organized Nanoporous Materials
Degree of recognition: International
Documents:
kral_Abstract_EPF_2017_2

Related event
European Polymer Federation Congress 2017
02/07/2017 → 07/07/2017
Lyon, France
Activity: Talks and presentations › Conference presentations

30th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems
Period: 5 Jul 2017
Dominik Franjo Dominkovic (Speaker)
Department of Energy Conversion and Storage
Description
Gave a presentation on: "A multi-objective energy planning including system exergy efficiency and socio-economic costs"
Degree of recognition: International

Related event
30th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems
02/07/2017 → 06/07/2017
San Diego, United States
Activity: Talks and presentations › Conference presentations

Proposing a Central AEC Ontology That Allows for Domain Specific Extensions
Period: 5 Jul 2017
Mads Holten Rasmussen (Speaker)
Department of Civil Engineering
Section for Building Design
Description
A minimal ontology describing building topology.
Degree of recognition: International
Documents:
Slides

Related event
The 34th CIB W78 Information Technology for Construction Conference: JC3 - The Joint Conference on Computing in Construction
04/07/2017 → 07/07/2017
Heraklion, Greece
Activity: Talks and presentations › Conference presentations
Change or be changed: Resilience in socio-technical systems (Event)
Period: 4 Jul 2017
Anja Maier (External examiner)
Department of Management Engineering
Engineering Systems
Copenhagen Center for Health Technology

Description
University of Cambridge, Department of Engineering, Engineering Design Centre

Censor for PhD project

Body type: PhD Assessment Committee
Degree of recognition: International
Activity: Examinations and supervision › External examination

IAM 2017 Summer Conference
Period: 4 Jul 2017 → 7 Jul 2017
Evita Milana (Speaker)
Department of Management Engineering
Technology and Innovation Management

Description
Paper presentation

Related event
IAM 2017 Summer: International Conference on Innovation and Management
04/07/2017 → 07/07/2017
Activity: Talks and presentations › Conference presentations

INRA Institut National de La Recherche Agronomique (External organisation)
Period: 4 Jul 2017
Maarten Nauta (Participant)
National Food Institute
Research Group for Risk-Benefit

Description
Jury Member PhD examination committee (rapporteur) Geraldine Boue, Nantes, France. Thesis "Public Health Risk-Benefit Assessments of Foods"
Degree of recognition: International

Related external organisation
INRA Institut National de La Recherche Agronomique
France
Activity: Membership › Membership in review committee

The 34th CIB W78 Information Technology for Construction Conference
Period: 4 Jul 2017 → 12 Jul 2017
Mads Holten Rasmussen (Speaker)
Department of Civil Engineering
Section for Building Design
Degree of recognition: International
Electrochemical Catalysis of Inorganic Complex $K_4[Fe(CN)]_6$ by *Shewanella oneidensis* MR-1

Period: 2 Jul 2017 → 5 Jul 2017

Zhiyong Zheng (Other)
Department of Chemistry
NanoChemistry

*Description*

The interaction between metal and bacteria is a universal and important biogeochemical process in environment. As a dissimilatory metal reduction bacteria, the electrochemical active bacteria *Shewanella oneidensis* MR-1 can transfer intracellular electrons to minerals\(^1\). This ability is attributed to the redox proteins localized to the outer-membrane, for example, the MtrC, MtrB, MtrA and CymA\(^2\). Here we investigate its electrochemical properties towards redox inorganic redox compounds. It shows strong electrocatalysis toward electrochemical oxidation of $K_4[Fe(CN)]_6$. As a redox molecule, $K_4[Fe(CN)]_6$ gives a pair of redox peaks on voltammetry on bare glassy carbon electrode (GCE), symmetric with ideal peak-peak separation of about 60 mV, indicating of a reversible one-electron transfer process (blue curve, Figure 1). Surprisingly, the presence of *Shewanella oneidensis* MR-1 on GCE results an asymmetric redox peak, with almost disappearance of the cathodic peak and strengthen of the anodic peak, which is a typical catalysis feature of electrochemical oxidation. Further experiments show that *Shewanella oneidensis* MR-1 does not give such electrocatalysis to redox compounds such as Ru[(NH\(_3\)]_6]Cl\(_6\) and Resorufin. Systematic study on the selectivity and electrocatalysis mechanisms of *Shewanella oneidensis* MR-1 are under investigation. The ability of *Shewanella oneidensis* MR-1 to catalyze redox action of inorganic metal complex compounds will provide an insight on metal cycles in nature

*Links:*

http://www.eicc-4.dk/home.html

Related event

**Forth EuCheMS Inorganic Chemistry Conference (EICC-4)**

02/07/2017 → 05/07/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

**Forth EuCheMS Inorganic Chemistry Conference (EICC-4)**

Period: 2 Jul 2017 → 5 Jul 2017
Ranran Wu (Participant)
Yong Xiao (Participant)
Hans Erik Mølager Christensen (Participant)
Feng Zhao (Participant)
Jingdong Zhang (Participant)
Department of Chemistry
NanoChemistry
Organic Chemistry
Metalloprotein Chemistry and Engineering

*Description*

Electrochemical Catalysis of Inorganic Complex $K_4[Fe(CN)]_6$ by *Shewanella oneidensis* MR-1

The interaction between metal and bacteria is a universal and important biogeochemical process in environment. As a dissimilatory metal reduction bacteria, the electrochemical active bacteria *Shewanella oneidensis* MR-1 can transfer intracellular electrons to minerals\(^1\). This ability is attributed to the redox proteins localized to the outer-membrane, for example, the MtrC, MtrB, MtrA and CymA\(^-\). Here we investigate its electrochemical properties towards redox inorganic redox compounds. It shows
strong electrocatalysis toward electrochemical oxidation of $\text{K}_4[\text{Fe(CN)}_6]$. As a redox molecule, $\text{K}_4[\text{Fe(CN)}_6]$ gives a pair of redox peaks on voltammetry on bare glassy carbon electrode (GCE), symmetric with ideal peak-peak separation of about 60 mV, indicating of a reversible one-electron transfer process (blue curve, Figure 1). Surprisingly, the presence of \textit{Shewanella oneidensis} MR-1 on GCE results an asymmetric redox peak, with almost disappearance of the cathodic peak and strengthen of the anodic peak, which is a typical catalysis feature of electrochemical oxidation. Further experiments show that \textit{Shewanella oneidensis} MR-1 does not give such electrocatalysis to redox compounds such as Ru[$(\text{NH}_3)_6]$Cl$_3$ and Resorufin. Systematic study on the selectivity and electrocatalysis mechanisms of \textit{Shewanella oneidensis} MR-1 are under investigation. The ability of \textit{Shewanella oneidensis} MR-1 to catalyze redox action of inorganic metal complex compounds will provide an insight on metal cycles in nature

Links:
http://www.eicc-4.dk/home.html

Related event

Forth EuCheMS Inorganic Chemistry Conference (EICC-4)
02/07/2017 → 05/07/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising a conference

Low RF-field strength cross polarization combined with photo-induced non-persistent radicals for clinically applicable dDNP
Period: 2 Jul 2017 → 6 Jul 2017
Joachim Møllesøe Vinther (Speaker)
Andrea Capozzi (Speaker)
Mohammed Albannay (Speaker)
Jan Henrik Ardenkjær-Larsen (Speaker)
Center for Hyperpolarization in Magnetic Resonance
Department of Electrical Engineering
Center for Magnetic Resonance
Degree of recognition: International
Documents:
poster.jmv.v2

Related event

Euromar 2017
02/07/2017 → 06/07/2017
Warsaw, Poland
Activity: Talks and presentations › Conference presentations

Poster Presentation
Period: 2 Jul 2017 → 6 Jul 2017
Ronja Maja Malinowski (Speaker)
Center for Hyperpolarization in Magnetic Resonance
Department of Electrical Engineering
Center for Magnetic Resonance
Degree of recognition: International
Documents:
EUROMAR2017RonjaMalinowski

Related event

Euromar 2017
02/07/2017 → 06/07/2017
Warsaw, Poland
Activity: Talks and presentations › Conference presentations
Decision-making for integrated energy systems
Period: 1 Jul 2017
Daniela Guericke (Invited speaker)
Department of Applied Mathematics and Computer Science
Dynamical Systems
Centre for IT-Intelligent Energy Systems in Cities
Description
Presentation at 10th DS&OR Forum
Related external organisation
University of Paderborn
Germany
Activity: Talks and presentations › Conference presentations

Department of Mechanical Engineering (Organisational unit)
Period: 1 Jul 2017 → 26 Sep 2017
Mogens Blanke (Chairman)
Department of Electrical Engineering
Automation and Control
Description
Chairman for PhD evaluation Committee for Jonas Lauridsen
Degree of recognition: National
Related organisation
Department of Mechanical Engineering (Organisational unit)
Blanke, M. (Chairman)
1 Jul 2017 → 26 Sep 2017
Activity: Membership › Membership in review committee

Management Team Copenhagen Center for Health Technology (Event)
Period: 1 Jul 2017 → …
Anja Maier (Member)
Department of Management Engineering
Engineering Systems
Copenhagen Center for Health Technology
Description
Member Management Team for Copenhagen Center for Health Technology
Degree of recognition: International
Related event
Management Team Copenhagen Center for Health Technology
01/07/2017 → …
Copenhagen, Denmark
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Reptoring af nationale overvågningsdata til den Europæiske Fødevaresikkerhedsautoritet, EFSA
Period: 1 Jul 2017
Julia Christensen (Other)
National Food Institute
Division of Risk Assessment and Nutrition
**STROBE-X Steering Committee (External organisation)**

**Period:** 1 Jul 2017 → …

Søren Brandt (Member)

National Space Institute

Astrophysics and Atmospheric Physics

Degree of recognition: International

Links:
https://gammaray.nsstc.nasa.gov/Strobe-X/Team.html (The STROBE-X Team)

**Related external organisation**

**STROBE-X Steering Committee**

**Activity:** Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

**23836 Quantitative Microbiological Risk Assessment**

**Period:** Jun 2017

Ana Sofia Ribeiro Duarte (Participant)

National Food Institute

Research Group for Genomic Epidemiology

**Description**

Course Lecturer

**Related event**

**23836 Quantitative Microbiological Risk Assessment 2017**

01/06/2017 → 30/06/2017

Denmark

**Konstantin Kiemm**

Start date: Jun 2017 → Aug 2017

Erik Andreas Martens (Host)

Department of Applied Mathematics and Computer Science

Dynamical Systems

Department of Electrical Engineering

Degree of recognition: International

Activity: Hosting a guest lecturer

**Solvolysis of Lignosulfonate Catalyzed by Supported NiMo**

**Period:** Jun 2017

Soheila Ghafearinejad Parto (Speaker)

Jakob Munkholt Christensen (Other)

Lars Saaby Pedersen (Other)

Esben Taarning (Other)

Freddy Tjosás (Other)

Anker Degn Jensen (Other)

Department of Chemical and Biochemical Engineering

CHEC Research Centre
New approach for validating the segmentation of 3D data applied to individual fibre extraction

Period: 30 Jun 2017

Monica Jane Emerson (Speaker)

Department of Applied Mathematics and Computer Science

Image Analysis & Computer Graphics

Documents:
ICTMS2017_300617_monj presentation

Links:
https://www.dropbox.com/s/eq5528lplxomjqi/20170630_105434.mp4?dl=0 (Recorded talk)

Annual Report on Zoonoses in Denmark (Journal)

Period: 29 Jun 2017

Julia Christensen (Editor)

National Food Institute

Division of Risk Assessment and Nutrition

Degree of recognition: National

High Current Full Scale Testing as Fundamental Element to Ensure Wind Turbine Reliability

Period: 29 Jun 2017

Stephan Vogel (Speaker)

Department of Electrical Engineering

Center for Electric Power and Energy

Electric power components

Description

Testing of lightning protection measures on wind turbine components provides fundamental improvements to wind turbine reliability. Full-scale testing of blades and nacelles is regarded as the most exhaustive mean to evaluate lightning performance, identify weak-points, and improve the lightning protection design. The continuous increase of dimensions of the test objects also increases the effective stray inductance, leading to a practical challenge of injecting the full lightning current into the test object, as is defined in in IEC 61400-24 Ed.1.0 Wind turbines – Part 24: Lightning protection. This circumstance led to the formation of the project "Enhanced Lightning effect Testing (ELITE)" under which was designed, constructed and prototype tested a novel extendable high-current crowbar impulse generator.

In this work, the concept of the generator is introduced, the components are described and performance is evaluated for single modules. The extendibility of the generator is achieved by modularity of 12 individual high-current impulse
generators cuboids, each equipped with an intrinsic capacitor bank, spark-gap, and a crowbar consisting of 45 series-connected rectifier diodes. Each module has a charging voltage of up to ±100 kV and a discharge current of 125 kA and can be used as an independent unit. By series and parallel connections of the modules, the capabilities of the resulting generator can be modified and tuned to the specific test item. During testing, the modules are arranged around the device under test which effectively minimizes the stray inductance of the circuit.

The audience will be introduced to the principles of high current full scale testing according to IEC 61400-24 and special focus will be placed on the limitations due to the increased size of full-scale test objects. Furthermore, test results from a prototype high current impulse are used to verify the principles of lightning current injection to test samples.

Degree of recognition: International

Related external organisation

European Academy of Wind Energy
Küpkersweg 70, 26129, Oldenburg, Germany
Activity: Talks and presentations › Conference presentations

inVALUABLE project meeting
Period: 29 Jun 2017 → 30 Jun 2017
Annette Nygaard Jensen (Speaker)
National Food Institute
Research Group for Microbial Food Safety

Related event

inVALUABLE project meeting
29/06/2017 → 30/06/2017
Aarhus, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Summary of oral and poster presentations
Period: 29 Jun 2017
Sven-Erik Gryning (Speaker)
Department of Wind Energy
Degree of recognition: International

Related event

International Conference on Energy & Meteorology
27/06/2017 → 29/06/2017
Bari, Italy
Activity: Talks and presentations › Conference presentations

The speech-based envelope power spectrum model (sEPSM) family: Development, achievements, and current challenges
Period: 29 Jun 2017
Helia Relano Iborra (Guest lecturer)
Department of Electrical Engineering
Hearing Systems

Description
Intelligibility models provide insights regarding the effects of target speech characteristics, transmission channels and/or auditory processing on the speech perception performance of listeners. In 2011, Jørgensen and Dau proposed the speech-based envelope power spectrum model [sEPSM, Jørgensen and Dau (2011). J. Acoust. Soc. Am. 130(3), 1475-1487]. It uses the signal-to-noise ratio in the modulation domain (SNRenv) as a decision metric and was shown to accurately predict the intelligibility of processed noisy speech. The sEPSM concept has since been applied in various subsequent models, which have extended the predictive power of the original model to a broad range of conditions. This contribution presents the most recent developments within the sEPSM “family:” (i) A binaural extension, the B-sEPSM [Chabot-Leclerc et al. (2016). J. Acoust. Soc. Am. 140(1), 192-205] which combines better-ear and binaural unmasking processes and accounts for a large variety of spatial phenomena in speech perception; (ii) a correlation-based version [Relaño-Iborra et al. (2016). J. Acoust. Soc. Am. 140(4), 2670-2679] which extends the predictions of the early model to non-linear distortions, such as phase jitter and binary mask-processing; and (iii) a recent physiologically inspired
extension, which allows to functionally account for effects of individual hearing impairment on speech perception.

Degree of recognition: International
Links:
http://dx.doi.org/10.1121/1.4989047

Related event

173rd Meeting of the Acoustical Society of America and the 8th Forum Acusticum
25/06/2017 → 29/06/2017
Boston, United States
Activity: Talks and presentations › Conference presentations

Wind Energy (Journal)
Period: 29 Jun 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
Meteorology & Remote Sensing

Related journal

Wind Energy
1095-4244
Web of Science (2017): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

WRF model evaluation based on wind lidar measurements
Period: 29 Jun 2017
Sven-Erik Gryning (Speaker)
Ekaterina Batchvarova (Other)
Department of Wind Energy
Degree of recognition: International
Links:
http://www.wemcouncil.org/wp/icem2017/

Related event

International Conference on Energy & Meteorology
27/06/2017 → 29/06/2017
Bari, Italy
Activity: Talks and presentations › Conference presentations

Zoonoseseminar i forbindelse med publicering af Annual Report on Zoonoses in Denmark 2016
Period: 29 Jun 2017
Julia Christensen (Organizer)
National Food Institute
Division of Risk Assessment and Nutrition
Degree of recognition: National

Related event

Zoonoseseminar i forbindelse med publicering af Annual Report on Zoonoses in Denmark 2016
29/06/2017 → 29/06/2017
København
Activity: Attending an event › Participating in or organising a conference

3D Microstructural Evolution of a Solid Oxide Cell during a Redox Cycle by High Resolution Ptychographic Tomography
Period: 28 Jun 2017
Salvatore De Angelis (Guest lecturer)
Department of Energy Conversion and Storage
Imaging and Structural Analysis

Description
3rd International Conference on Tomography of Materials and Structures
Degree of recognition: International
Links:

Related event
3rd International Conference on Tomography of 3D Materials and Structures
26/06/2017 → 30/06/2017
Lund, Sweden
Activity: Talks and presentations › Conference presentations

"Evaluation and management of microbial spoilage in the aquatic food industry" at Microbial Spoilers in Food 2017, Quimper, France.
Period: 28 Jun 2017 → 30 Jun 2017
Paw Dalgaard (Keynote speaker)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description
Degree of recognition: International

Related event
Microbial Spoilers in Food 2017
28/06/2017 → 30/06/2017
Quimper, France
Activity: Talks and presentations › Conference presentations

Federica Frati
Start date: 28 Jun 2017 → 7 Jul 2017
Sonia Coriani (Host)
Department of Chemistry
Degree of recognition: International
Activity: Hosting a guest lecturer

Interessent møde i FVST
Period: 28 Jun 2017
Dorte Lau Baggesen (Speaker)
National Food Institute

Description
Fødevarestyrelsens Strategiske Interessentudvalg
Interessentnetværk for fødevarer, produkter og forbruger
Degree of recognition: National
Documents:
FVSTs interessentmøde d. 28.6.2017_version 2

Related event
Interessent møde i FVST
28/06/2017 → 28/06/2017
Glostrup, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Journal of Geophysical Research - Part C - Ocean (Journal)
Period: 28 Jun 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
Meteorology & Remote Sensing

Related journal
Journal of Geophysical Research - Part C - Ocean
Local database
Activity: Research › Peer review of manuscripts

Regimes of self-pulsing in photonic crystal Fano lasers
Period: 28 Jun 2017
Thorsten Svend Rasmussen (Guest lecturer)
Department of Photonics Engineering
Nanophotonics Theory and Signal Processing
Description
Talk given at CLEO Europe 2017

Related event
25/06/2017 → 29/06/2017
Munich, Germany
Activity: Talks and presentations › Conference presentations

Scientific committee for Microbial spoilers in food 2017 (Event)
Period: 28 Jun 2017 → 30 Jun 2017
Paw Dalgaard (Chairman)
National Food Institute
Research Group for Analytical and Predictive Microbiology
Description
Scientific committee for 'Microbial spoilers in food', 28-30 June 2017, Quimper, France.
Degree of recognition: International

Related event
Scientific committee for Microbial spoilers in food 2017
28/06/2017 → 30/06/2017
Quimper, France
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Structural aspects of hydrates – insight into phase transformations using nanomechanical sensors
Period: 28 Jun 2017 → 30 Jun 2017
Peter Ouma Okeyo (Guest lecturer)
Peter Emil Larsen (Guest lecturer)
Oleksii Ilchenko (Guest lecturer)
Tomas Rindzevicius (Guest lecturer)
Roman Slipets (Guest lecturer)
Anja Boisen (Guest lecturer)
Thomas Rades (Guest lecturer)
Jukka Rantanen (Guest lecturer)

Department of Micro- and Nanotechnology
Nanoprobes
Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics

Degree of recognition: International

Related event

11th annual meeting of the Pharmaceutical Solid State Research Cluster
28/06/2017 → 30/06/2017
Graz, Austria
Activity: Talks and presentations › Conference presentations

The Østerild Balconies Experiment
Period: 28 Jun 2017
Ioanna Karagali (Speaker)
Ebba Dellwik (Other)
Guillaume Lea (Other)
Elliot Simon (Other)
Nikola Vasiljevic (Other)
Jakob Mann (Other)

Department of Wind Energy
Meteorology & Remote Sensing

Description
Mini Symposia "Exp. Investigations of Wind Resourced and Siting Parameters"

Related event

Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

A local freshwater impact – proposing a groundwater indicator AGWaRe
Period: 27 Jun 2017
Ryle Nørskov Gejl (Speaker)

Department of Environmental Engineering
Urban Water Systems

Related event

ISIE 2017: Science for Sustainable and Resilient Communities
25/06/2017 → 29/06/2017
Chicago, United States
Activity: Talks and presentations › Conference presentations

Chairing session on Forecasting for power-system applications - wind models
Period: 27 Jun 2017
Sven-Erik Gryning (Speaker)

Department of Wind Energy
Degree of recognition: International

Related event
Experimental Validation of Vibro-Impact Force Models using Numeric Simulation and Perturbation Methods

Period: 27 Jun 2017
Geraldo Francisco de Souza Reboucas (Guest lecturer)
Department of Mechanical Engineering

Description
The frequency response of a single-degree of freedom vibro-impact oscillator is analysed using Harmonic Linearization, Averaging and Numeric Simulations considering two different impact force models, one given by a piecewise-linear function and other by a high-order polynomial. Experimental validation is carried out using control-based continuation to obtain the experimental frequency response, including its unstable branch.
Degree of recognition: International

Documents:
Geraldo-ENOC2017
Links:
http://congressline.hu/enoc2017/abstracts/227.pdf (Link to the extended abstract on the conference site)

Related event
9th European Nonlinear Dynamics Conference (ENOC 2017)
Period: 25/06/2017 → 30/06/2017
Budapest, Hungary
Activity: Talks and presentations › Conference presentations

International Conference on Energy & Meteorology (Event)
Period: 27 Jun 2017
Sven-Erik Gryning (Participant)
Department of Wind Energy

Description
Chair of abstract selection committee
Degree of recognition: International

Related event
International Conference on Energy & Meteorology
27/06/2017 → 29/06/2017
Bari, Italy
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Stability of Salmonella and Campylobacter DNA in human and veterinary fecal samples preserved and stored at different conditions (Journal)
Period: 27 Jun 2017
Julia Christensen (Editor)
National Food Institute
Division of Risk Assessment and Nutrition
Degree of recognition: International

Related journal
Stability of Salmonella and Campylobacter DNA in human and veterinary fecal samples preserved and stored at different conditions
Local database
Activity: Research › Peer review of manuscripts
Turbulence Estimation from a Continuous-Wave Scanning Lidar (SpinnerLidar)
Period: 27 Jun 2017
Torben Krogh Mikkelsen (Guest lecturer)
Department of Wind Energy
Meteorology & Remote Sensing

Description
One of the current challenges using lidars for wind energy measurements is the inability of lidars to accurately measure turbulence. Two important factors affecting lidar measurements of turbulence are:

1) the spatial averaging by the lidars sounding volume leading to smaller eddies being filtered out, and
2) the mixing of velocity co-variances from other components into the line-of-sight variance measurements.

Turbulence measurements based on upwind horizontal rotor plane scanning of the line-of-sight variance measurements combined with ensemble-averaged Doppler spectra width measurements is shown to provide unfiltered, un-truncated line-of-sight turbulence measurements similar to what is achievable from a hub-hight installed cup anemometer.

Degree of recognition: International
Documents:
270617 – 1100 – S10
Links:
http://www.eawe.eu/index.php/wescdocs/ (Presentation at WESC2017 uploaded at AEWE public home pages)

Related organisation
Turbulence Estimation from a Continuous-Wave Scanning Lidar (SpinnerLidar)
Mikkelsen, T. K. (Guest lecturer)
27 Jun 2017
Activity: Talks and presentations › Conference presentations

13th Coating Science International 2017
Period: 26 Jun 2017 → 30 Jun 2017
Ting Wang (Participant)
Department of Chemical and Biochemical Engineering
CHEC Research Centre

Description
13th Coatings Science International 2017
Degree of recognition: International

Related event
13th Coating Science International 2017
26/06/2017 → 30/06/2017
Noordwijk, Netherlands
Activity: Attending an event › Participating in or organising a conference

Bigger is better! Is it really?
Period: 26 Jun 2017
Andrea N. Hahmann (Speaker)
Department of Wind Energy
Resource Assessment Modelling

Description
Sensitivity experiments with WRF over the North Sea.
Degree of recognition: International
Documents:
Bigger_is_better_noanim

Related event
Drag resistance measurements for newly applied antifouling coatings and welding seams on ship hull surface
Period: 26 Jun 2017 → 30 Jun 2017
Xueting Wang (Guest lecturer)
Department of Chemical and Biochemical Engineering
CHEC Research Centre
The Hempel Foundation Coatings Science and Technology Centre (CoaST)
Degree of recognition: International

Essential Societal Service Functions and Planetary Boundaries: The Case of Sustainable Urban Water Management
Period: 26 Jun 2017
Hjalte Jomo Danielsen Sørup (Speaker)
Department of Environmental Engineering
Urban Water Systems

Integrating environmental impacts into cost-benefit analysis: The value of environmental pollutants
Period: 26 Jun 2017
Yan Dong (Speaker)
Stefano Manzo (Other)
Michael Zwicky Hauschild (Other)
Department of Management Engineering
Quantitative Sustainability Assessment
Transport DTU
Transport Modelling
Degree of recognition: International
Documents:
Abstract_Final version
Links:
http://programme.exordo.com/isie2017/delegates/presentation/13/

Related event
9th biennial conference of the International Society for Industrial Ecology (ISIE) and the 25th annual conference of the International Symposium on Sustainable Systems and Technology (ISSST)
25/06/2017 → 29/06/2017
Chicago, United States
Activity: Talks and presentations › Conference presentations
Power curve measurement using \( V_\infty \) estimates from nacelle lidars and its uncertainty
Period: 26 Jun 2017 → 29 Jun 2017
Antoine Borraccino (Speaker)
Department of Wind Energy
Meteorology & Remote Sensing
Degree of recognition: International
Documents:
AntoineBorraccino_WESC17_presentation_PowerPerf_nacelle_lidars

Related event
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Pulsed laser deposition (PLD) of the CZTS absorber for thin solar cells with up to 5.2-% -efficiency
Period: 26 Jun 2017 → 30 Jun 2017
Jørgen Schou (Guest lecturer)
Andrea Carlo Cazzaniga (Other)
Stela Canulescu (Other)
Andrea Crovetto (Other)
Rebecca Bolt Ettlinger (Other)
Nini Pryds (Guest lecturer)
Ole Hansen (Other)
Chang Yan (Other)
Kaiwen Sun (Other)
Xiaojing Hao (Other)
Department of Photonics Engineering
Optical Microsensors and Micromaterials
Department of Physics
Experimental Surface and Nanomaterials Physics
Silicon Microtechnology
Department of Energy Conversion and Storage
Electrofunctional materials
Department of Micro- and Nanotechnology

Description
Collaborative Conference on Materials Research (CCMR) 2017
Documents:
Abstract Korea

Related external organisation
Kwangwoon University
Korea, Republic of
Activity: Talks and presentations › Conference presentations

Quantitative analysis of pigment dispersion taking into account the full agglomerate size distribution
Period: 26 Jun 2017 → 30 Jun 2017
Søren Kiil (Lecturer)
Related organisation

Quantitative analysis of pigment dispersion taking into account the full agglomerate size distribution
Kiil, S. (Lecturer)
26 Jun 2017 → 30 Jun 2017
Activity: Talks and presentations › Conference presentations

The wind speed signature of varying sea surface temperature in the mesoscale model WRF
Period: 26 Jun 2017
Ioanna Karagali (Speaker)
Andrea N. Hahmann (Other)
Department of Wind Energy
Meteorology & Remote Sensing
Resource Assessment Modelling
Documents:
Karagali_WESC_2017_SST_WRF

Related event

Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

CLEO®/Europe-EQEC 2017
Period: 25 Jun 2017 → 29 Jun 2017
Andreas Dyhl Østerkryger (Speaker)
Department of Photonics Engineering
Nanophotonics Theory and Signal Processing
Degree of recognition: International

Related event

25/06/2017 → 29/06/2017
Munich, Germany
Activity: Talks and presentations › Conference presentations

Strategidag for kemi mellem DTU Food og FVST fredag den 23. juni
Period: 23 Jun 2017
Vibe Meister Beltoft (Participant)
Elsa Ebbesen Nielsen (Participant)
National Food Institute
Division of Risk Assessment and Nutrition

Description
Strategidagen leverer input til arbejdsprogrammet for 2018.
Adsorption of microplastics to the edible Fucus vesiculosus and possible wash off before food application

Period: 22 Jun 2017

Nanna B. Hartmann (Speaker)
Clara G. Villaro (Speaker)
Ida D.W. Koch (Speaker)
Kasper B. Sundbæk (Speaker)
Niclas S. Rasmussen (Speaker)
Susan Løvstad Holdt (Speaker)

National Food Institute
Research Group for Bioactives – Analysis and Application
Department of Environmental Engineering

Environmental Chemistry

Description
The growing demand for food accessibility, due to rapidly growing population of the world, has raised the interest of macroalgae as a food source also in the Western world. However, this combined with increased food awareness trigger a concern that accumulated microplastics in the oceans might pollute the seaweed and influence food safety and thereby applicability. One of the most common types of seaweed in Denmark is bladder wrack, Fucus vesiculosus (FC), and this specimen is also popular for the use in e.g. pesto and flour in Denmark. This study investigated if fluorescent polystyrene (PS) microplastic particles (diameter: 20 μm) adsorb to the macroalga FC and if they can be washed off afterwards with filtered seawater.

Degree of recognition: International

Documents:
ISAP_2017_abstract_Hartmann et al-Microplastic on Fucus

Related external organisation
University of Nantes
France

Invited talk
Period: 22 Jun 2017

Sonia Coriani (Invited speaker)

Department of Chemistry

Related event
New Frontiers in Electron Correlation
20/06/2017 → 24/06/2017
Telluride, United States

Activity: Talks and presentations › Conference presentations

Multiphase oxygen electrodes for solid oxide electrolysis cells

Period: 22 Jun 2017

Dordije Tripkovic (Speaker)
Peter Vang Hendriksen (Other)
Mogens Bjerg Mogensen (Other)

Department of Energy Conversion and Storage

Mixed Conductors
Solid oxide electrolysis has the potential to become the most efficient way to convert electrical into chemical energy. Solid oxide electrolysis cells (SOEC) are thus an attractive solution for converting the occasional surplus amount of electricity produced by renewable energy sources to hydrogen or syngas. This promising technology requires further maturation to become economically competitive. Among other problems, the sluggish reaction at the oxygen electrode limits maximum fuel production rate, which directly affects overall process efficiency. Recent studies published by several groups highlight the importance of dissimilar interfaces and surface chemistry in promoting oxygen electrode reaction rate, opening a new route to enhance the electrode performance. Particularly, perovskite (113)/Ruddlesden-Popper (214) interface has been reported as highly beneficial for strontium doped lanthanum cobaltite (LSC) electrodes.[1–3]

The aim of this study is to investigate the potential of 113/214 interface to improve cobalt-free electrodes such as strontium doped lanthanum ferrite (LSF). The performance of LSF113/LSF214 couples is assessed by electrical conductivity relaxation (ECR) of geometrically well-defined electrodes, as well as by electrochemical impedance spectroscopy (EIS) of thin film electrodes prepared by PLD. The surface of the model electrodes is deliberately modified in a controlled manner by addition of secondary phases and examined by SEM and surface-sensitive characterization techniques.

Related event

21st International Conference on Solid State Ionics
18/06/2017 → 23/06/2017
Padova, Italy
Activity: Talks and presentations › Conference presentations

25th Annual conference on Intelligent Systems for Molecular Biology and 16th European Conference on Computational Biology
Period: 21 Jun 2017 → 25 Jun 2017
Kai Blin (Participant)

Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International

Related event

25th Annual conference on Intelligent Systems for Molecular Biology and 16th European Conference on Computational Biology
21/07/2017 → 25/07/2017
Prague, Czech Republic
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

2nd International Conference on New Business Models
Period: 21 Jun 2017 → 22 Jun 2017
Francesco Rosati (Speaker)

Degree of recognition: International
Links:
https://new-business-models.uni-graz.at/en/

Related event

2nd International Conference on New Business Models
21/06/2017 → 22/06/2017
Graz, Austria
Activity: Talks and presentations › Conference presentations
**Applied Optics (Journal)**
Period: 21 Jun 2017 → …
Anders Thorseth (Reviewer)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International

**Related journal**
Applied Optics
1559-128X
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 1.61 SJR 0.633 SNIP 1.095, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed Yes
Central database
Activity: Research › Peer review of manuscripts

**Consumer's Attitude Towards Investments in Residential Energy Efficient Appliances: how End-user Choices Contribute to Change Future Energy Systems**
Period: 21 Jun 2017
Mattia Baldini (Speaker)
Alessio Trivella (Other)
Jordan William Halverson Wente (Other)
Department of Management Engineering
Systems Analysis
Management Science
Operations Research
Degree of recognition: International
Documents:
Mattia Baldini
Links:

**Related event**
The 40th IAEE International Conference: Meeting the Energy Demands of Emerging Economies - Implications for Energy and Environmental Markets
18/06/2017 → 21/06/2017
Singapore, Singapore
Activity: Talks and presentations › Conference presentations

**Seaweed at stake**
Period: 21 Jun 2017
Susan Løvstad Holdt (Organizer)
National Food Institute
Research Group for Bioactives – Analysis and Application
Degree of recognition: International

**Related event**
Seaweed at stake: Seaweed stakeholder meeting
21/06/2017 → 21/06/2017
Nantes, France
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
The 40th International IAEE Conference
Period: 21 Jun 2017
Dominik Franjo Dominkovic (Speaker)
Department of Energy Conversion and Storage

Description
Gave a presentation on: Potential of waste heat and waste cold energy recovery in Singapore for district cooling applications
Degree of recognition: International

Related event
40th Annual IAEE International Conference
18/06/2017 → 21/06/2017
Singapore, Singapore
Activity: Talks and presentations › Conference presentations

A Probabilistic Approach to CFD Model Validation with Field Measurements in Wind Energy
Period: 20 Jun 2017
Alexander Raul Meyer Forsting (Speaker)
Department of Wind Energy
Aerodynamic design
Degree of recognition: International
Documents:
Presentation
Links:
https://www.youtube.com/watch?v=YrT7Hy_eGWg (WindScanner & UniTTe | 3D inflow measurement)

Related event
IEA Wind Task 32 (Lidar): Workshop on Elaboration of use cases in wake and complex flow measurements
19/06/2017 → 20/06/2017
Glasgow, United Kingdom
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Disturbance Attenuation of DC Voltage Droop Control Structures in a Multi-Terminal HVDC- Grid
Period: 20 Jun 2017
Florian Thams (Guest lecturer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems

Description
Presentation of the accepted paper
Degree of recognition: International

Related event
18/06/2017 → 22/06/2017
Manchester, United Kingdom
Activity: Talks and presentations › Conference presentations

New Frontiers in Electron Correlation
Period: 20 Jun 2017 → 24 Jun 2017
Sonia Coriani (Participant)
Department of Chemistry
Antioxidant composition and activity of seaweed Saccharina latissima: a seasonal perspective
Period: 19 Jun 2017
Goncalo Silva Marinho (Speaker)
Ann-Dorit Møltke Sørensen (Speaker)
Hamed Safafar (Speaker)
Anja H. Pedersen (Speaker)
Susan Løvstad Holdt (Speaker)
National Food Institute
Research Group for Bioactives – Analysis and Application

Description
Safety concerns regarding reported toxicity of artificial antioxidants lead the search for novel natural antioxidants. In this context, seaweeds have been receiving increasing attention as a promising source of antioxidants such as phenolic compounds (e.g. phenolic acids and flavonoids), carotenoids (e.g. fucoxanthin and β-carotene), and phycobiliproteins. Nevertheless, seaweed composition generally presents marked seasonal variations. The present study aimed at evaluating seasonal variations in the antioxidant composition and activity of sugar kelp, Saccharina latissima, cultivated at two different sites; in close proximity to a blue mussel and rainbow trout farm (IMTA), and at a reference/control site (REF), outside Horsens fjord, Denmark.

Degree of recognition: International
Documents:
Abstract_ISAP 2017-Marinho et al_FINAL
Is nitrogen-to-protein conversion factor for seaweed dependent on season?

Period: 19 Jun 2017

Goncalo Silva Marinho (Speaker)
Susan Løvstad Holdt (Speaker)

National Food Institute
Research Group for Bioactives – Analysis and Application

Description
Recently an effort has been made to establish nitrogen-to-protein conversion factors specific for seaweeds, as the tradition conversion factor of 6.25 overestimates their protein content. Nevertheless, potential seasonal variation of this conversion factor has not yet been considered. This paper evaluates the seasonal nitrogen budget of Saccharina latissima and discusses the importance of more specific nitrogen-to-protein conversion factors, also taking season into account.

Degree of recognition: International
Documents:
Abstract_ISAP 2017-Marinho and Holdt-Nitrogen-to-protein-factor

Related external organisation

University of Nantes
France
Activity: Talks and presentations › Conference presentations

12th IEEE Power and Energy Society PowerTech Conference
Period: 18 Jun 2017 → 22 Jun 2017
Theis Bo Rasmussen (Organizer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems

Description
Oral presentation of conference paper

Related event

18/06/2017 → 22/06/2017
Manchester, United Kingdom
Activity: Attending an event › Participating in or organising a conference

21st International Conference on Solid State Ionics
Period: 18 Jun 2017 → 23 Jun 2017
Vincenzo Esposito (Organizer)
Department of Energy Conversion and Storage
Ceramic Engineering & Science
Description
Low-dimensional ionic and mixed ionic/electronic conductor nanostructures

Related event
21st International Conference on Solid State Ionics
18/06/2017 → 23/06/2017
Padova, Italy
Activity: Attending an event › Participating in or organising a conference

GODSEM Project: Final Dissemination Workshop
Period: 16 Jun 2017
Francesco Rosati (Speaker)
Department of Management Engineering
Technology and Innovation Management

Related event
GODSEM Project: Final Dissemination Workshop
16/06/2017 → 16/06/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Grid tariffs to support flexibility in decarbonised energy systems
Period: 16 Jun 2017
Claire Bergaentzlé (Speaker)
Department of Management Engineering
Systems Analysis
Energy Economics and Regulation
Degree of recognition: International
Documents:
Presentation FSR_grid_tariffs_120617

Related event
6th Florence Conference on the Regulation of Infrastructures: Regulatory challenges for smart cities
16/06/2017 → 16/06/2017
Florence, Italy
Activity: Talks and presentations › Conference presentations

Statistical modelling of space-time processes with application to wind power
Period: 16 Jun 2017
Anders Stockmarr (Internal examiner)
Thordis Thorarinsdottir (External examiner)
Robin Girard (External examiner)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
Chairman of Phd defense
Degree of recognition: Local
Documents:
Announcement PhD defence Amanda Lenzi
Popular Science Summary Amanda Lenzi
Activity: Examinations and supervision › Internal examination
Velocity space tomography: Methods and results
Period: 16 Jun 2017
Jesper Rasmussen (Speaker)
Department of Physics
Plasma Physics and Fusion Energy

Related event
2nd Joint Nordic Fusion Energy Seminar
15/06/2017 → 16/06/2017
Activity: Talks and presentations › Conference presentations

A Probabilistic Approach to CFD Validation with Field Measurements in Wind Energy
Period: 15 Jun 2017
Alexander Raul Meyer Forsting (Speaker)
Department of Wind Energy
Aerodynamic design
Degree of recognition: International
Documents:
doc_dtubeamer

Related event
UNCECOMP 2017: 2nd International Conference on Uncertainty Quantification in Computational Sciences and Engineering
15/06/2017 → 17/06/2017
Rhodes, Greece
Activity: Talks and presentations › Conference presentations

DALI Designer 5 programming
Period: 15 Jun 2017
Anders Thorseth (Participant)
Finn Aage Christensen Pedersen (Participant)
Department of Photonics Engineering
Diode Lasers and LED Systems
Optical Sensor Technology
Degree of recognition: Local

Related event
DALI Designer 5 programming: Starter
15/06/2017 → …
Brøndby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

MADE Danish Manufacturing Association Conference
Period: 15 Jun 2017
Daniel Alberto Sepúlveda Estay (Speaker)
Department of Management Engineering
Management Science
Operations Management
Transport DTU
Description
Supply Chain Cyber resilience - The New Normal
Documents:
170515b_MADE_Final

Related event

MADE Danish Manufacturing Association Conference
15/06/2017 → 15/06/2017
Activity: Talks and presentations › Conference presentations

Value-Driven Risk Management - Supporting Systems Engineering Innovation
Period: 15 Jun 2017
Josef Oehmen (Keynote speaker)
Department of Management Engineering
Engineering Systems

Description
Invited keynote: Value-Driven Risk Management - Supporting Systems Engineering Innovation
Degree of recognition: International

Related event

Kongsberg Systems Engineering Event
15/06/2017 → 16/06/2017
Kongsberg, Norway
Activity: Talks and presentations › Conference presentations

Big Data: Rethink everything, but mind the mental Gap
Period: 14 Jun 2017
Pernille Rydén (Guest lecturer)
Center for Bachelor of Engineering Studies
Afdelingen for Forretningsudvikling
Degree of recognition: National
Links:
http://managementevents.dk/events/Conference-Industrial-Internet

Related event

Internet of Things conference: Management Event
14/06/2017 → 14/06/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

Characterization of nanoparticles in food and biological samples by single particle ICP-MS
Period: 14 Jun 2017
Katrin Löschner (Speaker)
National Food Institute
Research Group for Nano-Bio Science
Degree of recognition: International

Related event

European Workshop on Nanoparticle Analysis: Thermo Fisher Scientific
14/06/2017 → 14/06/2017
Hemel Hempstead, United Kingdom
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations
Demonstration of Impedance Spectroscopy as a Method to Evaluate Losses of Polymer Electolyte Membrane Electrolysis Cells during Water Electrolysis  
Period: 14 Jun 2017  
Katrine Elsøe (Guest lecturer)  
Department of Energy Conversion and Storage  

Related event  
International Conference on Electrolysis  
12/06/2017 → 15/06/2017  
Copenhagen, Denmark  
Activity: Talks and presentations › Conference presentations  

A Stochastic Method to Manage Delay and Missing Values for In-Situ Sensors in an Alternating Activated Sludge Process  
Period: 13 Jun 2017  
Peter Alexander Stentoft (Speaker)  
Jan Kloppenborg Møller (Other)  
Henrik Madsen (Other)  
Peter Steen Mikkelsen (Other)  
Thomas Munk-Nielsen (Other)  
Department of Applied Mathematics and Computer Science  
Dynamical Systems  
Department of Environmental Engineering  
Urban Water Systems  

Description  
Oral Presentation  
Degree of recognition: International  

Related event  
12th IWA Specialized Conference on Instrumentation, Control and Automation  
11/06/2017 → 14/06/2017  
Quebec, Canada  
Activity: Talks and presentations › Conference presentations  

Lectures on antibiotics biosynthesis: polyketides, aminoglycosides, RiPPs and others  
Period: 13 Jun 2017  
Tilmann Weber (Guest lecturer)  
Novo Nordisk Foundation Center for Biosustainability  
New Bioactive Compounds  

Description  
Lecture in the MSc module: Engineering of Antibiotics Biosynthesis at University of Tübingen  

Related event  
Antibiotika - Engineering der Antibiotika-Biosynthese  
19/06/2017 → 15/06/2018  
Tübingen, Germany  
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities  

Netværksmøde i Dansk Insektnetværk  
Period: 13 Jun 2017  
Annette Nygaard Jensen (Participant)  
National Food Institute
Research Group for Microbial Food Safety

Related event

Netværksmøde i Dansk Insektnetværk
13/06/2017 → …
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

SB7.0
Period: 13 Jun 2017 → 16 Jun 2017
Eric van der Helm (Participant)

Novo Nordisk Foundation Center for Biosustainability

Bacterial Synthetic Biology

Description
The goal of SB7.0 is to unite again the international synthetic biology communities to take a fresh look at the key topics and challenges that our field faces. Synthetic biology cannot advance without exploring and embracing the changes that it brings. As practitioners, scholars, and citizens we need to work together to explore the possibilities and plan strategically for collective growth of our science, its beneficial applications, and responsible practices.

Synthetic biology can be used to advance so many facets of the world today, from agriculture and biomanufacturing, to groundbreaking cancer treatments and medicines, to even fashion and information technology. As the science continues to evolve, the scientists, engineers, and designers themselves need to focus our efforts on creating local biological solutions to meet global needs. But what we can’t forget is to take a step back and look at the world as a whole. Not just how does any one latest advancements better human life, but what are the footprints we are leaving behind? How does what we develop ultimately affect the world, from insects and plants to animals and aquatic life? While the full potential of synthetic biology continues to develop, we as a community must join together to make sure we don’t lose focus on the global impacts of our collective capacities. How can we best help not only humans but also the rest of the planet?

Degree of recognition: International

Related event

SB7.0: The seventh international meeting on Synthetic Biology
13/06/2017 → 16/09/2017
Singapore , Singapore
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Solid Oxide Electrolysis for Grid Balancing: Recent Achievements and Future Challenges
Period: 13 Jun 2017 → 15 Jun 2017
Ming Chen (Speaker)

Department of Energy Conversion and Storage

Mixed Conductors

Description
Solid oxide electrolysis is a promising technology for energy storage and synthetic fuel production and it has a unique potential for grid regulation in the Danish power system. In this presentation results from the recent ForskEL projects coordinated by DTU Energy on developing the SOEC technology were presented.

Degree of recognition: International

Related event

1st International Conference on Electrolysis
13/06/2017 → 15/06/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Technological Advances and Opportunities for the Development of Sustainable Biorefineries
Period: 13 Jun 2017
Solange I. Mussatto (Invited speaker)
Biomass Conversion and Bioprocess Technology

Degree of recognition: International

Documents:
EUBCE 2017 - Abstract - oral presentation Solange Mussatto

Related event

25th European Biomass Conference and Exhibition
12/06/2017 → 15/06/2017
Stockholm, Sweden
Activity: Talks and presentations › Conference presentations

Workshop on establishing an infrastructure for the harmonisation of food allergen measurements
Period: 13 Jun 2017 → 14 Jun 2017
Charlotte Bernhard Madsen (Participant)
National Food Institute
Research Group for Gut Microbiology and Immunology

Related event

Workshop on establishing an infrastructure for the harmonisation of food allergen measurements
13/06/2017 → 14/06/2017
Geel, Belgium
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

25th European Biomass Conference and Exhibition
Period: 12 Jun 2017 → 15 Jun 2017
Solangi I. Mussatto (Organizer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Biomass Conversion and Bioprocess Technology

Description
Member of Scientific Committee / Topic Organizer / Reviewer of works / Poster Awards Committee / Chairperson - oral and visual sessions.
Degree of recognition: International

Related event

25th European Biomass Conference and Exhibition
12/06/2017 → 15/06/2017
Stockholm, Sweden
Activity: Attending an event › Participating in or organising a conference

25th European Biomass Conference and Exhibition
Period: 12 Jun 2017 → 15 Jun 2017
Solangi I. Mussatto (Participant)
Biomass Conversion and Bioprocess Technology

Description
Study on the Requirement of Nitrogen Sources by Scheffersomyces Stipitis NRRL Y-7124 to Produce Ethanol from Xylose Based-media
Documents:
11. Book of Abstracts - Poster Livia

Related event

25th European Biomass Conference and Exhibition
12/06/2017 → 15/06/2017
Stockholm, Sweden
Activity: Attending an event › Participating in or organising a conference

25th European Biomass Conference and Exhibition
Period: 12 Jun 2017 → 17 Jun 2017
Solange I. Mussatto (Participant)
Biomass Conversion and Bioprocess Technology

Description
Properties and Possible Applications for Lignin Streams Obtained from Rice Straw Processing

Documents:
9. Book of Abstracts - Poster Rafael

Related event

25th European Biomass Conference and Exhibition
12/06/2017 → 15/06/2017
Stockholm, Sweden
Activity: Attending an event › Participating in or organising a conference

25th European Biomass Conference and Exhibition
Period: 12 Jun 2017 → 15 Jun 2017
Solange I. Mussatto (Participant)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology

Description
Brewer’s Spent Grain Valorization Using Phosphoric Acid Pretreatment for Second Generation Bioethanol Production

Degree of recognition: International
Documents:
10. Book of Abstracts - Poster Inma

Related event

25th European Biomass Conference and Exhibition
12/06/2017 → 15/06/2017
Stockholm, Sweden
Activity: Attending an event › Participating in or organising a conference

Alkaline membrane electrolysis with PEM-level electrochemical performance
Period: 12 Jun 2017
Mikkel Rykær Kraglund (Guest lecturer)
Department of Energy Conversion and Storage
Proton conductors
Degree of recognition: International
Documents:
ICE2017_KraglundMR_Alkaline membrane electrolysis with PEM-level electrochemical performance

Related event

International Conference on Electrolysis
12/06/2017 → 15/06/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Coastal Dynamics 2017
Period: 12 Jun 2017 → 16 Jun 2017
David R. Fuhrman (Organizer)
Department of Mechanical Engineering
Fluid Mechanics, Coastal and Maritime Engineering

Description
Local Organizing Committee
Degree of recognition: International

Related event
Coastal Dynamics 2017
12/06/2017 → 16/06/2017
Helsingør, Denmark
Activity: Attending an event › Participating in or organising a conference

Consortia based production of biochemicals
Period: 12 Jun 2017
Sheila Ingemann Jensen (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Cell Factory Optimization
Degree of recognition: Optimization

Related event
25th European Biomass Conference and Exhibition
12/06/2017 → 15/06/2017
Stockholm, Sweden
Activity: Talks and presentations › Conference presentations

DTU Summer School 2017: Modern Challenges in Power System Operation and Electricity Markets: An Optimization Perspective
Period: 12 Jun 2017 → 16 Jun 2017
Jalal Kazempour (Organizer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electricity markets and energy analytics
Degree of recognition: International

Related event
DTU Summer School 2017: Modern Challenges in Power System Operation and Electricity Markets: An Optimization Perspective
12/06/2017 → 16/06/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Strain Development for Diacid Production
Period: 12 Jun 2017
Vratislav Stovicek (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Yeast Metabolic Engineering
Degree of recognition: International

Related event
BioREFINE-2G: Utilisation of Waste Streams for Bioproducts and Bioenergy: workshop within the 25th European Biomass Conference and Exhibition
9th International Conference on Advanced Vibrational Spectroscopy
Period: 11 Jun 2017 → 17 Jun 2017
René Wugt Larsen (Participant)

Department of Chemistry
Degree of recognition: International

Links:
http://www.icavs.org/

Related event
9th International Conference on Advanced Vibrational Spectroscopy
11/06/2017 → 17/06/2017
Victoria, Canada
Activity: Attending an event › Participating in or organising a conference

Integration of Nanopillar SERS Substrates in a Microfluidic Platform for Analyte Separation and Quantitative Sensing
Period: 11 Jun 2017 → 17 Jun 2017
Onur Durucan (Guest lecturer)
Lidia Morelli (Guest lecturer)
Kaiyu Wu (Guest lecturer)
Marlitt Viehlig (Guest lecturer)
Oleksii Ilchenko (Guest lecturer)
Kinga Zor (Guest lecturer)
Marco Matteucci (Guest lecturer)
Tommy Sonne Alstrøm (Guest lecturer)
Tomas Rindzevicius (Guest lecturer)
Michael Stenbæk Schmidt (Guest lecturer)
Anja Boisen (Guest lecturer)

Department of Micro- and Nanotechnology
Nanoprobes

Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics

Department of Applied Mathematics and Computer Science
Cognitive Systems

Related event
9th International Conference on Advanced Vibrational Spectroscopy
11/06/2017 → 17/06/2017
Victoria, Canada
Activity: Talks and presentations › Conference presentations

SERS combiner for high-speed and high-sensitive quantitative analysis
Period: 11 Jun 2017 → 17 Jun 2017
Oleksii Ilchenko (Guest lecturer)
Tomas Rindzevicius (Guest lecturer)
Onur Durucan (Guest lecturer)
Michael Stenbæk Schmidt (Guest lecturer)
Roman Slipets (Other)
Lidia Morelli (Guest lecturer)
Anja Boisen (Guest lecturer)
9th International Conference on Advanced Vibrational Spectroscopy
11/06/2017 → 17/06/2017
Victoria, Canada
Activity: Talks and presentations › Conference presentations

SERS combiner for high-speed and high-sensitive quantitative analysis
Period: 11 Jun 2017 → 17 Jun 2017
Oleksii Ilchenko (Guest lecturer)
Tomas Rindzevicius (Guest lecturer)
Michael Stenbæk Schmidt (Guest lecturer)
Roman Slipets (Guest lecturer)
Onur Durucan (Guest lecturer)
Lidia Morelli (Guest lecturer)
Anja Boisen (Guest lecturer)
Department of Micro- and Nanotechnology
Nanoprobes
Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics

7th International SpectroRadiometer Comparison (ISRC 2017)
Period: 10 Jun 2017 → 14 Jun 2017
Anders Thorseth (Participant)
Nicholas Riedel (Participant)
Peter Behrens Dorff Poulsen (Participant)
Department of Photonics Engineering
Diode Lasers and LED Systems

Description
Instrument comparison of outdoor spectoradiometers
Degree of recognition: International
Links:

7th International SpectroRadiometer Comparison (ISRC 2017)
12/06/2017 → 16/06/2017
Catania, Italy
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Biophotonics 17: International Graduate Summer School on Biophotonics
Period: 10 Jun 2017 → 17 Jun 2017
Dominik Marti (Organizer)
Related event

Biophotonics 17: International Graduate Summer School on Biophotonics
10/06/2017 → 17/06/2017
Ven, Sweden
Activity: Attending an event › Participating in or organising a conference

12th International Conference on Occupational Stress and Health
Period: 9 Jun 2017
Christine Ipsen (Organizer)
Signe Poulsen (Organizer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
CREATING PROXIMITY ACROSS DISTANCES – MANAGEMENT TOOLS TO SUPPORT PERFORMANCE AND EMPLOYEE WELL-BEING

Degree of recognition: International

Related event
12th International Conference on Occupational Stress and Health: Contemporary Challenges and Opportunities
07/06/2017 → 10/06/2017
Minneapolis, United States
Activity: Attending an event › Participating in or organising a conference

12th International Conference on Occupational Stress and Health
Period: 9 Jun 2017
Christine Ipsen (Chairman)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Symposium: The role of managers in organizational interventions and non-interventions – at intra and inter-organizational work places
Degree of recognition: International

Related event
12th International Conference on Occupational Stress and Health: Contemporary Challenges and Opportunities
07/06/2017 → 10/06/2017
Minneapolis, United States
Activity: Attending an event › Participating in or organising a conference

Acting With Consideration for Level of Influence
Period: 9 Jun 2017
Christine Ipsen (Speaker)
Kasper Edwards (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International
Documents:
Principle 8 Ipsen and Edwards

Related event
12th International Conference on Occupational Stress and Health: Contemporary Challenges and Opportunities
07/06/2017 → 10/06/2017
Minneapolis, United States
Activity: Talks and presentations › Conference presentations

Developing communities of practice in health care
Period: 9 Jun 2017
Rasmus Jørgensen (Speaker)
Kasper Edwards (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Documents:
Developing communities of practice in health care

Related event
IFKAD 2017: Knowledge Management in the 21st Century: Resilience, Creativity and Co-creation
07/06/2017 → 09/06/2017
Russian Federation
Food production and exports in the Arctic island operated society - Qaanaaq an example
Period: 9 Jun 2017
Kåre Hendriksen (Speaker)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Degree of recognition: International

Related event
International Conference on Arctic Social Sciences
07/06/2017 → 12/06/2017
Umeå, Sweden
Activity: Talks and presentations › Conference presentations

Introduction to Applied Statistics with R for PhD Students
Period: 9 Jun 2017 → 30 Jun 2017
Anders Stockmarr (Lecturer)
Bjarne Kjær Ersbøll (Lecturer)
Elisabeth Wreford Andersen (Guest lecturer)
Murat Kulahci (Lecturer)
Andreas Baum (Lecturer)
Camilla Thyregod (Other)
Jesper Fink Andersen (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related organisation
Introduction to Applied Statistics with R for PhD Students
Stockmarr, A. (Lecturer), Ersbøll, B. K. (Lecturer), Andersen, E. W. (Guest lecturer), Kulahci, M. (Lecturer), Baum, A. (Lecturer), Thyregod, C. (Other), Andersen, J. F. (Other)
9 Jun 2017 → 30 Jun 2017
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

KOMET-projektet (Test af energiforbrug og måling af kostindtag med to metoder)
Period: 9 Jun 2017 → 15 Oct 2017
Julia Christensen (Participant)
National Food Institute
Division of Risk Assessment and Nutrition
Degree of recognition: International
Activity: Other

PRINCIPLE 8. ACTING WITH CONSIDERATION FOR LEVEL OF INFLUENCE
Period: 9 Jun 2017
Kasper Edwards (Guest lecturer)
Christine Ipsen (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Presentation
Ten Recommendations for the Design, Implementation and Evaluation of Improvements in Organizations
Period: 9 Jun 2017
Ulrica von Thiele Schwarz (Speaker)
Kasper Edwards (Speaker)
Christine Ipsen (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Understanding the potentials and development dynamics of Arctic island-economies as pre-conditions for sustainable regional and societal planning
Period: 9 Jun 2017
Kåre Hendriksen (Speaker)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Degree of recognition: International

Byggeri for millioner til DTU's bygningsingeniører
Period: 8 Jun 2017
Per Goltermann (Other)
Department of Civil Engineering
Section for Structural Engineering

**Description**
Gennemgang og diskussion ad DTU's udviklingsplaner for byggeriet, samt rundvisning og diskussion af bygge løsninger i bygning 128

**Related external organisation**
Dansk Betonforening
Activity: Other

**Can you design for Fidelity? How your intervention framework describes intended actions, participation and behavior**
Period: 8 Jun 2017
Signe Poulsen (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

**Related event**
12th International Conference on Occupational Stress and Health: Contemporary Challenges and Opportunities
07/06/2017 → 10/06/2017
Minneapolis, United States
Activity: Talks and presentations › Conference presentations

**CRISPR2017**
Period: 8 Jun 2017 → 11 Jun 2017
Yaojun Tong (Participant)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International

**Related event**
CRISPR2017
08/06/2017 → 10/06/2017
Big Sky, United States
Activity: Attending an event › Participating in or organising a conference

**Implementation of Preventive Interventions - What are the contextual co-players and opponents?**
Period: 8 Jun 2017
Signe Poulsen (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

**Related event**
12th International Conference on Occupational Stress and Health: Contemporary Challenges and Opportunities
07/06/2017 → 10/06/2017
Minneapolis, United States
Activity: Talks and presentations › Conference presentations
Integrating Work Environment Considerations Into Lean and Value Stream Mapping
Period: 8 Jun 2017
Kasper Edwards (Speaker)
Department of Management Engineering
Implementation and Performance Management
Degree of recognition: International

Related event
12th International Conference on Occupational Stress and Health: Contemporary Challenges and Opportunities
07/06/2017 → 10/06/2017
Minneapolis, United States
Activity: Talks and presentations › Conference presentations

Metabolic Engineering of Yeast for production of fuels and chemicals
Period: 8 Jun 2017
Jens Nielsen (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Yeast Cell Factories

Description
Plenary lecture

Related event
RRB-13: Renewable Resources and Biorefineries
07/06/2017 → 09/06/2017
Wroclaw, Poland
Activity: Talks and presentations › Conference presentations

Protecting the built environment without killing the idea
Period: 8 Jun 2017
Laila Zwisler (Speaker)
Department of Physics

Description
Often conservation strategies for the built environment advocate focus on architecture and originality and these are interesting features of many university campuses. But this focus could also fossilize the buildings to such an extent, that they cannot support the main activities of a university. If this happens, what have we really kept for the future? A university must live and evolve and the built environment must often change with it. Can we preserve the atmospheres, the lives lived and the purposes of universities as integrated into the built environment. Should conservation focus mainly on the mundane as well as the signs of use and change? Integrating traces of the past into refurbishments and new buildings can be a way forward. But we need to be very vigilant about our choices and the effects of them. There is more at stake than practicalities. The preserved becomes symbolic, often idealized, and affect identities. If houses as Bourdieu claims can make us reproduce patterns of behavior, our conservation strategies carries very deep messages. One message could be that the past and the future are connected at a university.
Degree of recognition: International
Links:
http://www.universeum2017.rect.bg.ac.rs/preliminaryprogram.php (Conference website)

Related event
Universeum Network Meeting: Mobility of University Heritage
08/06/2017 → 10/06/2017
Belgrade, Serbia
Activity: Talks and presentations › Conference presentations
Solving 2D/3D Heat Conduction Problems by Combining Topology Optimization and Anisotropic Mesh Adaptation
Period: 8 Jun 2017
Kristian Ejlebjærg Jensen (Guest lecturer)
Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics
Department of Micro- and Nanotechnology
Nanoprobes

Related event
12th World Congress of Structural and Multidisciplinary Optimization
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Talks and presentations › Conference presentations

THE FISHBONE WORKSHOP: HOW TO TRANSFORM INITIAL PROBLEM IDENTIFICATION TO INTERVENTION INITIATIVES
Period: 8 Jun 2017
Christine Ipsen (Speaker)
Signe Poulsen (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related event
12th International Conference on Occupational Stress and Health: Contemporary Challenges and Opportunities
07/06/2017 → 10/06/2017
Minneapolis, United States
Activity: Talks and presentations › Conference presentations

12th World Congress of Structural and Multidisciplinary Optimisation
Period: 7 Jun 2017
Kasper Sandal (Participant)
Susana Rojas Labanda (Participant)
Mathias Stolpe (Participant)
Department of Wind Energy

Description
Sizing optimization of an offshore wind turbine jacket under dynamic loads considering stress and eigenfrequency constraints

Related event
12th World Congress of Structural and Multidisciplinary Optimisation
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Attending an event › Participating in or organising a conference

12th World Congress of Structural and Multidisciplinary Optimization
Period: 7 Jun 2017
Asger Bech Abrahamsen (Participant)
Mathias Stolpe (Participant)
Department of Wind Energy

Description
Optimal design of a galvanic corrosion protection systems for offshore wind turbine support structures
Degree of recognition: International
Links:
http://www.wcsmo12.org/

Related event

12th World Congress of Structural and Multidisciplinary Optimization
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Attending an event › Participating in or organising a conference

Eurelectric - Florence School of Regulation
Period: 7 Jun 2017
Claire Bergaentzlé (Participant)
Energy Economics and Regulation
Department of Management Engineering
Systems Analysis
Degree of recognition: International
Documents:
Agenda - The electricity market design of the future - 7 June

Related event

Eurelectric - Florence School of Regulation: What market design for a decarbonized electricity market?
07/06/2017 → 07/06/2017
Brussels, Belgium
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

FlexEm 2050 - Flexible Electricity Markets for Decarbonized Systems
Period: 7 Jun 2017
Klaus Skytte (Speaker)
Department of Management Engineering
Systems Analysis

Description
Conference: The electricity market design of the future
Euroelectric and Florence School of Regulation, Brussels
Degree of recognition: International
Documents:
FlexEm 2050_slides070617_a

Related event

The electricity market design of the future: Euroelectric and Florence School of Regulation
07/06/2017 → 07/06/2017
Brussels, Belgium
Activity: Talks and presentations › Conference presentations

International Congres on Arctic Social Sciences
Period: 7 Jun 2017 → 12 Jun 2017
Kåre Hendriksen (Organizer)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Description
Organizer and chair of session: Island operations - a driver in the urbanization?
Degree of recognition: International

Related event

International Congress on Arctic Social Sciences: ICASS IX
07/06/2017 → 12/06/2017
Umeå, Sweden
Activity: Attending an event › Participating in or organising a conference

Mapping offshore winds in the New European Wind Atlas (NEWA)
Period: 7 Jun 2017
Ioanna Karagali (Invited speaker)
Charlotte Bay Hasager (Other)
Merete Badger (Other)
Andrea N. Hahmann (Other)
Patrick Volker (Other)
Alfredo Peña (Guest lecturer)
Julia Gottschall (Other)
Eleonora Catalano (Other)
Jakob Mann (Other)
Department of Wind Energy
Meteorology & Remote Sensing
Resource Assessment Modelling

Related event

Offshore Wind Energy 2017
06/06/2017 → 08/06/2017
London, United Kingdom
Activity: Talks and presentations › Conference presentations

Nordic Dairy Congress, 7-9 June 2017, Copenhagen, Denmark
Period: 7 Jun 2017 → 9 Jun 2017
Veronica Martinez Rios (Participant)
National Food Institute
Research Group for Analytical and Predictive Microbiology
Description
‘Predictive modelling to improve and document safety of dairy products’ at Nordic Dairy Congress, Copenhagen, Denmark.

Degree of recognition: International

Related event

Nordic Dairy Congress, 7-9 June 2017, Copenhagen, Denmark: Adding value
07/06/2017 → 09/06/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising a conference

Optimal design of a galvanic corrosion protection systems for offshore wind turbine support structures
Period: 7 Jun 2017
Ali Sarhadi (Speaker)
Department of Wind Energy
Related event

12th World Congress of Structural and Multidisciplinary Optimization
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Talks and presentations › Conference presentations

'Predictive modelling to improve and document safety of dairy products' at Nordic Dairy Congress, Copenhagen, Denmark.
Period: 7 Jun 2017 → 9 Jun 2017
Paw Dalgaard (Invited speaker)
Ioulia Koukou (Other)
Veronica Martinez Rios (Guest lecturer)
National Food Institute
Research Group for Analytical and Predictive Microbiology
Description
Degree of recognition: International

Related event

Nordic Dairy Congress, 7-9 June 2017, Copenhagen, Denmark: Adding value
07/06/2017 → 09/06/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Prevalence of Listeria monocytogenes in European cheeses: A systematic review and meta-analysis
Period: 7 Jun 2017 → 9 Jun 2017
Veronica Martinez Rios (Speaker)
Paw Dalgaard (Other)
National Food Institute
Research Group for Analytical and Predictive Microbiology
Description
Degree of recognition: International

Related event

Nordic Dairy Congress 2017
07/06/2017 → 09/06/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Scientific committee for 44th Nordic Dairy Congress (Event)
Period: 7 Jun 2017 → 9 Jun 2017
Paw Dalgaard (Member)
National Food Institute
Research Group for Analytical and Predictive Microbiology
Description
Related event

Scientific committee for 44th Nordic Dairy Congress: Adding Value to Dairy
07/06/2017 → 09/06/2017
Copenhagen, Denmark
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

Sizing optimization of an offshore wind turbine jacket under dynamic loads considering stress and eigenfrequency constraints
Period: 7 Jun 2017
Alexander Verbart (Speaker)
Department of Wind Energy

Related event

12th World Congress of Structural and Multidisciplinary Optimisation
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Talks and presentations › Conference presentations

University Industry Interaction Conference 2017, Dublin
Period: 7 Jun 2017 → 9 Jun 2017
Ian Bridgwood (Speaker)
Center for Bachelor of Engineering Studies
Afdelingen for Informatik

Description
From innovation to implementation - SME collaboration in student projects.

Related external organisation

University Industry Innovation Network
Science Park 400, 098XH Amsterdam, Amsterdam, Netherlands
Activity: Talks and presentations › Conference presentations

WORK, STRESS and HEALTH
Period: 7 Jun 2017 → 10 Jun 2017
Kasper Edwards (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
The 12th International Conference on Occupational Stress and Health
Links:
http://www.apa.org/wsh/preliminary-program.pdf (Conference program)

Related event

12th International Conference on Occupational Stress and Health: Contemporary Challenges and Opportunities
07/06/2017 → 10/06/2017
Minneapolis, United States
Activity: Talks and presentations › Conference presentations

Flexibility-friendly support policies: A Nordic and Baltic Perspective
Period: 6 Jun 2017
Luis Rafael Boscán Flores (Speaker)
Department of Management Engineering
Systems Analysis

Description
Presentation slides
Degree of recognition: International
Documents:
Flexibility-friendly support policies

Related event
14th International Conference on the European Energy Market
06/06/2017 → 09/06/2017
Dresden, Germany
Activity: Talks and presentations › Conference presentations

Inclusive planning in transport and energy STI-policies
Period: 6 Jun 2017 → 9 Jun 2017
Per Dannemand Andersen (Speaker)
Meiken Hansen (Other)
Department of Management Engineering
Technology and Innovation Management

Description
Extended abstract
Degree of recognition: International
Documents:
Andersen Hansen Selin abstract

Related event
07/06/2017 → 09/06/2017
Vienna, Austria
Activity: Talks and presentations › Conference presentations

Near-shore wind resource estimation using lidar measurements and modelling
Period: 6 Jun 2017 → 8 Jun 2017
Rogier RalphFloors (Guest lecturer)
Andrea N. Hahmann (Guest lecturer)
Alfredo Peña (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling
Meteorology & Remote Sensing

Description
The atmospheric flow in the coastal zone is investigated using (scanning) lidars, mast measurements and the mesoscale WRF model. The WRF model is set-up in 12 different configurations using 2 planetary boundary-layer schemes, 3 horizontal grid spacings and varied sources of land use, and initial and lower boundary conditions.
Documents:
OWE17-RogierFloors-PO026

Related event
WindEurope Offshore 2017
06/06/2017 → 08/06/2017
Regulatory barriers for activating flexibility in the Nordic-Baltic electricity market
Period: 6 Jun 2017 → 9 Jun 2017
Claire Bergaentzlé (Speaker)
Department of Management Engineering

Related event
International Conference on the European Energy Market
06/06/2017 → 09/06/2017
Dresden, Germany
Activity: Talks and presentations › Conference presentations

12th World Congress of Structural and Multidisciplinary Optimisation
Period: 5 Jun 2017
Mathias Stolpe (Participant)
Susana Rojas Labanda (Participant)
José Pedro Albergaria Amaral Blasques (Participant)
Department of Wind Energy

Description
3D structural topology optimization of wind turbine blades with stiffness and frequency constraints
Degree of recognition: International

Related event
12th World Congress of Structural and Multidisciplinary Optimisation
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Attending an event › Participating in or organising a conference

Description
Simultaneous Analysis and Design formulation for sizing optimization problems under many dynamic loads
Degree of recognition: International

Related event
12th World Congress of Structural and Multidisciplinary Optimisation
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Attending an event › Participating in or organising a conference

3D structural topology optimization of wind turbine blades with stiffness and frequency constraints
Period: 5 Jun 2017
Christian Carstensen (Speaker)
Department of Wind Energy
Degree of recognition: International

Related event

12th World Congress of Structural and Multidisciplinary Optimisation
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Talks and presentations › Conference presentations

Comparison of fatigue constraints in optimal design of jacket structures for offshore wind turbines
Period: 5 Jun 2017 → 9 Jun 2017
Kasper Sandal (Speaker)
Department of Wind Energy
Wind Turbine Structures and Component Design
Degree of recognition: International

Related event

12th World Congress of Structural and Multidisciplinary Optimisation
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Talks and presentations › Conference presentations

Dynamics Days Europe 2017
Period: 5 Jun 2017
Erik Andreas Martens (Speaker)
Department of Applied Mathematics and Computer Science
Dynamical Systems
Department of Electrical Engineering

Description
Organization of minisymposium "Complex patterns on networks"
Degree of recognition: International

Related event

Dynamics Days Europe 2017
05/06/2017 → …
Szeged, Hungary
Activity: Talks and presentations › Conference presentations

High Throughput Engineering of CHO Cells
Period: 5 Jun 2017
Bjørn Gunnar Voldborg (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Core
Degree of recognition: International

Related event

KNECT365 Cell Line Development and Engineering
05/06/2017 → 07/06/2017
San Diego, United States
Activity: Talks and presentations › Conference presentations
Modelling of disease spread
Period: 5 Jun 2017 → 23 Jun 2017
Ana Carolina Lopes Antunes (Participant)
National Veterinary Institute
Epidemiology

Related event
Modelling of disease spread
05/06/2017 → 23/06/2017
Lyngby, Denmark
Activity: Other

Optimal modular design of jacket structures for offshore wind turbines
Period: 5 Jun 2017 → 9 Jun 2017
Mathias Stolpe (Speaker)
Kasper Sandal (Speaker)
Department of Wind Energy
Degree of recognition: International

Related event
12th World Congress of Structural and Multidisciplinary Optimisation
05/06/2017 → 09/06/2017
Braunschweig, Germany
Activity: Talks and presentations › Conference presentations

European Renal Association – European Dialysis and Transplantation Association
Period: 3 Jun 2017 → 6 Jun 2017
Signe Holm Nielsen (Organizer)
Department of Biotechnology and Biomedicine
Disease Systems Immunology

Related event
European Renal Association – European Dialysis and Transplantation Association: 54th congress
03/06/2017 → 06/06/2017
Madrid, Spain
Activity: Attending an event › Participating in or organising a conference

Estimating the burden of foodborne diseases: an integrated approach
Period: 2 Jun 2017
Sara Monteiro Pires (Speaker)
National Food Institute
Research Group for Risk-Benefit

Related event
GoFood 2017
31/05/2017 → 02/06/2017
Lund, Sweden
Activity: Talks and presentations › Conference presentations

Genome engineering of CHO cell factories. 12th Danish Conference on Biotechnology and Molecular Biology, Vejle, Danmark.
Period: 2 Jun 2017
Helene Faustrup Kildegaard (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: International

Related event

12th Danish Conference on Biotechnology and Molecular Biology
01/06/2017 → 02/06/2017
Activity: Talks and presentations › Conference presentations

PhD Assessment Committee Aalborg University (External organisation)
Period: 2 Jun 2017
Ole Broberg (Participant)

Copenhagen Center for Health Technology
Department of Management Engineering
Engineering Systems

Description
Member of assessment committee for PhD thesis by Anne Helbo Jespersen "OHS management systems audits as a regulatory instrument of psychosocial risks - principles and practice"
Degree of recognition: International

Related external organisation

PhD Assessment Committee Aalborg University
Activity: Membership › Membership in review committee

12th DANISH CONFERENCE ON BIOTECHNOLOGY AND MOLECULAR BIOLOGY (DCB12)
Period: 1 Jun 2017 → 2 Jun 2017
Carola Elisa Heesemann Rosenkilde (Organizer)
Novo Nordisk Foundation Center for Biosustainability

Bacterial Synthetic Biology
Degree of recognition: International
Links:
http://danishbiotechsociety.org/conferences-events/

Related event

12th DANISH CONFERENCE ON BIOTECHNOLOGY AND MOLECULAR BIOLOGY (DCB12): CRISPR-based technologies and Bio-products
01/06/2017 → 02/06/2017
Vejle, Denmark
Activity: Attending an event › Participating in or organising a conference

12th DANISH CONFERENCE ON BIOTECHNOLOGY AND MOLECULAR BIOLOGY (DCB12)
Period: 1 Jun 2017 → 2 Jun 2017
Sara Pereira (Speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design

Description
CRISPR-based technologies and Bio-products
Participation with a poster.
Degree of recognition: National

Related event
A Critical and in-depth analysis of the environmental aspect of the OECD SP dossiers

Period: 1 Jun 2017

Steffen Foss Hansen (Speaker)
Anders Baun (Other)
Rune Hjorth (Other)
Lars Michael Skjolding (Other)

Department of Environmental Engineering

Environmental Chemistry

Description

Degree of recognition: International

Related external organisation

National Research Center for Working Environment
Denmark

ASM Microbe

Period: 1 Jun 2017

Lejla Imamovic (Organizer)

Novo Nordisk Foundation Center for Biosustainability

Research Groups

Bacterial Synthetic Biology

Description
Workshop: Functional Metagenomic Selections for Antibiotic Resistance Gene Profiling

Related event

American Society for Microbiology 2017: ASM Microbe
01/06/2017 → 05/06/2017
New Orleans, United States

ASM Microme 2017

Period: 1 Jun 2017

Morten Otto Alexander Sommer (Invited speaker)

Novo Nordisk Foundation Center for Biosustainability

Bacterial Synthetic Biology

Description
Organising a workshop "Functional Metagenomic Selections for Antibiotic Resistance Gene Profiling"

Related event

ASM Microme 2017: ASM Microme
01/06/2017 → 05/06/2017
New Orleans, United States

Activity: Talks and presentations › Conference presentations
Engineering CHO cell's amino acid metabolism using CRISPR/Cas9 towards optimal by-product and cell growth phenotypes
Period: 1 Jun 2017 → 2 Jun 2017
Sara Pereira (Speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design

Description
Poster award (2nd place) and oral presentation
Degree of recognition: National

Related event
12th DANISH CONFERENCE ON BIOTECHNOLOGY AND MOLECULAR BIOLOGY (DCB12): CRISPR-based technologies and Bio-products
01/06/2017 → 02/06/2017
Vejle, Denmark
Activity: Talks and presentations › Conference presentations

Exploring the potential for improved satellite coverage in the High North
Period: 1 Jun 2017
Jens Olaf Pepke Pedersen (Speaker)
National Space Institute
Innovation and Research-based consultancy
Degree of recognition: International

Related event
Arctic Patrol and Reconnaissance 2017
31/05/2017 → 01/06/2017
Copenhagen, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Period: 1 Jun 2017
Ali Davoudinejad (Speaker)
Department of Mechanical Engineering
Manufacturing Engineering

Description
This study investigates the micro end-milling process by using a 3D finite element modeling (3D FEM) approach. The FE model is developed for contouring up-milling operation to predict chip flow, burr formation and cutting forces. Different cutting conditions were simulated in order to investigate the influence of process variables that might be difficult or even impossible to follow in the physical experiments, particularly at this scale. 3D simulations of chip flow and temperature distribution are compared in various cutting conditions. The results of the burr formation and cutting forces predictions are compared against the experiments. The correlations were observed in terms of burr dimension trends and force profile shapes and magnitude.
Degree of recognition: International

Related event
17th euspen International Conference & Exhibition
29/05/2017 → 02/06/2017
Hannover, Germany
Activity: Talks and presentations › Conference presentations

Functional Metagenomic Selections for Antibiotic Resistance Gene Profiling
Period: 1 Jun 2017
Enhance your antibiotic resistance gene research by attending this hands-on workshop! This course will enable you to: Functional metagenomic selections are non-culture based method for resistome profiling from specimens that might be difficult or impossible to culture. This workshop will introduce the functional metagenomic selections as a tool to identify known and novel antibiotic resistance gene from complex clinical and environmental communities. Hands-on instructions will be provided on free analysis resources, which attendees will use to run on their computer. We will explore the options for antibiotic resistance gene annotations, showing participant how they can broadly annotate hundreds of antibiotic resistance genes from different data input and perform detailed BLAST analysis in CARD, Resfam and Pfam. Such skills are of interest to ASM attendees who wish to understand clinical and environmental reservoirs of antibiotic resistance genes.

Degree of recognition: International

Related event

American Society for Microbiology 2017: ASM Microbe
01/06/2017 → 05/06/2017
New Orleans, United States
Activity: Talks and presentations › Conference presentations

Outsourcing seen in perspective of Industry 4.0
01/06/2017 → 05/06/2017
New Orleans, United States
Activity: Talks and presentations › Conference presentations
Wind farm efficiency assessed by WRF with a statistical-dynamical approach
Period: 1 Jun 2017
Patrick Volker (Speaker)
Jake Badger (Speaker)
Andrea N. Hahmann (Speaker)
Hans Ejsing Jørgensen (Speaker)
Department of Wind Energy
Resource Assessment Modelling
Meteorology & Remote Sensing
Description
Discussion about large wind farms and their efficiency
Degree of recognition: International
Documents:
abstract_pvol

3D Printing of Bio-inspired Surfaces
Period: May 2017
Ali Davoudinejad (Supervisor)
Department of Mechanical Engineering
Manufacturing Engineering
Description
In this thesis report, the intersection of bio-inspired surfaces and additive manufacturing is investigated, with the aim of determining the feasibility and viability of leveraging 3D printing technologies to rapidly prototype surfaces that mirror those found in nature. While both of these areas are heavily researched, the overlap of the two is an area filled with endless potential, ranging from the medical industry to product design and much more. The ability to rapidly and inexpensively reproduce bio-inspired surfaces using conventional 3D printing at microscale would thus serve to enable the scientific community to conduct optimisation of 3D surface model designs and printing process parameters. This would allow for improved forecasting of surface properties before investment in nano-fabrication takes place. However, as biological surfaces display divergent and numerous features, this report utilises the gecko toes, known for their dry adhesion properties, as a case study and a basis for investigation. As a point of departure, a literature geometry based on the gecko toe is used as a benchmark.

With reference to the research consulted in the duration of this project, this report identifies multi-hierarchical structures, feature geometry, feature density, and manufacturing methods used as the key determinants of how well 3D printing can emulate the intricate features of the gecko's toes. In this regard, Stereolithography (SLA) and Direct Light Processing (DLP) are characterised via experiments involving translating a simplification of the gecko toes features derived from the literature (literature sample) into a CAD model, and thereafter printing the model while manipulating different process parameters. In this particular case, DLP was found to outperform SLA in relation to features sizes, tolerances and other qualitative and quantitative criteria. As such, this thesis focuses on DLP as the most promising manufacturing method for the purpose of this project's aim. Based on conducting a wettability test (water drop angle measurement), it was determined that smaller and more intricate designs showed better wettability properties compared with the simplified literature geometry. This is indicative of that the simplification of bio-inspired surfaces is likely detrimental to the emergent properties of the replicated geometry. Hence, the capabilities of 3D printing geometries to print smaller, denser an more complex surface features should enable a closer match between synthetic bio-surfaces and real ones.
Degree of recognition: International
Links:
Activity: Examinations and supervision › Supervisor activities

**DSWeb Magazine - The Dynamical Systems Web (Journal)**
Period: May 2017
Erik Andreas Martens (Reviewer)
Department of Applied Mathematics and Computer Science
Dynamical Systems

**Description**
https://dsweb.siam.org/
Degree of recognition: International

**Related journal**

**DSWeb Magazine - The Dynamical Systems Web**
Local database
Activity: Communication › Journal editor

**New process development in Open Innovation**
Period: May 2017 → Oct 2017
Giulia Nardelli (Supervisor)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
Special course (10 ECTS)
Degree of recognition: Local
Activity: Examinations and supervision › Supervisor activities

**Climate change mitigation potential of hydrochars**
Period: 31 May 2017
Mikolaj Owsianiak (Speaker)
Department of Management Engineering
Quantitative Sustainability Assessment

**Related event**

**Climate change mitigation potential of hydrochars**
31/05/2017 → 31/05/2017
Valencia, Spain
Activity: Talks and presentations › Conference presentations

**Consumers as risk managers: The benefit of quantification of food related health effects.**
Period: 31 May 2017
Maarten Nauta (Speaker)
National Food Institute
Research Group for Risk-Benefit
Degree of recognition: International

**Related event**

**GoFood 2017**
Green Light for Smarter Methods in Railway Safety Verification
Period: 31 May 2017
Anne Elisabeth Haxthausen (Guest lecturer)
Department of Applied Mathematics and Computer Science
Software Engineering

Description
Invited pitch talk

Related event
Transport Summer Summit DTU 2017: Challenges, research and new developments within transportation, mobility and sustainability
31/05/2017 → 31/05/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Vejbelysningsdagen 2017
Period: 31 May 2017
Anders Thorseth (Organizer)
Dennis Dan Corell (Organizer)
Johannes Lindén (Organizer)
Department of Photonics Engineering
Diode Lasers and LED Systems

Description
DOLL exhibition of measurement facilities
Degree of recognition: National

Related event
Vejbelysningsdagen 2017
31/05/2017 → 31/05/2017
Odense, Denmark
Activity: Attending an event › Participating in or organising a conference

Classification of electricity consumption using smart meter data
Period: 30 May 2017
Alexander Martin Tureczek (Speaker)
Department of Management Engineering
Systems Analysis
Degree of recognition: International
Documents:
Electricity Smart Meter Consumption Analytics_orbit

Related event
CITIES consortium meeting 2017: Centre for IT–Intelligent Energy System in Cities
30/05/2017 → 31/05/2017
Aarhus, Denmark
Activity: Talks and presentations › Conference presentations

Decision-making under uncertainty for energy companies in smart cities
Period: 30 May 2017
Daniela Guericke (Speaker)
Ignacio Blanco (Other)
Department of Applied Mathematics and Computer Science
Dynamical Systems
Centre for IT-Intelligent Energy Systems in Cities

Links:

Related event

CITIES consortium meeting 2017: Centre for IT-Intelligent Energy System in Cities
30/05/2017 → 31/05/2017
Aarhus, Denmark
Activity: Talks and presentations › Conference presentations

Modelling lidar volume-averaging and its effect on wake measurements
Period: 30 May 2017 → 1 Jun 2017
Alexander Raul Meyer Forsting (Speaker)
Department of Wind Energy
Aerodynamic design

Description
Wake conference 2017
Degree of recognition: International
Documents:
AMeyerForsting

Related event

Wake Conference 2017
30/05/2017 → 01/06/2017
Visby, Sweden
Activity: Talks and presentations › Conference presentations

Structured Literature Review of Electricity Consumption Classification Using Smart Meter Data
Period: 30 May 2017 → 31 May 2017
Alexander Martin Tureczek (Speaker)
Department of Management Engineering
Systems Analysis
Degree of recognition: International
Documents:
poster_cities_consortium_2017_århus

Related event

CITIES consortium meeting 2017: Centre for IT-Intelligent Energy System in Cities
30/05/2017 → 31/05/2017
Aarhus, Denmark
Activity: Talks and presentations › Conference presentations

Studenterinvolvering via ressourcemaessig effektiv peer review i et obligatorisk kursus i fysikken i medicinsk billedanneelse
Period: 30 May 2017
Jens E. Wilhjelm (Speaker)
Sidsel-Marie Winther Prag (Guest lecturer)
Department of Electrical Engineering
Biomedical Engineering

LearningLab DTU

Office for Study Programmes and Student Affairs

Degree of recognition: International

Links:

http://dun-net.dk/aktiviteter/2017/dun-conference-2017/program-sessions/ (Link to program)

Related event

DUN konference 2017

30/05/2017 → 31/05/2017

Vingsted, Denmark

Activity: Talks and presentations › Conference presentations

Udviklingskonference for mindre bosteder

Period: 30 May 2017 → 31 May 2017

Kåre Hendriksen (Keynote speaker)

Department of Civil Engineering

ARTEK, Section for Arctic Engineering and Sustainable Solutions

Description

Erhvervsudvikling i mindre bosteder - Qaanaaq og Qeqertat - et eksempel

Inoqarfinni minnerusuni inuutissarsiornermik inerisaaneq - Qaanaaq aamma Qeqertat – assersuut

Related event

Udviklingskonference for mindre bosteder

30/05/2017 → 31/05/2017

Nuuk, Greenland

Activity: Talks and presentations › Conference presentations

Development and application of CRISPR-Cas9 genome editing system in actinomycetes

Period: 29 May 2017

Yaojun Tong (Invited speaker)

Novo Nordisk Foundation Center for Biosustainability

New Bioactive Compounds

Description

KAIST-DTU biosustain workshop

Degree of recognition: International

Related external organisation

Korea Advanced Institute of Science & Technology

Korea, Republic of

Activity: Talks and presentations › Conference presentations

EUROLAB

Period: 29 May 2017

Heidi Huus Petersen (Organizer)

National Veterinary Institute

Bacteriology & Parasitology

Degree of recognition: Local

Related event

EUROLAB: Netværksmøde
29/05/2017 → 29/05/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Royal Meteorological Society. Quarterly Journal (Journal)**
Period: 29 May 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
Meteorology & Remote Sensing

Related journal

**Royal Meteorological Society. Quarterly Journal**
0035-9009
Web of Science (2017): Indexed Yes
Central database
Activity: Research › Peer review of manuscripts

**Systems Engineering Risk Management**
Period: 29 May 2017 → 2 Jun 2017
Josef Oehmen (Keynote speaker)
Department of Management Engineering
Engineering Systems

**Description**
Keynote speaker and co-organizer of IS3E 2017
Degree of recognition: International

**Related event**

**5th International Spring School on Systems Engineering**
29/05/2017 → 02/06/2017
Enschede, Netherlands
Activity: Talks and presentations › Conference presentations

**Tutorial on high-throughput computations**
Period: 29 May 2017 → 31 May 2017
Simon Loftager (Participant)
Department of Energy Conversion and Storage
Atomic scale modelling and materials

**Description**
MARVEL/MaX/Psi-k tutorial on high-throughput computations: General methods and applications using AiiDA
Degree of recognition: International

**Related event**

**Tutorial on high-throughput computations: General methods and applications using AiiDA**
29/05/2017 → 31/05/2017
Lausanne, Switzerland
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Praksisfællesskaber og procesensartethed**
Period: 28 May 2017
Rasmus Jørgensen (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Præsentation af min forskning samt invitation til muligt samarbejde

Related external organisation

Berendsen Textil Service A/S
Denmark
Activity: Talks and presentations ➔ Talks and presentations in private or public companies and organisations

Korea Advanced Institute of Science and Technology (KAIST)
Period: 27 May 2017 → 29 May 2017
Yaojun Tong (Visiting researcher)

Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds

Description
visited the lab of Sang Yup Lee in KAIST
Degree of recognition: International
Activity: Visiting an external institution ➔ Visiting another research institution

IEEE Transactions on Industrial Electronics (Journal)
Period: 26 May 2017 → …
Anders Thorseth (Reviewer)

Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International

Related journal
IEEE Transactions on Industrial Electronics
0278-0046
Central database
Activity: Research ➔ Peer review of manuscripts

Nature Conference
Period: 26 May 2017 → 29 May 2017
Thomas Willum Hansen (Participant)

Center for Electron Nanoscopy
Center for Nanostructured Graphene
DTU Danchip
Degree of recognition: International

Related event
26/05/2017 → 29/05/2017
Hangzhou, China
Activity: Attending an event ➔ Participating in or organising a conference

2nd International workshop for in situ TEM
Period: 25 May 2017 → 26 May 2017
Thomas Willum Hansen (Invited speaker)
Center for Electron Nanoscopy
Center for Nanostructured Graphene
DTU Danchip
Degree of recognition: International

Related external organisation

Zhejiang University
China
Activity: Talks and presentations › Conference presentations

In silico and experimental tools for natural products genome mining and engineering
Period: 24 May 2017
Tilmann Weber (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International

Related event

18th International Symposium on the Biology of Actinomycetes
23/05/2017 → 27/05/2017
Jeju, Korea, Republic of
Activity: Talks and presentations › Conference presentations

Tidlig kolonisering af mikrobiota og betydningen af overgangskost hos småbørn
Period: 24 May 2017
Martin Iain Bahl (Speaker)
National Food Institute
Research Group for Gut Microbiology and Immunology

Related event

Det årlige videnskabelige temamøde i Selskab for Ernæringsforskning
24/05/2017 → 24/05/2017
Valby, Denmark
Activity: Talks and presentations › Conference presentations

WISE project - Experiences & Funding Bazar
Period: 24 May 2017
Katrine Nielsen (Organizer)
Birgitte Neergaard (Organizer)
Berit Godskesen (Organizer)
Viggo Aaberg Kærn (Organizer)
Lærke Philipsen (Organizer)
Peter Steen Mikkelsen (Organizer)
Camilla Bitsch (Organizer)
Department of Environmental Engineering
Urban Water Systems
Office for Innovation & Sector Services

Related event

WISE project - Experiences & Funding Bazar
24/05/2017 → 24/05/2017
Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

WISE-project - Societal needs to be solved & Professional mingling
Period: 24 May 2017
Katrine Nielsen (Organizer)
Berit Godskesen (Organizer)
Lærke Philipsen (Organizer)
Birgitte Neergaard (Organizer)
Viggo Aaberg Kærn (Organizer)
Peter Steen Mikkelsen (Organizer)
Camilla Bitsch (Organizer)
Department of Environmental Engineering
Urban Water Systems
Office for Innovation & Sector Services
Degree of recognition: National

Related event

WISE-project - Societal needs to be solved & Professional mingling
24/05/2017 → 24/05/2017
Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

18th International Symposium on the Biology of Actinomycetes
Period: 23 May 2017 → 27 May 2017
Tilmann Weber (Participant)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International

Related event

18th International Symposium on the Biology of Actinomycetes
23/05/2017 → 27/05/2017
Jeju, Korea, Republic of
Activity: Attending an event › Participating in or organising a conference

18th International Symposium on the Biology of Actinomycetes
Period: 23 May 2017 → 27 May 2017
Helene Lunde Robertsen (Participant)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International
Documents:
ISBA abstract

Related event

18th International Symposium on the Biology of Actinomycetes
23/05/2017 → 27/05/2017
Jeju, Korea, Republic of
Activity: Attending an event › Participating in or organising a conference
3th Water DTU Partner Seminar
Period: 23 May 2017 → 24 May 2017
Peter Steen Mikkelsen (Organizer)
Katrine Nielsen (Organizer)
Berit Godskesen (Organizer)
Birgitte Neergaard (Organizer)
Camilla Bitsch (Organizer)
Viggo Aaberg Kærn (Organizer)
Lærke Philipsen (Organizer)
Department of Environmental Engineering
Urban Water Systems
Office for Innovation & Sector Services
Degree of recognition: National

Related event
3th Water DTU Partner Seminar
23/05/2017 → 24/05/2017
Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

A Highly Efficient CRISPR-Cas9 System For Actinomycetal Genome Editing
Period: 23 May 2017 → 27 May 2017
Yaojun Tong (Other)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds

Description
poster presentation at ISBA 2017
Degree of recognition: International

Related event
18th International Symposium on the Biology of Actinomycetes
23/05/2017 → 27/05/2017
Jeju, Korea, Republic of
Activity: Talks and presentations › Conference presentations

EMRS Spring meeting 2017
Period: 23 May 2017
Jørgen Schou (Participant)
Andrea Carlo Cazzaniga (Participant)
Stela Canulescu (Organizer)
Rebecca Bolt Ettlinger (Participant)
Nini Pryds (Participant)
Ole Hansen (Organizer)
Andrea Crovetto (Organizer)
Chang Yan (Participant)
Kaiwen Sun (Participant)
Xiaojing Hao (Participant)
Department of Photonics Engineering
Photovoltaic Materials and Systems
Optical Microsensors and Micromaterials
Department of Energy Conversion and Storage
Electrofunctional materials
Experimental Surface and Nanomaterials Physics
Department of Micro- and Nanotechnology
Silicon Microtechnology
Department of Physics

Description
Pulsed laser deposition (PLD) of the CZTS absorber for thin solar cells with up to 5.2-% -efficiency
Degree of recognition: International
Documents:
Abstract Earth-abundant CZTS

Related event
EMRS Spring meeting 2017
22/05/2017 → 26/05/2017
Strasbourg, France
Activity: Attending an event › Participating in or organising a conference

ETALEE 2017
Period: 23 May 2017 → 24 May 2017
Carsten Thure Kirkeby (Participant)
National Veterinary Institute
Epidemiology

Description
The aim of the conference is to shine the spot light on forms of teaching and learning that motivate, activate and engage students. The conference aims to provide a meeting place where you can interact and exchange experiences with colleagues from other engineering education institutions. Thus, you are encouraged to bring good examples from your teaching practice on the use of active learning (article in danish - english) in engineering education.
The conference will be a mixture of active keynotes, practical Hands-on sessions, Explore sessions, an active Poster session and social arrangements.
Degree of recognition: International
Links:
http://www.etalee.dk

Related event
ETALEE 2017: Exploring Teaching for Active Learning in Engineering Education 2017
23/05/2017 → 24/05/2017
Odense, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

TEACH FOOD -Developing a teacher's community of practice
Period: 23 May 2017 → 24 May 2017
Lene Duedahl-Olesen (Speaker)
Håkan Vigre (Other)
Lars Bogø Jensen (Other)
Pernille Hammar Andersson (Other)
National Food Institute
Research Group for Analytical Food Chemistry
Description
Oral Presentation and paper
Degree of recognition: International
Documents:
TEACH FOOD abstract

Related event
ETALEE 2017: Exploring Teaching for Active Learning in Engineering Education 2017
23/05/2017 → 24/05/2017
Odense, Denmark
Activity: Talks and presentations › Conference presentations

Tools for improved genome engineering of CHO cell factories. 2nd International Advanced Biomanufacturing Conference. Sheffield, UK.
Period: 23 May 2017
Helene Fastrup Kildegaard (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design

Related event
2nd International Advanced Biomanufacturing Conference
22/05/2017 → 23/05/2017
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Animal Parasitology
Period: 22 May 2017
Heidi Huus Petersen (Guest lecturer)
National Veterinary Institute

Related external organisation
University of Copenhagen
Bülowsvej 17, 1780, Copenhagen, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Canards in Stiction: On Solutions of a Friction Oscillator by Regularization
Period: 22 May 2017
Elena Bossolini (Speaker)
Department of Applied Mathematics and Computer Science
Mathematics

Description
We consider the problem of the friction oscillator using the stiction model of friction. This friction law has a discontinuity between the dynamic and the static regime. The discontinuity set has a sticking region in which the forward solution is non-unique. In particular, there are special points along these segments where the solution is tangent to the boundary of the discontinuity set. In order to resolve this uncertainty, we introduce a regularization of the vector field and we obtain a multiple-time scale problem. Here the special points of the piecewise-smooth problem become folded saddles and a canard solution appears. We study the interaction of periodic orbits with the canard and we find that the the regularized problem has solutions that do not appear in the original problem.
Degree of recognition: International

Links:
http://meetings.siam.org/sess/dsp_programsess.cfm?SESSIONCODE=61861 (Minisymposium description)
Related event

**SIAAM Conference on Applications of Dynamical Systems 2017**
21/05/2017 → 26/05/2017
Snowbird, United States
Activity: Talks and presentations › Conference presentations

**Developing Active Sulfide- and Phosphide-based Catalysts for Sustainable Electrochemical Hydrogen Production**
Period: 22 May 2017 → 23 May 2017
Jakob Kibsgaard (Speaker)
Department of Physics
 Experimental Surface and Nanomaterials Physics

Related event

**Dansk Fysisk Selakab annual meeting**
22/05/2017 → 23/05/2017
Denmark
Activity: Talks and presentations › Conference presentations

**DTU Project Risk Forum**
Period: 22 May 2017
Josef Oehmen (Chairman)
Pelle Lundquist Willumsen (Organizer)
Department of Management Engineering
Engineering Systems

**Description**
Industry-university event to discover and exchange best practice regarding engineering project risk management. Part of a Nordic 5 Tech Initiative.
Degree of recognition: National

Related event

**DTU Project Risk Forum**
22/05/2017 → 22/05/2017
Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

**DTU Project Risk Forum**
Period: 22 May 2017
Miroslava Tegeltija (Keynote speaker)
Department of Management Engineering
Engineering Systems

**Description**
Industry-university event to discover and exchange best practice regarding engineering project risk management. Part of a Nordic 5 Tech Initiative.
Degree of recognition: National

Related event

**DTU Project Risk Forum**
22/05/2017 → 22/05/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations
**High-energy deposition methods for CZTS and CTS solar cells**

*Period: 22 May 2017 → 23 May 2017*

- Jørgen Schou (Other)
- Rebecca Bolt Ettlinger (Guest lecturer)
- Andrea Carlo Cazzaniga (Other)
- Stela Canulescu (Other)
- K. Normann (Other)
- F. Pattini (Other)
- Stefano Rampino (Other)
- Eduardo Gilioli (Other)

Department of Photonics Engineering

Optical Microsensors and Micromaterials

Degree of recognition: National

Documents:

- DFS 2017 abstract R Ettlinger (3)

**Related event**

**Dansk Fysisk Selskab annual meeting**

*22/05/2017 → 23/05/2017*

Denmark

Activity: Talks and presentations › Conference presentations

**Introduction to R**

*Period: 22 May 2017*

- Anders Stockmarr (Speaker)

Department of Applied Mathematics and Computer Science

Statistics and Data Analysis

Department of Management Engineering

Degree of recognition: Local

Documents:

- Intro R DTU Management Engineering
- Intro R DTU Management Engineering

**Related organisation**

Introduction to R
Canards in Stiction: On Solutions of a Friction Oscillator by Regularization

We consider the problem of the friction oscillator using the stiction model of friction. This friction law has a discontinuity between the dynamic and the static regime. The discontinuity set has a sticking region in which the forward solution is non-unique. In particular, there are special points along these segments where the solution is tangent to the boundary of the discontinuity set. In order to resolve this uncertainty, we introduce a regularization of the vector field and we obtain a multiple-time scale problem. Here the special points of the piecewise-smooth problem become folded saddles and a canard solution appears. We study the interaction of periodic orbits with the canard and we find that the the regularized problem has solutions that do not appear in the original problem.

Degree of recognition: International

Links:
http://meetings.siam.org/sess/dsp_programsess.cfm?SESSIONCODE=61861 (Minisymposium description)

Silent vanA in Enterococcus faecium from Danish pigs

Internship of Hans Murillo in relation to the One Health course held at University of Copenhagen, Denmark

Degree of recognition: National

Activity: Examinations and supervision › Supervisor activities
The 16th Protein.DTU Workshop : Networking for Young Researchers
Period: 22 May 2017
Henning Gram Hansen (Speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design

Description
Recombinant therapeutic glycoproteins: Improving the productivity in Chinese hamster ovary cells
Degree of recognition: National

Related event
The 16th Protein.DTU Workshop : Networking for Young Researchers
22/05/2017 → 22/05/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

The DTU fusor – Fusion power at your fingertips
Period: 22 May 2017
Jesper Rasmussen (Speaker)
Department of Physics
Plasma Physics and Fusion Energy

Related event
Danish Physical Society Annual Meeting 2017
22/05/2017 → 23/05/2017
Activity: Talks and presentations › Conference presentations

The effect of dopants on grain growth and PL in CZTS nanoparticle thin films for solar cell applications
Period: 22 May 2017 → 26 May 2017
Sara Lena Josefin Engberg (Guest lecturer)
Department of Photonics Engineering
 Optical Microsensors and Micromaterials
Degree of recognition: International

Related external organisation
European Materials Research Society
Lille, France
Activity: Talks and presentations › Conference presentations

Frontiers International Conference on Wastewater Treatment (FICWTM2017)
Period: 21 May 2017 → 24 May 2017
Carlos Domingo-Felez (Participant)
Department of Environmental Engineering
Water Technologies

Related event
Frontiers International Conference on Wastewater Treatment (FICWTM2017): FICWTM 2017
21/05/2017 → 24/05/2017
Palermo, Italy
Activity: Attending an event › Participating in or organising a conference
Low nitrous oxide production in intermittent-feed high performance nitritating reactors
Period: 21 May 2017 → 24 May 2017
Qingxian Su (Keynote speaker)
Department of Environmental Engineering
Water Technologies

Description
Flash presentation
Degree of recognition: International

Related event
Frontiers International Conference on Wastewater Treatment (FICWTM2017): FICWTM 2017
21/05/2017 → 24/05/2017
Palermo, Italy
Activity: Talks and presentations › Conference presentations

Position Dependence of Fractional Derivative Models for Loudspeaker Voice Coils with Lossy Inductance
Period: 20 May 2017
Alexander Weider King (Speaker)
Department of Electrical Engineering
Acoustic Technology

Description
Commonly used models of moving-coil loudspeaker voice coils, which include effects from eddy current losses, are either inaccurate or contain an abundance of parameters and are difficult to extend to the nonlinear domain. On the contrary, fractional derivative models accurately describe the frequency and position dependence of the lossy inductance, with meaningful connections to the underlying physics, while keeping the number of parameters low. These fractional derivatives are also compatible with state-space polynomial methods of modeling nonlinear behavior. It is shown that the fractional order derivative approaches a value of 1, corresponding to an ideal inductance, when the voice coil is completely outside the magnetic system. Finally, the developed model reveals details about the effect of conductive voice coil formers.
Degree of recognition: International

Related event
142nd International Audio Engineering Society (AES) Convention
20/05/2017 → 23/05/2017
Berlin, Germany
Activity: Talks and presentations › Conference presentations

A new association scheme for mono-ethylene glycol within Cubic-Plus-Association equation of state
Period: 19 May 2017
Francois Kruger (Guest lecturer)
Center for Energy Resources Engineering
Department of Chemical and Biochemical Engineering
CERE – Center for Energy Resources Engineering

Description
Presentation and poster detailing work on newly proposed association schemes for MEG, along with uncertainty analysis for the parameterization
Degree of recognition: International
Documents:
ESAT 2017: Uncertainty Analysis for the Parameterization of Glycols

Related event
29th European Symposium on Applied Thermodynamics
18/05/2017 → 21/05/2017
Bucharest, Romania
Creating bio-based solutions for a sustainable economy: technological developments and case studies
Period: 19 May 2017
Solange I. Mussatto (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Biomass Conversion and Bioprocess Technology
Degree of recognition: International

Related event
HYBER Symposium 2017
18/05/2017 → 19/05/2017
Helsinki, Finland

Smart regulatory framework conditions for smart energy systems? Incentives for flexible district heating in the Nordic countries
Period: 19 May 2017
Daniel Møller Sneum (Guest lecturer)
Department of Management Engineering
Systems Analysis

Description
Analyses of the impact of taxes, subsidies and grid tariffs, on the investment in - and operation of - renewables-based district heating plants in the Nordic countries.
Degree of recognition: International
Documents:
Smart regulatory framework conditions for smart energy systems?

Related event
2nd HAEE INTERNATIONAL CONFERENCE : The landscape in the new era of energy transition: Challenges, investment opportunities and technological innovations
18/05/2017 → 20/05/2017
Athens, Greece

A Method For Effect Modifier Assessment In Intervention Research – The EMA Method
Period: 18 May 2017
Kasper Edwards (Speaker)
Jørgen Winkel (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related event
European Association of Work and Organizational Psychology: Enabling Change through Work and Organizational Psychology
17/05/2017 → 20/05/2017
Dublin, Ireland
Assessing environmental impacts of future energy systems: A holistic LCA model for Europe in 2015-2050
Period: 18 May 2017
Serena Fabbri (Speaker)
Florence Alexia Bohnes (Other)
Department of Management Engineering
Quantitative Sustainability Assessment

Related event

Energy Modelling Platform for Europe (EMP-E) 2017
17/05/2017 → 18/05/2017
Brussels, Belgium
Activity: Talks and presentations › Conference presentations

Danish Sound Day Research Talent Pitch Battle
Period: 18 May 2017
Alexander Weider King (Speaker)
Department of Electrical Engineering
Acoustic Technology
Degree of recognition: National

Related event

Danish Sound Day 2017
18/05/2017 → …
Struer, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Electricity Grid Tariffs To Increase The Flexibility Of Power-To-Heat In District Heating
Period: 18 May 2017 → 20 May 2017
Claire Bergaentzlé (Speaker)
Department of Management Engineering
Systems Analysis
Degree of recognition: International
Documents:
Presentation HAEE

Related event

2nd HAEE INTERNATIONAL CONFERENCE : The landscape in the new era of energy transition: Challenges, investment opportunities and technological innovations
18/05/2017 → 20/05/2017
Athens, Greece
Activity: Talks and presentations › Conference presentations

Energy Modelling Platform for Europe (EMP-E) 2017
Period: 18 May 2017
Alexis Laurent (Participant)
Department of Management Engineering
Quantitative Sustainability Assessment

Description
Assessing environmental impacts of future energy systems: A holistic LCA model for Europe in 2015-2050

Related event

Energy Modelling Platform for Europe (EMP-E) 2017
17/05/2017 → 18/05/2017
Brussels, Belgium
Activity: Attending an event › Participating in or organising a conference

European Association of Work and Organizational Psychology
Period: 18 May 2017 → 19 May 2017
Christine Ipsen (Participant)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Poster presentation and symposium participant/organizer
Documents:
EAWOP Poster (16.05.17)

Related event
European Association of Work and Organizational Psychology: Enabling Change through Work and Organizational Psychology
17/05/2017 → 20/05/2017
Dublin, Ireland
Activity: Attending an event › Participating in or organising a conference

HEADS & HANDS TO FOOD 4.0
Period: 18 May 2017
Dorte Lau Baggesen (Speaker)
National Food Institute

Description
Hvordan kan virksomhederne rekruttere ingeniører og kandidater fra de videregående uddannelser og samarbejde om praktik og projekter?
Documents:
Præsentation DTU Dorte Lau Baggesen 01

Related event
HEADS & HANDS TO FOOD 4.0: Kloge hænder og hoveder til
18/05/2017 → 18/05/2017
Fredericia, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

HYBER Symposium 2017
Period: 18 May 2017 → 19 May 2017
Solange I. Mussatto (Participant)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology
Degree of recognition: International

Related event
HYBER Symposium 2017
18/05/2017 → 19/05/2017
Helsinki, Finland
Activity: Attending an event › Participating in or organising a conference

Optimal modular design of offshore support structures - modelling and methods
Period: 18 May 2017
Mathias Stolpe (Invited speaker)
Related event

Support Structure Optimization - Science or Art?
Period: 18 May 2017 → 19 May 2017
Delmenhorst, Germany
Activity: Talks and presentations › Conference presentations

Support Structure Optimization - Science or Art?
Period: 18 May 2017 → 19 May 2017
Delmenhorst, Germany
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Topics in Mining, Metallurgy and Materials Engineering (Journal)
Period: 18 May 2017
Vincenzo Esposito (Editor)
Ceramic Engineering & Science
Department of Energy Conversion and Storage
Description
Topics in Mining, Metallurgy and Materials Engineering
Related journal
Topics in Mining, Metallurgy and Materials Engineering
2364-3293
Local database
Activity: Research › Journal editor

Twelfth Workshop of National Reference Laboratories for Parasites
Period: 18 May 2017 → 19 May 2017
Heidi Huus Petersen (Speaker)
National Veterinary Institute
Bacteriology & Parasitology
Degree of recognition: International
Related event

Twelfth Workshop of National Reference Laboratories for Parasites
Period: 18 May 2017 → 19 May 2017
Rom, Italy
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Applied Bioinformatics & Public Health Microbiology
Period: 17 May 2017 → 19 May 2017
Valeria Bortolaia (Participant)
National Food Institute
Research Group for Genomic Epidemiology

Related event

Applied BioInformatics & Public Health Microbiology
17/05/2017 → 19/05/2017
Cambridge, United Kingdom
Activity: Attending an event › Participating in or organising a conference

Innovative new concept for asphalt based railway construction
Period: 17 May 2017
Tulika Bose (Speaker)
Department of Civil Engineering
Section for Geotechnics and Geology
Degree of recognition: National

Related external organisation

The Danish rail sector association (Banebranchen)
Tivoli Congress centre, Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Nordic Systems Engineering Tour 2017
Period: 17 May 2017
Josef Oehmen (Organizer)
Department of Management Engineering
Engineering Systems

Description
Co-organizer
Degree of recognition: International

Related event

Nordic Systems Engineering Tour 2017
17/05/2017 → ...
Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

OB-17: Symposium on Occupant Behaviour and Adaptive Thermal Comfort
Period: 17 May 2017
Rune Korsholm Andersen (Organizer)
Department of Civil Engineering
Section for Indoor Climate and Building Physics
Degree of recognition: International

Related event

OB-17: Symposium on Occupant Behaviour and Adaptive Thermal Comfort: Joint IEA EBC Annex 66 and 69 Symposium
17/05/2017 → 17/05/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Principle for studying the potency of the different vitamin D active compounds - usable for the vitamin B community?
Period: 17 May 2017
Jette Jakobsen (Invited speaker)
National Food Institute
Research Group for Bioactives – Analysis and Application

**Description**
Invited speaker
Degree of recognition: International

**Related event**
International Conference on Homocysteine and One-Carbon Metabolism 2017: "Taking science to the next level – challenging paradigms and conventions"
14/05/2017 → 18/05/2017
Århus, Denmark
Activity: Talks and presentations › Conference presentations

**Det Robuste Projekt Team**
Period: 16 May 2017
Julia Christensen (Participant)
National Food Institute
Division of Risk Assessment and Nutrition

**Related event**
Det Robuste Projekt Team
16/05/2017 → 16/05/2017
København
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Tar-Eating Bacterial Duo may Transform Toxic Compounds into New Usable Materials**
Period: 16 May 2017
Sünje Johanna Pamp (Participant)
Department of Biotechnology and Biomedicine
Department of Bio and Health Informatics
National Food Institute
Research Group for Genomic Epidemiology

**Description**
Danish researchers have sequenced and analyzed the genome of a bacterium that can feed off coal tar. It lives in symbiosis with another bacterium that can recycle its partner’s waste. Researchers hope that this sustainable bacterial duo can transform toxic substances into useful materials. Nevertheless, mapping the genome also led to an unpleasant surprise.

**Interview person.**
Degree of recognition: International
**Documents:**
Tar-eating bacterial duo may transform toxic compounds into new usable materials | Sciencenews.dk
**Links:**
Activity: Other

**Use of an antioxidant to improve monoclonal antibody production and quality in CHO cells**
Period: 16 May 2017
Tae Kwang Ha (Speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: International

**Related event**
25th ESACT Meeting: Cell technologies for innovative therapies
14/05/2017 → 17/05/2017
Lausanne, Switzerland
Activity: Talks and presentations › Conference presentations

Sikker fremstilling af fermenterede fødevarer - pølser og kål som cases
Period: 15 May 2017
Tina Beck Hansen (Invited speaker)
National Food Institute
Research Group for Microbial Food Safety
Documents:
fermentering_food_160517

Related event
Fødevare Sjælland Fyn Temadag
16/05/2017 → …
Korsør, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Oversvømmelsessimulering vs. detaljegrad i 1D modeller
Period: 11 May 2017
Roland Löwe (Speaker)
Department of Environmental Engineering
Urban Water Systems

Description
Invited speech on EVA temadag
Degree of recognition: National

Related event
Er modellerne for tynde: EVA temadag
11/05/2017 → 11/05/2017
Nyborg, Denmark
Activity: Talks and presentations › Conference presentations

water in urban area
Period: 11 May 2017
Berit Godskesen (Organizer)
Karsten Ambjerg-Nielsen (Organizer)
Department of Environmental Engineering
Urban Water Systems

Description
Water in urban areas, meeting (stormøde), May 11th, Odense, Denmark - Bæredygtighed, Vand og Klimatipasning
Degree of recognition: National
Links:

Related event
water in urban area: Sustainability, Water and Climate adaptation
11/05/2017 → 11/05/2017
Odense, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
Applying LCA in decision making - the need and the future perspective
Period: 10 May 2017
Yan Dong (Speaker)
Simona Miraglia (Other)
Stefano Manzo (Other)
Stylianos Georgiadis (Other)
Hjalte Jomo Danielsen Sarup (Other)
Elena Boriani (Other)
Tine Hald (Other)
Sebastian Thøns (Other)
Michael Zwicky Hauschild (Other)
Department of Management Engineering
Quantitative Sustainability Assessment
Centre for oil and gas – DTU
Transport DTU
Transport Modelling
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Department of Environmental Engineering
Urban Water Systems
National Food Institute
Research Group for Genomic Epidemiology
Department of Civil Engineering
Section for Structural Engineering
Documents:
AbstraApplying LCA in decision making_Final
Links:
https://brussels.setac.org/welcome/

Related event
SETAC Europe 27th Annual Meeting
07/05/2017 → 11/05/2017
Brussels, Belgium
Activity: Talks and presentations › Conference presentations

Intermittent aeration regimes are effective tools to manage size of bio-granules and microbial communities in PN/A SBRs.
Period: 10 May 2017
Jan-Michael Blum (Speaker)
Department of Environmental Engineering
Water Technologies
Description
The presentation was given at the 10th International Conference on Biofilm Reactors at University College Dublin, Ireland.
Degree of recognition: International

Related event
10th International Conference on Biofilm Reactors
09/05/2017 → 12/05/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations
Balancing complexity and uncertainty in model-based estimation of micropollutant fluxes in integrated urban drainage-wastewater systems
Period: 9 May 2017
Luca Vezzaro (Invited speaker)
Department of Environmental Engineering
Urban Water Systems
Description
Presentation held at the SETAC 2017 conference (special session on "Looking across organizational boundaries: exchanging ideas on mechanistic modelling between SETAC and the International Water Association (IWA)")
Degree of recognition: International
Documents:
20170509_MPmodelComplexity_SETAC_LUVE

Related event
SETAC Europe 27th Annual Meeting
07/05/2017 → 11/05/2017
Brussels, Belgium
Activity: Talks and presentations › Conference presentations

Data-driven Biotechnology
Period: 9 May 2017 → 10 May 2017
Joao Cardoso (Participant)
Ahmad A. Zeidan (Participant)
Markus Herrgard (Participant)
Nikolaus Sonnenschein (Participant)
Novo Nordisk Foundation Center for Biosustainability
iLoop
Research Groups
Global Econometric Modeling
Description
In silico Identification of metabolite analogues for rational strain Improvement

Related event
Data-driven Biotechnology: Bench, Bioreactor and Bedside
07/05/2017 → 11/05/2017
Hillerød, Denmark
Activity: Attending an event › Participating in or organising a conference

Developments in Integrated Urban Drainage
Period: 9 May 2017
Luca Vezzaro (Invited speaker)
Lorenzo Benedetti (Other)
Wolfgang Rauch (Other)
Peter M. Bach (Other)
Department of Environmental Engineering
Urban Water Systems
Description
Presentation held at the SETAC 2017 conference (special session on "Looking across organizational boundaries: exchanging ideas on mechanistic modelling between SETAC and the International Water Association (IWA)")
Degree of recognition: International
Related event
SETAC Europe 27th Annual Meeting
07/05/2017 → 11/05/2017
Brussels, Belgium
Activity: Talks and presentations › Conference presentations

Differential adhesion and the spatial positioning effect on early stage microbial aggregation
Period: 9 May 2017 → 12 May 2017
Bastiaan Cockx (Other)
Jan-Ulrich Kreft (Other)
Barth F. Smets (Other)

Department of Environmental Engineering
Water Technologies
Degree of recognition: International

Related event
10th International Conference on Biofilm Reactors
09/05/2017 → 12/05/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations

DTU OM Forum
Period: 9 May 2017
Kasper Edwards (Organizer)
Rasmus Jørgensen (Organizer)

Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Erfaringer med Lean Tavlemøder
Degree of recognition: National

Related event
DTU OM Forum: Erfaringer med Lean Tavlemøder
09/05/2017 → 09/05/2017
Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Estimating soil emissions and toxicity impacts from the application of livestock manure: application to heavy metals at national scale
Period: 9 May 2017
Alexandra Segolene Corinne Leclerc (Speaker)

Department of Management Engineering
Quantitative Sustainability Assessment

Related event
SETAC Europe 27th Annual Meeting
07/05/2017 → 11/05/2017
Brussels, Belgium
Activity: Talks and presentations › Conference presentations
Replication and analysis of polymer micro structured functional surfaces for contrast generation
Period: 9 May 2017
Francesco Regi (Speaker)
Department of Mechanical Engineering
Manufacturing Engineering

Related event
Polymer Replication on Nanoscale 2017
08/05/2017 → 09/05/2017
Aachen, Germany
Activity: Talks and presentations › Conference presentations

SETAC Europe 27th Annual Meeting
Period: 9 May 2017
Alexis Laurent (Participant)
Department of Management Engineering
Quantitative Sustainability Assessment

Description
Estimating soil emissions and toxicity impacts from the application of livestock manure: application to heavy metals at national scale

Related event
SETAC Europe 27th Annual Meeting
07/05/2017 → 11/05/2017
Brussels, Belgium
Activity: Attending an event › Participating in or organising a conference

Species-specific vulnerability of Arctic copepods to oil contamination and global warming
Period: 9 May 2017
Khuong Van Dinh (Speaker)
Torkel Gissel Nielsen (Other)
National Institute of Aquatic Resources
Section for Oceans and Arctic

Description
Special session: Combined effects of chemical and environmental stressors: from local stressors towards climate change, SETAC Europe 27th Annual Meeting in Brussels, Belgium

Related external organisation
Society of Environmental Toxicology and Chemistry
United States
Activity: Talks and presentations › Conference presentations

Biodegradation of hydrophobic chemicals in mixtures at low concentrations - Covering the chemical space of petroleum hydrocarbons
Period: 8 May 2017
Heidi Birch (Speaker)
Department of Environmental Engineering
Environmental Chemistry
Degree of recognition: International

Related event
BTSF course in Microbiological Risk Assessment
Period: 8 May 2017 → 12 May 2017
Maarten Nauta (Lecturer)
National Food Institute
Research Group for Risk-Benefit
Description
One week training course in the EU program better training for safer food
Training coordinator
Degree of recognition: International
Related event
Better Training for Safer Food (BTSF): Microbiological Risk Assessment
08/05/2017 → 12/05/2017
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

CIE Tutorial and Practical Workshop on LED Lamp and Luminaire Testing to CIE S 025
Period: 8 May 2017 → 11 May 2017
Anders Thorseth (Participant)
Department of Photonics Engineering
Diode Lasers and LED Systems
Description
CIE Tutorial and Practical Workshop on LED Lamp and Luminaire Testing to CIE S 025
May 08 – 11, 2017, METAS Bern-Wabern, Switzerland
Related event
CIE Tutorial and Practical Workshop on LED Lamp and Luminaire Testing to CIE S 025
08/05/2017 → 11/05/2017
Bern, Switzerland
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Globally-differentiated land use flow inventories for life cycle impact assessment
Period: 8 May 2017
Alexis Laurent (Speaker)
Maria Faragò (Other)
Lorenzo Benini (Other)
Michela Secchi (Other)
Serenella Sala (Other)
Department of Management Engineering
Quantitative Sustainability Assessment
Related event
SETAC Europe: 27th Annual Meeting – Environmental Quality Through Transdisciplinary Collaboration
07/05/2017 → 13/07/2017
Brussels, Belgium
Activity: Talks and presentations › Conference presentations
Journal of Geophysical Research: Atmospheres (Journal)
Period: 8 May 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
Meteorology & Remote Sensing

Related journal
Journal of Geophysical Research: Atmospheres
0148-0227
Web of Science (2017): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

Mikrobiologisk kvalitet af fisk og fiskeprodukter. Forelæsning ved KU-SUND
Period: 8 May 2017
Paw Dalgaard (Lecturer)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description
Mikrobiologisk kvalitet af fisk og fiskeprodukter (2 x 35 min.). Fødevaremikrobiologi (270009), KU-SUND, maj 2017, 150 studerende.

Related event
Kursus i Fødevaremikrobiologi
08/05/2017 → 08/05/2017
Frederiksberg, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

One Health International Summer Course 2017
Period: 8 May 2017 → 18 Aug 2017
Tine Hald (Organizer)
Maria Vang Johansen (Organizer)
Liza Rosenbaum Nielsen (Panel member)
Lars Erik Larsen (Organizer)
Anders Dalsgaard (Organizer)
National Food Institute
Research Group for Genomic Epidemiology
National Veterinary Institute
Virology

Description
One Health International Summer Course 2017
5-week elearning part + 1-week on campus paert, a total of 5 ECTS
Degree of recognition: International

Related event
One Health International Summer Course 2017
08/05/2017 → 18/08/2017
Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
Position of existing footprints in the environmental sustainability landscape
Period: 8 May 2017
Alexis Laurent (Speaker)
Department of Management Engineering
Quantitative Sustainability Assessment
Degree of recognition: International

Related event
SETAC Europe: 27th Annual Meeting – Environmental Quality Through Transdisciplinary Collaboration
Period: 8 May 2017
Mikolaj Owsianiak (Participant)
Department of Management Engineering
Quantitative Sustainability Assessment

Description
Position of existing footprints in the environmental sustainability landscape
Degree of recognition: International

Related event
SETAC Europe: 27th Annual Meeting – Environmental Quality Through Transdisciplinary Collaboration
Period: 8 May 2017
Mikolaj Owsianiak (Participant)
Department of Management Engineering
Quantitative Sustainability Assessment

SMATAD 2017
Period: 8 May 2017 → 11 May 2100
Ignacio Blanco (Participant)
Juan Miguel Morales González (Organizer)
Department of Applied Mathematics and Computer Science
Dynamical Systems

Related event
SMATAD 2017: Symposia on Mathematical Techniques Applied to Data Analysis and Processing
Period: 08/05/2017 → 11/05/2017
Fuengirola, Spain
Activity: Attending an event › Participating in or organising a conference

Teaching Quantitative Microbial Risk Assessment - Better Training for Safer Food (BTSF)
Period: 8 May 2017 → 12 May 2017
Ana Sofia Ribeiro Duarte (Guest lecturer)
National Food Institute
Research Group for Genomic Epidemiology

Related event
Teaching Quantitative Microbial Risk Assessment - Better Training for Safer Food (BTSF)
Period: 08/05/2017 → 12/05/2017
Czech Republic
The antiSMASH platform: A comprehensive framework for genome mining for secondary metabolites
Period: 8 May 2017
Tilmann Weber (Speaker)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International

Related event
Copenhagen Bioscience Conference 2017: Data-Driven Biotechnology - Bench, Bioreactor and Bedside
07/05/2017 → 10/05/2017
Hillerød, Denmark
Activity: Talks and presentations › Conference presentations

US-Danish Electricity Future Markets
Period: 8 May 2017 → 9 May 2017
Claire Bergaentzlé (Participant)
Energy Economics and Regulation
Department of Management Engineering
Systems Analysis
Degree of recognition: International
Documents:
Agenda US-Danish Electricity Future Markets

Related event
US-Danish Electricity Future Markets
08/05/2017 → 09/05/2017
Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

Consortia based production of biochemicals
Period: 7 May 2017 → 11 May 2017
Sheila Ingemann Jensen (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Cell Factory Optimization
Degree of recognition: International

Related event
Copenhagen Bioscience Conference 2017: Data-Driven Biotechnology - Bench, Bioreactor and Bedside
07/05/2017 → 10/05/2017
Hillerød, Denmark
Activity: Talks and presentations › Conference presentations

Copenhagen Bioscience Conference
Period: 7 May 2017 → 10 May 2017
Tilmann Weber (Organizer)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds

Description
Member of the Scientific Organization Committee for the Copenhagen Bioscience Conference: Data-Driven Biotechnology - Bench, Bioreactor and Bedside
Related event

**Copenhagen Bioscience Conference 2017: Data-Driven Biotechnology - Bench, Bioreactor and Bedside**
07/05/2017 → 10/05/2017
Hillerød, Denmark
Activity: Attending an event › Participating in or organising a conference

**International Congress of Andrology**
Period: 6 May 2017
Marta Axelstad Petersen (Organizer)
National Food Institute
Research Group for Molecular and Reproductive Toxicology

**Description**
Pre-congress course: Endocrine disrupters and male reproductive Health. I gave a talk called "Disruption of reproduction in animal models"

Related event

**International Congress of Andrology**
06/05/2017 → 09/05/2017
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**EER - ELMA Seminar**
Period: 5 May 2017 → …
Claire Bergaentzlé (Organizer)
Energy Economics and Regulation
Department of Management Engineering
Systems Analysis
Degree of recognition: Local

Related event

**EER - ELMA Seminar: Energy Economics and Regulation - Energy Analytics & Markets**
05/05/2017 → …
Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Human factors and ergonomics in manufacturing and service industries (Journal)**
Period: 5 May 2017 → 5 Jun 2017
Kasper Edwards (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
Review of submitted paper.
Degree of recognition: International

Related journal

**Human factors and ergonomics in manufacturing and service industries**
Local database
Activity: Research › Peer review of manuscripts
Innovation through Risk Management: More Success by Failing Well
Period: 5 May 2017
Josef Oehmen (Keynote speaker)
Department of Management Engineering
Engineering Systems

Description
Invited talk at event “Failure in Innovation – is it the rule? Examples and strategies from industry and academic research”, organized by the German National Academy of Science and Engineering, Stuttgart
Degree of recognition: International

Related external organisation

German National Academy of Science and Engineering - acatech
Berlin, Germany
Activity: Talks and presentations › Conference presentations

The Smart Sustainable City: Values, Visions, and Engagement
Period: 5 May 2017
Jay Sterling Gregg (Invited speaker)
Department of Management Engineering
Systems Analysis

Description
Presentation at UNEP
Degree of recognition: Regional
Documents:
UN City

Related organisation

The Smart Sustainable City: Values, Visions, and Engagement
Gregg, J. S. (Invited speaker)
5 May 2017
Activity: Talks and presentations › Conference presentations

Anlægsteknikforeningens forårsmøde 4. - 5. maj 2017
Period: 4 May 2017 → 5 May 2017
Lisbeth Lindbo Larsen (Organizer)
Center for Bachelor of Engineering Studies
Afdelingen for Byggeri og Infrastruktur
Degree of recognition: National
Documents:
Anlægsteknikforeningens Årsmøde maj 2017 Deltagerliste
Forårsmøde 2017 ver 2

Related event

Anlægsteknikforeningens forårsmøde 4. - 5. maj 2017
04/05/2017 → 05/05/2017
København, Denmark
Activity: Attending an event › Participating in or organising a conference

Engineering the CHO Cell
Period: 4 May 2017
Bjørn Gunnar Voldborg (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Core
Degree of recognition: International

Related event

PEGS Boston: The Essential Protein Engineering Summit
01/05/2017 → 05/05/2017
Boston, United States
Activity: Talks and presentations › Conference presentations

Guest lecture at Ecole des Mines de Saint-Etienne
Period: 4 May 2017
Mads Holten Rasmussen (Speaker)
Department of Civil Engineering
Section for Building Design
Description
Use of the SEAS-ontologies (Smart Energy Aware Systems) for modeling flow systems
Degree of recognition: International
Documents:
Slides

Related external organisation
Ecole des Mines de Saint-Etienne
France
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Practical experiences with validation of analytical methods for NM at the National Food Institute in Denmark
Period: 4 May 2017
Katrin Löschner (Speaker)
National Food Institute
Research Group for Nano-Bio Science
Degree of recognition: International

Related event
Joint JRC-SANTE Symposium "Nanomaterials in Food: reliability of measurement results"
03/05/2017 → 04/05/2017
Ispra, Italy
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Rapid resistome mapping using Nanopore sequencing
Period: 4 May 2017 → 5 May 2017
Lejla Imamovic (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Bacterial Synthetic Biology
Degree of recognition: International

Related event
04/05/2017 → 05/06/2017
London, United Kingdom
Activity: Talks and presentations › Conference presentations
Rapid resistome mapping using Nanopore sequencing  
Period: 4 May 2017  
Eric van der Helm (Speaker)  
Novo Nordisk Foundation Center for Biosustainability  
Bacterial Synthetic Biology  
Degree of recognition: International  

Related event  
04/05/2017 → 05/06/2017  
London, United Kingdom  
Activity: Talks and presentations › Conference presentations

Reflections on a case study, an RBA on nuts  
Period: 4 May 2017  
Maarten Nauta (Speaker)  
National Food Institute  
Research Group for Risk-Benefit  
Degree of recognition: International  

Related event  
expert workshop on risk benefit assessment  
03/05/2017 → 05/05/2017  
Copenhagen, Denmark  
Activity: Talks and presentations › Conference presentations

Ecole des Mines de Saint-Etienne  
Period: 3 May 2017 → 5 May 2017  
Mads Holten Rasmussen (Visiting researcher)  
Department of Civil Engineering  
Section for Building Design  
Description  
Research visit at Ecole de Mines de Saint-Etienne, France  
Degree of recognition: International  
Activity: Visiting an external institution › Visiting another research institution

IEA 4E SSL Annex's 14th Expert Meeting  
Period: 3 May 2017 → 5 May 2017  
Carsten Dam-Hansen (Participant)  
Department of Photonics Engineering  
Diode Lasers and LED Systems  
Description  
Participation in meeting as Danish expert  
Degree of recognition: International  
Related event  
IEA 4E SSL Annex's 14th Expert Meeting  
03/05/2017 → 05/05/2017  
Stockholm, Sweden  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
7th International Conference
Period: 2 May 2017 → 5 May 2017
Kamilla Marie Speht Kaarsholm (Participant)
Henrik Rasmus Andersen (Chairman)
Traek Manasfi (Participant)
Jean-Luc Boudenne (Participant)
Department of Environmental Engineering
Water Technologies

Description
Effect of UV treatment on DBPs formation in chlorinated seawater swimming pools- a laboratory study

The study aim was to investigate the effect of UV treatment followed by chlorination on DBP formation was studied using laboratory experiments. Three groups of DBPs were investigated including THMs, HANs and HAAs. DBP level measured after post-UV chlorination was compared to dark control sample which was not subjected to UV exposure. Bromine substitution was investigated to analyse its effects on the formation of DBPs. Finally, overall cytotoxicity and genotoxicity were estimated for the toxic potency of compounds before and after treatment.

Degree of recognition: International
Documents:
UV for seawater pools

Related event

7th International Conference : Swimming Pool and Spa
02/05/2017 → 05/05/2017
Kos, Greece
Activity: Attending an event › Participating in or organising a conference

7th International Conference
Period: 2 May 2017 → 5 May 2017
Kamilla Marie Speht Kaarsholm (Participant)
Henrik Rasmus Andersen (Chairman)
Department of Environmental Engineering
Water Technologies

Description
Destruction of DBPs and their precursors in swimming pool water by combined UV-treatment and ozonation

The study aim was to investigate the effect of a combined treatment system on DBP formation. As both ozone and chlorine preferably react with electrophilic groups in compounds, we hypothesise that reactivity to chlorine, created by the UV treatment of dissolved organic matter in pool water, might also mean that there is increased reactivity to ozone and that ozonation might remove the chlorine reactivity created by UV treatment. Therefore, we first performed an experiment to range-find the effect of swimming pool water UV activation on chlorine reactivity. Secondly, an experiment was carried out to characterise the effect of adding various doses of ozone to pool water, with or without UV pre-treatment, before
chlorination to study the effect on chlorine reactivity and the formation of chlorination by-products. Finally, the possible effect on chlorination by-product formation was investigated by a repeated, combined UV-ozone treatment interchanged with chlorination (repeated cycles of UV followed by ozone with subsequent chlorination). Toxicity estimation was used to evaluate water quality.

Degree of recognition: International

Documents:
combined UV and ozone treatment for swimming pool water

Related event

7th International Conference : Swimming Pool and Spa
02/05/2017 → 05/05/2017
Kos, Greece
Activity: Attending an event › Participating in or organising a conference

Copenhagen Workshop on Endocrine Disrupters
Period: 2 May 2017 → 5 May 2017
Silvia Bonomo (Speaker)
National Food Institute
Research Group for Molecular and Reproductive Toxicology
Links:

Related event

Copenhagen Workshop on Endocrine Disrupters
01/01/2008 → …
Copenhagen University Hospital
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Destruction of DBPs and their precursors in swimming pool water by combined UV-treatment and ozonation
Period: 2 May 2017 → 5 May 2017
Waqas Akram Cheema (Speaker)
Department of Environmental Engineering
Water Technologies

Description
The study aim was to investigate the effect of a combined treatment system on DBP formation. As both ozone and chlorine preferably react with electrophilic groups in compounds, we hypothesise that reactivity to chlorine, created by the UV treatment of dissolved organic matter in pool water, might also mean that there is increased reactivity to ozone and that ozonation might remove the chlorine reactivity created by UV treatment. Therefore, we first performed an experiment to range-find the effect of swimming pool water UV activation on chlorine reactivity. Secondly, an experiment was carried out to characterise the effect of adding various doses of ozone to pool water, with or without UV pre-treatment, before chlorination to study the effect on chlorine reactivity and the formation of chlorination by-products. Finally, the possible effect on chlorination by-product formation was investigated by a repeated, combined UV-ozone treatment interchanged with chlorination (repeated cycles of UV followed by ozone with subsequent chlorination). Toxicity estimation was used to evaluate water quality.

Degree of recognition: International

Documents:
combined UV and ozone treatment for swimming pool water

Related event

7th International Conference : Swimming Pool and Spa
02/05/2017 → 05/05/2017
Kos, Greece
Activity: Talks and presentations › Conference presentations

Effect of UV treatment on DBPs formation in chlorinated seawater swimming pools- a laboratory study
Period: 2 May 2017 → 5 May 2017
Waqas Akram Cheema (Speaker)
Department of Environmental Engineering
Water Technologies

Description
The study aim was to investigate the effect of UV treatment followed by chlorination on DBP formation was studied using laboratory experiments. Three groups of DBPs were investigated including THMs, HANs and HAAs. DBP level measured after post-UV chlorination was compared to dark control sample which was not subjected to UV exposure. Bromine substitution was investigated to analyse its effects on the formation of DBPs. Finally, overall cytotoxicity and genotoxicity were estimated for the toxic potency of compounds before and after treatment.

Degree of recognition: International
Documents:
UV for seawater pools

Related event
7th International Conference : Swimming Pool and Spa
02/05/2017 → 05/05/2017
Kos, Greece
Activity: Talks and presentations › Conference presentations

Foredrag: Celler som medicinproducent. Ungdommens Naturvidenskabelige Forening (UNF), Lyngby, Danmark.
Period: 2 May 2017
Helene Fastrup Kildegaard (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: National

Related event
Ungdommens Naturvidenskabelige Forening (UNF)
02/05/2017 → 02/05/2017
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Mixture effects of anti-androgens and oestrogens on reproductive development of male rats
Period: 2 May 2017 → 5 May 2017
Sofie Christiansen (Speaker)
National Food Institute
Research Group for Molecular and Reproductive Toxicology

Description
Invited speaker abstract
Degree of recognition: International

Related event
9th Copenhagen Workshop on Endocrine Disrupters - COW2017
02/05/2017 → 05/05/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Smart Cities Day Vienna
Period: 2 May 2017 → 3 May 2017
Alfred Heller (Speaker)
Department of Civil Engineering
Centre for IT-Intelligent Energy Systems in Cities
**Description**
International expert for international and national smart cities projects.
Presenter for the lab to living lab to business - value chain.
Degree of recognition: International

**Related event**

**Smart Cities Day Vienna**
02/05/2017 → 03/05/2017
Vienna, Austria
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

**39th Symposium on Biotechnology for Fuels and Chemicals**
Period: 1 May 2017 → 4 May 2017
Solangene I. Mussatto (Organizer)
Novo Nordisk Foudnation Center for Biosustainability
Research Groups
Biomass Conversion and Bioprocess Technology

**Description**
Poster Judge
Degree of recognition: International

**Related event**

**39th Symposium on Biotechnology for Fuels and Chemicals**
01/05/2017 → 04/05/2017
San Francisco, United States
Activity: Attending an event › Participating in or organising a conference

**39th Symposium on Biotechnology for Fuels and Chemicals**
Period: 1 May 2017 → 4 May 2017
Solangene I. Mussatto (Participant)
Rafael C.A. Castro (Participant)
Inês C. Roberto (Participant)
Novo Nordisk Foudnation Center for Biosustainability
Research Groups
Biomass Conversion and Bioprocess Technology

**Description**
Enzymatic hydrolysis of rice straw and glucose fermentation using a Vertical Ball Mill Bioreactor (VBMB): Impact of operational conditions
Degree of recognition: International
Documents:
Abstract SBFC Rafael published complete

**Related event**

**39th Symposium on Biotechnology for Fuels and Chemicals**
01/05/2017 → 04/05/2017
San Francisco, United States
Activity: Attending an event › Participating in or organising a conference

**39th Symposium on Biotechnology for Fuels and Chemicals**
Period: 1 May 2017 → 4 May 2017
Solangene I. Mussatto (Participant)
Novo Nordisk Foudnation Center for Biosustainability
Research Groups

Biomass Conversion and Bioprocess Technology

**Description**
Pretreatment and fermentation strategies to overcome the toxicity of acetic acid in hemicellulosic hydrolysates

Degree of recognition: International

Documents:
Abstract SBFC Solange published complete

**Related event**

39th Symposium on Biotechnology for Fuels and Chemicals
01/05/2017 → 04/05/2017
San Francisco, United States
Activity: Attending an event › Participating in or organising a conference

IEA Bioenergy Task 42 – Biorefining (External organisation)
Period: 1 May 2017 → …
Solange I. Mussatto (Participant)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Biomass Conversion and Bioprocess Technology

**Description**
Country representative in IEA Bioenergy Task 42 – Biorefining
Degree of recognition: International

**Related external organisation**

IEA Bioenergy Task 42 – Biorefining
Denmark
Activity: Membership › Membership of commitees, commissions, boards, councils, associations, organisations, or similar

IEEE Globecom (Publisher)
Period: 1 May 2017
José Soler (Reviewer)
Department of Photonics Engineering
Networks Technology and Service Platforms

**Description**
http://globecom2017.ieee-globecom.org/
Degree of recognition: International
Links:
http://globecom2017.ieee-globecom.org/

**Related Publisher**

IEEE Globecom
Local database
Activity: Research › Peer review of manuscripts

International Conference in Animal Health Surveillance 3
Period: 1 May 2017 → 4 May 2017
Ana Carolina Lopes Antunes (Speaker)
National Veterinary Institute
Epidemiology
**Surface properties and chemistry correlate to the digestibility of biomass following hydrothermal pretreatment at different severities**
Period: 1 May 2017 → 4 May 2017
Demi Tristan Djajadi (Guest lecturer)
Aleksander R. Hansen (Guest lecturer)
Anders Jensen (Guest lecturer)
Lisbeth G. Thygesen (Guest lecturer)
Manuel Pinelo (Guest lecturer)
Anne S. Meyer (Guest lecturer)
Henning Jørgensen (Guest lecturer)
Department of Chemical and Biochemical Engineering
Center for BioProcess Engineering

**Description**
Poster presentation
Degree of recognition: International

**Related event**
**39th Symposium on Biotechnology for Fuels and Chemicals**
01/05/2017 → 04/05/2017
San Francisco, United States
Activity: Talks and presentations › Conference presentations

**University of North Carolina at Charlotte**
Period: 1 May 2017 → 31 Jul 2017
Danilo Quagliotti (Visiting researcher)
Department of Mechanical Engineering
Manufacturing Engineering

**Description**
Statistical modelling, surfaces generation and traceability for 3D Micro/Nano Optical Metrology at the Center for Precision Metrology
Activity: Visiting an external institution › Visiting another research institution

**What tools are useful for monitoring endemic diseases? A simulation study based on different time-series components.**
Period: 1 May 2017 → 4 May 2017
Ana Carolina Lopes Antunes (Speaker)
National Veterinary Institute
Epidemiology
Degree of recognition: International

**Related event**
**International Conference in Animal Health Surveillance 3**
01/05/2017 → 04/05/2017
Rotorua, New Zealand
Activity: Talks and presentations › Conference presentations
Chimera states—mythological monsters from mathsarise in the real world
Period: Apr 2017
Erik Andreas Martens (Guest lecturer)
Department of Applied Mathematics and Computer Science
Dynamical Systems

Description
Invited Lecture
Degree of recognition: International

Related external organisation
Institute for Cross-Disciplinary Physics and Complex Systems (IFISC), Campus Universitat de les Illes Balears, Palma de Mallorca, Spain
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Paul Scherrer Institut (External organisation)
Period: Apr 2017
Martin Meedom Nielsen (Participant)
Department of Physics
Neutrons and X-rays for Materials Physics

Description
Swiss Light Source Proposal panel
Degree of recognition: International

Related external organisation
Paul Scherrer Institut
Switzerland
Activity: Membership › Membership in review committee

Natural antioxidants derived from seaweed material
Period: 30 Apr 2017 → 3 May 2017
Ditte Baun Hermund (Other)
National Food Institute
Research Group for Bioactives – Analysis and Application
Degree of recognition: International

Related event
American oil chemist society Annual meeting and Expo 2017
30/04/2017 → 03/05/2017
Orlando, United States
Activity: Other

PICO 2017
Period: 30 Apr 2017 → 4 May 2017
Jakob Birkedal Wagner (Participant)
Center for Electron Nanoscopy
DTU Danchip
Degree of recognition: International

Related event
PICO 2017
PICO 2017
Period: 30 Apr 2017 → 4 May 2017
Thomas Willum Hansen (Participant)
Center for Electron Nanoscopy
Center for Nanostructured Graphene
DTU Danchip

Description
Fourth conference on frontiers of aberration corrected electron microscopy
Degree of recognition: International

Related event
PICO 2017
30/04/2017 → 04/05/2017
Vaals, Netherlands
Activity: Attending an event › Participating in or organising a conference

Forskningens døgn 2017 - Hvordan bygger og renoverer vi grønt?
Period: 28 Apr 2017
Jakob Brinkø Berg (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: Regional
Links:
http://forsk.dk/indbakke/hvordan-bygger-og-renoverer-vi-gront#cookieoptin

Related external organisation
Erhvervsakademi Sjælland
Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Aarhus University (External organisation)
Period: 27 Apr 2017
Per Dannemand Andersen (Chairman)
Department of Management Engineering
Technology and Innovation Management
Transport DTU

Description
Member of the assessment committee of the PhD thesis of Tymen Jissink. Department of Management, School of Business and Social Sciences, Aarhus University, Denmark.

Related external organisation
Aarhus University
Inge Lehmanns Gade 10, 8000, Aarhus C, Denmark
Activity: Membership › Membership in review committee
Description
General assembly of the European Geosciences Union 2017
Degree of recognition: International
Links:

Related event
EGU General Assembly 2017: European GEosciences Union 2017
24/04/2017 → 28/04/2017
Vienna, Austria
Activity: Talks and presentations › Conference presentations

EGU General Assembly 2017
Period: 27 Apr 2017
Teis Nørgaard Mikkelsen (Speaker)
Department of Environmental Engineering
Atmospheric Environment

Description
N2O emission from plant surfaces – light stimulated and a global phenomenon PICO Presentation. Teis N. Mikkelsen, Dan Bruhn, Kim Pilegaard & Per Ambus
Degree of recognition: International
Documents:
PICO presentation EGU 2017

Related event
EGU General Assembly 2017: European GEosciences Union 2017
24/04/2017 → 28/04/2017
Vienna, Austria
Activity: Talks and presentations › Conference presentations

Ionospheric magnetic signals during conjunctions between ground based and Swarm satellite observations
Period: 27 Apr 2017
Diana Saturnino (Speaker)
National Space Institute
Geomagnetism

Description
High-precision magnetic measurements collected by satellites such as Swarm or CHAMP, flying at altitudes between 300 and 800 km, allow for improved geomagnetic field modelling. An accurate description of the internal (core and crust) field must account for contributions from other sources, such as the ionosphere and magnetosphere. However, the description of the rapidly changing external field contributions, particularly during the quiet times from which the data are selected, constitutes a major challenge of the construction of such models. Our study attempts to obtain improved knowledge on ionospheric field contributions during quiet times conditions, in particular during night local times. We use two different datasets: ground magnetic observatories time series (obtained below the ionospheric E-layer currents), and Swarm satellites measurements acquired above these currents. First, we remove from the data estimates of the core, lithospheric and large-scale magnetospheric magnetic contributions as given by the CHAOS-6 model, to obtain corrected time series. Then, we focus on the differences of the corrected time series: for a pair of ground magnetic observatories, we determine the time series of the difference, and similarly we determine time series differences at satellite altitude, given by the difference between the Swarm Alpha and Charlie satellites taken in the vicinity of the ground observatory locations. The obtained differences time series are analysed regarding their temporal and spatial scales variations, with emphasis on measurements during night local
Raising the Ocean Literacy of all levels of society is now a policy priority for the European Commission. The long-term objective is better appreciation of the socio-economic benefits and ecosystem services that the marine environment provides, and encourage better stewardship of the seas.

One long-term, and potentially self-sustainable, concept is to put sufficient mutual incentives in place so that researchers, teachers and students in high-schools science and mathematics classes accessorize school curricula with the latest marine research results and knowledge.

Summary of preliminary teachers consultations at Copenhagen International School suggest that teachers are prepared and willing to include recent marine research, research data and knowledge in high school science classes and carry over the research data to mathematics/statistics classes and exercises. However the active participation of researchers is sought to provide guidance and translation of latest research findings, and point to real data sources.

LEARN-TEACH Pilot's main objective is to test a long-term scalable and locally applicable solution for engaging young people in marine environment issues and challenges.

LEARN-TEACH sustainability of concept relies on mutual training and clear mutual incentives. For the teachers, it allows an opportunity to understand and inject recent research in the school curriculum in order to “increase the level of knowledge among the population of the marine environment”.

For the researchers, LEARN-TEACH is tailored as a tool for outreach and dissmination, as well as exposing young marine researchers to the challenges of translating and communicating research to non-academic audiences, and potentially an alternative career.

The presentation will demonstrate how LEARN-TEACH can be embedded in every research grant in any EU region, and how it can add a competitive edge at research grant proposal evaluation.

The content is based on the “Blue Schools” initiative of Horizon 2020 SeaChange Consortium, an EC Ocean Literacy project (www.seachangeproject.eu)
VO-ESD: a virtual observatory approach to describe the geomagnetic field temporal variations with application to Swarm data

Period: 27 Apr 2017
Diana Saturnino (Speaker)
National Space Institute

Description
A complete description of the main geomagnetic field temporal variation is crucial to understand dynamics in the core. This variation, termed secular variation (SV), is known with high accuracy at ground magnetic observatory locations. However, the description of its spatial variability is hampered by the globally uneven distribution of the observatories. For the past two decades, a global coverage of the field changes has been allowed by satellites. Their surveys of the geomagnetic field have been used to derive and improve global spherical harmonic (SH) models through some strict data selection schemes to minimize external field contributions. But discrepancies remain between ground measurements and field predictions by these models. Indeed, the global models do not reproduce small spatial scales of the field temporal variations. To overcome this problem, we propose a modified Virtual Observatory (VO) approach by defining a globally homogeneous mesh of VOs at satellite altitude. With this approach, we directly extract time series of the field and its temporal variation from satellite measurements as it is done at observatory locations. As satellite measurements are acquired at different altitudes, a correction for the altitude is needed. Therefore, we apply an Equivalent Source Dipole (ESD) technique for each VO and each given time interval to reduce all measurements to a unique location, leading to time series similar to those available at ground magnetic observatories. Synthetic data is first used to validate the new VO-ESD approach. Then, we apply our scheme to measurements from the Swarm mission. For the first time, a 2.5 degrees resolution global mesh of VO times series is built. The VO-ESD derived time series are locally compared to ground observations as well as to satellite-based model predictions. The approach is able to describe detailed temporal variations of the field at local scales. The VO-ESD time series are also used to derive global SH models. Without regularization, these models describe well the secular trend of the magnetic field. The derivation of longer VO-ESD time series, as more data will be made available, will allow the study of field temporal variations features such as geomagnetic jerks.

Degree of recognition: International
Links:

Related event
EGU General Assembly 2017: European GEosciences Union 2017
24/04/2017 → 28/04/2017
Vienna, Austria
Activity: Talks and presentations › Conference presentations

17th Annual Executive Seminar in Analytical Chemistry
Period: 26 Apr 2017
Anders Holmgaard Hansen (Participant)
CHO Cell Line Engineering and Design
CFB - Core Flow
Novo Nordisk Foundation Center for Biosustainability
CHO in Silico Engineering of Glycosylation and Protein Quality (CiSe)
CHO Core
iLoop
Degree of recognition: National

Related event
17th Annual Executive Seminar in Analytical Chemistry
26/04/2017 → 26/04/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising a conference
BD FACS User Meeting 2017  
Period: 26 Apr 2017 → 27 Apr 2017  
Lumeng Ye (Participant)  
Novo Nordisk Foundation Center for Biosustainability  
Bacterial Synthetic Biology  

Related event  
BD FACS User Meeting 2017: The Nordic BD FACS User meeting  
26/04/2017 → 27/04/2017  
Gothenburg, Sweden  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

EU workshop with EMA  
Period: 26 Apr 2017  
Lina Cavaco (Participant)  
National Food Institute  

Related event  
EU workshop with EMA: EC workshop in Brussels with EMA  
26/04/2017 → 26/04/2017  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Evolution Constrains Large-Scale Bioproduction  
Period: 26 Apr 2017  
Peter Rugbjerg (Speaker)  
Novo Nordisk Foundation Center for Biosustainability  
Bacterial Synthetic Biology  
Degree of recognition: International  

Related event  
Synthetic Biology for Bioprocessing of Next Generation Biologics  
26/04/2017 → 26/04/2017  
Manchester, United Kingdom  
Activity: Talks and presentations › Conference presentations

FM Innovations - Can touchpoints stand alone?  
Period: 26 Apr 2017  
Giulia Nardelli (Speaker)  
Department of Management Engineering  
Management Science  
Implementation and Performance Management  

Description  
In the FM industry, clients, customers and end users are crucial inspirators for innovators. But do FM innovators truly understand their customers’ “jobs”, and not just their touchpoints throughout the day? And if they do, how do their integrate such understanding when driving and implementing innovation?  
Degree of recognition: International  

Related event  
European Facilities Management Conference 2017  
25/04/2017 → 28/04/2017  
Madrid, Spain
Forskning og projekter inden for klimatilpasning
Period: 26 Apr 2017
Hjalte Jomo Danielsen Sørup (Speaker)
Department of Environmental Engineering
Urban Water Systems

Related external organisation
The Danish Society of Engineers, IDA
Kalvebod Brygge 31-33, DK-1780, Copenhagen V, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Mary had a little Lamb: Scanner-recorded speech during MRI without gradient-induced sound
Period: 26 Apr 2017
Jan Ole Pedersen (Speaker)
Department of Electrical Engineering
Center for Magnetic Resonance
Degree of recognition: International
Documents:
ISMRM17sound(1)

Related event
ISMRM 25th Annual Meeting & Exhibition
22/04/2017 → 27/04/2017
Honolulu, United States
Activity: Talks and presentations › Conference presentations

Vidensmodeller - BIM er meget mere end 3D-geometri
Period: 26 Apr 2017
Mads Holten Rasmussen (Speaker)
Department of Civil Engineering
Section for Building Design
Degree of recognition: Regional
Documents:
170426 Modellering af viden

Related external organisation
NIRAS A/S
Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Amsterdam, Holland.
Period: 25 Apr 2017
Helene Fastrup Kildegaard (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: International

Related event
Cell Line Development and Engineering
24/04/2017 → 26/04/2017
Encoding of Inductively Measured k-Space Trajectories in MR Raw Data
Period: 25 Apr 2017
Jan Ole Pedersen (Speaker)
Department of Electrical Engineering
Center for Magnetic Resonance
Degree of recognition: International
Documents:
abstract_001

Related event
ISM RM 25th Annual Meeting & Exhibition
22/04/2017 → 27/04/2017
Honolulu, United States
Activity: Talks and presentations › Conference presentations

Proteins Congress
Period: 25 Apr 2017
Peter Rugbjerg (Participant)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology
Degree of recognition: International

Related event
Proteins Congress
25/04/2017 → 25/04/2017
London, United Kingdom
Activity: Attending an event › Participating in or organising a conference

Efficient and controlled genome engineering of CHO cell factories. 9th Conference on Recombinant Protein Production (RPP9). Dubrovnik, Croatia.
Period: 24 Apr 2017
Helene Fastrup Kildegaard (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: International

Related event
7th Recombinant Protein Production (RPP7)
23/04/2017 → 26/04/2017
Activity: Talks and presentations › Conference presentations

EGU2017-18355 Passive vs Active Knowledge Transfer: boosting grant proposal impact
Period: 24 Apr 2017
Ivo Grigorov (Speaker)
Georgia Bayliss-Brown (Other)
David Murphy (Other)
Thomas Lindberg Thøgersen (Other)
Patrizio Mariani (Other)
National Institute of Aquatic Resources
Research Secretariat
Research funders are increasingly concerned with measurable socio-economic impact of investment in research, and on increasingly shorter timescales. Innovation, and “open innovation” are the policy priorities of the moment and optimising the flow of ideas along the lab-2-market spectrum is essential for re-use of results, fuelling open innovation, and boosting socio-economic impact or public funded research.

The presentation showcases two complimentary strategies that Project Managers can employ pre- and/or post-award in order to optimise the exploitation and impact of research project: passive and active knowledge transfer. Passive Knowledge Transfer relies on maximum disclosure of research output (other than commercially exploitable research via patents and other IPR) in the interest of optimal reproducibility, independent validation and re-use by both academic and non-academic users, without necessarily targeting specific users. Tools of the trade include standard public & academic dissemination means (research articles, online media publications, newsletters, generic policy briefs). Additional transparency of the research workflow can be achieved by integrating “open science” (open notebooks, open data, open research software and open access to research publications) as well as Virtual Research Environments (VREs) in the methodology of the proposed work. Ensuring that the proposal partners are suitably trained in best practices of open science, makes proposal grant more competitive at evaluation and the resulting maximum access to research outputs does contribute to better return on investment for funders (Beagrie 2016) and economic growth objectives of publics e.g. Blue Growth (Houghton & Swan 2011, Marine Knowledge 2020 Roadmap). Active Knowledge Transfer, or the pro-active translation of research into policy or commercial context, is the more classical and better known approach (also referred to as extension services, or researchers providing advice e.g. to fisheries and aquaculture governance bodies and private sector). Horizon2020 COLUMBUS Consortium proposes and tests a methodology for categorizing the diverse output of research into verifiable “knowledge outputs”, and documenting the execution of an transfer plan to very specific and identified potential users, in order to transfer knowledge along the lab-2-market spectrum. The presentation will demonstrate how Open Science and detailed knowledge transfer plans complement each other, enhance grant proposal evaluation pre- and post-award, and can address Blue Growth policy objectives. Concepts presented are developed by FP7/H2020 FOSTER (www.fosteropenscience.eu), H2020 COLUMBUS (www.columbusproject.eu).

Degree of recognition: International
Documents:
EGU2017-18355-2
Links:
https://www.fosteropenscience.eu/event/ipr-open-science-and-technology-transfer

Related event
EGU General Assembly 2017: European GEosciences Union 2017
24/04/2017 → 28/04/2017
Vienna, Austria
Activity: Talks and presentations › Conference presentations

Forskningens døgn 2017 - Hvordan bygger og renoverer vi grønt?
Period: 24 Apr 2017
Jakob Brinkø Berg (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: Regional
Links:
http://forsk.dk/indbakke/hvordan-bygger-og-renovere-vi-gront

Related external organisation
Erhvervsakademii Sjælland
Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Forskningens døgn 2017 - Hvordan bygger og renoverer vi grønt?
Period: 24 Apr 2017
Jakob Brinkø Berg (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: Regional
Links:
http://forsk.dk/indbakke/hvordan-bygger-og-renovere-vi-gront#cookieoptin

Related external organisation
Klima- og Energigruppen Stevns
Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Remote Sensing of Environment (Journal)
Period: 24 Apr 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
Meteorology & Remote Sensing

Related journal
Remote Sensing of Environment
0034-4257
Central database
Activity: Research › Peer review of manuscripts

Supervision of larger projects at DTU
Period: 24 Apr 2017
Giulia Nardelli (Participant)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Supervision of larger projects at DTU
Degree of recognition: Local

Related event
Supervision of larger projects at DTU
02/03/2010 → …
Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Finding the high-producers: Efficient selection of CHO cell lines (RPP9)
Period: 23 Apr 2017
Nusa Pristovsek (Speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design
Degree of recognition: International

Related event
ISMRM 25th Annual Meeting & Exhibition
Period: 22 Apr 2017 → 27 Apr 2017
Jan Ole Pedersen (Speaker)
Department of Electrical Engineering
Center for Magnetic Resonance
Degree of recognition: International

Related event
ISMRM 25th Annual Meeting & Exhibition
22/04/2017 → 27/04/2017
Honolulu, United States
Activity: Talks and presentations › Conference presentations

Interconnected activities and functions of matrix metalloproteinases at the wound edge.
Period: 21 Apr 2017
Simonas Savickas (Speaker)
Department of Biotechnology and Biomedicine
Degree of recognition: National

Related event
LS2 Swiss Proteomics Meeting
01/10/2016 → …
Activity: Talks and presentations › Conference presentations

Microbial multi modular xylanolytic enzymes in mesophilic anaerobic digesters fed with wastewater treatment sludge
Period: 21 Apr 2017
Casper Wilkens (Invited speaker)
Department of Chemical and Biochemical Engineering
Center for BioProcess Engineering
Degree of recognition: International

Related event
Satellite Meeting of CBM12
20/04/2017 → 21/04/2017
Kongens Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Digital dermatitis hos storfe – Identifikation og karakterisering av Treponema spp og andre mikrobiota
Period: 20 Apr 2017
Tim Kåre Jensen (Speaker)
National Veterinary Institute
Pathology

Description
Invited lecture.
Documents:
Digital dermatitis hos storfe – Identifikation og karakterisering

Related external organisation
**Norwegian University of Life Sciences**  
**Norway**  
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

**NNF Copenhagen bioscience lectures**  
**Period:** 20 Apr 2017  
**Lumeng Ye (Participant)**  
Novo Nordisk Foundation Center for Biosustainability  
Bacterial Synthetic Biology  
**Related event**  
**NNF Copenhagen bioscience lectures: Translational medicine in drug discovery for psychiatrics**  
20/04/2017 → 20/04/2017  
Copenhagen, Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Recent Advances in Biomass Conversion Technologies and Biorefinery Opportunities**  
**Period:** 20 Apr 2017  
**Solange I. Mussatto (Keynote speaker)**  
Novo Nordisk Foundation Center for Biosustainability  
Biomass Conversion and Bioprocess Technology  
**Description**  
Plenary Speaker  
Degree of recognition: International  
**Related event**  
**International Bioenergy (Shanghai) Conference and Exhibition**  
19/04/2017 → 21/04/2017  
Shanghai, China  
Activity: Talks and presentations › Conference presentations

**Techno-economic assessment of biorefinery strategies for rice straw conversion into ethanol and co-products**  
**Period:** 20 Apr 2017  
**Solange I. Mussatto (Speaker)**  
**Rafael C.A. Castro (Other)**  
**Inês C. Roberto (Other)**  
Novo Nordisk Foundation Center for Biosustainability  
Research Groups  
Biomass Conversion and Bioprocess Technology  
Degree of recognition: International  
**Related event**  
**International Bioenergy (Shanghai) Conference and Exhibition**  
19/04/2017 → 21/04/2017  
Shanghai, China  
Activity: Talks and presentations › Conference presentations

**Undersøgelse af tarm mikrobiota hos "nyremink"**  
**Period:** 20 Apr 2017  
**Martin Iain Bahl (Invited speaker)**  
National Food Institute
Research Group for Gut Microbiology and Immunology
Degree of recognition: National

Related event

**CPH Mink seminar**
20/04/2017 → 20/04/2017
Frederiksberg C, Denmark
Activity: Talks and presentations › Conference presentations

**International Bioenergy (Shanghai) Conference and Exhibition**
Period: 19 Apr 2017 → 21 Apr 2017
Solange I. Mussatto (Organizer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Biomass Conversion and Bioprocess Technology

**Description**
Member of Program Committee, Topic Organizer, Chairperson, Guest Editor - Special Issue dedicated to the conference
Degree of recognition: International

Related event

**International Bioenergy (Shanghai) Conference and Exhibition**
19/04/2017 → 21/04/2017
Shanghai, China
Activity: Attending an event › Participating in or organising a conference

**International Bioenergy (Shanghai) Conference and Exhibition**
Period: 19 Apr 2017 → 21 Apr 2017
Solange I. Mussatto (Participant)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology
Degree of recognition: International

Related event

**International Bioenergy (Shanghai) Conference and Exhibition**
19/04/2017 → 21/04/2017
Shanghai, China
Activity: Attending an event › Participating in or organising a conference

**Human factors and ergonomics in manufacturing and service industries (Journal)**
Period: 18 Apr 2017 → …
Kasper Edwards (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
Member of the Editorial Board of Human Factors and Ergonomics in Manufacturing & Service Industries
Degree of recognition: International

Related journal

**Human factors and ergonomics in manufacturing and service industries**
Local database
Activity: Research › Journal editor
Interface engineering to boost the open circuit voltage of Cu2ZnSnS4 solar cells
Period: 18 Apr 2017
Andrea Crovetto (Speaker)
Department of Physics
Experimental Surface and Nanomaterials Physics
Silicon Microtechnology

Related event

2017 MRS Spring Meeting
17/04/2017 → 21/04/2017
Phoenix, United States
Activity: Talks and presentations › Conference presentations

Perlekædebroer og andre nye superløse konstruktioner
Period: 18 Apr 2017
Per Goltermann (Other)
Department of Civil Engineering
Section for Structural Engineering

Description
Professor Kristian Hertz foredrag over de ingeniøræmæssige udfordringer ved at lave den nye type superløse betonkonstruktioner ved brug af præfabrikerede elementer og rationelle produktions og montagemetoder

Related external organisation

Dansk Betonforening
Activity: Other

Ultrafast electronic and nuclear dynamics in photo-excited transition-metal complexes
Period: 18 Apr 2017 → 21 Apr 2017
Klaus Braagaard Møller (Invited speaker)
Department of Chemistry

Description
CMST COST Action CM1405
Degree of recognition: International

Related event

International Workshop on Molecular Quantum Dynamics and Kinetics
18/04/2017 → 21/04/2017
Zürich, Switzerland
Activity: Talks and presentations › Conference presentations

2017 MRS Spring Meeting
Period: 17 Apr 2017 → 21 Apr 2017
Andrea Crovetto (Speaker)
Department of Physics
Experimental Surface and Nanomaterials Physics
Silicon Microtechnology

Related event

2017 MRS Spring Meeting
17/04/2017 → 21/04/2017
Pulsed laser deposition (PLD) of a CZTS-absorber for thin solar cells with up to 5.2 % efficiency

Related event

Na-assisted grain growth in CZTS nanoparticle thin films for solar cell applications
Teaching Assistant for course 15.872 System Dynamics II
Period: 15 Apr 2017 → 2 Jun 2017
Daniel Alberto Sepúlveda Estay (Guest lecturer)
Bradley Morrison (Lecturer)
Department of Management Engineering
Management Science
Transport DTU

Description
15.871 and 872 introduce you to system dynamics modeling for the analysis of business policy and strategy. You will learn to visualize a business organization in terms of the structures and policies that create dynamics and regulate performance. System dynamics allows us to create ‘microworlds,’ management flight simulators where space and time can be compressed, slowed, and stopped so we can experience the long-term side effects of decisions, systematically explore new strategies, and develop our understanding of complex systems. In these system dynamics courses we use simulation models, case studies, and management flight simulators to develop principles of policy design for successful management of complex strategies. Case studies of successful strategy design and implementation using system dynamics will be stressed. We consider the use of systems thinking to promote effective organizational learning. The principal purpose of modeling is to improve our understanding of the ways in which an organization's performance is related to its internal structure and operating policies as well as those of customers, competitors, suppliers, and other stakeholders.

During the course students use several simulation models to explore such strategic issues as fluctuating sales, production and earnings; market growth and stagnation; the diffusion of new technologies; the use and reliability of forecasts; the rationality of business decision making; and applications in health care, energy policy, environmental sustainability, and other topics.

Students learn to recognize and deal with situations where policy interventions are likely to be delayed, diluted, or defeated by unanticipated reactions and side effects. You will have a chance to use state of the art software for computer simulation and gaming. Assignments give hands-on experience in developing and testing computer simulation models in diverse settings.

Degree of recognition: National
Documents:
Syllabus for course 15.872 System Dynamics II

Related event
15.872 System Dynamics II
15/04/2017 → 02/06/2017
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Process development and strategies to move towards a biobased economy
Period: 14 Apr 2017
Solange I. Mussatto (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Biomass Conversion and Bioprocess Technology

Description
Special Lecture (by invitation) at Tokyo Institute of Technology, Department of Chemical Science and Engineering, School of Materials and Chemical Technology.

Degree of recognition: Local
Documents:
Prof. Mussatto Lecture

Related event
Lecture at Tokyo Institute of Technology
14/04/2017 → 14/04/2017
Tokyo, Japan
52nd International Universities' Power Engineering Conference (Event)
Period: 11 Apr 2017
Mattia Marinelli (Participant)
Department of Electrical Engineering
Center for Electric Power and Energy
Energy resources, services and control
Description
UPEC (University Power Engineering Conference) Steering Committee participation
Degree of recognition: International
Links:
Related event
52nd International Universities' Power Engineering Conference
29/08/2017 → 01/09/2017
Greece
Activity: Membership › Membership of committee, commissions, boards, councils, associations, organisations, or similar
International Conference: Molecular Properties and Computational Spectroscopy - from Esoteric Effects to Novel Probing Tools
Period: 10 Apr 2017 → 12 Apr 2017
Sonia Coriani (Organizer)
Department of Chemistry
Degree of recognition: International
Links:
http://mpcs17.pi.ipcf.cnr.it/ (Conference website)
Related event
International Conference: Molecular Properties and Computational Spectroscopy - from Esoteric Effects to Novel Probing Tools
09/04/2017 → 12/04/2017
Pisa, Italy
Activity: Attending an event › Participating in or organising a conference
Phosphoric Acid Anion Migration through Polybenzimidazole Membrane
Period: 9 Apr 2017
Hans Becker (Speaker)
Department of Energy Conversion and Storage
Proton conductors
Degree of recognition: International
Related event
CARISMA Conference 2017
09/04/2017 → 12/07/2017
Newcastle, United Kingdom
Activity: Talks and presentations › Conference presentations
Systems Analysis (Organisational unit)
Period: 7 Apr 2017
Henrik Klinge Jacobsen (Chairman)
Department of Management Engineering
Systems Analysis

Description
Senior researcher assessment committee (chair)

Related organisation

Systems Analysis (Organisational unit)
Klinge Jacobsen, H. (Chairman)
7 Apr 2017
Activity: Membership › Membership in review committee

EURL -AR workshop
Period: 6 Apr 2017 → 7 Apr 2017
Helle Bisgaard Korsgaard (Speaker)
National Food Institute
Division of Risk Assessment and Nutrition
Degree of recognition: International

Related event

EURL -AR workshop
06/04/2017 → 07/04/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

EURL Workshop 2017
Period: 6 Apr 2017 → 7 Apr 2017
Lina Cavaco (Organizer)
National Food Institute

Description
participate as speaker and part of organization

Related event

EURL Workshop 2017
06/04/2017 → 07/04/2017
Activity: Attending an event › Participating in or organising a conference

EURL Workshop 2017
Period: 6 Apr 2017 → 7 Apr 2017
Lina Cavaco (Speaker)
National Food Institute

Description
participate as speaker and part of organization

Related event

EURL Workshop 2017
06/04/2017 → 07/04/2017
Activity: Talks and presentations › Conference presentations

Theriogenology (Journal)
Period: 6 Apr 2017
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Emergence of Engineering Academia and the Teaching Practices at DTU
Period: 5 Apr 2017
Laila Zwisler (Speaker)
Department of Physics

Description
When the Danish polytechnical school opened in 1829 under University of Copenhagen basic sciences were given a dominant role. There was an uneasy and debated relationship between basic sciences and technical subjects. In this talk I will look into how the school dealt with this relationship and the practical executive issues up to 1929. Teachers invoked both the theoretical bodies and the methodology of the natural sciences in the creation of engineering knowledge systems reaching beyond fundamental sciences.

Related external organisation
IMFUFA course, Roskilde (DK)
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Facilities Management and Corporate Real Estate as Value Drivers
Period: 5 Apr 2017
Per Anker Jensen (Invited speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Per Anker Jensen holdt indlæg om ny bog på Nordisk FM Dag i Malmö den 5. april 2017

Related event
Nordisk FM Dag
05/04/2017 → …
Malmö
Activity: Talks and presentations › Conference presentations

Klimatiltapning af vandinfrastruktur
Period: 5 Apr 2017
Hjalte Jomo Danielsen Sarup (Speaker)
Department of Environmental Engineering
Urban Water Systems

Related organisation
Klimatiltapning af vandinfrastruktur
Sørup, H. J. D. (Speaker)
5 Apr 2017
Modelling open nanophotonic structures using the Fourier modal method in infinite domains  
Period: 5 Apr 2017  
Andreas Dyhl Østerkryger (Speaker)  
Department of Photonics Engineering  
Nanophotonics Theory and Signal Processing  
Degree of recognition: International  

Related event  
25th International Workshop on Optical Waveguide Theory and Numerical Modelling  
05/04/2017 → 06/04/2017  
Eindhoven, Netherlands  

Systems Biology of Metabolism  
Period: 5 Apr 2017  
Jens Nielsen (Speaker)  
Novo Nordisk Foundation Center for Biosustainability  
Yeast Cell Factories  

Description  
Plenary lecture at BioSB, Lunteren, The Netherlands  
Degree of recognition: International  

Related event  
BioSB 2017: Dutch Bioinformatics & Systems Biology Conference  
04/04/2017 → 05/04/2017  
Lunteren, Netherlands  

Training in luminance imaging  
Period: 5 Apr 2017 → 6 Apr 2017  
Anders Thorseth (Organizer)  
Dennis Dan Corell (Participant)  
Mekbib Wubishet Amdemeskel (Participant)  
Johannes Lindén (Participant)  
Thierry Silvio Claude Soreze (Participant)  
Carsten Dam-Hansen (Participant)  
Department of Photonics Engineering  
Diode Lasers and LED Systems  

Description  
Course lecturer: Tobias Porsch  
Degree of recognition: Local  

Related event  
Training in luminance imaging  
05/04/2017 → 06/04/2017  
Roskilde, Denmark  
Activity: Attending an event  
Participating in or organising workshops, courses, seminars etc.  

Nanoworld Conference  
Period: 4 Apr 2017
Steffen Foss Hansen (Chairman)
Department of Environmental Engineering
Environmental Chemistry

Related event

Nanoworld Conference
03/04/2017 → 05/04/2017
Newton, United States
Activity: Attending an event › Participating in or organising a conference

Nanoworld Conference
Period: 4 Apr 2017
Steffen Foss Hansen (Speaker)
Department of Environmental Engineering
Environmental Chemistry
Links:

Related event

Nanoworld Conference
03/04/2017 → 05/04/2017
Newton, United States
Activity: Talks and presentations › Conference presentations

The African Diaspora Biotech Summit
Period: 4 Apr 2017
Eugene Fletcher (Participant)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology

Related event

The African Diaspora Biotech Summit
04/04/2017 → 04/04/2017
Cambridge, United Kingdom
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Gravitationsbølger
Period: 3 Apr 2017
Søren Brandt (Speaker)
National Space Institute
Astrophysics and Atmospheric Physics
Degree of recognition: Regional

Related external organisation

Folkeuniversitetet i Aarhus
Ny Munkegade 118, 8000, Aarhus, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Harmonic Polynomial Cell method with Immersed Boundaries
Period: 3 Apr 2017 → 7 Apr 2017
Yanlin Shao (Speaker)
Department of Mechanical Engineering
Hybrid hydrogels by the co-assembly of chitosan with phospholipids
Period: 3 Apr 2017 → 6 Apr 2017
Elhamalsadat Shekarforoush (Guest lecturer)
Ana Carina Loureiro Mendes (Guest lecturer)
Christoph Engwer (Other)
Francisco Goycoolea (Other)
Ioannis S. Chronakis (Guest lecturer)
National Food Institute
Research Group for Nano-Bio Science
Degree of recognition: International
Documents:
Elham Abstract-

Related event

Annual European Rheology Conference (AERC2017)
03/04/2017 → 06/04/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Hybrid hydrogels by the co-assembly of chitosan with phospholipids
Period: 3 Apr 2017 → 6 Apr 2017
Elhamalsadat Shekarforoush (Other)
Ana Carina Loureiro Mendes (Other)
Christoph Engwer (Other)
Ioannis S. Chronakis (Other)
National Food Institute
Research Group for Nano-Bio Science
Degree of recognition: International
Documents:
Elham Abstract-

Related event

Annual European Rheology Conference (AERC2017)
03/04/2017 → 06/04/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Improvements in organisations workshop
Period: 3 Apr 2017 → 4 Apr 2017
Signe Poulsen (Participant)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related event

Improvements in organisations workshop
03/04/2017 → 04/04/2017
Sweden
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Joint FutureGas-CITIES-InnoSE Gas Workshop
Period: 3 Apr 2017
Tara Sabbag Amirkhizi (Speaker)
Department of Management Engineering
Systems Analysis

Description
Presentation

Related organisation

Joint FutureGas-CITIES-InnoSE Gas Workshop
Amirkhizi, T. S. (Speaker)
3 Apr 2017
Activity: Talks and presentations › Conference presentations

Optical and Hydrodynamic Stretching of Single Cells from Blood
Period: 3 Apr 2017
Kirstine Berg-Sørensen (Speaker)
Department of Physics
Quantum Physics and Information Techology
Degree of recognition: International
Documents:
3pagesummary

Related event

OSA Biophotonics Congress: Optical Trapping Applications 2017: Optics in the Life Sciences
02/04/2017 → 05/04/2017
San Diego, United States
Activity: Talks and presentations › Conference presentations

Sub-picosecond nonlinear THz transmission modulation with ultrafast recovery time in silicon carbide
Period: 2 Apr 2017
Abebe Tilahun Tarekegne (Speaker)
Department of Photonics Engineering
Diode Lasers and LED Systems

Related external organisation

OTST 2017
University College London, WC1E 6BT, London , United Kingdom
Activity: Talks and presentations › Conference presentations
THz-frequency zone-folded weak phonon modes in 4H and 6H silicon carbide
Period: 2 Apr 2017
Abebe Tilahun Tarekegne (Speaker)
Department of Photonics Engineering
Diode Lasers and LED Systems

Related external organisation
OTST 2017
University College London, WC1E 6BT, London , United Kingdom
Activity: Talks and presentations › Conference presentations

Dansk Universitetspaedagogisk Tidsskrift (Journal)
Period: 1 Apr 2017 → 7 Apr 2017
José Soler (Reviewer)
Department of Photonics Engineering
Networks Technology and Service Platforms

Related journal
Dansk Universitetspaedagogisk Tidsskrift
1901-5089
BFI (2017): BFI-level 1
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

International Journal of Workplace Health Management (Journal)
Period: 1 Apr 2017 → …
Signe Poulsen (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Related journal
International Journal of Workplace Health Management
1753-8351
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 1.24 SJR 0.485 SNIP 1.324, ISI indexed (2013): ISI indexed no
Central database
Activity: Research › Peer review of manuscripts

Journal of Intelligent Transportation Systems (Journal)
Period: 1 Apr 2017 → 7 Apr 2017
José Soler (Reviewer)
Department of Photonics Engineering
Networks Technology and Service Platforms

Related journal
Journal of Intelligent Transportation Systems
1547-2450
Central database
Activity: Research › Peer review of manuscripts
**Member of Panel on Work Environment at DTU Environment (External organisation)**

**Period:** 1 Apr 2017

**Steffen Foss Hansen** (Participant)

*Department of Environmental Engineering*

*Environmental Chemistry*

**Description**

*Member of Panel on Work Environment at DTU Environment*

*Degree of recognition: Local*

**Related external organisation**

*Member of Panel on Work Environment at DTU Environment*

*Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar*

**Supervision for a master student Rohullah Sahar**

**Period:** 1 Apr 2017 → 15 Aug 2017

**Yaojun Tong** (Supervisor)

**Emilia Palazzotto** (Supervisor)

**Tilmann Weber** (Supervisor)

*Novo Nordisk Foundation Center for Biosustainability*

*New Bioactive Compounds*

**Research Groups**

*Degree of recognition: Local*

*Activity: Examinations and supervision › Supervisor activities*

**The Deans Lecture Hall Technology Committee (Event)**

**Period:** 1 Apr 2017 → …

**Christine Ipsen** (Participant)

*Department of Management Engineering*

*Management Science*

*Implementation and Performance Management*

**Description**

*Member of DTUs Lecture Hall Technology committee*

**Related event**

*The Deans Lecture Hall Technology Committee*

03/04/2017 → …

*Kgs. Lyngby, Denmark*

*Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar*

**Energy Efficiency (Journal)**

**Period:** Mar 2017

**Toke Rammer Nielsen** (Reviewer)

*Department of Civil Engineering*

*Section for Building Energy*

**Description**

*Review of journal article*

*Degree of recognition: International*

**Related journal**
Energy Efficiency
1570-646X
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 1.43 SJR 0.74 SNIP 0.816, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed Yes
Central database
Activity: Research › Peer review of manuscripts

IET Renewable Power Generation (Journal)
Period: Mar 2017 → …
Theis Bo Rasmussen (Reviewer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electric power systems
Description
Reviewer
Related journal
IET Renewable Power Generation
1752-1416
BFI (2017): BFI-level 2, Scopus rating (2016): CiteScore 3.55 SJR 0.988 SNIP 1.379, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed Yes
Central database
Activity: Research › Peer review of manuscripts

Sikre Fødevarekontaktmaterialer - en kemisk udfordring
Period: Mar 2017
Gitte Alsing Pedersen (Speaker)
National Food Institute
Division of Risk Assessment and Nutrition
Description
Møde i IDA Levnedsmiddelselskabet
Related event
IDA møde om fødevarekontaktmaterialer
21/03/2017 → 21/03/2017
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

The Ph.D. Supervision Process: Methods and Tools
Period: Mar 2017 → May 2017
Giulia Nardelli (Participant)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: Local
Documents:
PhD supervision course-Diploma
Related event
The Ph.D. Supervision Process: Methods and Tools
07/03/2017 → 09/05/2017
Kgs. Lyngby, Denmark
Activity: Other
Electricity grid tariffs to support flexibility from district heating: The case of Denmark
Period: 31 Mar 2017
Claire Bergaentzlé (Speaker)
Department of Management Engineering
Systems Analysis
Degree of recognition: Local

Related event

ELMA - EER Common Seminar: ELMA (DTU Elektro) EER (DTU MAN)
31/03/2017 → 31/03/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Intraday Market Asymmetries
Period: 31 Mar 2017
Emilie Rosenlund Soysal (Speaker)
Department of Management Engineering
Systems Analysis
Degree of recognition: Local
Documents:
Intraday Market Asymmetries PRESENTATION MARCH 2017

Related event

ELMA - EER Common Seminar: ELMA (DTU Elektro) EER (DTU MAN)
31/03/2017 → 31/03/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Joint Spring Symposium 2017: Danish Society for Parasitology and Danish Society for Tropical Medicine and International Health
Period: 31 Mar 2017
Heidi Huus Petersen (Participant)
National Veterinary Institute
Section for Public sector service and commercial diagnostics
Bacteriology & Parasitology
Degree of recognition: National
Documents:
Coccidia infection in Danish farmed mink
Links:
http://parasitology.dk/web/

Related event

Joint Spring Symposium 2017: Danish Society for Parasitology and Danish Society for Tropical Medicine and International Health
31/03/2017 → 31/03/2017
Frederiksberg, Denmark
Activity: Attending an event › Participating in or organising a conference

Temaaften om tang for Tokai University Alumneforening
Period: 31 Mar 2017
Ditte Baun Hermund (Guest lecturer)
National Food Institute
Research Group for Bioactives – Analysis and Application

Related external organisation

Tokai Centret
Vedbæk Strandvej 476, 2950, Vedbæk, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Biomedical Microdevices (Journal)
Period: 30 Mar 2017 – 31 Dec 2017
Govindan Puthumana (Reviewer)
Department of Mechanical Engineering

Description
Biomedical Microdevices
Degree of recognition: International
Links:
https://link.springer.com/journal/10544

Related journal

Biomedical Microdevices
1387-2176
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 2.29 SJR 0.595 SNIP 0.752, ISI indexed (2013): ISI indexed yes,
Web of Science (2017): Indexed Yes
Central database
Activity: Research › Journal editor

Kick off Coast to Coast Climate Challenge
Period: 30 Mar 2017
Carlo Sass Sørensen (Participant)
National Space Institute
Geodesy

Description
Contribution to event, e.g. in the preparation of exhibition stand about subprojects C9, C17, and C21 of c2c cc.
Degree of recognition: Regional
Documents:
17117.118 LemvigKommune_roll-up_ren_screen
c2c-300317-1
Links:
http://www.c2ccc.eu

Related event

Kick off Coast to Coast Climate Challenge
30/03/2017 → 30/03/2017
Herning, Denmark
Activity: Attending an event › Participating in or organising a conference

Mechanisms of action involved in chemically induced effects on male reproductive health
Period: 30 Mar 2017 – 31 Mar 2017
Camilla Victoria Lindgren Schwartz (Speaker)
Sofie Christiansen (Other)
Anne Marie Vinggaard (Other)
Terje Svingen (Other)
National Food Institute
Research Group for Molecular and Reproductive Toxicology

Copenhagen Center for Health Technology
Degree of recognition: Regional

**Related event**

**3rd ReproYoung Conference**
30/03/2017 → 31/03/2017
Båstad, Sweden
Activity: Talks and presentations › Conference presentations

**SCIENCE OF MAKING TORQUE FROM WIND (Journal)**
Period: 30 Mar 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
Meteorology & Remote Sensing

**Related journal**

**SCIENCE OF MAKING TORQUE FROM WIND**
1742-6596
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 0.45 SJR 0.24 SNIP 0.383, ISI indexed (2013): ISI indexed no,
Web of Science (2017): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

**EVALUATION OF ADAPTIVE TEST STRATEGIES FOR CONTROL AND ERADICATION OF PARATUBERCULOSIS WITHIN DAIRY CATTLE HERDS**
Period: 29 Mar 2017 → 31 Mar 2017
Carsten Thure Kirkeby (Invited speaker)
National Veterinary Institute
Epidemiology
Links:

**Related event**

**2017 Annual Meeting of SVEPM 2017, 29-31 March, Inverness, Scotland**
29/03/2017 → 31/03/2017
Scotland, United Kingdom
Activity: Talks and presentations › Conference presentations

**Indvendig ydervægsisolering – Findes der en sikker metode ?**
Period: 29 Mar 2017
Tommy Odgaard (Speaker)
Søren Peter Bjarløv (Speaker)
Department of Civil Engineering
Section for Building Design
Degree of recognition: National

**Related event**

**Ejendomsmessen**
29/03/2017 → 30/03/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations
Konstruktion og test af kunstige regnserier
Period: 29 Mar 2017
Hjalte Jomo Danielsen Sarup (Speaker)
Department of Environmental Engineering
Urban Water Systems

Related external organisation
The Danish Society of Engineers, IDA
Kalvebod Brygge 31-33, DK-1780, Copenhagen V, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Low Carbon Economy Territory (ESPON - LOCATE) workshop
Period: 29 Mar 2017
Angreine Kewo (Speaker)
Per Sieverts Nielsen (Speaker)
Department of Management Engineering
Systems Analysis
Degree of recognition: International

Related event
Low Carbon Economy Territory (ESPON - LOCATE) workshop
29/03/2017 → …
Vienna, Austria
Activity: Talks and presentations › Conference presentations

Remote Sensing (Journal)
Period: 29 Mar 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
Meteorology & Remote Sensing

Related journal
Remote Sensing
2072-4292
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

Source attribution: Translating science into public health action
Period: 29 Mar 2017 → 31 Mar 2017
Tine Hald (Keynote speaker)
National Food Institute
Research Group for Genomic Epidemiology
Degree of recognition: International

Related event
2017 Annual Meeting of SVEPM 2017, 29-31 March, Inverness, Scotland
29/03/2017 → 31/03/2017
Scotland, United Kingdom
Activity: Talks and presentations › Conference presentations
Graphene 2017
Period: 28 Mar 2017 → 31 Mar 2010
Thomas Aktor (Organizer)
Center for Nanostructured Graphene
Department of Micro- and Nanotechnology
Theoretical Nanotechnology
Degree of recognition: International

Related event
Graphene 2017
28/03/2017 → 31/03/2017
Barcelona, Spain
Activity: Attending an event › Participating in or organising a conference

2017 STAMP Workshop
Period: 27 Mar 2017 → 30 Mar 2017
Daniel Alberto Sepúlveda Estay (Speaker)
Nancy Leveson (Speaker)
John Thomas (Lecturer)
Department of Management Engineering
Management Science
Transport DTU

Description
MIT STAMP/STPA Workshop took place during March 27-30, 2017.

STAMP is an accident causality model based on systems theory and systems thinking. STAMP integrates into engineering analysis the causal factors in our increasingly complex systems such as software, human-decision making and human factors, new technology, social and organizational design, and safety culture.

STPA is a powerful new hazard analysis technique based on STAMP while CAST is the equivalent for accident/incident analysis. These tools are now used globally in almost every industry. Newer tools, such of those for doing early concept analysis (STECA) security analysis (STPA-Sec) and leading indicators have been developed. This free workshop will provide attendees with the opportunity to learn how to use these new tools, to meet with users and to hear about applications, evaluations, and the latest developments in this powerful new approach to system safety engineering and to cyber security.

Degree of recognition: International
Documents:
170330_Workshop_presentation_Sepulveda

Related external organisation
Massachusetts Institute of Technology
Cambridge, United States
Activity: Talks and presentations › Conference presentations

High Frequency Planar Magnetics for Power Conversion
Period: 27 Mar 2017
Ziwei Ouyang (Speaker)
William Gerard Hurley (Speaker)
Department of Electrical Engineering
Electronics

Description
Related event

27/03/2017 → …
Tampa, United States
Activity: Talks and presentations › Conference presentations

---

**Goddag - og farvel - til broer**
Period: 26 Mar 2017
Laila Zwisler (Speaker)
Jørgen Burchardt (Speaker)
Magnus Heunicke (Speaker)
Department of Physics

**Description**
Kan historien lære os om hvordan vi skal planlægge store infrastrukturer som forbindelserne over Femern og Kattegat? Jørgen Burchardt, forsker ved Danmarks Tekniske Museum, fortæller om skæbnen for Tscherning’s forslag i 1855 i Folketinget om bro over Lillebælt og tunnel under Storebælt. Laila Zwisler fra Teknologihistorie, DTU, diskuterer, hvordan en ingeniørvidsenskab har udviklet sig for at holde styr på den moderne verden, hvor teknologiske systemer er blevet vores anden natur. Tidligere trafikminister Magnus Heunicke kommenterer og styrer debat fra publikum.

Degree of recognition: National

**Related external organisation**

**Historiske Dage**
Store Kirkestræde 1, 4, 1073, København K, Denmark
Activity: Other

---

**Kinetic considerations of two Sulfurospirillum spp. competing for tetrachloroethene**
Period: 26 Mar 2017 → 29 Mar 2017
Geraldine Buttet (Other)
Alexandra Marie Murray (Other)
Melissa Burion (Other)
C. Holliger (Other)
J Maillard (Speaker)
Department of Environmental Engineering

**Water Resources Engineering**

Degree of recognition: International
Documents:
Maillard_abstract_final (1)

**Related event**

**Dehalocon II: A Conference on Anaerobic Reductive Dehalogenation**
26/03/2017 → 29/03/2017
Leipzig, Germany
Activity: Talks and presentations › Conference presentations

---

**APEC2017 Professional Education Seminar: Bidirectional DC-DC Converters: Fundamentals and Advances**
Period: 25 Mar 2017
Zhe Zhang (Speaker)
Department of Electrical Engineering
Electronics
Description
Professional Education Seminar at the 2017 IEEE Applied Power Electronics Conference and Exposition (APEC 2017),
Tampa, FL, USA

Related event
the 2017 IEEE Applied Power Electronics Conference and Exposition (APEC 2017)
26/03/2017 → 30/03/2017
Tampa, United States
Activity: Talks and presentations › Conference presentations

Animal health surveillance in Denmark
Period: 23 Mar 2017
Tim Kåre Jensen (Speaker)
National Veterinary Institute
Pathology

Description
Invited guest lecture
Degree of recognition: National
Documents:
Animal health surveillance in Denmark

Related external organisation
Universidade Federal de Minas Gerais
Brazil
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Bovine endometritis and abortions revisited
Period: 23 Mar 2017
Tim Kåre Jensen (Speaker)
National Veterinary Institute
Pathology

Description
Invited guest lecture
Degree of recognition: National

Related external organisation
Universidade Federal de Minas Gerais
Brazil
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Bovine neurological diseases and BSE in Denmark
Period: 23 Mar 2017
Tim Kåre Jensen (Speaker)
National Veterinary Institute
Pathology

Description
Invited guest lecture
Degree of recognition: National
Documents:
National Veterinary Institute, Technical University of Denmark

Related external organisation
Microbiological applications of mass spectrometry in clinical and environmental microbiology
Period: 23 Mar 2017
Lumeng Ye (Participant)

Novo Nordisk Foundation Center for Biosustainability  
Bacterial Synthetic Biology

Related event

Microbiological applications of mass spectrometry in clinical and environmental microbiology  
23/03/2017 → 23/03/2017  
Copenhagen, Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Ruminfrastruktur - Arktis
Period: 23 Mar 2017
Jens Olaf Pepke Pedersen (Speaker)

National Space Institute  
Innovation and Research-based consultancy

Description


Degree of recognition: National
Links:
http://censec.dk/Files/Billeder/CenSec/rumindustri/Pepke-Pedersen-Arktis.ppt

Related event

Forretningsmuligheder i rumindustrien  
23/03/2017 → …  
Copenhagen, Denmark  
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Trends i byggeriet – IoT, Big data - Inspiration fra DTU, CITIES og Vidensbyen
Period: 23 Mar 2017
Alfred Heller (Speaker)

Department of Civil Engineering  
Centre for IT-Intelligent Energy Systems in Cities

Description
Inviteret præsentation af de erfaringer der er lavet i CITIES og Vidensbyen omkring Internet of Things, Science Cloud for Cities og mere
Documents:
Bygnetværk - Alfred Heller - marts 2017

Related external organisation

Byggeriets netværk  
København  
Activity: Talks and presentations › Conference presentations
Bovine digital dermatitis, the pathology and the association with Treponema species
Period: 22 Mar 2017
Tim Kåre Jensen (Speaker)
National Veterinary Institute
Pathology

Description
Invited guest lecture
Degree of recognition: National
Documents:
Bovine digital dermatitis, the pathology and the

Related external organisation

Universidade Federal de Minas Gerais
Brazil
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Dartmouth College (External organisation)
Period: 22 Mar 2017
Michael A. E. Andersen (Participant)
Department of Electrical Engineering
Electronics

Description
Tenure Track Review Evaluation (Associate Professor with tenure)

Related external organisation

Dartmouth College
United States
Activity: Membership › Membership in review committee

Diagnostic application of FISH for Identification of bacterial pathogens
Period: 22 Mar 2017
Tim Kåre Jensen (Speaker)
National Veterinary Institute
Pathology

Description
Invited guest lecture
Degree of recognition: National
Documents:
Diagnostic application of FISH for Identification of

Related external organisation

Universidade Federal de Minas Gerais
Brazil
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Safe production of mealworms
Period: 22 Mar 2017
Annette Nygaard Jensen (Invited speaker)
National Food Institute
Research Group for Microbial Food Safety

Description
Food and feed safety in relation to farmed insects
Documents:
FoodTalkBio 2203 2017

Related event

Food Talk - Insects
22/03/2017 → 22/03/2017
Lyngby, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Udfordringer ved VE-gas anvendt i brændselsceller
Period: 22 Mar 2017
Anke Hagen (Guest lecturer)
Department of Energy Conversion and Storage
Applied Electrochemistry

Description
Invited talk

Related event

IDA KEMI
22/03/2017 → 22/03/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Wind power in the future energy system
Period: 22 Mar 2017
Klaus Skytte (Speaker)
Department of Management Engineering
Systems Analysis

Description
AER Seminar 22nd March 2017, Comwell Campus Klarskovgaard, Korsør
Degree of recognition: National
Documents:
Flex4RES_Presentation_AER_seminar_220317

Related organisation

Wind power in the future energy system
Skytte, K. (Speaker)
22 Mar 2017
Activity: Talks and presentations › Conference presentations

5th Scandinavian Academy of Industrial Engineering and Management
Period: 21 Mar 2017
Christine Ipsen (Organizer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Board meeting
We investigate the problem of incentivising flexibility in electricity markets. As the share of intermittent renewable energy increases in the generation mix, power systems are exposed to greater levels of uncertainty and risk, which requires
planners, policy and business decision makers to incentivise flexibility, that is: their adaptability to unforeseen variations in generation and demand. The greater need for flexibility, along with the fact that its provision is costly, highlights the importance of efficient procurement. As a commodity, flexibility has multiple attributes such as capacity, ramp rate, duration and lead time among which there are complementarities. Additionally, along with traditional sources, which already enable flexibility, a number of business models, such as thermostat-based demand response, aggregators and small storage providers, are emerging in electricity markets and expected to constitute important sources of flexibility in future decentralised power systems. However, due to presence of high transaction costs, relative to the size of resource, the emerging small resources cannot directly participate in an organised electricity market and/or compete. Therefore we ask the fundamental question of how should the provision of flexibility, as a multi-dimensional commodity, be incentivised in this context? We model the procurement of flexibility services from emerging small resources through bilateral contracts in a multidimensional adverse selection setting. We take a normative perspective and show how efficient contracts for flexibility services can be designed given its peculiarity as an economic commodity. Through a simulation analysis we elucidate the applicability of the proposed model and demonstrate the way it can be utilised in, for example, a thermostat based demand response programme.

Degree of recognition: National
Documents:
Flexibility Enabling Contracts in Electricity Markets

Related event
Seminar at Department of Sociology, Environmental and Business Economics
21/03/2017 → …
Esbjerg, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

IC3 and IC4 Trains Under Risk of Blocking their Wheels -A Big Data Case Story
Period: 21 Mar 2017
Anders Stockmarr (Speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
DTU Executive School of Business
Degree of recognition: Local
Documents:
DTU Management 2103017

Related event
Visit from Antwerp Management School to DTU Business
20/03/2017 → 22/03/2017
Activity: Talks and presentations › Conference presentations

Identification of bacterial pathogens using Fluorescent In Situ Hybridisation
Period: 21 Mar 2017
Tim Kåre Jensen (Speaker)
National Veterinary Institute
Pathology
Description
Invited guest lecture
Documents:
Identification of bacteria by FISH

Related external organisation
Universidade Federal de Minas Gerais
Brazil
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

International Conference on Frontiers of Characterization and Metrology for Nanoelectronics 2017
Period: 21 Mar 2017 → 23 Mar 2017
Maria-Louise Witthøft (Participant)
Department of Micro- and Nanotechnology

**Description**
Precision of Micro Hall Effect Measurements in Scribe Line Test Pads of B-doped Si

**Degree of recognition:** International

**Documents:**
Poster_FCMN_2017

**Related event**

**International Conference on Frontiers of Characterization and Metrology for Nanoelectronics 2017**
21/03/2017 → 23/03/2017
Monterey, CA, United States

**Activity:** Attending an event › Participating in or organising a conference

---

Dorte Lau Baggesen (Organizer)
National Food Institute

**Description**
Joined workshop arranged by the National Food Institute DTU, University of Copenhagen, Danish Technological Institute together with the Ministry of Environment and Food of Denmark

**Degree of recognition:** National

**Documents:**
Kick_off_workshop_program_mm_21_03_2017

**Related event**

**Kick off workshop om dansk insektindustri**
21/03/2017 → 21/03/2017
Copenhagen, Denmark

**Activity:** Attending an event › Participating in or organising workshops, courses, seminars etc.

---

Annette Nygaard Jensen (Chairman)
National Food Institute

**Description**

Forarbejdning af insekter

**Degree of recognition:** National

**Documents:**
Kick off workshop program mm 21_03 2017

**Related event**

**Kick off workshop om dansk insektindustri**
21/03/2017 → 21/03/2017
Copenhagen, Denmark

**Activity:** Attending an event › Participating in or organising workshops, courses, seminars etc.

---

Jens Olaf Pepke Pedersen (Speaker)

**A space infrastructure for the Arctic**

**Period:** 20 Mar 2017

**Activity:** Attending an event › Participating in or organising workshops, courses, seminars etc.
National Space Institute
Innovation and Research-based consultancy

**Description**
Ships and other methods for surveillance of the Arctic regions.
Degree of recognition: National

**Related event**
Skibstekniksk Selskab: Ships and other methods for surveillance of the Arctic regions
20/03/2017 → 20/03/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Fremtidens katalyse
Period: 20 Mar 2017
Jakob Kibsgaard (Speaker)
Jane Hvolbæk Nielsen (Speaker)
Department of Physics
Experimental Surface and Nanomaterials Physics
Documents:
SCIENCE_FILM FORUM_2017_PROGRAM

**Related event**
CPH:DOX - SCIENCE:FILM FORUM
20/03/2017 → …
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Introduktion til Facilities Management
Period: 20 Mar 2017
Per Anker Jensen (Invited speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: Regional

**Related event**
Temadag om Facilities Management
22/03/2017 → …
Fredericia
Activity: Talks and presentations › Conference presentations

National Veterinary Research Institute
Period: 20 Mar 2017 → 14 Apr 2017
Ann Sofie Olesen (Visiting researcher)
National Veterinary Institute
Virology
Activity: Visiting an external institution › Visiting another research institution

Wind resource error estimation from mesoscale modeling for the Wind Atlas for South Africa
Period: 17 Mar 2017
Andrea N. Hahmann (Guest lecturer)
Niels Gylling Mortensen (Guest lecturer)
Patrick Volker (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling
Documents:
WindEurope-RA17-Poster

Related event

WindEurope Resource Assessment Workshop 2017
16/03/2017 → 17/03/2017
Edinburgh, United Kingdom
Activity: Talks and presentations › Conference presentations

Burden of disease and source attribution
Period: 16 Mar 2017
Tine Hald (Lecturer)
National Food Institute
Research Group for Genomic Epidemiology
Description
Teaching vet students at the One Health differentiation
Degree of recognition: Local

Related external organisation

University of Copenhagen
Bülowsvej 17, 1780, Copenhagen, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Copenhagen Bioscience Lectures 2017 - March
Period: 16 Mar 2017
Lumeng Ye (Participant)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology

Related event

Copenhagen Bioscience Lectures 2017 - March: Personalized medicine
16/03/2017 → 16/03/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Copenhagen Bioscience Lectures 2017 - March
Period: 16 Mar 2017
Eric van der Helm (Participant)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology

Related event

Copenhagen Bioscience Lectures 2017 - March: Personalized medicine
16/03/2017 → 16/03/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
Copenhagen Bioscience Lectures 2017 - March
Period: 16 Mar 2017
Mari Cristina Rodriguez de Evgrafov (Participant)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology
Links:

Related event
Copenhagen Bioscience Lectures 2017 - March: Personalized medicine
16/03/2017 → 16/03/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Towards a New European Wind Atlas: WRF Sensitivity Experiments and the Mesoscale-to-Microscale Model Chain
Period: 16 Mar 2017
Andrea N. Hahmann (Guest lecturer)
Alfredo Peña (Guest lecturer)
Rogier Ralph Floors (Guest lecturer)
Xiaoli Guo Larsén (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling
Meteorology & Remote Sensing
Degree of recognition: International
Documents:
NEWA_WindEurope-TechWorkshop2017_forweb

Related event
WindEurope Resource Assessment Workshop 2017
16/03/2017 → 17/03/2017
Edinburgh, United Kingdom
Activity: Talks and presentations › Conference presentations

Levedygtige økologiske kalve
Period: 15 Mar 2017
Heidi Huus Petersen (Participant)
National Veterinary Institute

Related event
Levedygtige økologiske kalve
15/03/2017 → 15/03/2017
Tjele, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Member of Evaluation Tribunal. (Event)
Period: 15 Mar 2017 → 15 Jul 2017
José Soler (Participant)
Department of Photonics Engineering
Networks Technology and Service Platforms

Description
**Mod det uendelige Univers / Kosmisk stråling**  
**Period:** 15 Mar 2017  
**Jens Olaf Pepke Pedersen (Speaker)**  
National Space Institute  
Innovation and Research-based consultancy

**Description**  
Foredrag på Folkeuniversitetet  
Degree of recognition: Regional  
Documents:  
Kosmiske stråler FU 2017

**Related event**

**Mod det uendelige Univers: Kosmist Stråling**  
**15/03/2017 → 15/03/2017**  
Copenhagen, Denmark  
Activity: Talks and presentations › Conference presentations

---

**Webinar: Recovery of Operations from Cyberattacks - a structure for response**  
**Period:** 15 Mar 2017  
**Daniel Alberto Sepúlveda Estay (Speaker)**  
Department of Management Engineering  
Management Science  
Transport DTU

**Description**  
Cyber attacks on supply chains are a constant threat to organizations. News media are regularly reporting cyber attacks to supply chains that result in data theft or denial of service. Examples abound, such as the theft of credit card data for 70 million customers from Target in 2013, and a sophisticated distributed attack that blocked the websites of major companies in the east-US such as Amazon, Starbucks and PayPal, during most of October 2016. Although relevant, this coverage often overshadows cyber-attacks that affect supply chain operations, which continue to occur without media attention. This is giving hackers free range to refine and practice their techniques for increased penetration and damage, resulting in a whole different range of disruptions such as container theft, intervention of plant operation, or misallocation of payments, for example. The MIT Center for Transportation & Logistics (CTL) will host a webinar to address hacker-related vulnerabilities in supply chain operations. At the root of this problem lies the structure of data exchanges between supply chain partners. Key questions for supply chain managers include: How does your supply chain manage these data exchanges? How much are you assigning these problems to IT even though they have direct impact on operations? How does your supply chain prevent these attacks, or react when these attacks happen? Is your supply chain merely relying on external insurance, or do you understand how these exchanges can be designed and controlled in cases of attack for improved recovery? Dr. Jim Rice and Daniel Sepulveda, PhD student, will address these questions, and talk about research findings that offer a deeper understanding of the structures that supply chains can use to improve their response from hacker attacks so as to minimize operational disruption and allow a more efficient recovery.  
Chairman: James Blanley Rice. Center for Transportation and Logistics at the Massachusetts Institute of Technology  
Degree of recognition: International  
Documents:  
170315_Webinar_Daniel_Sepulveda  
MIT-CTL-Webinar_registration_page  
Links:  
https://www.youtube.com/watch?v=zsmpjNRcIfI (Cyber attacks on supply chains are a constant threat to organizations. News media are regularly reporting cyber attacks to supply chains that result in data theft or denial of service. Examples abound, such as the theft of credit card data for 70 million customers from Target in 2013, and a sophisticated distributed attack that blocked the websites of major companies in the east-US such as Amazon, Starbucks and PayPal, during most
the 21st of October 2016. Although relevant, this coverage often overshadows cyber-attacks that affect supply chain operations, which continue to occur without media attention. This is giving hackers free range to refine and practice their techniques for increased penetration and damage, resulting in a whole different range of disruptions such as container theft, intervention of plant operation, or misallocation of payments, for example. The MIT Center for Transportation & Logistics (CTL) will host a webinar to address hacker-related vulnerabilities in supply chain operations. At the root of this problem lies the structure of data exchanges between supply chain partners. Key questions for supply chain managers include: How does your supply chain manage these data exchanges? How much are you assigning these problems to IT even though they have direct impact on operations? How does your supply chain prevent these attacks, or react when these attacks happen? Is your supply chain merely relying on external insurance, or do you understand how these exchanges can be designed and controlled in cases of attack for improved recovery? Dr. Jim Rice and Daniel Sepulveda, PhD student, will address these questions, and talk about research findings that offer a deeper understanding of the structures that supply chains can use to improve their response from hacker attacks so as to minimize operational disruption and allow a more efficient recovery.

Related event

Webinar: Recovery of Operations from Cyberattacks - a structure for response
15/03/2017 → …
Cambridge, United States
Activity: Talks and presentations › Conference presentations

29th Fungal Genetics Conference
Period: 14 Mar 2017 → 19 Mar 2017
Jane Lind Nybo Rasmussen (Speaker)
Department of Biotechnology and Biomedicine
Network Engineering of Eukaryotic Cell factories
Degree of recognition: International
Documents:
29FGC_Abstract_Book
Links:
http://www.genetics-gsa.org/fungal/2017/

Related event

29th Fungal Genetics Conference
14/03/2017 → 19/03/2017
Pacific Grove, United States
Activity: Talks and presentations › Conference presentations

A DTU researcher's experiences
Period: 14 Mar 2017
Christine Ipsen (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management

Related event

Introduction to DTU - Welcome seminar
14/03/2017 → 14/03/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Annual Design Society Board of Management and Advisory Board Meeting (Event)
Period: 13 Mar 2017 → 17 Mar 2017
Anja Maier (Participant)
Copenhagen Center for Health Technology
Department of Management Engineering
Engineering Systems

**Description**
Annual Design Society Board of Management and Advisory Board Meeting
Degree of recognition: International
Links:
http://www.designsociety.org (Design Society)

**Related event**
Annual Design Society Board of Management and Advisory Board Meeting
13/03/2017 → 17/03/2017
Montreal, Canada
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

**DCAMM 16th Internal Symposium**
Period: 13 Mar 2017 → 15 Mar 2017
Christian Kim Christiansen (Participant)
Department of Mechanical Engineering
Center for Bachelor of Engineering Studies
Afdelingen for Maskin og Design

**Related event**
DCAMM 16th Internal Symposium
13/03/2017 → 15/03/2017
Middelfart, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Gravitationsbølger**
Period: 13 Mar 2017
Søren Brandt (Speaker)
National Space Institute
Astrophysics and Atmospheric Physics
Degree of recognition: Regional

**Related external organisation**
Folkeuniversitetet i København
Læderstræde 34, 2, 1201, København, Denmark
Activity: Talks and presentations › Conference presentations

**Zoonoseinterresengruppemøde**
Period: 13 Mar 2017
Julia Christensen (Organizer)
National Food Institute
Division of Risk Assessment and Nutrition
Degree of recognition: National

**Related event**
Zoonoseinterresengruppemøde
13/03/2017 → 13/03/2017
København
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
Bloch simulation and MR fundamentals visualized
Period: 11 Mar 2017
Lars G. Hanson (Speaker)
Center for Hyperpolarization in Magnetic Resonance
Department of Electrical Engineering
Center for Magnetic Resonance

Description
Invited talk
Degree of recognition: International
Documents:
MMCE2017_visualization
Links:
http://drcmr.dk/MR (Related content)

Related event
Magnetic Moments in Central Europe 2017
08/03/2017 → 12/03/2017
Budapest, Hungary
Activity: Talks and presentations › Conference presentations

Danish OIKOS Annual Meeting
Period: 10 Mar 2017 → 11 Mar 2017
Najmul Haider (Speaker)
National Veterinary Institute
Epidemiology

Description
Oral Presentation in The Danish OIKOS Annual Meeting 2017
Title: Vector-borne diseases transmission and microclimate
Authors: Najmul Haider, Carsten Kirkeby, Birgit Kristensen, Lene Jung Kjaer, Jens Havskov Sørensen, Rene Bedker
Degree of recognition: Regional
Documents:
OIKOS2017_ScientificProgramme_ver2

Related event
Danish OIKOS Annual Meeting
10/03/2017 → 11/03/2017
Frederiksberg, Denmark
Activity: Talks and presentations › Conference presentations

IEEE Transactions on Dependable and Secure Computing (Journal)
Period: 10 Mar 2017 → 20 Mar 2017
José Soler (Reviewer)
Department of Photonics Engineering
Networks Technology and Service Platforms

Description
Peer Review

Related journal
IEEE Transactions on Dependable and Secure Computing
Climate Adaptations
Period: 9 Mar 2017
Carlo Sass Sørensen (Speaker)
National Space Institute
Geodesy

Description
Invited speaker
Degree of recognition: National
Documents: 6_climate_adaptation_carlo_sass
Links:
http://workshop.copernicus.eu/denmark-infosession (Workshop homepage)
https://www.youtube.com/watch?v=VumSug7Yrws&feature=youtu.be (Talk)

Related event
Copernicus Training and Information Session in Denmark, Aarhus, 9 Mar 2017
09/03/2017 → 09/03/2017
Activity: Talks and presentations › Conference presentations

Forsyning 2020: Fremtid og forandring i forsyningssektoren
Period: 9 Mar 2017
Martin Rygaard (Invited speaker)
Department of Environmental Engineering
Urban Water Systems
Degree of recognition: National

Related event
Forsyning 2020: Fremtid og forandring i forsyningssektoren
09/03/2017 → 09/03/2017
Kolding, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Workshop for electromechanical and dielectric materials and devices
Period: 9 Mar 2017
Astri Bjørnetun Haugen (Organizer)
Hugh Simons (Organizer)
Department of Energy Conversion and Storage
Ceramic Engineering & Science
Department of Physics
Neutrons and X-rays for Materials Physics
Documents: Workshop_poster

Related event
Listening to music with a cochlear implant: Limitations and possible solutions

Period: 8 Mar 2017

Jeremy Marozeau (Invited speaker)
Sébastien Santurette (Invited speaker)

Department of Electrical Engineering
Hearing Systems

Description
Although the cochlear implant can restore the perception of speech in quiet environments remarkably well, CI users are still facing many challenges in order to perceive music. In this talk, we describe how musical dimensions (pitch, tempo, timbre,...) are affected by the sound processor and a few solutions that could be used to improve the enjoyment of music by CI users.

Links:
http://cfh.dk/6.-nordiske.html

Related event
Nordiske Konference - Hørelse, kognition, kommunikation
18/03/2015 → …
Fredericia, Denmark
Activity: Talks and presentations › Conference presentations

Microbial processes in rapid sandfilters - removal of ammonium and organic micropollutants (pesticides)

Period: 8 Mar 2017

Hans-Jørgen Albrechtsen (Invited speaker)

Department of Environmental Engineering
Urban Water Systems
Degree of recognition: International

Related event
New Technologies and Innovative Solutions in the Danish Water Sector
07/03/2017 → 08/03/2017
Tallinn, Estonia
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Nordiske Konference - Hørelse, kognition, kommunikation
Period: 8 Mar 2017

Wiebke Lamping (Participant)
Steffen Spangmose Pedersen (Participant)

Department of Electrical Engineering
Hearing Systems

Description
Listening to music with a cochlear implant: Limitations and possible solutions

Although the cochlear implant can restore the perception of speech in quiet environments remarkably well, CI users are still facing many challenges in order to perceive music. In this talk, we describe how musical dimensions (pitch, tempo, timbre,...) are affected by the sound processor and a few solutions that could be used to improve the enjoyment of music by CI users.

Links:
http://cfh.dk/6.-nordiske.html

Related event
Nordiske Konference - Hørelse, kognition, kommunikation
18/03/2015 → …
Fredericia, Denmark
Activity: Attending an event › Participating in or organising a conference

Bella Sky Hotel: Design og bygning af verdens skæveste hotel
Period: 7 Mar 2017
Per Goltermann (Other)
Department of Civil Engineering
Section for Structural Engineering

Description
Kaare Dahl præsenterede og diskuterede de bygningsingeniørmaessige udfordringer ved at designe og bygge verdens skæveste hotel ved brug af præfabrikerede elementer

Related external organisation
Dansk Betonforening
Activity: Other

Climate proofing our cities
Period: 7 Mar 2017
Carlo Sass Sørensen (Speaker)
National Space Institute
Geodesy
Degree of recognition: Local
Links:
http://holstebrofolkeuniversitet.dk/

Related external organisation
Holstebro, Danmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Detection and characterization of nanoparticles in food
Period: 7 Mar 2017
Katrin Löschner (Speaker)
National Food Institute
Research Group for Nano-Bio Science

Description
Seminar
Degree of recognition: National

Related external organisation
Sveriges Livsmedelsverk
Sweden
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Zoonosestormøde
Period: 7 Mar 2017
Julia Christensen (Organizer)
National Food Institute
Division of Risk Assessment and Nutrition
Division of Food Microbiology
Division of Food Production Engineering
Section for Diagnostics and Scientific Advice
Degree of recognition: National

Related event

**Zoonosestormøde**
07/03/2017 → 07/03/2017
København
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Cities research for District Heating Innovation
Period: 6 Mar 2017
Alfred Heller (Speaker)
Henrik Madsen (Speaker)
Centre for IT-Intelligent Energy Systems in Cities
Department of Civil Engineering
Department of Applied Mathematics and Computer Science

Description
Workshop on further development of district heatings after 4DH. Henrik presented mathematical tools for district heating, and Alfred presented the Science Cloud for District Heating Innovation.

Documents:
Data Infrastruktur - Niras møde Århus marts 2017 - Alfred Heller

Related external organisation

**NIRAS A/S**
Denmark
Activity: Talks and presentations › Conference presentations

State of the art in Energy Informatics – opportunities and barriers
Period: 6 Mar 2017
Alexander Martin Tureczek (Speaker)
Department of Management Engineering

Systems Analysis
Degree of recognition: Local
Documents:
Presentation Vejle 6_3_17 - Alex-Final

Related event

**Scale UP Denmark Camp**
06/03/2017 → 06/03/2017
Vejle, Denmark
Activity: Talks and presentations › Conference presentations

**SCIENCE OF MAKING TORQUE FROM WIND**
Period: 3 Mar 2017
Ioanna Karagali (Reviewer)
Department of Wind Energy
Meteorology & Remote Sensing

Related journal

**SCIENCE OF MAKING TORQUE FROM WIND**
Waldemir Santiago Neto  
Start date: 3 Mar 2017 → 15 Sep 2017  
Tine Hald (Host)
National Food Institute  
Research Group for Genomic Epidemiology

Description  
External research stay for PhD study  
Degree of recognition: International  
Activity: Hosting a guest lecturer

ESVAC annual network meeting  
Period: 2 Mar 2017 → 3 Mar 2017  
Valeria Bortolaia (Participant)  
National Food Institute  
Research Group for Genomic Epidemiology

Degree of recognition: International

Related event  
ESVAC annual network meeting  
01/03/2016 → 02/03/2016  
London, United Kingdom  
Activity: Attending an event › Participating in or organising a conference

Pathogenic organisms - no thanks: Use of next generation sequencing techniques in risk assessment and HACCP
Period: 2 Mar 2017  
Lisbeth Truelstrup Hansen (Speaker)  
National Food Institute  
Research Group for Analytical and Predictive Microbiology  
Degree of recognition: National

Related event  
Mejeriforskningens Dag 2017: Mælk Ny viden og muligheder  
02/03/2017 → 02/03/2017  
Billund, Denmark  
Activity: Talks and presentations › Conference presentations

Quality Risk Management, food safety & HACCP
Period: 2 Mar 2017  
Tina Beck Hansen (Lecturer)  
National Food Institute  
Research Group for Microbial Food Safety

Description  
gæsteundervisning

Related event  
Course 28855 GMP and quality in pharmaceutical, biotech and food industry F17
SRA Policy Forum: Risk Governance for Key Enabling Technologies
Period: 2 Mar 2017
Steffen Foss Hansen (Organizer)
Department of Environmental Engineering
Environmental Chemistry

Description
Chairman. Synthetic Biology Applications and State of Science. Risk Governance of Key Emerging Technologies. Venice, Italy, 1-3 March 2017
Degree of recognition: International

Related event
SRA Policy Forum: Risk Governance for Key Enabling Technologies
01/03/2017 → 03/03/2017
Venice, Italy
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Sustainable production of monomers via fermentation
Period: 2 Mar 2017
Vratislav Stovicek (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Yeast Metabolic Engineering

Description
invited talk
Degree of recognition: International

Related event
International Seminar on Biopolymers and Sustainable Composites
01/03/2017 → 02/03/2017
Valencia, Spain
Activity: Talks and presentations › Conference presentations

35th International Conference on the System Dynamics Society (Event)
Period: 1 Mar 2017 → 30 Apr 2017
Daniel Alberto Sepúlveda Estay (Reviewer)
Department of Management Engineering
Management Science

Description
2017 marks the 60th anniversary of the founding of the field of System Dynamics. It is thus fitting that we hold the 60th anniversary conference in Cambridge, next to the MIT campus where Jay Forrester developed the field. Today, System Dynamics is used around the world, from K-12 classrooms through doctoral programs, in scholarly research across many disciplines, and in applications from organizational change to climate change, from medicine to management. We will celebrate the accomplishments of the past six decades and explore future directions by showcasing the best work in dynamic modeling being done today.

There will be plenary presentations showcasing important work in the field, along with parallel and poster sessions, making available the most current research, applications, and work in progress. There is a full day of skill-building workshops covering a range of topics from basic software use to advanced analysis techniques. In addition, there will be interest group sessions, student colloquia, the modeling assistance workshop, vendor displays, demonstrations, and more. The conference schedule will provide time for social and professional interaction.
The Society’s annual international conference is held alternately in North America and Europe, with occasional appearances in Asia and the Pacific Rim. These conferences, and the meetings of local chapters and interest groups, introduce newcomers to the field, keep practitioners aware of current developments, and provide unparalleled networking opportunities.

Degree of recognition: International

Related event

35th International Conference on the System Dynamics Society
16/07/2017 → 20/07/2017
Cambridge, United States
Activity: Research › Peer review of manuscripts

ANSES - French Agency for Food, Environmental and Occupational Health & Safety (External organisation)
Period: 1 Mar 2017 → 1 Mar 2018
Maarten Nauta (Participant)
National Food Institute
Research Group for Risk-Benefit

Description
Member ANSES working group On Campylobacter Risk Assessment
Degree of recognition: National

Related external organisation

ANSES - French Agency for Food, Environmental and Occupational Health & Safety
France
Activity: Membership › Membership of research networks or expert groups

A pumping and tracer test in limestone with modeling interpretation – experiences and results
Period: 1 Mar 2017
Klaus Mosthaf (Speaker)
Bentje Brauns (Other)
Annika Sidellmann Fjordbøge (Other)
Jens Schaarup Sørensen (Other)
Bent Henning Skov (Other)
Flemming Møller (Other)
Mette Martina Broholm (Other)
Poul Legstrup Bjerg (Other)
Philip John Binning (Other)
Niels D. Overheu (Other)
Anna Toft (Other)
Henriette Kerr-Jespersen (Other)
Magnus Marius Rohde (Other)
Christian Helweg (Other)
John U. Bastrup (Other)
Department of Environmental Engineering
Water Resources Engineering
Degree of recognition: National

Related event

Fagmøde: Forurening af kalkmagasiner: Konceptuelle modeller, transport, spredningsprocesser og modellering
01/03/2017 → 01/03/2017
København, Denmark
Activity: Talks and presentations › Conference presentations
Fagmøde: Forurening af kalkmagasiner
Period: 1 Mar 2017
Niels D. Overheu (Organizer)
Henriette Kerrn-Jespersen (Organizer)
Philip John Binning (Organizer)
Klaus Mosthaf (Organizer)
Annika Sidelmann Fjordbøge (Organizer)
Mette Martina Broholm (Organizer)
Poul Løgstrup Bjerg (Organizer)
Department of Environmental Engineering
Water Resources Engineering
Degree of recognition: National

Related event
Fagmøde: Forurening af kalkmagasiner: Konceptuelle modeller, transport, spredningsprocesser og modellering
01/03/2017 → 01/03/2017
København, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Formidling af ”kalkprojektet” & Introduction of the Limestone Wiki
Period: 1 Mar 2017
Klaus Mosthaf (Speaker)
Poul Løgstrup Bjerg (Speaker)
Department of Environmental Engineering
Water Resources Engineering
Degree of recognition: National

Related event
Fagmøde: Forurening af kalkmagasiner: Konceptuelle modeller, transport, spredningsprocesser og modellering
01/03/2017 → 01/03/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

Geopolitik i Arktis – konflikt eller samarbejde?
Period: 1 Mar 2017 → 8 Mar 2017
Jens Olaf Pepke Pedersen (Speaker)
National Space Institute
Innovation and Research-based consultancy
Description
Forlæsningstrækk i Folkeuniversitetet Emdrup
Degree of recognition: Regional
Links:

Related external organisation
Folkeuniversitetet i Emdrup
Aarhus Universitet, Campus Emdrup, Tuborgvej 164, 2400, København NV, Denmark
Activity: Talks and presentations › Conference presentations

Hvor finder man forureningen ved Akacievej?
Period: 1 Mar 2017
Annika Sidelmann Fjordbøge (Speaker)
Klaus Mosthaf (Other)
Bentje Brauns (Other)
Poul Løgstrup Bjerg (Other)
Philip John Binning (Other)
Mette Martina Broholm (Other)
Henriette Kern-Jespersen (Other)
Anna Toft (Other)

Department of Environmental Engineering
Water Resources Engineering
Degree of recognition: National

Related event

Fagmøde: Forurening af kalkmagasiner: Konceptuelle modeller, transport, spredningsprocesser og modellering
01/03/2017 → 01/03/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

IEEE Communications Magazine (Journal)
Period: 1 Mar 2017 → 14 Mar 2017
José Soler (Reviewer)

Department of Photonics Engineering
Networks Technology and Service Platforms

Description
Peer Review. (Network Testing and Analytics Series)

Related journal

IEEE Communications Magazine
0163-6804
Central database
Activity: Research › Peer review of manuscripts

Period: 1 Mar 2017 → …
Jacob Østergaard (Reviewer)

Department of Electrical Engineering
Center for Electric Power and Energy
Degree of recognition: International

Related journal

International Journal of Electrical Power & Energy Systems
0142-0615
Central database
Activity: Research › Journal editor

Journal of Intelligent Transportation Systems (Journal)
Period: 1 Mar 2017 → 30 Mar 2017
José Soler (Reviewer)

Department of Photonics Engineering
Networks Technology and Service Platforms
Kalkgeologi og transportprocesser samt intro til Akaclevej
Period: 1 Mar 2017
Mette Martina Broholm (Speaker)
Annika Sidelmann Fjordbøge (Other)
Klaus Mosthaf (Other)
Poul Legstrup Bjerg (Other)
Peter Roll Jakobsen (Other)
Rasmus Jakobsen (Other)
Jens Galsgaard (Other)
Magnus Marius Rohde (Other)
Henriette Kerrn-Jespersen (Other)
Anna Toft (Other)
Department of Environmental Engineering
Water Resources Engineering
Degree of recognition: National

Related event
Fagmøde: Forurening af kalkmagasiner: Konceptuelle modeller, transport, spredningsprocesser og modellering
01/03/2017 → 01/03/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

Lyd - trådløs kommunikation i intelligent brugetilpasset design
Period: 1 Mar 2017 → 26 Apr 2017
Kaj Bjarne Jakobsen (Participant)
Department of Electrical Engineering
Electromagnetic Systems

Description
Lyd - trådløs kommunikation i intelligent brugetilpasset design

At være til gavn for samfundet er et af DTU’s mål og motto, og det virker højaktuelt, når det handler om teknologiudviklingen indenfor feltet trådløs kommunikation og moderne høreudvikling. Ikke mindst set i lyset af at hver 6. person anslås at have et hørelab i Danmark (og 37 mio. i Europa). Det er jo en størrelse som er til at forholde sig til.

Trådløs kommunikation og antenneudvikling og -specialisering indgår som vigtige elementer i moderne høreapparater og på DTU Elektro arbejdes der tæt med de danske høreapparatvirksomheder, som står for ca. 30 % af alle høreapparater i verden. Her kan man tale om high-end teknologier som tjener et reelt og nyttigt formål.


Kom og oplev udstillingen som spænder bredt; fra teoretiske illustrationer af hvad trådløs kommunikation kan i dag, fraktal antenner, smart phones teknologiers bidrag til høreapparater, m.m.
Interview person.
Degree of recognition: International
Links:
http://www.elektro.dtu.dk/Kalender/Arrangement?id=5651b779-d32b-41cd-838f-308ab6a7b7d5

Related event

Lyd - trådløs kommunikation i intelligent brugertilpasset design
01/03/2017 → 26/04/2017
Kgs. Lyngby, Denmark
Activity: Other

Modeller til strømning og stoftransport i kalk
Period: 1 Mar 2017
Poul Løgstrup Bjerg (Speaker)
Klaus Mosthaf (Other)
Annika Sidellmann Fjordbøge (Other)
Mette Martina Broholm (Other)
Philip John Binning (Other)
Department of Environmental Engineering
Water Resources Engineering
Degree of recognition: National

Related event

Fagmøde: Forurening af kalkmagasiner: Konceptuelle modeller, transport, spredningsprocesser og modellering
01/03/2017 → 01/03/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

PhD assessment (Candidate from Deakin University, Australia)
Period: 1 Mar 2017 → 28 Apr 2017
Christine Ipsen (External examiner)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Examiner
Degree of recognition: International
Activity: Examinations and supervision › Internal examination

Risikovurdering af Akacievej
Period: 1 Mar 2017
Poul Løgstrup Bjerg (Speaker)
Klaus Mosthaf (Other)
Annika Sidellmann Fjordbøge (Other)
Philip John Binning (Other)
Mette Martina Broholm (Other)
Department of Environmental Engineering
Water Resources Engineering
Degree of recognition: National

Related event

Fagmøde: Forurening af kalkmagasiner: Konceptuelle modeller, transport, spredningsprocesser og modellering
01/03/2017 → 01/03/2017
Which data is most useful for the assessment of a contaminated limestone site? How can it be obtained?
Period: 1 Mar 2017
Klaus Mosthaf (Speaker)
Bentje Brauns (Other)
Annika Sidelmann Fjordbøge (Other)
Jens Schaarup Sørensen (Other)
Bent Henning Skov (Other)
Flemming Møller (Other)
Mette Martina Broholm (Other)
Poul Løgstrup Bjerg (Other)
Philip John Binning (Other)
Niels D. Overheu (Other)
Anna Toft (Other)
Henriette Kerrn-Jespersen (Other)
Magnus Marius Rohde (Other)
Christian Helweg (Other)
John U. Bastrup (Other)
Department of Environmental Engineering
Water Resources Engineering
Degree of recognition: National

Related event
Fagmøde: Forurening af kalkmagasiner: Konceptuelle modeller, transport, spredningsprocesser og modellering
01/03/2017 → 01/03/2017
København, Denmark
Activity: Talks and presentations › Conference presentations

World Sustainable Energy Days 2017
Period: 1 Mar 2017 → 3 Mar 2017
Aristeidis Tsakiris (Speaker)
Department of Management Engineering
UNEP DTU Partnership
Documents:
Conference Programme WSED 2017
Conference Review WSED17

Related event
World Sustainable Energy Days 2017: Young Researchers Conference: Energy Efficiency
28/02/2017 → 03/03/2017
Wels, Austria
Activity: Talks and presentations › Conference presentations

Riskovurdering af fluorerede stoffer i fødevarekontaktmateriale
Period: Feb 2017
Gitte Aising Pedersen (Consultant)
National Food Institute
Division of Risk Assessment and Nutrition

Description
Notat til Fødevarestyrelsen
Related external organisation

Fødevarestyrelsen
Glostrup, Denmark
Activity: Public and private sector consultancy › Consultancy

INSEKTKBH - Community møde
Period: 28 Feb 2017
Annette Nygaard Jensen (Participant)
National Food Institute
Research Group for Microbial Food Safety

Description
Future food - edible insects

Related event

INSEKTKBH - Community møde
28/02/2017 → …
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Lighting Research and Technology (Journal)
Period: 28 Feb 2017 → …
Anders Thorseth (Reviewer)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International

Related journal

Lighting Research and Technology
1477-1535
BFI (2017): BFI-level 1, Scopus rating (2016): CiteScore 1.05 SJR 0.51 SNIP 1.373, ISI indexed (2013): ISI indexed yes, Web of Science (2017): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

Personlig power for AC’er og ledere
Period: 28 Feb 2017 → 28 Apr 2017
Heidi Huus Petersen (Participant)
National Veterinary Institute
Office for HR

Related event

Personlig power for AC’er og ledere
28/02/2017 → 26/04/2017
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Interconnected activities and functions of matrix metalloproteinases at the wound edge.
Period: 27 Feb 2017
Simonas Savickas (Speaker)
Department of Biotechnology and Biomedicine

Related event

35TH WINTER SCHOOL ON PROTEINASES AND INHIBITORS
**Prediction of antibiotic resistance phenotypes from whole genome sequence data of clinically relevant bacteria**

Period: 27 Feb 2017 → 10 Jul 2017

Valeria Bortolaia (Main supervisor)

National Food Institute

**Description**

Bachelor project by Mohammed Nateqi

Degree of recognition: International

Activity: Examinations and supervision › Supervisor activities

---

**ASLO Aquatic Sciences Meeting 2017**

Period: 26 Feb 2017 → 3 Mar 2017

Urban Wünsch (Speaker)

National Institute of Aquatic Resources

Section for Marine Ecology and Oceanography

**Description**

AQUATIC SCIENCES MEETING

Degree of recognition: International

Links:


**Related event**

**ASLO Aquatic Sciences Meeting 2017: Mountains to the Sea**

26/02/2017 → 03/03/2017

Honolulu, United States

Activity: Talks and presentations › Conference presentations

---

**Coupled Cluster Strategies for Core Spectroscopies of Ground and Excited States**

Period: 24 Feb 2017

Sonia Coriani (Keynote speaker)

Department of Chemistry

Degree of recognition: International

**Related event**

**The 57th Sanibel Meeting: The Theory Meeting for Theoreticians**

19/02/2017 → 24/02/2017

St. St. Simons Island, GA, United States

Activity: Talks and presentations › Conference presentations

---

**Epidemiology and control of Taenia solium in Africa**

Period: 24 Feb 2017

Tine Hald (External examiner)

National Food Institute

Research Group for Genomic Epidemiology

**Description**

PhD thesis

Degree of recognition: International

Activity: Examinations and supervision › Internal examination
Social kapital netværksmøde 1 2017
Period: 24 Feb 2017
Kasper Edwards (Participant)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: National

Related event
Social kapital netværksmøde 1 2017: vad hedder social kapital andre steder? Og hvad kan vi lære af det?
24/02/2017 → …
Høje Taastrup, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

First meeting of the One Health Network on Antimicrobial Resistance
Period: 23 Feb 2017
Valeria Bortolaia (Participant)
National Food Institute
Research Group for Genomic Epidemiology

Related event
First meeting of the One Health Network on Antimicrobial Resistance
23/02/2017 → 23/02/2017
Activity: Attending an event › Participating in or organising a conference

Non-Invasive Delivery of Macromolecules Conference
Period: 23 Feb 2017
Chiara Mazzoni (Guest lecturer)
Department of Micro- and Nanotechnology
Nanoprobes
Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics
Description
MICROCONTAINERS FOR INTESTINAL DRUG DELIVERY: in vivo and ex vivo study
Degree of recognition: International
Documents:
Abstract_Mazzoni

Related event
Non-Invasive Delivery of Macromolecules Conference
21/02/2017 → 24/02/2017
San Diego, United States
Activity: Talks and presentations › Conference presentations

Single particle ICP-MS for the detection of inorganic nanoparticles in food and biological samples
Period: 23 Feb 2017
Katrin Löschner (Speaker)
National Food Institute
Research Group for Nano-Bio Science
Description
Inductively coupled plasma-mass spectrometry in single particle mode (single particle ICP-MS) has become a frequently used method for the detection and characterization of inorganic nanoparticles. The technique has been applied in our
laboratory for studying inorganic nanoparticles in a variety of biological samples, including rat lung and liver tissue (gold and cerium oxide NPs), whale brain and liver tissue (mercury selenide NPs), human synovial fluid (cobalt and chromium-containing NPs) and human placenta tissue (silver NPs). Furthermore, food-related samples were investigated including lean chicken meat (silver NPs), game meet (lead NPs), food simulants (silver NPs), and noodles (aluminum-containing NPs).

We identified sample preparation as the most crucial step, especially in the case of solid / semi-solid matrices where simple dilution is not sufficient. As single particle ICP-MS analysis is not as sensitive as other analytical techniques, like field flow fractionation, to eventually remaining matrix residues, complete digestion of the matrix is usually not required. The main challenge is to minimize changes of the NPs during sample preparation mainly due to dissolution. For the majority of examples, we identified enzymatic digestion as the most suitable sample preparation method.

Our experiences show that single particle ICP-MS is a powerful screen method for the presence of NPs, but that care has to be taken with regards to false-positive-results and the obtained quantitative information in terms of particle size distribution and number / mass concentration. False positive results were obtained for two reasons: 1) Induced particle formation during sample preparation, e.g. from ionic species and 2) carry-over. For the latter case, we observed that analysis of ultrapure water between samples was not sufficient for evaluating carry-over, but that a realistic reagent or blank sample needs to be analyzed. Matrix-matching of calibration solutions was not possible in every case due to instability of the ionic species. In these cases, ionic standards had to be analyzed in ultrapure water or diluted acidic acid.

Based on our experiences, the talk will highlight the challenges and the “lessons learned” in relation to sample preparation for single particle ICP-MS, determination of transport efficiency, calibration, and data interpretation, and the next steps in the current and future work described.

Degree of recognition: International

**Related event**

**European Winter Conference on Plasma Spectrochemistry**
19/02/2017 → 24/02/2017  
Sankt Anton am Arlberg, Austria  
Activity: Talks and presentations › Conference presentations

**29. Irseer Naturstofftage**
Period: 22 Feb 2017 → 24 Feb 2017  
Tilmann Weber (Participant)  
Kai Blin (Participant)  
Novo Nordisk Foundation Center for Biosustainability  
New Bioactive Compounds  
Degree of recognition: National

**Related event**

**29. Irseer Naturstofftage: Aktuelle Entwicklungen in der Naturstoff-Forschung**
22/02/2017 → 24/02/2017  
Irsee, Germany  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**CHO cell factory engineering, for working towards improved production of therapeutic proteins. 7th Cell Culture World Congress. Munich, Germany.**
Period: 22 Feb 2017  
Helene Fastrup Kildegaard (Invited speaker)  
Novo Nordisk Foundation Center for Biosustainability  
CHO Cell Line Engineering and Design  
Degree of recognition: International

**Related event**

**7th Cell Culture World Congress**
21/02/2017 → 22/02/2017  
Activity: Talks and presentations › Conference presentations

**Minikursus: Brug af ComBase i brændindustrien**
Period: 22 Feb 2017  
Tina Beck Hansen (Lecturer)
National Food Institute
Research Group for Microbial Food Safety

Related external organisation

Lantmännen Unibake Denmark A/S
Oensvej 28, Hatting, 8700, Horsens, Denmark
Activity: Talks and presentations › Conference presentations

Descriptive study of antibiotic resistance and resistance determinants in indicator E. coli from Danish and imported meat and Danish animals using whole genome sequencing (WGS) and phenotypic resistance determination
Period: 21 Feb 2017
Tine Hald (Supervisor)

National Food Institute
Research Group for Genomic Epidemiology

Description
Supervisor and co-examiner of Master thesis, Master in Food Quality and Safety
Degree of recognition: National
Activity: Examinations and supervision › Supervisor activities

Er der en sammenhæng mellem opfyldelse af Måltidsmærkets krav og kundernes indtag? Fremlæggelse ved Fødevarestyrelsens samarbejdsgruppe
Period: 21 Feb 2017
Anne Dahl Lassen (Consultant)

National Food Institute
Division of Risk Assessment and Nutrition

Related external organisation

Fødevarestyrelsen
Glostrup, Denmark
Activity: Public and private sector consultancy › Consultancy

The 57th Sanibel Meeting
Period: 19 Feb 2017 → 24 Feb 2017
Sonia Coriani (Participant)

Department of Chemistry
Degree of recognition: International
Links:

Related event

The 57th Sanibel Meeting: The Theory Meeting for Theoreticians
19/02/2017 → 24/02/2017
St. St. Simons Island, GA, United States
Activity: Attending an event › Participating in or organising a conference

Application of microbial cell factories for the production and modification of bioactive compounds
Period: 17 Feb 2017
Sailesh Malla (Invited speaker)

Novo Nordisk Foundation Center for Biosustainability
iLoop
Degree of recognition: Local
Application of microbial cell factories for the production and modification of bioactive compounds
17/02/2017 → …
Nepal
Activity: Talks and presentations › Conference presentations

Time Series Analysis (02417)
Period: 17 Feb 2017
Anders Stockmarr (Speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Smart and connected urban playgrounds that promote creative development and endorse social encounters for liveable cities
Period: 16 Feb 2017 → 18 Jul 2017
Jay Sterling Gregg (Main supervisor)
Department of Management Engineering
Systems Analysis

Description
Master's Thesis
Júlia Camprubí i Vernis
S151103
Activity: Examinations and supervision › Supervisor activities

R for begyndere
Period: 14 Feb 2017
Julia Christensen (Participant)
National Food Institute
Division of Risk Assessment and Nutrition

Related event
R for begyndere
14/02/2017 → 14/02/2017
København
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Deakin University
Period: 13 Feb 2017 → 3 Mar 2017
Susanne Brix Pedersen (Visiting researcher)
Department of Biotechnology and Biomedicine
Disease Systems Immunology
Degree of recognition: International
Activity: Visiting an external institution › Visiting another research institution

Regulation and Policies on Electricity Markets
Period: 13 Feb 2017
Klaus Skytte (Speaker)
Department of Management Engineering
Systems Analysis

Description
Lecture 3 in "31761 - Renewables in Electricity Markets"
13 February 2017, DTU Elektro
Documents:
Lecture3_Regulation-policy-2017

Related organisation

Regulation and Policies on Electricity Markets
Skytte, K. (Speaker)
13 Feb 2017
Activity: Talks and presentations › Conference presentations

The production and modification(s) of natural products or secondary metabolites: A sustainable approach using microbial cell factories.
Period: 11 Feb 2017
Sailesh Malla (Participant)
Novo Nordisk Foundation Center for Biosustainability
iLoop
Degree of recognition: National

Related event

The production and modification(s) of natural products or secondary metabolites: A sustainable approach using microbial cell factories. › Natural product and Drug Discovery
11/02/2017 → 11/02/2017
Kirtipur, Nepal
Activity: Attending an event › Participating in or organising a conference

Plandage 2017
Period: 10 Feb 2017
Kåre Hendriksen (Invited speaker)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions

Description
Samfundsmæssige vækstpotentialer
Degree of recognition: National

Related event

Plandage 2017
09/02/2017 → 12/02/2017
Nuuk, Greenland
Activity: Talks and presentations › Conference presentations

DTU CEN - Elektronnanoskopi i verdensklasse
Period: 9 Feb 2017
Christian Danvad Damsgaard (Lecturer)
Jakob Birkedal Wagner (Lecturer)
Department of Physics
Center for Electron Nanoscopy
Kom med IDA Mechanical København på besøg hos Center for Elektronnanoskopi (CEN) på DTU og hør hvordan verdens mest avancerede mikroskoper fungerer, og hvordan man kan se noget, der er mindre end lysets bølgelængde.

CEN blev indviet i december 2007 og er et af verdens mest avancerede laboratorier for elektronmikroskopi. Centeret råder over både skanning elektron mikroskoper (SEM) og transmission elektron mikroskoper (TEM), og mikroskoperne er hver i saer udstyret med yderligere udstyr der fx gør det muligt at bearbejde prøverne med en ion stråle eller nedfrosset kryogen tilstand.

Program:
IDA Mechanical, København, inviterer til en spændende aften hos Center for Elektronnanoskopi på DTU, hvor vi får:
• En introduktion til centeret og dets historie
• En beskrivelse af de otte elektronmikroskoper, og hvad de hver især kan benyttes til
• Et overblik over hvilken forskning centeret arbejde med, og hvorfor det er så vigtigt, at kunne undersøge prøver på nanoskala.
• En rundvisning på faciliteterne.

Degree of recognition: Local

Related external organisation

The Danish Society of Engineers, IDA
Kalvebod Brygge 31-33, DK-1780, Copenhagen V, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Vurdering af den evidens Graudal fremlægger i Ugeskrift for læger i januar 2017, fremlæggelse ved Saltpartnerskabemøde
Period: 9 Feb 2017
Anne Dahl Lassen (Consultant)
National Food Institute
Division of Risk Assessment and Nutrition
Degree of recognition: National

Related external organisation

Fødevarestyrelsen
Glostrup, Denmark
Activity: Public and private sector consultancy › Consultancy

Solutions to Practical Challenges in Developing Procedures for Nanoparticle Characterization and Toxicological Testing
Period: 8 Feb 2017
Katrin Löschnner (Speaker)
National Food Institute
Research Group for Nano-Bio Science

Description
In large-scale scientific projects where nanomaterials need to be investigated by a number of research groups with different scientific background it is necessary to assure that all preparation and subsequent characterization procedures are as harmonized and inter-calibrated as possible. One major challenge is the preparation of stock dispersions from nanomaterials provided as powders as distinct dispersion procedures may introduce variability in the toxicity or characteristics that are measured. Stock dispersions are used in a variety of toxicological tests where aliquots of the stock suspension are typically added to the relevant test medium, e.g. cell culture medium. Furthermore, stock dispersions are required for particle characterization, as many techniques, like dynamic light scattering, laser diffraction, analytical ultracentrifugation, nanoparticle tracking analysis, are only able to measure aqueous samples. In order to obtain meaningful results and to allow cross-comparison of different toxicity and characterization tests and assays, it is therefore crucial to develop efficient and reproducible dispersion procedures. These harmonized and standardized protocols have not only to be efficient, but also be feasible in the majority of test laboratories. Common limitations include the availability of dispersion equipment in the involved laboratories and the access to analytical equipment for characterizing and checking the quality of the dispersions. Further a compromise has to be found regarding, the (maximum) concentration of the stock dispersion, the resulting stock dispersion volume, and the composition of the dispersion medium, because of the variety of (eco)toxicology tests with each having specific requirements. The presentation will summarize the major
challenges and the corresponding solutions of the NANOSOLUTIONS project with regards to stock dispersion preparation. As a specific example the development of a common dispersion procedure for copper oxide nanoparticles with different surface functionalization (ammonium, carboxylate, or polyethylene glycol) will be presented. For this nanomaterial, a dispersion SOP was developed which included a calorimetric method for calibration of the delivered acoustic energy by adjustment of the probe-sonicator amplitude. Additionally, an SOP was established that described the conduction of dynamic light scattering (DLS) measurements for determination of hydrodynamic size and size-distribution of the nanoparticles in the final stock dispersion. The SOPs were tested by ten laboratories. In most cases deviations of the determined sizes could be explained with deviations from the procedure described in the SOP. The performed work showed that it is possible to obtain comparable stock dispersions in different laboratories if carefully prepared SOPs are provided which consider the most important parameters that influence the dispersion process and the following characterization step. Acknowledgements: The research leading to these results has received funding from the European Union’s Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 309329.

Related event

New tools and approaches for nanomaterial safety assessment 2017
07/02/2017 → 09/02/2017
Málaga, Spain
Activity: Talks and presentations › Conference presentations

Tværoffentligt Seminar 2017 - om balanceret vækst
Period: 8 Feb 2017
Kåre Hendriksen (Keynote speaker)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions

Description
Parametre for landsplanarbejde
Degree of recognition: National

Related event

Tværoffentligt Seminar 2017 - om balanceret vækst
07/02/2017 → 08/02/2017
Nuuk, Greenland
Activity: Talks and presentations › Conference presentations

Introduktion til Facilities Management
Period: 7 Feb 2017
Per Anker Jensen (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
oPer Anker Jensen er sammen med Flemming Wuulf Hansen, Datea med til at tilrettelægge og holde oplæg på temadage for medlemmer af Maskinmesterforeningen med henblik på etablering af netværk for FM
Første temadag afholdt den 7. februar i shoppingcenter RO i Roskilde, der administreres af DateaOK
Anden temadag afholdt den 22. marts på Fredericia Maskinmesterskole

Related event

Temadag om Facilities Management
07/02/2017 → …
Roskilde
Activity: Talks and presentations › Conference presentations

Smart City workshop between TUBerlin, NTNU and DTU
Period: 7 Feb 2017
Alfred Heller (Speaker)
Department of Civil Engineering
Centre for IT-Intelligent Energy Systems in Cities

Description
Science Hub for Cities - a common platform for city research (presentation)
Documents:
Alfred Heller et al.- NTNU-MTU-DTU, Nov 2015 (at DTU)

Related event

Smart City workshop between TUBerlin, NTNU and DTU
06/02/2017 → 07/02/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Better Training for Safer Foods
Period: 6 Feb 2017 → 10 Feb 2017
Heddie Mejborn (Organizer)
National Food Institute
Division of Risk Assessment and Nutrition

Description
Training coordinator and tutor
Degree of recognition: International

Related event

Better Training for Safer Foods
06/02/2017 → 10/02/2017
Rome, Italy
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

High-throughput X-ray Astronomy in the eXTP era
Period: 6 Feb 2017 → 8 Feb 2017
Søren Brandt (Organizer)
National Space Institute
Astrophysics and Atmospheric Physics

Description
Member of the Scientific Organizing Committee
First Science Meeting dedicated to the high-throughput X-ray Astronomy and the eXTP mission.
Degree of recognition: International

Related event

High-throughput X-ray Astronomy in the eXTP era
06/02/2017 → 08/02/2017
Rome, Italy
Activity: Attending an event › Participating in or organising a conference

MODELING OF LI-ION BATTERY PACKS AS BASIS FOR DESIGN OF BATTERY THERMAL MANAGEMENT SYSTEMS
Period: 6 Feb 2017
Kurt Engelbrecht (External examiner)
Department of Energy Conversion and Storage
Electrofunctional materials
**Description**
External opponent on PhD thesis
Degree of recognition: National
Activity: Examinations and supervision › External examination

**STECF Expert Working Group EWG-16-14 on Technical Measures**

*Period: 6 Feb 2017 → 10 Feb 2017*

Lars O. Mortensen (Participant)

National Institute of Aquatic Resources
Section for Ecosystem based Marine Management

**Description**
STECF Expert Working Group EWG-16-14 on Technical Measures

**Related event**

**STECF Expert Working Group EWG-16-14 on Technical Measures**

*06/02/2017 → 10/02/2017*

Brussels
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**2017 IUVA Americas Conference**

*Period: 5 Feb 2017 → 8 Feb 2017*

Waqas Akram Cheema (Speaker)

Department of Environmental Engineering
Water Technologies

**Description**
presented topic "Effect of UV treatment on formation of disinfection by-products in chlorinated seawater swimming pools"
Degree of recognition: International

**Related event**

**2017 IUVA Americas Conference**

*05/02/2017 → 08/02/2017*

Austin, United States
Activity: Talks and presentations › Conference presentations

**Lubricant transport across the piston ring with flat and triangular lubrication injection profiles on the liner in large two-stroke marine diesel engines**

*Period: 3 Feb 2017*

Hannibal Toxvaerd Overgaard (Guest lecturer)

Department of Mechanical Engineering
Solid Mechanics

**Related external organisation**

**MAN Diesel and Turbo SE**
Tegholsmsgade 41, 2450 SV, Copenhagen, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

**Prizes:**

1st price in the Wikipedia competition organized by the International Society for Computational Biology
Leonie Johanna Jahn (Recipient)
Novo Nordisk Foundation Center for Biosustainability, Bacterial Synthetic Biology

**Description**
Leonie Jahn and Alexander Hauser got the 1st price for improving the Wikipedia article about molecular docking. 

**Details**
Awarded date: 10 Jul 2016  
Degree of recognition: International  
Granting Organisations: International Society for Computational Biology  
event: ISMB 2016  
Prize: Prizes, scholarships, distinctions

2013 IEEE ECCE Asia Downunder First Prize Paper  
Michael A. E. Andersen (Recipient)  
Department of Electrical Engineering, Electronics

**Details**
Awarded date: 3 Jun 2013  
Granting Organisations: IEEE Power Electronics Society  
Prize: Prizes, scholarships, distinctions

2nd Poster Prize  
Sara Pereira (Recipient)  
Novo Nordisk Foundation Center for Biosustainability, CHO Cell Line Engineering and Design

**Details**
Awarded date: 2 Jun 2017  
Degree of recognition: National  
Granting Organisations: Danish Biotechnological Society  
event: 12th DANISH CONFERENCE ON BIOTECHNOLOGY AND MOLECULAR BIOLOGY (DCB12)  
Prize: Prizes, scholarships, distinctions

2nd prize winner in Green Challenge at the Technical University of Denmark: Project 817: Reducing overflow to River Aarhus by using MPC - Master thesis, idea category  
Nadia Schou Vorndran Lund (Recipient)  
Department of Environmental Engineering, Urban Water Systems

**Description**  
Student conference at the Technical University of Denmark

**Details**
Awarded date: 24 Jun 2016  
Prize: Prizes, scholarships, distinctions

3M Travelscholarship  
Mette Møller (Recipient)  
Department of Transport, Transport policy and behaviour

**Details**
Awarded date: 2012  
Prize: Prizes, scholarships, distinctions

3rd prize "Best Student Presentation" at ARTEK Event 2016, International Conference - Sanitation in Cold Climate Regions  
Camilla Tang (Recipient)  
Department of Environmental Engineering, Urban Water Systems

**Details**
Awarded date: 14 Apr 2016  
Prize: Prizes, scholarships, distinctions

3rd prize winner at Grøn Dyst (Green Challenge) 2016 in the category "Master thesis idea"  
Henrik Pieper (Recipient)  
Department of Mechanical Engineering, Thermal Energy
Details
Awarded date: 24 Jun 2016
Degree of recognition: Local
Granting Organisations: Technical University of Denmark
Event: Grøn dyst 2016
Prize: Prizes, scholarships, distinctions

3rd World Congress of Positive Psychology Scholarship
David Hansen (Recipient)
Department of Management Engineering, Production and Service Management

Details
Awarded date: 20 May 2013
Granting Organisations: International Positive Psychology Association
Prize: Prizes, scholarships, distinctions

4th annual meeting EPIZONE, St. Malo, France, 2010: Poster prize
Tanya von Rosen (Recipient)
National Veterinary Institute

Details
Awarded date: 7 Jun 2010
Granting Organisations: St. Malo, France
Prize: Prizes, scholarships, distinctions

4th International DHC+ Student Awards - 1st prize
Dominik Franjo Dominkovic (Recipient)
Department of Energy Conversion and Storage, Centre for IT-Intelligent Energy Systems in Cities

Description
The 1st prize award was achieved for a report dubbed "Large scale heat pumps as a link between intermittent electrical energy sources and district heating sector". The evaluation committee awarded three papers. As announced, the prize consists of a research contribution of EUR 1000, presentation of findings at the En+Eff International Trade Fair and Congress for Heating, Cooling and CHP in Frankfurt on 19-20 April 2016 and publishing the article in the International EuroHeat & Power magazine.

Details
Awarded date: Mar 2016
Degree of recognition: International
Granting Organisations: Euroheat & Power international association
Prize: Prizes, scholarships, distinctions

Aase and Ejnar Danielsen Foundation Medical Research Grant, Kongens Lyngby, Denmark, 10 September 2015
Amalie Ribel-Madsen (Recipient)
Department of Systems Biology

Details
Awarded date: 10 Sep 2015
Prize: Prizes, scholarships, distinctions

Academic Research Grant 2017
Theis Bo Rasmussen (Recipient)
Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems

Description
Recipient of the 2017 National Instrument Academic Research Grant for conference participation at FedCSIS 2017 in Prague, Czech Republic

Details
Awarded date: 2017
Granting Organisations: National Instruments
Prize: Prizes, scholarships, distinctions
**AEG Elektronprisen**  
Michael A. E. Andersen (Recipient)  
Department of Electrical Engineering, Electronics

**Details**  
Awarded date: 31 Aug 2004  
Prize: Prizes, scholarships, distinctions

**Alexander Foss MADE award**  
Sara Shafiee (Recipient)  
Department of Mechanical Engineering, Engineering Design and Product Development, Operations Management

**Description**  

**Details**  
Awarded date: 30 Nov 2017  
Degree of recognition: National  
Prize: Prizes, scholarships, distinctions

**AMS 8ENERGY Student Presentation Award**  
Elliot Simon (Recipient)  
Department of Wind Energy, Meteorology & Remote Sensing

**Details**  
Awarded date: 5 Feb 2017  
Degree of recognition: International  
Granting Organisations: American Meteorological Society  
Event: AMS 97th Annual Meeting  
Prize: Prizes, scholarships, distinctions

**APM Hebert Walton Award 2008**  
Joana Geraldi (Recipient)  
Department of Management Engineering, Engineering Systems

**Description**  
British award for the best PhD in project management

I won the award for the year of 2008.

**Details**  
Awarded date: 2008  
Prize: Prizes, scholarships, distinctions

**A. R. Angelo's Grant**  
Michael A. E. Andersen (Recipient)  
Department of Electrical Engineering, Electronics

**Details**  
Awarded date: 1990  
Granting Organisations: NESA  
Prize: Prizes, scholarships, distinctions

**Årets Danske Forskningsresultat 2016**  
Jens Olaf Pepke Pedersen (Recipient)  
National Space Institute, Innovation and Research-based consultancy
Description
Valgt af læserne på videnskab.dk

Details
Awarded date: 28 Apr 2017
Degree of recognition: National
Granting Organisations: videnskab.dk
Prize: Prizes, scholarships, distinctions

Augustinus Foundation Medical Research Grant, Copenhagen, Denmark, 15 February 2016
Amalie Ribel-Madsen (Recipient)
Department of Systems Biology

Details
Awarded date: 15 Feb 2016
Prize: Prizes, scholarships, distinctions

August-Wilhelm Scheer Visiting Professorship@TUM
Tejs Vegge (Recipient)
Department of Energy Conversion and Storage, Atomic scale modelling and materials

Details
Awarded date: 2016
Granting Organisations: Technical University of Munich
Prize: Prizes, scholarships, distinctions

Best Demo Award
Andrea Burattin (Recipient)
Department of Applied Mathematics and Computer Science, Software Engineering

Details
Awarded date: 21 Sep 2016
Degree of recognition: International
event: 14th conference in the field of Business Process Management
Prize: Prizes, scholarships, distinctions

Best innovation award of Novo Nordisk Foundation Center for Biosustainability 2015
Yaojun Tong (Recipient)
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds

Details
Awarded date: 30 Aug 2015
Prize: Prizes, scholarships, distinctions

Best Lecture Award
Jesper Harild Serensen (Recipient)
Department of Civil Engineering, Section for Structural Engineering

Details
Awarded date: 31 Aug 2016
Degree of recognition: International
Granting Organisations: The International Federation for Structural Concrete
event: 11th fib International PhD Symposium in Civil Engineering
Prize: Prizes, scholarships, distinctions

Best Oral Presentation
Ana Sofia Ribeiro Duarte (Recipient)
National Food Institute, Research Group for Genomic Epidemiology

Details
Awarded date: 2010
event: Food Denmark Congress 2010
Best oral presentation at Electrochemical Science & Technology Conference 2017
Bente Højlund Hyldegaard (Recipient)
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Description
My presentation entitled ‘Electrochemically induced reduction and oxidation of chlorinated solvents in groundwater’ was elected as best presentation given by PhD fellows and Postdocs.

Details
Awarded date: Nov 2017
Degree of recognition: International
Granting Organisations: Danish Electrochemical Society
event: Electrochemical Science & Technology Conference
Prize: Prizes, scholarships, distinctions

Best Oral Presentation Award
Seyed Soheil Mansouri (Recipient)
Department of Chemical and Biochemical Engineering, CAPEC-PROCESS

Description
9th IFAC Symposium on Advanced Control of Chemical Processes ADCHEM 2015 – Whistler, Canada, 7–10 June, 2015

Details
Awarded date: 7 Jun 2015
Degree of recognition: International
Prize: Prizes, scholarships, distinctions

Best overall paper award. ITEA Conference on Transportation Economics, Oslo, 2015.
Mogens Fosgerau (Recipient)
Transport policy and behaviour, Department of Management Engineering

Details
Awarded date: 2015
Prize: Prizes, scholarships, distinctions

Best overseas poster
Tim Kåre Jensen (Recipient)
National Veterinary Institute, Pathology

Details
Awarded date: 9 Jul 1998
Degree of recognition: International
event: 15th International Pig Veterinary Society Congress
Prize: Prizes, scholarships, distinctions

Best paper award. BIVEC-GIVET Transport Research Day, 2007
Mogens Fosgerau (Recipient)
Transport policy and behaviour, Department of Management Engineering

Details
Awarded date: 2007
Prize: Prizes, scholarships, distinctions

Best paper award. Kuhmo-Nectar Conference and Summer School, Amsterdam 2008
Mogens Fosgerau (Recipient)
Transport policy and behaviour, Department of Management Engineering

Details
Awarded date: 2008
Prize: Prizes, scholarships, distinctions
Best Poster Award at the 44th IEEE Photovoltaic Specialists Conference
Gisele Alves dos Reis Benatto (Recipient), Sune Thorsteinsson (Recipient), Nicholas Riedel (Recipient), Peter Behrensdorff Poulsen (Recipient), Anders Thorseth (Recipient), Carsten Dam-Hansen (Recipient), Claire Mantel (Recipient) & Søren Forchhammer (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems, Coding and Visual Communication, Centre of Excellence for Silicon Photonics for Optical Communications

Description
Area 5: Characterization II

Details
Awarded date: 29 Jun 2017
Degree of recognition: International
Granting Organisations: IEEE
event: 2017 IEEE Photovoltaic Specialists Conference
Prize: Prizes, scholarships, distinctions

Best Poster Award at the Sustain 2017
Gisele Alves dos Reis Benatto (Recipient), Nicholas Riedel (Recipient), Claire Mantel (Recipient), Sune Thorsteinsson (Recipient), Peter Behrensdorff Poulsen (Recipient), Søren Forchhammer (Recipient), Kenn H. B. Frederiksen (Recipient), Jan Vedde (Recipient), Harsh Parikh (Recipient), Sergiu Spataru (Recipient) & Dezso Sera (Recipient)
Department of Photonics Engineering, Photovoltaic Materials and Systems, Organic Energy Materials, Coding and Visual Communication, Centre of Excellence for Silicon Photonics for Optical Communications

Description
Outdoor luminescence imaging strategies for drone-based PV array inspection

Details
Awarded date: 6 Dec 2017
Degree of recognition: International
Granting Organisations: Technical University of Denmark
event: Sustain 2017
Prize: Prizes, scholarships, distinctions

Best Poster Award at ISAP 2017
Urd Grandorf Bak (Recipient)
National Food Institute

Details
Awarded date: 23 Jun 2017
Degree of recognition: International
event: 6th congress of international society for applied phycology
Prize: Prizes, scholarships, distinctions

Best poster competition winner @ Stanford University
Jose Manuel Estaran Tolosa (Recipient)
Department of Photonics Engineering, Metro-Access and Short Range Systems, High-Speed Optical Communication

Description
International Photonics Workshop

Details
Awarded date: 2013
Prize: Prizes, scholarships, distinctions

Best poster competition winner @ UC Berkeley
Jose Manuel Estaran Tolosa (Recipient)
Department of Photonics Engineering, Metro-Access and Short Range Systems, High-Speed Optical Communication

Details
Awarded date: 2014
Prize: Prizes, scholarships, distinctions
Best Poster Prize UPEC '91
Michael A. E. Andersen (Recipient)
Department of Electrical Engineering, Electronics

Details
Awarded date: 19 Sep 1991
Granting Organisations: Universities Power Engineering Conference
Prize: Prizes, scholarships, distinctions

Best Presentation
Seyed Soheil Mansouri (Recipient)
Department of Chemical and Biochemical Engineering, CAPEC-PROCESS

Description
2015 Annual AIChE Meeting in Salt Lake City

Details
Awarded date: 10 Nov 2015
Granting Organisations: American Institute of Chemical Engineers
Prize: Prizes, scholarships, distinctions

Best Presentation Award at 7th International Conference Swimming Pool & Spa
Waqas Akram Cheema (Recipient)
Department of Environmental Engineering, Water Technologies

Description
At the 7th International Swimming Pool & Spa Conference (Kos Island, Greece), Waqas A. Cheema (WCHE) received the award for the best presentation out of 48 presentations. The title of the presentation was "Destruction of DBPs and their precursors in swimming pool water by combined UV treatment and ozonation".

Details
Awarded date: 5 May 2017
Degree of recognition: International
Granting Organisations: National University of Sciences & Technology (NUST), Pakistan
event: 7th International Conference
Prize: Prizes, scholarships, distinctions

Best presentation award at the symposium NanoSafety Forum for Young Scientists
Manuel Correia (Recipient)
National Food Institute, Research Group for Nano-Bio Science

Details
Awarded date: 8 Oct 2014
Granting Organisations: NanoSafety Forum for Young Scientists 2014
Prize: Prizes, scholarships, distinctions

Best Process Mining Dissertation Award
Andrea Burattin (Recipient)
Department of Applied Mathematics and Computer Science , Software Engineering

Description
The Best Process Mining Dissertation Award is awarded by the IEEE Task Force on Process Mining to an outstanding PhD thesis focused on the area of business process intelligence. The award is particularly dedicated to works contributing to research in the area of process mining and/or the innovative use of process mining techniques for solving practically relevant problems.

With this award, the IEEE Task Force on Process Mining wants to draw attention to excellent works by young researchers and promote the research area as a whole.

Details
Awarded date: 8 Sep 2014
Degree of recognition: International
Granting Organisations: IEEE Task Force on Process Mining
Prize: Prizes, scholarships, distinctions

**Best publication award of Novo Nordisk Foundation Center for Biosustainability 2015**  
Yaojun Tong (Recipient)  
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds

**Details**  
Awarded date: 30 Aug 2015  
Prize: Prizes, scholarships, distinctions

**Best Reviewer 2015 Award of Materials and Structures**  
Alexander Michel (Recipient)  
Department of Civil Engineering, Section for Structural Engineering

**Details**  
Awarded date: 2016  
Degree of recognition: International  
Prize: Prizes, scholarships, distinctions

**Best reviewer award 2013**  
Joana Geraldi (Recipient)  
Department of Management Engineering, Engineering Systems

**Details**  
Awarded date: 2013  
Granting Organisations: Elsevier International Journal of Managing Projects in Business  
Prize: Prizes, scholarships, distinctions

**Best Student Paper Award**  
Giulia Nardelli (Recipient)  
Department of Management Engineering, Management Science, Implementation and Performance Management

**Description**  

**Details**  
Awarded date: 20 Aug 2012  
Degree of recognition: International  
Granting Organisations: Information Systems Research in Scandinavia (IRIS) Association  
event: 3rd Scandinavian Conference of Information Systems (SCIS)  
Prize: Prizes, scholarships, distinctions

**Best Student Paper Award**  
Emil Krabbe Nielsen (Recipient)  
Department of Electrical Engineering, Automation and Control

**Details**  
Awarded date: 29 Nov 2017  
Granting Organisations: Korean Nuclear Society  
event: International Symposium on Future Instrumentation & Control for Nuclear Power Plants  
Prize: Prizes, scholarships, distinctions

**Best Student Project winner at the VandTek fair 2016**  
Camilla Tang (Recipient)  
Department of Environmental Engineering, Urban Water Systems

**Details**  
Awarded date: 22 Sep 2016
Prize: Prizes, scholarships, distinctions

**Best Student Thesis 2013**
Niels-Christian Fink Bagger (Recipient)
Department of Management Engineering, Management Science, Operations Research

**Details**
Awarded date: 2013
Degree of recognition: National
Granting Organisations: DONG Energy A/S

**Best Thesis in Operations Research 2013**
Niels-Christian Fink Bagger (Recipient)
Department of Management Engineering, Management Science, Operations Research

**Details**
Awarded date: 29 Apr 2013
Degree of recognition: National
Granting Organisations: Danish Operations Research Society (DORS)
event: DORS - General Assembly

**Chemicals in the Environment - Best course of the year 2012/2013 chosen by the students**
Steffen Foss Hansen (Recipient)
Department of Environmental Engineering, Environmental Chemistry

**Details**
Awarded date: 2013
Degree of recognition: Local

**Chinese Government Award for Outstanding Self-financed PhD Student Abroad**
Hairun Guo (Recipient)
Department of Photonics Engineering, Ultrafast Nonlinear Optics group

**Details**
Awarded date: Feb 2014

**Civilingenør Kristian Rasmussen og hustru Gunhild Katrine Rasmussens Fond**
Danilo Quagliotti (Recipient)
Department of Mechanical Engineering, Manufacturing Engineering

**Description**
Awarded with a research grant to support Postdoc research "Statistical modelling, surfaces generation and traceability for 3D Micro/Nano Optical Metrology"

**Details**
Awarded date: Jan 2017

**Corning Student Paper Competition**
Rafael Puerta Ramirez (Recipient)
Department of Photonics Engineering, Metro-Access and Short Range Systems, Networks Technology and Service Platforms

**Description**
Nominated as finalist.

**Details**
Awarded date: 21 Apr 2017
Cover Illustration (Cytometry Part A): Insight into the Microbial Multicellular Lifestyle
Sünje Johanna Pamp (Recipient)
Department of Systems Biology

Details
Awarded date: Feb 2009
Prize: Prizes, scholarships, distinctions

Cover Illustration (Genome Research): SFB Single-Cell Genomics
Sünje Johanna Pamp (Recipient)
National Food Institute, Division of Epidemiology and Microbial Genomics

Details
Awarded date: Jun 2012
Prize: Prizes, scholarships, distinctions

Cover Illustration (Journal of Bacteriology): Microbial Interactions, 3-Colour-Coded Biofilm
Sünje Johanna Pamp (Recipient)
Department of Systems Biology

Details
Awarded date: Jan 2007
Prize: Prizes, scholarships, distinctions

Danisco Award, 2003 (250.000 DKK)
Charlotte Jacobsen (Recipient)
National Food Institute, Research Group for Bioactives – Analysis and Application

Details
Awarded date: 2003
Prize: Prizes, scholarships, distinctions

Danish 3R-Center 3R-prize 2016
Eva Bay Wedebye (Recipient) & Nikolai Georgiev Nikolov (Recipient)
National Food Institute, Research Group for Molecular and Reproductive Toxicology

Details
Awarded date: 15 Sep 2016
Degree of recognition: National
Prize: Prizes, scholarships, distinctions

Danish Akustisk Selskab Fonden Travel Grant
Alexander Weider King (Recipient)
Department of Electrical Engineering, Acoustic Technology

Details
Awarded date: 2015
Degree of recognition: National
Granting Organisations: Dansk Akustisk Selskab
Prize: Prizes, scholarships, distinctions

DropSens International Award
Suhith Hemanth (Recipient)
Department of Micro- and Nanotechnology

Description
Finalist- 2016
DTU Award for Development of Teaching & Learning
Gunvor Marie Kirkelund (Recipient)
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Description
Received for the case “Project families: How to improve learning in thesis works and increase impact on research” together with 6 colleagues at DTU Civil Engineering.

Details
Awarded date: 4 Dec 2017
Degree of recognition: Local
Prize: Prizes, scholarships, distinctions

DTU Award for Development of Teaching and learning 2017
Per Goltermann (Recipient)
Department of Civil Engineering, Section for Structural Engineering

Description
The award is granted to teachers who have made a special effort to initiate, investigate, document, and share experiences about development of their teaching and their students’ learning. The objectives are to encourage DTU teachers to systematically and continuously investigate how various teaching methods support their student learning, to make special efforts to develop teaching and learning methods at DTU visible, and hereby to support the ongoing enhancement of the quality of teaching, learning and education at DTU.

Details
Awarded date: 4 Dec 2017
Degree of recognition: Local
Granting Organisations: Technical University of Denmark
Prize: Prizes, scholarships, distinctions

DTU-Byg Ph.D. thesis of the year
Jens Henrik Nielsen (Recipient)
Department of Civil Engineering, Section for Structural Engineering

Details
Awarded date: 10 Apr 2009
Prize: Prizes, scholarships, distinctions

DTU Innovation Prize
Michael A. E. Andersen (Recipient)
Department of Electrical Engineering, Electronics

Details
Awarded date: 28 Apr 2006
Prize: Prizes, scholarships, distinctions

DTU Internationalization Award
Gunvor Marie Kirkelund (Recipient)
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Description
Awarded for establishing and coordinating the Nordic Master in Cold Climate Engineering in the Nordic Five Tech-alliance.

Details
Awarded date: 28 Apr 2017
Degree of recognition: Local
Granting Organisations: Technical University of Denmark
DTU’s Sustain Conference Poster Award
Sarah Brudler (Recipient)
Department of Environmental Engineering, Urban Water Engineering

Details
Awarded date: 17 Dec 2015
Prize: Prizes, scholarships, distinctions

DTU’s Young Researcher award
Matteo Villa (Recipient)
Department of Mechanical Engineering, Materials and Surface Engineering

Details
Awarded date: 31 Oct 2014
Granting Organisations: Technical University of Denmark
Prize: Prizes, scholarships, distinctions

DTU’s Young Researcher Award 2011
Camilla Taxvig (Recipient)
National Food Institute, Research Group for Molecular and Reproductive Toxicology

Details
Awarded date: 2011
Degree of recognition: National
Granting Organisations: Technical University of Denmark
Prize: Prizes, scholarships, distinctions

DTU Teacher of the year 2017
Birgitte Andersen (Recipient)
Department of Biotechnology and Biomedicine, Fungal Degradation

Details
Awarded date: 28 Apr 2017
Prize: Prizes, scholarships, distinctions

Edwin Frankel Best Paper Award (The American Oil Chemist Society), 2010
Charlotte Jacobsen (Recipient)
National Food Institute, Research Group for Bioactives – Analysis and Application

Details
Awarded date: 2010
Prize: Prizes, scholarships, distinctions

Edwin Frankel Best Paper Award (The American Oil Chemist Society), 2011
Charlotte Jacobsen (Recipient)
National Food Institute, Research Group for Bioactives – Analysis and Application

Details
Awarded date: 2011
Prize: Prizes, scholarships, distinctions

E-gruppens 100 års jubilæum og uddeling af E-priser
Jonas Bækby Bjarnø (Recipient)
National Space Institute, Measurement and Instrumentation Systems

Description
Ingeniørforeningens Elektrofond har netop uddelt årets E-priser, som i år var mangedoblet i antal pga. 100-året for etableringen af E-gruppen.

Andreas Hærstedt Jørgensen, DTU Space og Jonas Bækby Bjarnø, DTU Space
Description
Single-photon sources are of great interest because of their potential use in quantum information schemes. Because of their discrete energy transition, quantum dots are considered to be ideal single-photon sources and understanding their properties is essential for their application in quantum information systems. The radiative properties of a single quantum dot can be strongly modified by embedding it in a micropillar cavity, which gives rise to cavity quantum electrodynamical (cQED) effects. In this thesis, the cavity-quantum dot interaction is investigated both experimentally and theoretically. A quantum theory describing the light-matter interaction is set up, and all parameters in the model are experimentally measured, allowing for a complete comparison between experiment and theory. A very good agreement is found, verifying that the model captures the most influential features of the interaction.
Awarded with the scholarship for the purpose of visiting different research groups. It will be used to finance the guest research stay at Energy Research Institute at Nanyang Technological University in Singapore and for the guest research stay at National Renewable Energy Laboratory (NREL) in Colorado, the USA.

Details
Awarded date: 23 Feb 2017
Degree of recognition: National
Granting Organisations: Ministry of Higher Education and Science
Prize: Prizes, scholarships, distinctions

Ellen and Hans Hermers Award 2015
Tejs Vegge (Recipient)
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials

Description
The Foundation is managed by Rector of the University of Copenhagen, Prof. Ralf Hemmingsen, the Dean of the Faculty of Sciences at University of Copenhagen, Prof. John Renner Hansen, and the President of the Technical University of Denmark, Prof. Anders O. Bjarklev. The foundation awards honorary grants (unsolicited).

Details
Awarded date: 26 Jan 2015
Granting Organisations: Ellen and Hans Hermers Foundation
Prize: Prizes, scholarships, distinctions

Entrepreneurship in Technical Science
Suhith Hemanth (Recipient)
Department of Micro- and Nanotechnology

Description
Won 1st place

Details
Awarded date: 29 Jun 2015
Degree of recognition: Local
Prize: Prizes, scholarships, distinctions

Environmental Management and Ethics - Best course of the year 2004/2005 chosen by the students
Steffen Foss Hansen (Recipient)
Department of Environmental Engineering, Environmental Chemistry

Details
Awarded date: 2005
Degree of recognition: Local
Prize: Prizes, scholarships, distinctions

European FM researcher of the year
Rikke Brinkø Berg (Recipient)
Department of Management Engineering, Systems Analysis, DTU Climate Centre

Description
FM Researcher of the year is an award, which recognises the value of research being undertaken across Europe. The research must address the EuroFM research agenda and contribute to its overall objectives to advance knowledge in FM and promote its effective application in practice and education. Read more about the competition below.

Details
Awarded date: 8 Jun 2016
Prize: Prizes, scholarships, distinctions

European FM Researcher of the Year
Giulia Nardelli (Recipient)
Department of Management Engineering, Production and Service Management, Centre for Facilities Management, Implementation and Performance Management
Description
Awarded during European Facilities Management Conference (EFMC) 2014 in Berlin (DE).

Details
Awarded date: Jun 2014
Degree of recognition: International
Granting Organisations: EuroFM
Prize: Prizes, scholarships, distinctions

F1000 - Exceptional: Development of Spatial Distribution Patterns by Biofilm Cells (AEM Vol. 81(18)).
Sünje Johanna Pamp (Recipient)
National Food Institute, Research Group for Genomic Epidemiology

Description
Article: Development of Spatial Distribution Patterns by Biofilm Cells., Applied and Environmental Microbiology, 2015 (DOI: 10.3410/f.725596154.793509444), has been recommended in F1000Prime as being of special significance in its field by F1000 Faculty Member Robert Palmer.

Details
Awarded date: 8 Sep 2015
Granting Organisations: Faculty of 1000 Ltd
Prize: Prizes, scholarships, distinctions

F1000Prime - Tolerance to the antimicrobial peptide colistin in Pseudomonas aeruginosa biofilms is linked to metabolically active cells (Mol.Microbiol. Vol. 68(1)).
Sünje Johanna Pamp (Recipient)
National Food Institute, Research Group for Genomic Epidemiology

Description
This study demonstrates that difficulties in treating infections caused by biofilm-forming bacteria may be due to differential sensitivities of metabolically distinct subpopulations of bacterial cells in the biofilm. The authors show that combination therapy, with antibiotics targeting each distinct subpopulation, may be a successful treatment strategy for infections of biofilm-forming bacteria [...] Synergistic effects of antibiotics are well known, and this paper presents one interesting explanation: distinct sub-populations of cells in a biofilm that are susceptible to different classes of drugs [...].

This paper highlights the importance of studying distinct and well-defined sub-populations of cells in a physiologically relevant context.

Details
Awarded date: 15 May 2008
Prize: Prizes, scholarships, distinctions

Fabrication of antireflective SiC surface using plasma etching with self-assembled nanopattern
Aikaterini Argyraki (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Description

Details
Awarded date: 16 Sep 2013
Granting Organisations: DTU Fotonik
Prize: Prizes, scholarships, distinctions

Fabriksejer, Civilingeniør Louis Dreyer Myhrwold og hustru Janne Myhrwolds Fond
Danilo Quagliotti (Recipient)
Department of Mechanical Engineering, Manufacturing Engineering
Description
Awarded with a research grant to support PhD research project "Multi Scale Micro Nano Metrology for Advanced Moulding Technologies"

Details
Awarded date: 30 Oct 2015
Prize: Prizes, scholarships, distinctions

Fellow of Royal Society for Public Health, United Kingdom
Johanne Ellis-Iversen (Recipient)
National Food Institute, Division of Risk Assessment and Nutrition

Details
Awarded date: 2012
Degree of recognition: National
Prize: Prizes, scholarships, distinctions

FEMS Young Scientists Meeting Grant
Henrik Munch Roager (Recipient)
National Food Institute, Research Group for Gut Microbiology and Immunology

Details
Awarded date: 20 Jun 2016
Prize: Prizes, scholarships, distinctions

Finalist in Corning Outstanding Student Paper Competition 2014
Jose Manuel Estaran Tolosa (Recipient)
Department of Photonics Engineering, Metro-Access and Short Range Systems

Description
Established in 2007, this program recognizes innovation, research excellence, and presentation abilities in optical communications. The competition is endowed by a grant from Corning Incorporated. The contest was framed within the Optical Fiber Conference 2014 (OFC’14)

Details
Awarded date: 9 Mar 2014
Prize: Prizes, scholarships, distinctions

First Prize Reach.Out! 2015
Anne Hansen (Recipient)
Department of Physics

Description

Details
Awarded date: 13 May 2015
Granting Organisations: European Materials Research Society (E-MRS)
Prize: Prizes, scholarships, distinctions

First Prize UTRC Best Student Paper at ECCE 2013
Michael A. E. Andersen (Recipient)
Department of Electrical Engineering, Electronics

Details
Awarded date: 15 Sep 2013
Granting Organisations: IEEE Power Electronics Society
Prize: Prizes, scholarships, distinctions
FOKOS Award 2013: "Publication reporting most striking discovery in the field of complex systems"
Erik Andreas Martens (Recipient)
Department of Applied Mathematics and Computer Science

Description
FOKOS Award 2013 for the "Publication reporting most striking discovery in the field of complex systems": Martens et al., "Chimera states in mechanical oscillator networks", PNAS (2013)

Details
Awarded date: 2013
Granting Organisations: Freunde der Forschung an komplexen Systemen (FOKOS)
Prize: Prizes, scholarships, distinctions

Freescale Semiconductor Prize
Alexander Michel (Recipient)
Department of Civil Engineering, Section for Structural Engineering

Details
Awarded date: 2008
Degree of recognition: National
Granting Organisations: University of the West of Scotland
Prize: Prizes, scholarships, distinctions

Frie Forskningsråds Ung Eliteforskerpris: EliteForsk-konference
Praveen Gauravaram (Recipient)
Department of Mathematics, Discrete mathematics

Description

Details
Awarded date: 27 Jan 2010
Granting Organisations: Ny Carlsberg Glyptotek, København, Denmark
Prize: Prizes, scholarships, distinctions

G.A. Hagemanns Mindefond
Henrik Munch Roager (Recipient)
National Food Institute, Division of Food Microbiology

Description
Travel grant

Details
Awarded date: 1 Mar 2014
Prize: Prizes, scholarships, distinctions

Geosyntec Student Paper Competition 2015
Bente Højlund Hyldegaard (Recipient)
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Description
The paper entitled ‘Assessment of Electrokinetically Enhanced Delivery of Lactate and Bacteria in 1,2-cis-DCE contaminated Limestone’ was awarded with a 2nd place in performing cutting-edge research related to assessment and treatment of chemical contaminants in groundwater or soil.

**Details**
Awarded date: Apr 2015  
Degree of recognition: International  
Granting Organisations: Geosyntec Consultants Inc.  
Prize: Prizes, scholarships, distinctions

**Green Talents Award 2015**
Maria E. Mondejar Montagud (Recipient)  
Department of Mechanical Engineering, Thermal Energy

**Description**
The German Federal Ministry of Education and Research (BMBF) hosts the prestigious Green Talents Award to promote the international exchange of innovative green ideas. The award honors young researchers from numerous countries and scientific disciplines who are selected by a high-ranking jury of German experts for their outstanding achievements in making our societies more sustainable.

**Details**
Awarded date: Oct 2015  
Degree of recognition: International  
Granting Organisations: German Federal Ministry of Education and Research (BMBF)  
Prize: Prizes, scholarships, distinctions

**Green Tech Challenge - Master Thesis**
Peter Alexander Stentoft (Recipient)  
Department of Applied Mathematics and Computer Science, Dynamical Systems

**Details**
Awarded date: 23 Jun 2017  
Degree of recognition: National  
Granting Organisations: Technical University of Denmark  
Prize: Prizes, scholarships, distinctions

**Hedofs Fonds Pris for Transportforskning, 2011**
Mogens Fosgerau (Recipient)  
Transport policy and behaviour, Department of Management Engineering

**Details**
Awarded date: 2011  
Prize: Prizes, scholarships, distinctions

**Honours student: Advanced and Applied Chemistry: Catalysis and Nanotechnology**
Helene Kolding (Recipient)  
Centre for Catalysis and Sustainable Chemistry, Department of Chemistry

**Description**
1 Sept 2009 - 17 Nov 2011

**Details**
Awarded date: 17 Nov 2011  
Granting Organisations: Technical University of Denmark  
Prize: Prizes, scholarships, distinctions

**Horizon 2020 Prize**
Edson Porto da Silva (Recipient)  
Department of Photonics Engineering, High-Speed Optical Communication

**Description**  
Horizon 2020 Prize: "Breaking the optical transmission barriers'" within the PHOTONMAP team

Press release: "The goal of this prize was the development of a breakthrough solution in the area of point-to-point optical
fibre transmission, to overcome the current limitations of long distance fibre transmission systems. The €500,000 award for optical transmission went to the PHOTONMAP project led by Department of Photonics Engineering, Technical University of Denmark.

Their solution is based on ultra-high capacity fibres, which can transmit information over thousands of kilometres, with significant energy and cost savings compared to state of the art commercial systems. The Department of Photonics Engineering, Technical University of Denmark (DK) as coordinator, teamed up with University of Southampton (UK) and Fujikura Ltd (JP) to submit the winning entry of the breaking the optical transmission barriers Horizon Prize, PHOTONMAP.

The PHOTONMAP solution suggests breaking the optical transmission barriers by building optical communication systems based on high-count, single-mode, multi-core fibre (HC-SM-MCF) for long-haul transmission, which can achieve orders of magnitude more capacity than the state-of-the-art commercial transmission system. This is an innovative solution regarding transmission capacity, transmission reach, energy saving, which also offers low complexity, low cost, and better integration.

Six applications were competing to win the prize. A high-level expert group with five independent, leading experts in the optical field evaluated the applications. The prize was awarded by Commissioner G.H. Oettinger on November 9th, 2016 during the 2nd Global 5G Event in Rome, Italy."
IEA Fellow
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

Description
The IEA Fellowship is given to recognize extraordinary or sustained, superior accomplishments of an individual within the human factors and ergonomics field.

Details
Awarded date: 2016
Granting Organisations: International Ergonomics Association
Prize: Prizes, scholarships, distinctions

IEC 1996 Award
Poul Ejnar Sørensen (Recipient)
Department of Wind Energy, Integration & Planning

Description
The price was given in recognition of devotion and excellent leadership of electrical system modelling and power quality standards

Details
Awarded date: 31 Jul 2012
Degree of recognition: International
Granting Organisations: International Electrotechnical Committee
Prize: Prizes, scholarships, distinctions

IEEE Senior Member
Poul Ejnar Sørensen (Recipient)
Department of Wind Energy, Integration & Planning

Details
Awarded date: 2007
Degree of recognition: International
Granting Organisations: IEEE
Prize: Prizes, scholarships, distinctions

Industrial PhD scholarship with Alectia Consulting: Integration of human factors knowledge into engineering design processes
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

Details
Awarded date: 2009
Granting Organisations: Danish Agency for Science Technology and Innovation
Prize: Prizes, scholarships, distinctions

INFORMS Railway Application Section 2016 Student Paper Award - Second Place
Fabrizio Cerreto (Recipient), Otto Anker Nielsen (Recipient) & Steven Harrod (Recipient)
Department of Management Engineering, Transport DTU, Transport Modelling, Management Science

Description
RAS (Railway Applications Section), a subdivision of INFORMS (Institute for Operations Research and Management Sciences), is sponsoring a student research paper contest on analytics and fact-based decision making in railway applications.

Operations Research (OR) and the Management Sciences (MS) are professional disciplines that deal with the application of information technology for informed decision making. OR/MS professionals aim to provide rational bases for decision
making by seeking to understand and structure complex situations and to use this understanding to predict system behavior and improve system performance. Much of this work is done using analytical and numerical techniques to develop and manipulate mathematical and computer models of organizational systems composed of people, machines, and procedures. RAS provides a forum for bringing together practitioners, consultants, and academics interested in applying OR/MS techniques to the railroad industry. RAS activities include roundtables, paper sessions at INFORMS national meetings, workshops, and focus groups. Roundtables provide attendees with a unique opportunity to explore, in-depth, topics ranging from eBusiness to simulation to network modeling together with a panel of experts. Paper sessions feature the latest in OR/MS research pertaining to the rail industry.

**Details**
Awarded date: 13 Nov 2016  
Degree of recognition: International  
Granting Organisations: INFORMS  
Event: INFORMS Nashville 2016 Annual Meeting  
Prize: Prizes, scholarships, distinctions

**International Proteolysis society travel award**
Simonas Savickas (Recipient)  
Department of Biotechnology and Biomedicine

**Details**
Awarded date: 2017  
Degree of recognition: International  
Prize: Prizes, scholarships, distinctions

**Invited paper for SPIE newsroom**
Anders Thorseth (Recipient)  
Department of Photonics Engineering, Diode Lasers and LED Systems

**Details**
Awarded date: 12 Feb 2013  
Degree of recognition: International  
Granting Organisations: SPIE  
Prize: Prizes, scholarships, distinctions

**IPMA Young Researcher Award 2008**
Joana Geraldi (Recipient)  
Department of Management Engineering, Engineering Systems

**Description**
International award to the best PhD student thesis of the year. My thesis won the award for the year of 2008.

**Details**
Awarded date: 2008  
Granting Organisations: IPMA (International Project Management Association)  
Prize: Prizes, scholarships, distinctions

**ISAAR scholarship**
Helia Relano Iborra (Recipient)  
Department of Electrical Engineering, Hearing Systems

**Description**
The ISAAR committee offers a limited number of scholarships to young scientists that would like to participate with a scientific contribution at an ISAAR symposium. The scholarship covers the symposium fee for full participation and accommodation. Travel expenses are not covered. The ISAAR scholarships are intended for young scientists (e.g., PhD-students, post-doctoral students, and others) working in Auditory and Audiological Research or related areas.

**Details**
Awarded date: 2017  
Prize: Prizes, scholarships, distinctions
IUIS VIC Keystone rejse legat
Simon Welner (Recipient)
National Veterinary Institute, Center for Biological Sequence Analysis, Section for Immunology and Vaccinology, Section for Virology

Description
Fondsmidler til at hjælpe PhD/DVM studerende med at deltage i Keystone symposiet ad 20.-25.01.2015: "Immunity to veterinary pathogens: Informing vaccine development"

Modtog et legat på 1000 USD. Dog skal jeg betale nogle af pengene tilbage, da jeg også modtog et andet legat udbudt af Keystone, så jeg i alt har modtaget flere penge end mine rejseomkostninger er budgetteret til.

Details
Awarded date: 20 Jan 2015
Granting Organisations: IUIS VIC: International Union of Immunological Societies - Veterinary Immunology Commitee
Prize: Prizes, scholarships, distinctions

Keystone symposia future of science fund scholarship
Simon Welner (Recipient)
National Veterinary Institute, Center for Biological Sequence Analysis, Section for Immunology and Vaccinology, Section for Virology

Description
Fik bevilget 1200 USD

Details
Awarded date: 20 Jan 2015
Prize: Prizes, scholarships, distinctions

Keystone Symposia scholarship
Heidi Mikkelsen Melvang (Recipient)
National Veterinary Institute, Section for Immunology and Vaccinology

Description

Details
Awarded date: 20 Jan 2015
Granting Organisations: Keystone Symposia
Prize: Prizes, scholarships, distinctions

La Médaille Chevreul 2010, Association Francaise pour l'étude des Corps Gras
Charlotte Jacobsen (Recipient)
National Food Institute, Research Group for Bioactives – Analysis and Application

Details
Awarded date: 2010
Prize: Prizes, scholarships, distinctions

Legat fra Otto Møntsteds Fond til konferencedeltagelse
Anders Thorseth (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Details
Awarded date: 21 Jan 2012
Granting Organisations: Otto Møntsteds Fond
Prize: Prizes, scholarships, distinctions

Life long Honorary Member of 'The International Association of Vehicle Systems Dynamics' (IAVSD)
Hans True (Recipient)
Department of Applied Mathematics and Computer Science

Details
Awarded date: 15 Aug 2017
Degree of recognition: International
Granting Organisations: The International Association of Vehicle Systems Dynamics
Prize: Prizes, scholarships, distinctions

Life Science Switzerland travel award
Simonas Savickas (Recipient)
Department of Biotechnology and Biomedicine

Details
Awarded date: 2017
Degree of recognition: International
Prize: Prizes, scholarships, distinctions

Lundbeckfonden: Travel grant
Henrik Munch Roager (Recipient)
National Food Institute, Division of Food Microbiology

Details
Awarded date: 10 Sep 2014
Granting Organisations: Lundbeckfonden
Prize: Prizes, scholarships, distinctions

Marcuse Lecturer grant (Lipidforum), 1999
Charlotte Jacobsen (Recipient)
National Food Institute, Research Group for Bioactives – Analysis and Application

Details
Awarded date: 1999
Prize: Prizes, scholarships, distinctions

Member of the Danish Academy of Technical Sciences (ATV)
Tejs Vegge (Recipient)
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials

Details
Awarded date: May 2014
Granting Organisations: Danish Academy of Technical Sciences (ATV)
Prize: Prizes, scholarships, distinctions

Method for knowledge transfer from the operations phase of offshore units into design, planning, and optimization
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

Description
Two year research project

Details
Awarded date: 2014
Granting Organisations: The Danish Maritime Fund
Prize: Prizes, scholarships, distinctions

Methods for employee participation in product innovation.
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

Description
Two year research project
MNE 2013 Micro Nano Graph Contest, honorable mention
Aikaterini Argyraki (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Molecular Ecology best reviewer 2013
Gilles Guillot (Recipient)
Department of Applied Mathematics and Computer Science, Cognitive Systems

Most downloaded article in the year 2015 - 2016
Maumita Chakrabarti (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

A novel spectrometer concept is analyzed and experimentally verified. The method relies on probing the speckle displacement due to a change in the incident wavelength. A rough surface is illuminated at an oblique angle, and the peak position of the covariance between the speckle patterns observed in the far field with the two wavelengths reveals the wavelength change. A spectral resolution of 100 Mhz is argued to be achievable.

Most downloaded article in the year 2015 - 2016. Downloaded 354 times.

MSC: Graduation with distinction
Robert Bitsche (Recipient)
Department of Wind Energy, Wind Turbines

Nanoscale zero-valent iron impregnation of covalent organic polymer grafted activated carbon for water treatment: 11th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICEENN 2016)
Paul D. Mines (Recipient)
Department of Environmental Engineering, Water Technologies, Department of Micro- and Nanotechnology, Surface Engineering

Best Poster Prize

Details
Awarded date: 1 Apr 2015
Granting Organisations: OSA Publishing
Prize: Prizes, scholarships, distinctions

Details
Awarded date: 2005
Granting Organisations: Vienna University of Technology, Austria
Prize: Prizes, scholarships, distinctions

Details
Awarded date: 18 Aug 2016
Granting Organisations: Royal Society of Chemistry - Environment Science: Nano
Prize: Prizes, scholarships, distinctions
**NASA Group Achievement Award: Juno Earth Flyby ASC Earth-Moon Movie Development**
Alessandro Salvatore Massaro (Recipient)
National Space Institute, Measurement and Instrumentation Systems

**Description**
For outstanding technical accomplishment in the imaging, production and release of the captivating Juno Earth Flyby 4-day Earth-Moon Movie

**Details**
Awarded date: 2014
Granting Organisations: NASA, National Aeronautics and Space Administration
Prize: Prizes, scholarships, distinctions

**National Women in Engineering Day In 2016**
Solange I. Mussatto (Recipient)
Novo Nordisk Foundation Center for Biosustainability, Research Groups, Biomass Conversion and Bioprocess Technology

**Description**
Recognized by Elsevier at the National Woman in Engineering Day in 2016, as an Editor who have made a valuable contribution to the field of engineering.

**Details**
Awarded date: 23 Jun 2016
Granting Organisations: Elsevier
event: National women in engineering day 2016
Prize: Prizes, scholarships, distinctions

**New Investigator Award for Basic Science**
Tommaso di Ianni (Recipient)
Department of Electrical Engineering, Biomedical Engineering

**Description**
American Institute of Ultrasound in Medicine

**Details**
Awarded date: Mar 2017
Prize: Prizes, scholarships, distinctions

**NNF Center For Biosustainibility best paper award 2014**
Carlotta Ronda (Recipient)
Novo Nordisk Foundation Center for Biosustainibility

**Details**
Awarded date: 15 Sep 2014
Prize: Prizes, scholarships, distinctions

**Nordic Ergonomics Society Great Prize**
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

**Details**
Awarded date: 2004
Granting Organisations: Nordic Ergonomics and Human Factors Society
Prize: Prizes, scholarships, distinctions

**On the list of the 40 outstanding reviewers of IEEE Transactions on Power Systems for 2015**
Jalal Kazempour (Recipient)
Department of Electrical Engineering, Center for Electric Power and Energy, Electricity markets and energy analytics

**Details**
Awarded date: 2015
Prize: Prizes, scholarships, distinctions

On the list of the 47 outstanding reviewers of IEEE Transactions on Smart Grid for 2016
Jalal Kazempour (Recipient)
Department of Electrical Engineering, Center for Electric Power and Energy, Electricity markets and energy analytics

Description
On the list of outstanding reviewers of IEEE Transactions on Smart Grid for 2016

Details
Awarded date: 2016
Prize: Prizes, scholarships, distinctions

Oticon Fonden Ph.D. Scholarship
Alexander Weider King (Recipient)
Department of Electrical Engineering, Acoustic Technology

Details
Awarded date: 2016
Degree of recognition: National
Granting Organisations: Oticon Fonden
Prize: Prizes, scholarships, distinctions

Otto Mønsted Fonden
David Hansen (Recipient)
Department of Management Engineering, Production and Service Management

Details
Awarded date: 1 Jan 2013
Granting Organisations: Otto Mønsteds Fond
Prize: Prizes, scholarships, distinctions

Otto Mønsted Foundation Research Grant, Copenhagen, Denmark, 16 August 2015
Amalie Ribel-Madsen (Recipient)
Department of Systems Biology

Details
Awarded date: 16 Aug 2015
Prize: Prizes, scholarships, distinctions

Otto Mønsteds Fond
Danilo Quagliotti (Recipient)
Department of Mechanical Engineering, Manufacturing Engineering

Description
Awarded with a research grant to support PhD research project "Multi Scale Micro Nano Metrology for Advanced Moulding Technologies"

Details
Awarded date: 15 Mar 2016
Prize: Prizes, scholarships, distinctions

Otto Mønsteds Fond Conference Scholarship
Pedro Parraguez Ruiz (Recipient)
Engineering Systems Group, Department of Management Engineering, Production and Service Management

Description
Grant to finance conference abroad

Details
Awarded date: 2014
**Granting Organisations:** Otto Mønsteds Fond

**Prize:** Prizes, scholarships, distinctions

---

### Otto Mønsteds Fond - Travel Grant

**Florian Thams (Recipient)**

Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems

**Description**

Financial Support of the External Research Stay

**Details**

Awarded date: 19 Nov 2016

Granting Organisations: Otto Mønsteds Fond

Prize: Prizes, scholarships, distinctions

---

### Otto Mønsteds Fond - Travel Grant

**Theis Bo Rasmussen (Recipient)**

Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems

**Description**

Financial support for external stay at the University of New South Wales, Sydney, Australia

**Details**

Awarded date: 9 Oct 2017

Granting Organisations: Otto Mønsteds Fond

Prize: Prizes, scholarships, distinctions

---

### Otto Mønsteds Fond - Travel Grant

**Jundi Jia (Recipient)**

Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems

**Details**

Awarded date: 12 Jul 2017

Granting Organisations: Otto Mønsteds Fond

Prize: Prizes, scholarships, distinctions

---

### Otto Mønsteds Fund: Travel Grant

**Hugo-Andrés López-Acosta (Recipient)**

Department of Applied Mathematics and Computer Science, Language-Based Technology

**Description**

Travel grant to support the presentation of a paper at the 2015 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications, OOPSLA 2015, part of (SLASH) 2015. Pittsburgh, PA, USA, October 25-30, 2015

**Details**

Awarded date: 25 Oct 2015

Granting Organisations: Otto Mønsteds Fond

Prize: Prizes, scholarships, distinctions

---

### Otto-Mønsted travel grant

**Arnab Halder (Recipient)**

Department of Chemistry, NanoChemistry, Organic Chemistry

**Description**

Travel grant for attending international conference.

**Details**

Awarded date: Aug 2016

Prize: Prizes, scholarships, distinctions
**Outstanding contribution**
Peter Bo Sarka (Recipient)
Department of Management Engineering, Production and Service Management, Implementation and Performance Management

**Description**
Award for recognition that my paper, ENGINEERS ARE USING SOCIAL MEDIA FOR WORK PURPOSES, was rated in the top 10% papers based on reviewers’ scores.

**Details**
Awarded date: 19 May 2014
Prize: Prizes, scholarships, distinctions

---

**Outstanding paper presentation award (The American Oil Chemist Society), 1999**
Charlotte Jacobsen (Recipient)
National Food Institute, Research Group for Bioactives – Analysis and Application

**Details**
Awarded date: 1999
Prize: Prizes, scholarships, distinctions

---

**Outstanding Reviewer**
Pernille Rydén (Recipient)
Center for Bachelor of Engineering Studies, Afdelingen for Forretningsudvikling

**Details**
Awarded date: 8 Aug 2016
Degree of recognition: International
Prize: Prizes, scholarships, distinctions

---

**Outstanding Reviewer Award**
David R. Fuhrman (Recipient)
Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering

**Description**
ASCE Journal of Waterway, Port, Coastal, and Ocean Engineering

**Details**
Awarded date: 2015
Degree of recognition: International
Prize: Prizes, scholarships, distinctions

---

**Paper selected for "Light and Culture: key papers on museum & art gallery lighting": Light and Culture: The latest must-reads from Lighting Research & Technology**
Anders Thorseth (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

**Description**
Paper selected for special mention in connection with the 5th Professional Lighting Design Convention

**Details**
Awarded date: 27 Oct 2015
Prize: Prizes, scholarships, distinctions

---

**Paper selected for "Light and Culture: key papers on museum & art gallery lighting": Light and Culture: The latest must-reads from Lighting Research & Technology: Paper selected for special mention in connection with the 5th Professional Lighting Design Convention**
Maumita Chakrabarti (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

**Details**
Awarded date: 27 Oct 2015
Prize: Prizes, scholarships, distinctions
P. Gorm-Petersen's Memorial Grant
Michael A. E. Andersen (Recipient)
Department of Electrical Engineering, Electronics

Details
Awarded date: 1991
Granting Organisations: Technical University of Denmark
Prize: Prizes, scholarships, distinctions

PhD Award Wind Energy Denmark 2016: Design optimization of jackets
Kasper Sandal (Recipient)
Department of Wind Energy

Description
Poster presentation and 5 minute oral presentation in the PhD session at Wind Energy Denmark Annual Event 2016.

Details
Awarded date: 27 Oct 2016
Prize: Prizes, scholarships, distinctions

PhD: Graduation with distinction
Robert Bitsche (Recipient)
Department of Wind Energy, Wind Turbines

Details
Awarded date: 2009
Granting Organisations: Vienna University of Technology, Austria
Prize: Prizes, scholarships, distinctions

PhD Scholarship: Interactive simulation: A new means for promoting occupational health and safety in the hospital sector.
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

Details
Awarded date: 2013
Granting Organisations: The Working Environment Research Fund
Prize: Prizes, scholarships, distinctions

Ph.D. student conference grant (Lipidforum) 1998
Charlotte Jacobsen (Recipient)
National Food Institute, Research Group for Bioactives – Analysis and Application

Details
Awarded date: 1998
Prize: Prizes, scholarships, distinctions

PhD Supervisor the year 2017
Tejs Vegge (Recipient)
Department of Energy Conversion and Storage, Atomic scale modelling and materials

Description
PhD Supervisor of the year at DTU

Details
Awarded date: 27 Oct 2017
Granting Organisations: Technical University of Denmark
Prize: Prizes, scholarships, distinctions

Poster: A quasi 3D computation of merging wakes using a boundary layer equation model approach
Helge Aagaard Madsen (Recipient)
Risø National Laboratory for Sustainable Energy, Wind Energy Division, Aeroelastic Design

**Details**
Awarded date: 14 Mar 2011  
*event:* EWEA Annual Event 2011  
*Prize:* Prizes, scholarships, distinctions

**Poster award**
Henrik Munch Roager (Recipient)  
National Food Institute, Division of Food Microbiology

**Description**
Best poster at 8th Danish Conference on Biotechnology and Molecular Biology

**Details**
Awarded date: 31 May 2013  
*Prize:* Prizes, scholarships, distinctions

**Poster: Gearbox loads caused by double contact simulated with HAWC2**
Torben J. Larsen (Recipient)  
Risø National Laboratory for Sustainable Energy, Wind Energy Division, Aeroelastic Design

**Details**
Awarded date: 14 Mar 2011  
*event:* EWEA Annual Event 2011  
*Prize:* Prizes, scholarships, distinctions

**Poster prize**
Daniel Ley (Recipient)  
Department of Systems Biology, Network Engineering of Eukaryotic Cell Factories, Novo Nordisk Foundation Center for Biosustainability, CHO Cell Line Engineering and Design

**Description**
Awarded the poster prize at 24th ESACT meeting in Barcelona in 2015.  
http://www.esact.org

**Details**
Awarded date: 2 Jun 2015  
*Granting Organisations:* European Society for Animal Cell Technology  
*Prize:* Prizes, scholarships, distinctions

**Poster Prize**
Anna Irene Vedel Sørensen (Recipient)  
National Veterinary Institute, Epidemiology

**Description**
Poster prize awarded for the poster: "Modelling spread of MRSA within a pig herd"

**Details**
Awarded date: 30 Mar 2017  
*Granting Organisations:* Society for Veterinary Epidemiology and Preventive Medicine  
*event:* 2017 Annual Meeting of SVEPM 2017, 29-31 March, Inverness, Scotland  
*Prize:* Prizes, scholarships, distinctions

**Poster prize: Best poster presentation**
Daniel Ley (Recipient)  
Department of Systems Biology, Network Engineering of Eukaryotic Cell Factories, Novo Nordisk Foundation Center for Biosustainability, CHO Cell Line Engineering and Design

**Description**
Poster prize awarded for best poster presentation at ECI Cell Culture Engineering XV in Palm Springs, CA, USA.

32 Broadway, Suite 314, New York, NY 10004
**Poul V. Andersen Foundation grant**

Arnab Halder (Recipient) & Suhith Hemanth (Recipient)
Department of Chemistry, NanoChemistry, Organic Chemistry, Department of Micro- and Nanotechnology

**Description**

The project “3D Nanocarbon chips for microsupercapacitors and ultrasensitive detection” by PhD students Arnab Halder from DTU Chemistry and Suhith Hemanth from DTU Nanotech has been selected as the winning project by the Poul V. Andersen Foundation and will receive a grant of 250,000 DKK. Only one project per year is awarded by the Poul V. Andersen Foundation.

---

**Power of Programming Conference 2014 Poster Prize**

Amalie Ribel-Madsen (Recipient)
Department of Systems Biology

**Description**

Munich, Germany, 13-15 March 2014

---

**Presentation Award: Prize for an excellent presentation at Novo Scholarship Symposium 2013**

Henrik Munch Roager (Recipient)
National Food Institute, Division of Food Microbiology

---

**Professor P. H. Bendtsen's Trafikforskningspris**

Michael Bruhn Barfod (Recipient)
Department of Transport, Decision Modelling

---

**Prof. P.H. Bendtsens Transport Research Award**

Mikkel Thorhauge (Recipient)
Department of Management Engineering, Transport DTU, Transport Modelling

---

**Project Management Journal Paper of the Year Award 2017**

Christian Thuesen (Recipient), Joana Geraldi (Recipient) & Anders Fogh Jensen (Recipient)
Department of Management Engineering, Engineering Systems
Two Associate Professors from the Engineering Systems Division, Christian Thuesen and Joana Geraldi, received the "Best Paper 2016"-Award from the Project Management Journal. The honoured publication "The projectification of everything: projects as a human condition" was written in collaboration with the philosopher Anders Jensen.

Details
Awarded date: 26 Jun 2017
Granting Organisations: Project Management Institute
event: International Research Network on Organizing by Projects, IRNOP 2017
Prize: Prizes, scholarships, distinctions

Promoting the occupational health services efforts in relation to technological changes in companies
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

Details
Awarded date: 2001
Granting Organisations: The Working Environment Research Fund
Prize: Prizes, scholarships, distinctions

REHVA Young Scientist Award
Gabriel Bekö (Recipient)
Department of Civil Engineering, Section for Indoor Environment

Details
Awarded date: 8 May 2010
Granting Organisations: Antalia, Turkey
Prize: Prizes, scholarships, distinctions

Reinholdt W. Jorck og Hustrus Fond - Travel Grant
Florian Thams (Recipient)
Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems

Details
Awarded date: 10 Nov 2016
Granting Organisations: Reinholdt W. Jorck og Hustrus Fond
Prize: Prizes, scholarships, distinctions

Roberto Chizzoline Memorial Poster Award 2017
Ana Carolina Lopes Antunes (Recipient)
National Veterinary Institute, Epidemiology

Details
Awarded date: 4 Oct 2017
Degree of recognition: International
Granting Organisations: European College of Veterinary Public Health
Prize: Prizes, scholarships, distinctions

Scholarship awarded by the H-STAR program
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

Details
Visiting Researcher Stanford University: Center for Design Research
Science without Borders - Brazil
Evandro Malanski (Recipient)
National Institute of Aquatic Resources, Centre for Ocean Life

Description
PhD scholarship

Second place at the international competition Descience
Pedro Parraguez Ruiz (Recipient)
Engineering Systems Group, Department of Management Engineering, Production and Service Management

Description
International competition staged at MIT Media Lab. Descience's purpose is to create science inspired design that can effectively communicate complex scientific concepts to the general public.

Selected by Editors: Microbial Community Assembly and Spatial Ecology (AEM Vol. 81(18)): Articles of Significant Interest Selected by the Editors from AEM
Sünje Johanna Pamp (Recipient)
National Food Institute, Research Group for Genomic Epidemiology

Description
The principles and mechanisms that govern multicellular community assembly are incompletely understood. Haagensen et al. (p. 6120 – 6128 [doi: 10.1128/AEM.01614-15]) integrated high-resolution time-lapse microscopy with ecological spatial pattern analysis to characterize microbial community assembly and spatial organization. Their work revealed that small multicellular clusters can move, interact with each other, and fuse to form symmetric patterns of larger multicellular assemblages. Knowledge about microbial spatial ecology is central to our understanding of the structure and function of environmental, host-associated, and synthetic microbial communities. Moreover, the observed formation of primordial cell groups and their aggregation to higher-level structures may be a model for studying the emergence of multicellular life.

Society of Electron Microscope Technology, Don Claugher Bursary
Louise Helene Søgaard Jensen (Recipient)
Center for Electron Nanoscopy, DTU Danchip

Details
Awarded date: 16 Dec 2013
Prize: Prizes, scholarships, distinctions

SPIE 2013 Green Photonics Award for Solid State Lighting and Displays
Carsten Dam-Hansen (Recipient), Dennis Dan Corell (Recipient), Anders Thorseth (Recipient) & Peter Behrensdorff Poulsen (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems
**Description**
The SPIE Green Photonics Award for Solid State Lighting and Displays recognizes outstanding contributions that enable efficient new light sources that will provide long-lived and economical illumination for human activities and information display. The paper Light quality and efficiency of consumer grade solid state products is recognized for pioneering contributions in the development of advanced technologies for the possible applications in infrared excited LED, lighting, lasers and displays.

**Details**
- Awarded date: 5 Feb 2013
- Granting Organisations: SPIE
- event: SPIE Photonics West : Green Photonics
- Prize: Prizes, scholarships, distinctions

**SPIE Scholarship in Optics and Photonics**
Viktoriia Babicheva (Recipient)
Department of Photonics Engineering, Plasmonics and Metamaterials

**Description**
Viktoriia E. Babicheva has been awarded a 2012 Scholarship by SPIE, the international society for optics and photonics for her potential contributions to the field of optics, photonics or related field.

**Details**
- Awarded date: 15 Jun 2012
- Prize: Prizes, scholarships, distinctions

**Teacher of the year at DTU**
Per Goltermann (Recipient)
Department of Civil Engineering, Section for Structural Engineering

**Description**
Teacher of the year at the Technical University of Denmark

**Details**
- Awarded date: 3 May 2013
- Degree of recognition: Regional
- Prize: Prizes, scholarships, distinctions

**The 2nd Annual Ted Brown and Hal Hendrick Young Investigators Award**
Signe Poulsen (Recipient)
Department of Management Engineering, Production and Service Management

**Description**
This award is for young investigators in recognition of their research and project efforts within the ODAM (Organizational Design And Management) field, and to support their career development in the ODAM area.

**Details**
- Awarded date: 20 Aug 2014
- Prize: Prizes, scholarships, distinctions

**The Best Oral Presentation’ at DTU Chemistry PhD symposium 2016**
Arnab Halder (Recipient)
Department of Chemistry, NanoChemistry, Organic Chemistry

**Details**
- Awarded date: 10 Nov 2016
- event: DTU Chemistry PhD Symposium 2016
- Prize: Prizes, scholarships, distinctions

**The best poster award of the conference: the 13th International Symposium on the Genetics of Industrial Microorganisms (GIM2016)**
Yaojun Tong (Recipient)
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds
The Capital Region of Denmark PhD Study Grant, Copenhagen, Denmark, 1 October 2014
Amalie Ribel-Madsen (Recipient)
Department of Systems Biology

The Danish Lighting Innovation Network travel grant 2013
Anders Thorseth (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

The Director Gorm-Petersen memorial grant to young scientist in promising development
Steffen Foss Hansen (Recipient)
Department of Environmental Engineering, Environmental Chemistry

The Idella Foundation Travel Scholarship
Pedro Parraguez Ruiz (Recipient)
Engineering Systems Group, Department of Management Engineering, Production and Service Management

The Idella Foundation Travel Scholarship
Frederik Ancker Agergaard (Recipient)
Department of Civil Engineering, Section for Geotechnics and Geology, Arctic Technology Centre, ARTEK

The Outstanding Paper Award 2009 (IABSE)
Jens Henrik Nielsen (Recipient)
Department of Civil Engineering, Section for Structural Engineering
Description
Together with A.B. Ølgaard and J.F. Olesen

Details
Awarded date: 22 Sep 2010
Prize: Prizes, scholarships, distinctions

The TIM Division Award for Best Reviewer 2017 (AOM)
Sabrina Woltmann (Recipient)
Department of Applied Mathematics and Computer Science, Department of Management Engineering, Technology and Innovation Management

Description
TIM reviewers that distinguished themselves for the timeliness and constructiveness of their comments. It is based both on authors’ evaluation and the TIM officers’ own reading of your reports.

Details
Awarded date: 8 Aug 2017
event: Academy of Management 2017
Prize: Prizes, scholarships, distinctions

Tom Bell Young Author Award
Matteo Villa (Recipient)
Department of Mechanical Engineering, Materials and Surface Engineering

Details
Awarded date: 21 Apr 2016
Degree of recognition: International
Granting Organisations: International Federation for Heat Treatment and Surface Engineering
event: 23rd IFHTSE Congress
Prize: Prizes, scholarships, distinctions

Travel grant
Theis Bo Rasmussen (Recipient)
Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems

Description
Recipient of Idella Foundation travel grant for external stay during PhD studies

Details
Awarded date: 2017
Granting Organisations: Foundation Idella
Prize: Prizes, scholarships, distinctions

Travel grant from Otto Mønsteds Fondation
Anders Thorseth (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Details
Awarded date: 2 Feb 2013
Granting Organisations: Otto Mønsteds Fond
Prize: Prizes, scholarships, distinctions

Travel grant from The Otto Mønsted Foundation
Anders Thorseth (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Details
Awarded date: 6 Oct 2017
Granting Organisations: Otto Mønsteds Fond
Prize: Prizes, scholarships, distinctions
Travel stipend for participation in CIE 2014 conference
Anders Thorseth (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Details
Awarded date: 5 Apr 2014
Granting Organisations: Otto Mønsteds Fond
Prize: Prizes, scholarships, distinctions

Travel stipend for participation in CIE 2015 conference
Anders Thorseth (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Details
Awarded date: 30 May 2015
Degree of recognition: National
Granting Organisations: Otto Mønsteds Fond
Prize: Prizes, scholarships, distinctions

Travel stipend from Otto Mønsted Foundation to participate in Photonics West 2012
Anders Thorseth (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Details
Awarded date: 8 Jan 2012
Degree of recognition: National
Granting Organisations: Otto Mønsteds Fond
Prize: Prizes, scholarships, distinctions

TRAVISIONS COMPETITION 2016: Second place in Rail
Fabrizio Cerreto (Recipient)
Traffic modelling and planning, Department of Management Engineering

Description
The student competition aimed at university and technical institute students pursuing bachelor degrees and higher. Initially, participants were invited to submit an abstract under one of the TRA2016 conference topics: Environment – Decarbonisation, Sustainability and Energy Efficiency Vehicles & Vessels Technologies, Design and Production Urban and Long-Distance People Mobility - Systems and Services Freight Transport and Logistics Safe, Secure and Resilient Transport Systems Transport Infrastructures Human Factors, Socio-Economics and Foresights Automation and Connectivity Enabling Environment for Innovation Implementation All participants were invited to register their ideas and submit a Title and a short abstract by January 2016. They also had until the end of January to develop and submit their idea, which was meant to be a report based on the Final Project Template accompanied by any supporting documents. This was followed by an Evaluation of Ideas period during which a judging panel determined which were the top three ideas per mode. Some 130 students participated, submitting a total of 107 student projects from 14 different EU countries and 35 different universities. Here are the three winners of each category.

http://www.travisions.eu

Details
Awarded date: 18 Apr 2016
Degree of recognition: International
Granting Organisations: European Commission
event: 6th Transport Research Arena
Prize: Prizes, scholarships, distinctions

Trophees Performance Veolia Environment
Aikaterini Spiliotopoulou (Recipient)
Department of Environmental Engineering, Water Technologies

Details
Awarded date: 2013
Granting Organisations: VEOLIA
Prize: Prizes, scholarships, distinctions

Venture Cup
Suhith Hemanth (Recipient)
Department of Micro- and Nanotechnology

Description
Finalist in GreenTech

Details
Awarded date: 26 Jan 2017
Degree of recognition: National
Prize: Prizes, scholarships, distinctions

Veolia Trophees Performance
Peter Alexander Stentoft (Recipient)
Department of Applied Mathematics and Computer Science, Dynamical Systems

Details
Awarded date: 5 Dec 2017
Degree of recognition: International
Granting Organisations: VEOLIA
Prize: Prizes, scholarships, distinctions

Winner of Abstract award held by Danish Nutrition Society
Ioanna Nissen (Recipient)
National Food Institute, Research Group for Risk-Benefit

Description
“Common genetic variation in CYP2R1 and GC predicts vitamin D status in late summer, after food-fortification and after UVB irradiation in the Danish population”

Details
Awarded date: 2015
Granting Organisations: SFE
Prize: Prizes, scholarships, distinctions

Winner of Agro Business Park’s Innovation competition 2014
Charlotte Jacobsen (Recipient)
National Food Institute, Division of Industrial Food Research

Details
Awarded date: Nov 2014
Granting Organisations: AgroPark, Denmark
Prize: Prizes, scholarships, distinctions

Winner of Copenhagen Congress and Event Award 2017
Charlotte Jacobsen (Recipient)
National Food Institute, Research Group for Bioactives – Analysis and Application

Description
Winner as the best congress host for congresses below 1000 participants for the 22nd International Seaweed Symposium, Copenhagen, June 2016.

Details
Awarded date: Jun 2016
Granting Organisations: International Seaweed Symposium
Prize: Prizes, scholarships, distinctions

Winner of The Young Investigator Award at the 2014 Vitamin D and Human Health meeting –from the gamete to the grave
Ioanna Nissen (Recipient)
Description
"Real-life use of Vitamin D3-fortified bread and milk during winter season: The effect of CYP2R1 and GC genes on 25-Hydroxyvitamin D concentrations in Danish families"

Details
Awarded date: 2014
Prize: Prizes, scholarships, distinctions

Winner of Trainee Travel Award for the 18th Workshop on Vitamin D
Ioanna Nissen (Recipient)
National Food Institute, Research Group for Risk-Benefit

Description
"Common CYP2R1 and GC gene variants are determinants of 25-hydroxyvitamin D concentration after ultraviolet-B irradiation and after vitamin D3-fortification”.

Details
Awarded date: 2015
Prize: Prizes, scholarships, distinctions

Workspace Design II: Development of a new dialogue-oriented design practice
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

Description
Three year research project

Details
Awarded date: 2010
Granting Organisations: The Working Environment Research Fund
Prize: Prizes, scholarships, distinctions

Workspace Design I: User involvement and work life integration into technological and organizational change processes.
Ole Broberg (Recipient)
Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

Description
Three year research project

Details
Awarded date: 2005
Granting Organisations: The Working Environment Research Fund
Prize: Prizes, scholarships, distinctions

Yaglou Award
Gabriel Bekö (Recipient)
Department of Civil Engineering, Section for Indoor Climate and Building Physics

Details
Awarded date: Jul 2014
Degree of recognition: International
Granting Organisations: International Society of Indoor Air Quality and Climate – ISIAQ
Prize: Prizes, scholarships, distinctions

YOUNG EPIZONE Poster Prize
Ana Carolina Lopes Antunes (Recipient)
National Veterinary Institute, Section for Epidemiology

Description
Poster Prize at EPIZONE 8th Annual meeting
**Details**

Awarded date: 24 Sep 2014  
Prize: Prizes, scholarships, distinctions

**Young Scientist Award**  
Andrea Crovetto (Recipient)  
Department of Micro- and Nanotechnology, Silicon Microtechnology

**Details**

Awarded date: 4 May 2016  
Granting Organisations: European Materials Research Society  
Prize: Prizes, scholarships, distinctions

**Young Scientist Award: 6th ACE-X Conference, Istanbul, Turkey 2012**  
Michael Wenani Nielsen (Recipient)  
Department of Mechanical Engineering, Manufacturing Engineering

**Description**

For his contribution:  
Prediction of internal strains during curing, post-curing and demoulding of thick glass/epoxy composite – Analysis of different constitutive models  

**Details**

Awarded date: 4 Jul 2012  
Prize: Prizes, scholarships, distinctions

**Press clippings:**

**Nytårsmad**  
Sisse Fagt  
11/12/2017  
National Food Institute, Division of Risk Assessment and Nutrition

**Media coverage (1)**

**Hvad spiser danskerne nytårsaften?**  
11/12/2017  
Jyllandsposten (National), Denmark, Print  
Simon Kudal  
Sisse Fagt  
National Food Institute, Division of Risk Assessment and Nutrition  
Press / Media

**Viser nyt studie virkelig, at kvinder er bedre til at køre bil end mænd?**  
Laila Marianne Martinussen  
30/11/2017  
Department of Management Engineering, Technology and Innovation Management, Transport DTU

**Media contribution (1)**

**Viser nyt studie virkelig, at kvinder er bedre til at køre bil end mænd?**  
30/11/2017  
Mandag Morgen (National), Denmark, Web  
Rasmus Kern-Jepsersen og Andreas Grimstrup Ragn  
https://www.mm.dk/tjekdet/artikel/viser-nyt-studie-virkelig-at-kvinder-er-bedre-til-at-koere-bil-end-maend  
Laila Marianne Martinussen  
Press / Media

**Video and Blog-post / interview at sciencenews.dk on iimena project (NNF Challenge Grant)**  
Tilmann Weber  
24/11/2017
Description
Video on the NNF Challenge Grant project "Integration of Informatics and Metabolic Engineering for the discovery of Novel Antibiotics"

Subject
Antibiotics, antimicrobials
Novel screening technologies for antimicrobials
competition-based adaptive laboratory evolution (co-ALE)
Genome Mining
Metabolic Engineering
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds

Media coverage (1)

Struggle between good and bad bacteria reveals antibiotics of the future
24/11/2017
sciencenews.dk (National), Denmark, Web
Morten Busch
Video: 3:25
Tilmann Weber

Relations
Research outputs:
Recent development of computational resources for new antibiotics discovery
Towards systems metabolic engineering of streptomycetes for secondary metabolites production
The evolution of genome mining in microbes – a review
Projects:
Integration of Informatics and Metabolic Engineering for the discovery of Novel Antibiotics

Press / Media

Når gulvarme giver brændte naller og kolde tæer
Michael Mast
21/11/2017
Center for Bachelor of Engineering Studies, Afdelingen for Byggeri og Infrastruktur

Media contribution (1)

Dansk VVS
21/11/2017
Dansk VVS (National), Denmark, Print
Michael Mast
Michael Mast
Press / Media

Nyt batteri kan oplades på ét minut og give 800 km rækkevidde
Tejs Vegge
16/11/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Media contribution (1)

Nyt batteri kan oplades på ét minut og give 800 km rækkevidde
16/11/2017
www.ing.dk, Denmark, Web
https://ing.dk/artikel/nyt-batteri-kan-oplades-paa-minut-give-800-km-rækkevidde-208620
Tejs Vegge
Press / Media

Researchers hunt for tomorrow's antimicrobial agents in the Christiania topsoil
Pep Charusanti
13/11/2017
Researchers hunt for tomorrow’s antimicrobial agents in the Christiania topsoil
13/11/2017
DTU (International), Denmark, Web
Anne Lykke
Description of research done by the NBC group. Written for a general, non-scientific audience. Pep Charusanti
Press / Media

København bruger ti gange så meget på skolerenoveringer som Skanderborg
Per Anker Jensen
12/11/2017

Description

Artiklerne “Tjek din kommune: Så meget har kommunerne brugt på at renovere og bygge nye skoler” og ”København bruger ti gange så meget på skolerenoveringer som Skanderborg.”, begge med citater fra Per Anker Jensen baseret på TV-interview med Per, blev bragt på dr.dk den 18. november i tilknytning til hovedhistorie i TV-avisen kl. 18:30.

Subject

Artiklerne “Tjek din kommune: Så meget har kommunerne brugt på at renovere og bygge nye skoler” og ”København bruger ti gange så meget på skolerenoveringer som Skanderborg.”, begge med citater fra Per Anker Jensen baseret på TV-interview med Per, blev bragt på dr.dk den 18. november i tilknytning til hovedhistorie i TV-avisen kl. 18:30.

Department of Management Engineering, Management Science, Implementation and Performance Management

Media contribution (1)

København bruger ti gange så meget på skolerenoveringer som Skanderborg
12/11/2017
dr.dk, Denmark
Artiklerne “Tjek din kommune: Så meget har kommunerne brugt på at renovere og bygge nye skoler” og ”København bruger ti gange så meget på skolerenoveringer som Skanderborg.”, begge med citater fra Per Anker Jensen baseret på TV-interview med Per, blev bragt på dr.dk den 18. november i tilknytning til hovedhistorie i TV-avisen kl. 18:30.
Per Anker Jensen
Press / Media

Tjek din kommune: Så meget har kommunerne brugt på at renovere og bygge nye skoler
Per Anker Jensen
12/11/2017 → 12/11/2017

Description

Artiklerne “Tjek din kommune: Så meget har kommunerne brugt på at renovere og bygge nye skoler” og ”København bruger ti gange så meget på skolerenoveringer som Skanderborg.”, begge med citater fra Per Anker Jensen baseret på TV-interview med Per, blev bragt på dr.dk den 18. november i tilknytning til hovedhistorie i TV-avisen kl. 18:30.
Artiklerne ”Tjek din kommune: Så meget har kommunerne brugt på at renovere og bygge nye skoler” og ”København bruger ti gange så meget på skolerenoveringer som Skanderborg.”, begge med citater fra Per Anker Jensen baseret på TV-interview med Per, blev bragt på dr.dk den 18. november i tilknytning til hovedhistorie i TV-avisen kl. 18:30.

Department of Management Engineering, Management Science, Implementation and Performance Management

Media contributions (2)

Tjek din kommune: Så meget har kommunerne brugt på at renovere og bygge nye skoler
12/11/2017
dr.dk, Denmark
Artiklerne ”Tjek din kommune: Så meget har kommunerne brugt på at renovere og bygge nye skoler” og ”København bruger ti gange så meget på skolerenoveringer som Skanderborg.”, begge med citater fra Per Anker Jensen baseret på TV-interview med Per, blev bragt på dr.dk den 18. november i tilknytning til hovedhistorie i TV-avisen kl. 18:30.
Per Anker Jensen
Department of Management Engineering, Management Science, Implementation and Performance Management

Masser af nedslidte skoler i hele landet
Per Anker Jensen
11/11/2017
Department of Management Engineering, Management Science, Implementation and Performance Management

Media contribution (1)

Masser af nedslidte skoler i hele landet
11/11/2017
Denmark
Per Anker Jensen
Press / Media

Nyt projekt skal hjælpe områder, der er truet af oversvømmelse
Morten Andreas Dahl Larsen
03/11/2017
Department of Management Engineering, Systems Analysis

Media contribution (1)

Nyt projekt skal hjælpe områder, der er truet af oversvømmelse
03/11/2017
dr.dk (National), Denmark, Web
Morten Andreas Dahl Larsen
Press / Media

The Race to Build Better Batteries
Tejs Vegge
01/11/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage
Media contribution (1)

The Race to Build Better Batteries
01/11/2017
Foresight - Climate & Energy Business, Denmark, Print
Tejs Vegge
Press / Media

11 veje udstyres med stærkasser
Laila Marianne Martinussen
28/10/2017
Department of Management Engineering, Technology and Innovation Management, Transport DTU

Media contribution (1)

11 veje udstyres med stærkasser
28/10/2017
Tv2 news (National), Denmark, Television
1 minute, 17 seconds
Laila Marianne Martinussen
Press / Media

Ugens podcast: Dansk rumudstyr bidrog til årets astronyhed
Søren Brandt
27/10/2017
National Space Institute, Astrophysics and Atmospheric Physics

Media coverage (1)

Ugens podcast: Dansk rumudstyr bidrog til årets astronyhed
27/10/2017
Videnskab.dk (National), Denmark, Web
Jais Baggestrøm Koch
http://videnskab.dk/teknologi-innovation/ugens-podcast-dansk-rumudstyr-opdagede-aarets-astro-nyhed
Søren Brandt

Relations
Research outputs:
INTEGRAL Detection of the First Prompt Gamma-Ray Signal Coincident with the Gravitational-wave Event GW170817
Multi-messenger Observations of a Binary Neutron Star Merger
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO
Press / Media

Sådan får du dit batteri til at holde længere
Tejs Vegge
24/10/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Media contribution (1)

Sådan får du dit batteri til at holde længere
24/10/2017
www.dr.dk, Denmark, Web
Tejs Vegge
Press / Media

EKKO med fokus på at torsk spiser sortmundet kutling
Mads Christoffersen
23/10/2017

Description
Deltagelse i Naturprogrammet EKKO sendt på TV2/Bornholm d. 23/10 - 2017

Subject
Gavner den sortmundede kutling de rovfisk der lever i havet omkring Bornholm, med speciel fokus på torsk.
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management

Media contribution (1)

EKKO
23/10/2017
TV2/Bornholm (National), Denmark, Television
Marie Møhl
45 min
http://play.tv2bornholm.dk/?area=specifikTV&serienavn=ekko
Naturprogram
Mads Christoffersen
Press / Media

Ugens profil: "Vi fejrer en milepæl i astronomien"
Søren Brandt
19/10/2017
National Space Institute, Astrophysics and Atmospheric Physics

Media coverage (1)

Ugens profil: "Vi fejrer en milepæl i astronomien"
19/10/2017
Magisterbladet (National), Denmark, Web
Troels Kølln
Søren Brandt

Relations
Research outputs:
INTEGRAL Detection of the First Prompt Gamma-Ray Signal Coincident with the Gravitational-wave Event GW170817
Multi-messenger Observations of a Binary Neutron Star Merger
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO
Activities:
INTEGRAL 2017
Press / Media

Vi skal stadig blive klogere på vindmøller (We still need to learn more about wind turbines)
Niels-Erik Clausen & Tom Nervil
17/10/2017

Description

Subject
Noise from wind turbines
Støj fra vindmøller
Department of Micro- and Nanotechnology, Office for Research and Relations, Department of Wind Energy, Integration & Planning

Media contribution (1)

Vi skal stadig blive klogere på vindmøller
17/10/2017
Bornholms Tidende (Regional), Denmark, Print
Niels-Erik Clausen and Tom Nervil
1 page
Niels-Erik Clausen & Tom Nervil
Einstein havde ret
Søren Brandt
17/10/2017
National Space Institute, Astrophysics and Atmospheric Physics, Niels Bohr Institute

Media coverage (1)

Einstein havde ret
17/10/2017
BT (National), Denmark, Print
Lars Lindevall
side 16-17
Søren Brandt
Niels Bohr Institute

Relations
Research outputs:
INTEGRAL Detection of the First Prompt Gamma-Ray Signal Coincident with the Gravitational-wave Event GW170817
Multi-messenger Observations of a Binary Neutron Star Merger
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

Ny lovgivning om regnvand er nødvendig
Katrine Nielsen
17/10/2017
Department of Environmental Engineering, Urban Water Systems

Media contribution (1)

Ny lovgivning om regnvand er nødvendig
17/10/2017
Denmark, Web
http://www.dtu.dk/Nyheder/Nyhed?id=b934fbda-42f7-4669-b8bf-d97bee3ec830
Katrine Nielsen
Press / Media

Dansk røntgendetektor på rumfartøj står bag historisk fund
Søren Brandt
16/10/2017
National Space Institute, Astrophysics and Atmospheric Physics

Media coverage (1)

Dansk røntgendetektor på rumfartøj står bag historisk fund
16/10/2017
Politiken (National), Denmark, Web
Ritzau
http://politiken.dk/viden/Viden/art6162084/Dansk-r%C3%B8ntgendetektor-p%C3%A5-rumfart%C3%B8j-st%C3%A5r-bag-historisk-fund
Søren Brandt

Relations
Research outputs:
INTEGRAL Detection of the First Prompt Gamma-Ray Signal Coincident with the Gravitational-wave Event GW170817
Multi-messenger Observations of a Binary Neutron Star Merger
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO
'Menneskeheden har aldrig set noget lignende': Forskere afslører banebrydende observationer
Søren Brandt & Allan Hornstrup
16/10/2017
National Space Institute, Astrophysics and Atmospheric Physics

Mediacoverage (1)

Menneskeheden har aldrig set noget lignende: Forskere afslører banebrydende observationer
16/10/2017
Ekstra Bladet (National), Denmark, Web
Benjamin Krogh
Søren Brandt & Allan Hornstrup
National Space Institute, Astrophysics and Atmospheric Physics

Relations
Research outputs:
INTEGRAL Detection of the First Prompt Gamma-Ray Signal Coincident with the Gravitational-wave Event GW170817
Multi-messenger Observations of a Binary Neutron Star Merger
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

Sensationel tyngdebølgemåling åbner nyt kapitel i udforskningen af rummet
Søren Brandt
16/10/2017
National Space Institute, Astrophysics and Atmospheric Physics

Mediacoverage (1)

Sensationel tyngdebølgemåling åbner nyt kapitel i udforskningen af rummet
16/10/2017
Videnskab.dk, Denmark
http://videnskab.dk/naturvidenskab/sensationel-tyngdebogemaaling-aabner-nyt-kapitel-i-udforskningen-af-rummet
Søren Brandt

Relations
Research outputs:
INTEGRAL Detection of the First Prompt Gamma-Ray Signal Coincident with the Gravitational-wave Event GW170817
Multi-messenger Observations of a Binary Neutron Star Merger
Localization and Broadband Follow-Up of the Gravitational-Wave Transient GW150914
Supplement: "Localization And Broadband Follow-Up of the Gravitational-Wave Transient GW150914" (2016, Apjl, 826, L13)
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

Astronomer jubler over den første observation af sammenstød mellem to neutronstjerner
Søren Brandt
16/10/2017
National Space Institute, Astrophysics and Atmospheric Physics, Niels Bohr Institute

Mediacoverage (1)

Astronomer jubler over den første observation af sammenstød mellem to neutronstjerner
16/10/2017
Ingeniøren (National), Denmark, Web
Jens Ramskov
INTEGRAL Detection of the First Prompt Gamma-Ray Signal Coincident with the Gravitational-wave Event GW170817
Multi-messenger Observations of a Binary Neutron Star Merger

Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO
The JEM-X X-ray monitor on INTEGRAL

DTU researchers involved in historic discovery in outer space
Søren Brandt & Jérôme Chenevez
16/10/2017

The INTEGRAL space craft has measured signals originating from a collision of two neutron stars. For the first time ever, gravitational waves and gamma rays have been recorded from the same event. With the discovery of this phenomenon, which Einstein predicted, and for which the Nobel prize was recently awarded, the DTU researchers have secured their place in history.

Subject
Gravitational waves
National Space Institute, Astrophysics and Atmospheric Physics

Hummere i Lillebælt
Mads Christoffersen
16/10/2017

Der er observeret flere hummere i Lillebælt, hvad skyldes det?
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management

Media contribution (1)

Hummere i Lillebælt
Sofie Myhre
16/10/2017

TV2/Fyn (Regional), Denmark, Television
Morgendagens ledere har styr på faciliteterne
Per Anker Jensen
04/09/2017

Description
Artiklen "Morgendagens ledere har styr på faciliteterne" med billede af Per Anker Jensen og primært baseret på interview med Per indgik i kampagnen Analyse og Helse, som udkom med Børsen den 4 september 2017.

Subject
Artiklen "Morgendagens ledere har styr på faciliteterne" med billede af Per Anker Jensen og primært baseret på interview med Per indgik i kampagnen Analyse og Helse, som udkom med Børsen den 4 september 2017.

Department of Management Engineering, Management Science, Implementation and Performance Management

Media contribution (1)

Morgendagens ledere har styr på faciliteterne
04/09/2017
Børsen, Kampagnetillæg Analyse og Helse, Denmark
Per Anker Jensen
Press / Media

Bornholm: Flere bassiner har problemer med vandkvalitet
Henrik Rasmus Andersen
24/07/2017
Department of Environmental Engineering, Water Technologies

Media contribution (1)

Bornholm: Flere bassiner har problemer med vandkvalitet
24/07/2017
Danmarks Radio (National), Denmark, Television
http://www.dr.dk/nyheder/regionale/bornholm/bornholm-flere-bassiner-har-problemer-med-vandkvalitet
Henrik Rasmus Andersen
Press / Media

Fire sandheder om vandet i poolen: Nej, det er hverken kloren der lugter eller svier i øjnene
Henrik Rasmus Andersen
19/07/2017

Description

Subject
swimming pool; chlorine
Department of Environmental Engineering, Water Technologies

Media contribution (1)

Fire sandheder om vandet i poolen: Nej, det er hverken kloren der lugter eller svier i øjnene
19/07/2017
TV2 (National), Denmark, Web
Marie Kjempff
2p
Det er højsæson for plasken og sjasken i swimmingpools og badebassiner. Men hvad er det egentlig, der foregår under vandoverfladen? Er det for eksempel farligt at sluge poolvandet? Og hvad er det egentlig, der svier sådan i øjnene?
Henrik Rasmus Andersen
Press / Media
Hot topics fra international innovationsekspert
Kasper Edwards
26/06/2017
Department of Management Engineering, Management Science, Implementation and Performance Management

Media coverage (1)

Hot topics fra international innovationsekspert
26/06/2017
Dansk Industri Nyhedsbrev (National), Denmark, Web
Liv Thøger
http://di.dk/Virksomhed/Innovation/innovationforside/myhederinnovation/Pages/Hot-topics-fra-international-innovationsekspert.aspx
Kasper Edwards
Press / Media

Europa får helt nyt supervindue mod rummet
Søren Brandt
22/06/2017
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Europa får helt nyt supervindue mod rummet
22/06/2017
Berlingske (National), Denmark, Web
Lars Henrik Aagaard
Søren Brandt
Press / Media

Profitmål stresser ansatte
Kasper Edwards
16/06/2017
Department of Management Engineering, Management Science, Implementation and Performance Management

Media coverage (1)

Profitmål stresser ansatte
16/06/2017
Magisterbladet (National), Denmark, Web
Martin Ejertsen
http://magisterbladet.dk/magisterbladet/2017/062017/062017_p32
Kasper Edwards

Relations
Projects:
Sammenhænge mellem produktivitet og psykisk arbejdsmiljø
Press / Media

Elektriske fly
Tejs Vegge
16/06/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Media contribution (1)

Elektriske fly
16/06/2017
DR2 Dagen, Denmark, Television
Tejs Vegge
Press / Media
Media coverage (1)

SLÅPP TAGET!
Kasper Edwards
14/06/2017
Department of Management Engineering, Management Science, Implementation and Performance Management

SLÅPP TAGET!
14/06/2017
chefstidningen (International), Sweden, Print
Jennie Aquilonius
http://chefstidningen.se/
Kasper Edwards

Relations
Projects:
Udvikling af kvalitet, samarbejde, aktivitet samt relationel koordination på operationsgangen, Rigshospitalets, Hjertecenter

Press / Media

Små, billige nanosatellitter sætter dansk rumforskning på verdenskortet
Jens Olaf Pepke Pedersen
09/06/2017

Description
Studerende på flere danske universiteter bygger selv nanosatellitter, der både er billige og nemme at opsende. De små satellitter har stort potentiale, fortæller en seniorforsker fra DTU Space.
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Små, billige nanosatellitter sætter dansk rumforskning på verdenskortet
09/06/2017
Jyllands Posten (National), Denmark, Web
Louise Schou Drivsholm
http://jyllands-posten.dk/nyviden/ECE9634479/smaa-billige-nanosatellitter-saetter-dansk-rumforskning-paa-verdenskortet/
Jens Olaf Pepke Pedersen
Press / Media

Tang
Susan Løvstad Holdt
08/06/2017
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

Tang
08/06/2017
Dansk Kemi, Web
Katrine Meyn
Susan Løvstad Holdt
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

Nanosatellitter sætter dansk rumforskning på verdenskortet
Jens Olaf Pepke Pedersen
06/06/2017
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Nanosatellitter sætter dansk rumforskning på verdenskortet
06/06/2017
Ny metode kan give hurtigere måling af antibiotikaresistens i tarmen
Eric van der Helm
01/06/2017
Novo Nordisk Foundation Center for Biosustainability, Bacterial Synthetic Biology

Media contribution (1)

Ny metode kan give hurtigere måling af antibiotikaresistens i tarmen
01/06/2017
Dansk Kemi (National), Denmark, Print
Eric van der Helm

Relations
Research outputs:
Rapid resistome mapping using nanopore sequencing
Press / Media

Knastørre facts om ventilation
Michael Mast
01/06/2017
Center for Bachelor of Engineering Studies, Afdelingen for Byggeri og Infrastruktur

Media contribution (1)

Knastørre facts om ventilation
01/06/2017
Dansk VVS (National), Denmark, Print
Tekniq
Michael Mast
Press / Media

Ekspert: Sådan overlever en bygd
Kåre Hendriksen
30/05/2017
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Ekspert: Sådan overlever en bygd
30/05/2017
KNR (National), Greenland, Web
Thomas Munk Veirum, Sara K. Jakobsen
http://knr.gl/da/nyheder/sådan-overlever-en-bygd
Kåre Hendriksen
Press / Media

Erhvervsudvikling i bygderne
Kåre Hendriksen
30/05/2017
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Erhvervsudvikling i bygder
30/05/2017
Nyt OUH: Chefflugt kan blive dyrt
Christian Thuesen
29/05/2017

Description
Expert interview
Department of Management Engineering, Engineering Systems

Media contribution (1)

Nyt OUH: Chefflugt kan blive dyrt
29/05/2017
TV2 Fyn (Regional), Denmark, Television
Christian Thuesen
Press / Media

Koldt LED-lys truer nordisk hygge
Anders Thorseth & Carsten Dam-Hansen
26/05/2017
Department of Photonics Engineering, Diode Lasers and LED Systems

Media contribution (1)

Koldt LED-lys truer nordisk hygge
26/05/2017
DYNAMO (National), Denmark, Print
Lotte Krull
http://www.dtu.dk/om-dtu/nyheder-og-presse/dynamo1/2017/05/koldt-led-lys-truer-nordisk-hygge?id=ff8776ff-c85a-431f-83a3-06be858c69c7
Skandinaviens forkærlighed for det varme lys står til at tabe i den internationale udvikling af LED-lys. Forbrugerne bør råde op, mener forfatteren Tor Nørretranders.
Anders Thorseth & Carsten Dam-Hansen
Department of Photonics Engineering, Diode Lasers and LED Systems

Relations
Projects:
Center for LED metrology
Warm or Cold, Lights influence on thermal comfort
Global Test of SSL Products - IEA-4E-SSL
Activities:
LED Conference 2016
Press / Media

Is there too little control with direct-to-consumer genetics tests (Danish language only)
Lasse Westergaard Folkersen
19/05/2017

Description
Debate between Lasse Folkersen and Thomas Ploug on the uses and potential pitfalls of modern direct-to-consumer genetics, and their analysis on sites such as www.impute.me
Department of Bio and Health Informatics, Integrative Systems Biology

Media contribution (1)

Is there too little control with direct-to-consumer genetics tests (Danish language only)
19/05/2017
videnskab-dk, Denmark
ais Baggestrøm Koch
https://soundcloud.com/videnskabdk/slar-forbrugergentest-plat-pa-sygdomsangste-mennesker
Debate between Lasse Folkersen and Thomas Ploug on the uses and potential pitfalls of modern direct-to-consumer genetics, and their analysis on sites such as www.impute.me
Lasse Westergaard Folkersen
Department of Bio and Health Informatics, Integrative Systems Biology
Press / Media

Rumforskning: Han skal sikre astronauter en returbillet fra Mars
Christopher R. Graves
17/05/2017

Description
Article in Jyllands Posten about Christopher Graves's involvement in a NASA project that will send a CO2 electrolyzer to Mars on the rover in 2020.
Following is the link to the article. A PDF of the full could be uploaded if there was an attachment option.
Applied Electrochemistry, Department of Energy Conversion and Storage

Media coverage (1)

Rumforskning: Han skal sikre astronauter en returbillet fra Mars
17/05/2017
Jyllands Posten (National), Denmark, Print
Lars Dalsgaard
Christopher R. Graves
Press / Media

Sjældent fænomen: Vindmøller kløver skyer over Nordsøen
Charlotte Bay Hasager
15/05/2017

Description
Forklaringen på fænomenet skal findes i den perfekte kombination af varm og fugtig luft, et koldt hav og hård vind fra sydvest.
Department of Wind Energy, Meteorology & Remote Sensing

Media contribution (1)

dr.dk
15/05/2017
Denmark
http://www.dr.dk/nyheder/viden/naturvidenskab/sjaeldent-faenomen-vindmoeller-kloever-skyer-over-nordsoen
Charlotte Bay Hasager
Press / Media

Kühle Folgen der Schmelze
Jens Olaf Pepke Pedersen
13/05/2017

Description
Interview om Arktis med Neues Deutschland

Subject
Klimaændringer i Arktis
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Kühle Folgen der Schmelze
13/05/2017
Neues Deutschland (National), Germany, Print
Andreas Knudsen
Jens Olaf Pepke Pedersen
Press / Media

Web analytics server gives access to medical genetics information (Danish language only)
Lasse Westergaard Folkersen
08/05/2017
Department of Bio and Health Informatics, Integrative Systems Biology

Media coverage (1)

Medierel hjemmeside afslører, hvilke sygdomme du er disponeret for
08/05/2017
Videnskab-dk, Denmark
Anne Ringgaard
http://kontroversiel-hjemmeside-afslorer-hvilke-sygdomme-du-er-disponeret-for
Lasse Westergaard Folkersen
Department of Bio and Health Informatics, Integrative Systems Biology
Press / Media

Ugens Podcast: Årets Danske Forskningsresultat
Jens Olaf Pepke Pedersen
05/05/2017

Description
I denne uges podcast kan du høre dialeker fra hele landet, og hvad de siger om os. Du kan også møde vinderne af Årets Danske Forskningsresultat, der fortæller om deres klimaprojekt.
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Årets Danske Forskningsresultat
05/05/2017
Videnskab.dk (National), Denmark, Radio
30 min
http://videnskab.dk/kultur-samfund/ugens-podcast-vores-dialekter-sladrer-om-samfundet
Jens Olaf Pepke Pedersen
Press / Media

Batterirevolutionen lader vente på sig
Tejs Vegge
03/05/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Media contribution (1)

Batterirevolutionen lader vente
03/05/2017
Nordea Invest Magasin, Denmark, Web
http://nordeainvestmagasinet.dk/artikler/batterirevolutionen-lader-vente-pa-sig
Tejs Vegge
Press / Media

Europractice Activity Report 2016
Pere Llimos Muntal
01/05/2017

Description
Activity report from Europractice during 2016.

Subject
Integrated circuit design projects done using Europractice during 2016.
Media contribution (1)

Europractice Activity Report 2016
01/05/2017
Denmark
Pere Limos Muntal
Press / Media

Vindmøller kløver skyerne over Nordsøen
Charlotte Bay Hasager
01/05/2017
Department of Wind Energy, Meteorology & Remote Sensing

Media contribution (1)

DTU Avisen
01/05/2017
Denmark
http://emagstudio.win.dtu.dk/DTU-avisen/DTUavisen1705/#/10/24
Charlotte Bay Hasager
Press / Media

In Greenland's northernmost village, a melting Arctic threatens the age-old hunt
Kåre Hendriksen
30/04/2017
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

In Greenland's northernmost village, a melting Arctic threatens the age-old hunt
30/04/2017
Washington Post (International), United States, Print
Chris Mooney
6 p.
After being displaced from their native village, a Greenlandic Inugguit community faces a new threat: climate change
Kåre Hendriksen
Press / Media

Description
After being displaced from their native village, a Greenlandic Inugguit community faces a new threat: climate change
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

In Greenland's northernmost village, a melting Arctic threatens the age-old hunt
30/04/2017
Washington Post (International), Washington, United States, Print
Chris Mooney
6 p.
After being displaced from their native village, a Greenlandic Inugguit community faces a new threat: climate change
Kåre Hendriksen
Press / Media

Forskningens døgn - forskning for fremtiden
Lars Pilgaard Mikkelsen
29/04/2017
Forskningens døgn i Roskilde 2017

Event: Exhibition

Media coverage (1)

Forskningens døgn i Roskilde
29/04/2017
Kanal Roskilde (Local), Denmark, Television
29 min.
https://www.youtube.com/watch?v=hVh8FuWcy-k&t=880s
Lars Pilgaard Mikkelsen
Press / Media

Kvantemekanik skal være allemandseje
Ulrich Busk Hoff
29/04/2017
Quantum Physics and Information Techology, Department of Physics

Media coverage (1)

Kvantemekanik skal være allemandseje
29/04/2017
Ingeniøren (National), Denmark, Web
Kristian Balle Ravn
https://ing.dk/artikel/kvantemekanik-skal-vaere-allemandseje-197695
Ulrich Busk Hoff
Press / Media

En deprimerende konklusion er årets danske forskningsresultat
Jens Olaf Pepke Pedersen
28/04/2017

Description
Danskerne har talt: En noget deprimerende konklusion om fremtidens globale klima er valgt til årets danske forskningsresultat.
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

En deprimerende konklusion er årets danske forskningsresultat
28/04/2017
Berlingske (National), Denmark, Web
Lars Henrik Aagaard
Jens Olaf Pepke Pedersen
Press / Media

Let adgang til satellitdata skal skabe grundlag for nye virksomheder
Jens Olaf Pepke Pedersen
27/04/2017

Description
I et nyt projekt vil danske forskere bringe orden og systematik i de enorme mængder af globale data om havstrømme, bølger og vind. Flere virksomheder står på spring til at udnytte disse til nye forretningsmuligheder.
National Space Institute, Innovation and Research-based consultancy

Media coverage (1)

Let adgang til satellitdata skal skabe grundlag for nye virksomheder
27/04/2017
Ingeniøren (National), Denmark, Web
Jens Ramskov
https://ing.dk/artikel/let-adgang-satellitdata-skal-skabe-grundlag-nye-virksomheder-197709
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media

Mercedes satser stort på produktion af højeffektive batterier
Tejs Vegge
27/04/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Mercedes satser stort på produktion af højeffektive batterier
27/04/2017
DI Energi årsmagasin 2017, Denmark, Web
http://Mercedes satser stort på produktion af højeffektive batterier
Tejs Vegge
Press / Media

Børn og unges indtag af slik og chokolade
Sisse Fagt
26/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Status og uviklingen i børn og unges indtag af slik og chokolade
26/04/2017
BT (National), Denmark, Print
Jonas Melander Hammer
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Børn og unges slik og chokoladeindtag i weekenden
Jeppe Matthiessen
26/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Børn og unges slik og chokoladeindtag i weekenden
26/04/2017
Radio Nova (Regional), Denmark, Radio
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Hvad skal vi sige til børnene: Klimadebatten skal være mere nuanceret
Jens Olaf Pepke Pedersen
26/04/2017

Description
Klimaforskeren Jens Olaf Pepke er skeptisk overfor om konsekvenserne af klimaforandringerne er så store, som mange af hans kolleger mener.
National Space Institute, Innovation and Research-based consultancy

Klimaforskeren Jens Olaf Pepke er skeptisk overfor om konsekvenserne af klimaforandringerne er så store, som mange af hans kolleger mener.
Hvorfor er det godt at spise brød?
Heddie Mejborn
24/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Grunde til at spise brød og dermed få kostfibre
24/04/2017
Ritzau Fokus (National), Denmark, Other
Cecilie Lyngberg
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Genbrug af vandflasker af plast
Gitte Alsing Pedersen
21/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Er det fornuftigt at genbruge sin plastikvandflaske, når den er tømt én gang?
21/04/2017
Videnskab.dk (National), Denmark, Web
Charlotte Price Persson
Gitte Alsing Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Æg
Sisse Fagt
18/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Æg - hvor mange må vi spise?
18/04/2017
DR Madmagasinet (National), Denmark, Television
Lotte Jahnsen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Børn og unges kost
Sisse Fagt
18/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Kostens betydning for børn og unges sundhed og overvægt
18/04/2017
Science Report (National), Denmark, Web
Ugens Podcast: Kan du forstå kvantefysik?
Ulrich Busk Hoff
12/04/2017
Quantum Physics and Information Technology, Department of Physics

Media contribution (1)

Ugens Podcast: Kan du forstå kvantefysik?
12/04/2017
ForskerZonen/VIDenskab.dk (National), Denmark, Web
Camilla Segaard Kristensen
19:54
http://videnskab.dk/naturvidenskab/ugens-podcast-kan-du-forstaa-kvantefysik
Ulrich Busk Hoff
Press / Media

Hvordan formidler vi kvantefysik, vi ikke kan se?
Ulrich Busk Hoff
12/04/2017
Quantum Physics and Information Technology, Department of Physics

Media contribution (1)

Hvordan formidler vi kvantefysik, vi ikke kan se?
12/04/2017
ForskerZonen/VIDenskab.dk (National), Denmark, Web
Ulrich Busk Hoff
http://videnskab.dk/naturvidenskab/hvordan-formidler-vi-kvantefysik-vi-ikke-kan-se
Ulrich Busk Hoff
Press / Media

Æg
Jeppe Matthiessen
07/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Et sundt indtag af æg
07/04/2017
Ritzau Fokus (National), Denmark, Other
Nanna Frank
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fødevareallergi
Charlotte Bernhard Madsen
06/04/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

Media coverage (1)

Hyppigheden af fødevareallergi hos børn
06/04/2017
DR Videnskab (National), Denmark, Radio
Maja Hald
Charlotte Bernhard Madsen
Morgenmadsanbefalinger
Sisse Fagt
05/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Hvordan spiser man sig til en god start på dagen?
05/04/2017
Ritzau Fokus, Denmark
Nanna Frank
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Svær overvægt hos danske voksne
Jeppe Matthiessen
05/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Status og udvikling i forekomsten af svær overvægt blandt voksne danskere
05/04/2017
TV2 News (National), Denmark, Television
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition

Hvad sker der når køleskabet går online?
Alfred Heller
04/04/2017

Description
Article in BYG Nyt - news letter of DTU Civil Engineering.

Subject
Internet of Things is relevant for the building industry. First trails in the City of Knowledge, Lyngby and DTU.
Department of Civil Engineering, Centre for IT-Intelligent Energy Systems in Cities, Section for Building Energy

Media contribution (1)

BYG Nyt
04/04/2017
DTU Civil Engineering, Denmark
Alfred Heller
Centre for IT-Intelligent Energy Systems in Cities

Interview contribution: Article "A new genetic revolution" in Technologist
Helene Fastrup Kildegaard
01/04/2017
Novo Nordisk Foundation Center for Biosustainability, CHO Cell Line Engineering and Design

Media contribution (1)

Technologist
01/04/2017
Denmark
Kaffe og koffein
Jeppe Matthiessen
31/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Hvornår er et kaffeindtag for stort?
31/03/2017
Ritzau Fokus (National), Denmark, Other
Nanna Frank
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition

Is - og sundere alternativer
Sisse Fagt
31/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Is - og sundere alternativer
31/03/2017
Ritzau Focus (National), Denmark, Other
Sabrina Melina Andersen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Børn og unges fiskeindtag
Jeppe Matthiessen
29/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Børn og unges fiskeindtag i forhold til andre nordiske børn
29/03/2017
Publicity, Denmark, Other
http://Mette Kirstine Goddiksen
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition

Afhængighed af bestemte fødevarer
Sisse Fagt
29/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Bliver mennesker mere afhængige af visse fødevarer end andre?
29/03/2017
Ritzau Focus (National), Denmark, Other
Anna Raabæk
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
MikroRNA fra fødevarer kan ikke overføres til mennesker
Claus Heiner Bang-Berthelsen
29/03/2017
National Food Institute, Research Group for Microbial Biotechnology and Biorefining

Media coverage (1)

MikroRNA fra fødevarer kan ikke overføres til mennesker
29/03/2017
ScienceNordic (International), Denmark, Web
Catherine Jex
http://sciencenordic.com/can-microrna-food-harm-us-no-say-scientists
Claus Heiner Bang-Berthelsen
National Food Institute, Research Group for Microbial Biotechnology and Biorefining

GMO-fri mælk
Jan W. Pedersen
28/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Mælk mærket med GMO-fri
28/03/2017
DR Nordjylland (Regional), Denmark, Radio
Maja Hald
Jan W. Pedersen
National Food Institute, Division of Risk Assessment and Nutrition

HK Privatbladet
Pernille Rydén
24/03/2017
Center for Bachelor of Engineering Studies, Afdelingen for Forretningsudvikling

Media contribution (1)

Der skal mennesker til at give Big Data mening
24/03/2017
HK/Privatbladet (Regional), Denmark, Print
Peter Gotschalk
4 sider
Pernille Rydén
Press / Media

Børn og unges kostvaner
Jeppe Matthiessen
23/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Status og udvikling i børn og unges kostvaner
23/03/2017
Jyllands-Posten (National), Denmark, Print
Katrine Stampe Nielsen
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Børn og unges kostvaner
Jeppe Matthiessen
22/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Status og udvikling i børn og unges kostvaner
22/03/2017
Ritzau (National), Denmark, Other
Anne Katrine Hasse
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Næringsindholdet i almindelige vs gourmet burgere
Sisse Fagt
21/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Næringsindholdet i almindelige vs gourmet burgere
21/03/2017
DR Madmagasinet (National), Denmark, Television
Mette Frisk
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Innovative Treatment & Frontline Research: Dept. of Urology, Herlev & Gentofte University Hospital
Dominik Marti & Gregers G. Hermann
20/03/2017

Description
Video about Medico Optics Center, the collaboration between DTU and Herlev Gentofte Hospital. Available on youtube at https://youtu.be/ra-45aiM_WU?t=2m41s
Department of Photonics Engineering, Diode Lasers and LED Systems, Herlev and Gentofte Hospital

European Association of Urology Congress 17
Event: Conference

Media contribution (1)

Innovative Treatment & Frontline Research: Dept. of Urology, Herlev & Gentofte University Hospital
20/03/2017
YouTube (International), United Kingdom, Web
WebsEdgeHealth
3:17
https://youtu.be/ra-45aiM_WU?t=2m41s

The Herlev and Gentofte University Hospital’s’ Urological department is one of the largest urological departments in Europe. Doctors receive patients with congenital and acquired diseases and injuries of the kidneys, adrenal glands, bladder, urethra, prostate, testes and potency disorders and offer medical and surgical treatment and care of the highest standards, using the latest treatment methods.

There’s also a very active research unit at the Herlev and Gentofte University Hospital, where young doctors are encouraged to be on the frontline and given responsibility early in their careers.

Dominik Marti & Gregers G. Hermann
Herlev and Gentofte Hospital

Relations
Projects:
Multi-modal, Endoscopic Biophotonic Imaging of Bladder Cancer for Point-of-Care Diagnosis
Webinar: Recovery of Operations From Hacker Attacks: A Structure for Response
Daniel Alberto Sepúlveda Estay & James Blanley Rice
15/03/2017

Description
Cyber attacks on supply chains are a constant threat to organizations. News media are regularly reporting cyber attacks to supply chains that result in data theft or denial of service. Examples abound, such as the theft of credit card data for 70 million customers from Target in 2013, and a sophisticated distributed attack that blocked the websites of major companies in the east-US such as Amazon, Starbucks and PayPal, during most the 21st of October 2016. Although relevant, this coverage often overshadows cyber-attacks that affect supply chain operations, which continue to occur without media attention. This is giving hackers free range to refine and practice their techniques for increased penetration and damage, resulting in a whole different range of disruptions such as container theft, intervention of plant operation, or misallocation of payments, for example.

The MIT Center for Transportation & Logistics (CTL) will host a webinar to address hacker-related vulnerabilities in supply chain operations.

At the root of this problem lies the structure of data exchanges between supply chain partners. Key questions for supply chain managers include:

How does your supply chain manage these data exchanges?

How much are you assigning these problems to IT even though they have direct impact on operations?

How does your supply chain prevent these attacks, or react when these attacks happen?

Is your supply chain merely relying on external insurance, or do you understand how these exchanges can be designed and controlled in cases of attack for improved recovery?

Dr. Jim Rice and Daniel Sepulveda, PhD student, will address these questions, and talk about research findings that offer a deeper understanding of the structures that supply chains can use to improve their response from hacker attacks so as to minimize operational disruption and allow a more efficient recovery.

Department of Management Engineering, Management Science, Center for Transportation and Logistics at the Massachusetts Institute of Technology

Media contribution (1)

Webinar: Recovery of Operations From Hacker Attacks: A Structure for Response
15/03/2017
Webinar (International), United States, Web
Christine Adams / Daniel Sepulveda
44:40
https://www.youtube.com/watch?v=zsmpjNRcIfI&t=152s

Cyber attacks on supply chains are a constant threat to organizations. News media are regularly reporting cyber attacks to supply chains that result in data theft or denial of service. Examples abound, such as the theft of credit card data for 70 million customers from Target in 2013, and a sophisticated distributed attack that blocked the websites of major companies in the east-US such as Amazon, Starbucks and PayPal, during most the 21st of October 2016. Although relevant, this coverage often overshadows cyber-attacks that affect supply chain operations, which continue to occur without media attention. This is giving hackers free range to refine and practice their techniques for increased penetration and damage, resulting in a whole different range of disruptions such as container theft, intervention of plant operation, or misallocation of payments, for example. The MIT Center for Transportation & Logistics (CTL) will host a webinar to address hacker-related vulnerabilities in supply chain operations. At the root of this problem lies the structure of data exchanges between supply chain partners. Key questions for supply chain managers include: How does your supply chain manage these data exchanges? How much are you assigning these problems to IT even though they have direct impact on operations? How does your supply chain prevent these attacks, or react when these attacks happen? Is your supply chain merely relying on external insurance, or do you understand how these exchanges can be designed and controlled in cases of attack for improved recovery?

Dr. Jim Rice and Daniel Sepulveda, PhD student, will address these questions, and talk about research findings that offer a deeper understanding of the structures that supply chains can use to improve their response from hacker attacks so as to minimize operational disruption and allow a more efficient recovery.

Department of Management Engineering, Management Science, Center for Transportation and Logistics at the Massachusetts Institute of Technology
**Media coverage (1)**

**Sundhedsmæssig bekymring over mineralolie i læbepomade**
15/03/2017
Ritzau (National), Denmark, Other
Kristine Dam Johansen
Pelle Thonning Olesen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Kosttilskud**
Anja Pia Biltoft-Jensen
13/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

**Media coverage (1)**

**Er kosttilskud nødvendige?**
13/03/2017
Radio Nova (Regional), Denmark, Radio
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Hvad gør jeg, hvis jeg taber min mobil i toilettet?**
Ivan Harald Holger Jørgensen
11/03/2017

**Description**
Artikel om hvad man skal gøre hvis ens mobiltelefon tabes i vand.

**Subject**
Hvordan redder du egentlig mest effektivt din mobil fra at lidde druknedøden, hvis du har tabt den i toilettet? Og hvad skal du gøre ved computeren, hvis du har hældt kaffe ned i den?
Department of Electrical Engineering, Electronics

**Media contribution (1)**

**Hvad gør jeg, hvis jeg taber min mobil i toilettet?**
11/03/2017
Videnskab.dk (National), Denmark, Web
http://videnskab.dk/kultur-samfund/hvad-goer-jeg-hvis-jeg-taber-min-mobil-i-toilettet
Ivan Harald Holger Jørgensen
Press / Media

**Zink i leverpostej**
Flemming Bager
10/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

**Media coverage (1)**

**Zink i leverpostej**
10/03/2017
TV2 News (National), Denmark, Television
Mikkel Fyhn Christensen
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Danskeres brug af kosttilskud**
Anja Pia Biltoft-Jensen
09/03/2017
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)

Danskeres brug af kosttilskud
09/03/2017
Ritzau Fokus (National), Denmark, Web
Kristine Dam Johansen
https://www.mx.dk/ritzau/nyheder/story/13618118
Anja Pia Bilotto-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fakta bag 6 om dagen
Sisse Fagt
08/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Fakta bag 6 om dagen
08/03/2017
Aktiv Træning (National), Denmark, Print
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Unges brødvaner
Sisse Fagt
08/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Unges brødvaner
08/03/2017
Kristeligt Dagblad (National), Denmark, Web
Signe Kaalund Jensen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Sødemidlet Stevia
Kirsten Pilegaard
07/03/2017
National Food Institute, Research Group for Risk-Benefit

Media coverage (1)

Sødemidlet Stevia
07/03/2017
Fit Living (National), Denmark, Print
Lene Roe Rasmussen
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit
Press / Media

Indberetning af MRSA data til EFSA
Frank Møller Aarestrup
06/03/2017
National Food Institute, Research Group for Genomic Epidemiology

Media coverage (1)

Indberetning af MRSA data til EFSA
06/03/2017
Fysiker vil hverve unge til kvanteforskningen
Ulrich Busk Hoff
06/03/2017
Quantum Physics and Information Technology, Department of Physics

Media contribution (1)

Fysiker vil hverve unge til kvanteforskningen
06/03/2017
Videnskab.dk (National), Denmark, Web
Johanne Uhrenholt Kusnitzoff
http://videnskab.dk/naturvidenskab/fysiker-vil-hverve-unge-til-kvanteforskningen
Ulrich Busk Hoff
Press / Media

OECD nanomaterials programme 'of little value' for risk assessment
Steffen Foss Hansen
02/03/2017

Description
Criticism from Ecos, Ciel and Oeko-Institute aimed at industry and EU policy makers
Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)

OECD nanomaterials programme 'of little value' for risk assessment
02/03/2017
Chemical Watch (International), Web
Andrew Turley
Criticism from Ecos, Ciel and Oeko-Institute aimed at industry and EU policy makers
Steffen Foss Hansen
Press / Media

Holdbarhed af fødevarer
Jens Kirk Andersen
28/02/2017
National Food Institute, Research Group for Microbial Food Safety

Media coverage (1)

Holdbarhed af fødevarer
28/02/2017
Radio Nova (Regional), Denmark, Radio
Jens Kirk Andersen
National Food Institute, Research Group for Microbial Food Safety
Press / Media

Holdbarhedsdatoer
Jens Kirk Andersen
28/02/2017
National Food Institute, Research Group for Microbial Food Safety

Media coverage (1)

Holdbarhed af fødevarer.
28/02/2017
Ritzau (National), Denmark, Other
Ritzau
WHO's prioriteringsliste for R&D
Frank Møller Aarestrup
28/02/2017
National Food Institute, Research Group for Genomic Epidemiology

Media coverage (1)

MRSA ekspertgruppe
Frank Møller Aarestrup
28/02/2017
National Food Institute, Research Group for Genomic Epidemiology

Media coverage (1)

Forskerforum (National), Denmark, Web
Mads Øigaard
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology

Five Questions for Steffen Foss Hansen
Steffen Foss Hansen
23/02/2017

Description
A Danish scholar talks about his online database of ‘nano-enhanced’ products — many made with materials that could be hazardous.
Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)
A Danish scholar talks about his online database of ‘nano-enhanced’ products — many made with materials that could be hazardous.

Steffen Foss Hansen
Press / Media

Validiteten af Roundup forsøg på rotter
Jan W. Pedersen
23/02/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Effekter af Roundup forsøg på rotter.
23/02/2017
Ingeniøren (National), Denmark, Web
Rebekka Falsing
Jan W. Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Måltidssalater - er de bedre end traditionel fastfood
Sisse Fagt
22/02/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Måltidssalater - er de bedre end traditionel fastfood
22/02/2017
Ritzau, Web
Cecilie Lyngberg
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

MikroRNA fra fødevarer kan ikke overføres til mennesker
Claus Heiner Bang-Berthelsen
22/02/2017
National Food Institute, Research Group for Microbial Biotechnology and Biorefining

Media contribution (1)

MikroRNA fra fødevarer kan ikke overføres til mennesker
22/02/2017
Videnskab.dk, Web
Kristian Peter Sjærgen
http://videnskab.dk/krop-sundhed/kan-mikrona-i-maden-skade-os-nej-siger-forskere
Claus Heiner Bang-Berthelsen
National Food Institute, Research Group for Microbial Biotechnology and Biorefining
Press / Media

Mellemmåltiders bidrag til danskernes energiindtag
Sisse Fagt
22/02/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Mellemmåltiders bidrag til danskernes energiindtag
22/02/2017
Samvirke, Print
Inger Abildgaard
Sisse Fagt
MikroRNA fra fødevarer kan ikke overføres til mennesker
Claus Heiner Bang-Berthelsen
22/02/2017
National Food Institute, Research Group for Microbial Biotechnology and Biorefining

MikroRNA fra fødevarer kan ikke overføres til mennesker
22/02/2017
bj-news@ga-net.dk, Web
Bjørn Jensen
Claus Heiner Bang-Berthelsen
National Food Institute, Research Group for Microbial Biotechnology and Biorefining

Fælles platform for smart city-løsninger lanceret på DTU: Smart City Hub
Alfred Heller
22/02/2017

Description
Innovation platform for the City of Knowledge, Lyngby.
Department of Civil Engineering

MikroRNA fra fødevarer kan ikke overføres til mennesker
22/02/2017
bj-news@ga-net.dk, Web
Bjørn Jensen
Claus Heiner Bang-Berthelsen
National Food Institute, Research Group for Microbial Biotechnology and Biorefining

Fælles platform for smart city-løsninger lanceret på DTU: Smart City Hub
Alfred Heller
22/02/2017

Description
Innovation platform for the City of Knowledge, Lyngby.
Department of Civil Engineering

Sample labelling in the North Sea helping link up Europe’s research ships
Urban Wünsch
20/02/2017

Description
Online Article
National Institute of Aquatic Resources, Section for Marine Ecology and Oceanography

MikroRNA fra fødevarer kan ikke overføres til mennesker
22/02/2017
bj-news@ga-net.dk, Web
Bjørn Jensen
Claus Heiner Bang-Berthelsen
National Food Institute, Research Group for Microbial Biotechnology and Biorefining

Sample labelling in the North Sea helping link up Europe’s research ships
20/02/2017
Horizon Magazine (International), Denmark, Web
Catherine Collins
Urban Wünsch

Ny kemi i batterier øger muligheden for at lagre grøn energi
Tejs Vegge
20/02/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Fælles platform for smart city-løsninger lanceret på DTU: Smart City Hub
Alfred Heller
22/02/2017

Description
Innovation platform for the City of Knowledge, Lyngby.
Department of Civil Engineering

Sample labelling in the North Sea helping link up Europe’s research ships
20/02/2017
Horizon Magazine (International), Denmark, Web
Catherine Collins
Urban Wünsch

Ny kemi i batterier øger muligheden for at lagre grøn energi
Tejs Vegge
20/02/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Sample labelling in the North Sea helping link up Europe’s research ships
20/02/2017
Horizon Magazine (International), Denmark, Web
Catherine Collins
Urban Wünsch

Ny kemi i batterier øger muligheden for at lagre grøn energi
Tejs Vegge
20/02/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Sample labelling in the North Sea helping link up Europe’s research ships
20/02/2017
Horizon Magazine (International), Denmark, Web
Catherine Collins
Urban Wünsch

Ny kemi i batterier øger muligheden for at lagre grøn energi
Tejs Vegge
20/02/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Sample labelling in the North Sea helping link up Europe’s research ships
20/02/2017
Horizon Magazine (International), Denmark, Web
Catherine Collins
Urban Wünsch

Ny kemi i batterier øger muligheden for at lagre grøn energi
Tejs Vegge
20/02/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage
Sample labelling in the North Sea helping link up Europe's research ships
Urban Wünsch
20/02/2017

Description
Online article featuring a EUROFLEETS2 teaching course that involved Associate Professor Colin Stedmon and Professor Andre Visser as well as DTU AQUA's research vessel Dana.
National Institute of Aquatic Resources, Section for Oceans and Arctic

Media coverage (1)

Sample labelling in the North Sea helping link up Europe's research ships
20/02/2017
Horizon (International), Denmark, Web
Catherine Collins
Urban Wünsch never expected product labelling to be the hardest part of a seven-day voyage across the North Sea.
Urban Wünsch
Press / Media

Manipulation af ubevidste holdninger skal bekæmpe spritbilisme
Laila Marianne Martinussen
20/02/2017

Description
Selvom danskerne ikke accepterer sammenblandingen af alkohol og bilkørsel, er spritbilister fortsat en trussel på vejene.
Men kan man stoppe spirituskørsel ved at påvirke ubevidste holdninger? Nyt forskningsprojekt vil gøre forsøget.
Department of Management Engineering, Technology and Innovation Management, Transport DTU

Media contribution (1)

Manipulation af ubevidste holdninger skal bekæmpe spritbilisme
20/02/2017
Videnskab.dk, Web
http://videnskab.dk/kultur-samfund/manipulation-af-ubevidste-holdninger-skal-bekaempe-spritbilisme
Laila Marianne Martinussen
Department of Management Engineering, Technology and Innovation Management, Transport DTU
Press / Media

Antibiotika vægtning
Frank Møller Aarestrup
17/02/2017
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Antibiotika vægtning
17/02/2017
Landbrugsmedierne, Web
Mette Boas
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Blød vand i hovedstaden skal spare husstande for millioner
Camilla Tang
14/02/2017
Blødt vand i hovedstaden skal spare husstande for millioner
14/02/2017
Politiken (National), Denmark, Web
Anna Bølling-Ladegaard
http://politiken.dk/indland/art5833405/Bl%C3%B8dt-vand-i-hovedstaden-skal-spare-husstande-for-millioner
Camilla Tang
Press / Media

DANMAP opgørelse af zink forbrug – hvordan undgåes fejl fremover?
Flemming Bager
14/02/2017

Subject
Zinkforbrug i svin
National Food Institute, Division of Risk Assessment and Nutrition

Udvinding af naturlige antioxidanter fra tang
Ditte Baun Hermund
14/02/2017
National Food Institute, Research Group for Bioactives – Analysis and Application

Risiko ved at erstatte hvede med ris i en glutenfri kost
Max Hansen
14/02/2017
National Food Institute, Division of Risk Assessment and Nutrition

Working in Denmark has allowed me to enjoy my time with my family
Timothy Clifford Farrell
13/02/2017
Department of Management Engineering, UNEP DTU Partnership
Working in Denmark has allowed me to enjoy my time with my family
13/02/2017
The Local, Web
Melanie Haynes
http://www.thelocal.dk/20170213/working-denmark-enjoy-time-with-family
Timothy Clifford Farrell
Department of Management Engineering, UNEP DTU Partnership
Press / Media

Expert comment on controversy over welfare costs of particle emissions from wood stoves: "Skatteministeriet afviser vismands-kritik: Vi bruger officielle brændeovnstal"
Henrik Klinge Jacobsen
08/02/2017

Description
Skatteministeriet afviser vismands-kritik: Vi bruger officielle brændeovnstal
Morten Øyen | 8. februar 2017 kl. 3:30

Subject
Ekspert: Interessant med nye tal
Altinget har også fremlagt vismændenes kritik til de tre ekspertter i afgifts- og tilskudsanalysens referencegruppe. Her har kun en, Henrik Klinge Jacobsen, professor MSO ved DTU, haft mulighed for at svare. Han vurderer ikke, at kritikken af Skatteministeriet ændrer "markant" på den kvalitative konklusion: Der er en samfundsmæssig gevinst ved at reducere partikelemissioner fra brændeovne i tæt befolkede områder, selv når der tages hensyn til omkostninger ved reguleringen.
"Men det er selvfølgelig interessant at se, hvor meget et andet og nyere bud på skadesomkostninger påvirker samfundsekonomiske gevinster ved reguleriing i forhold til omkostninger ved reguleriing," skriver Henrik Klinge Jacobsen i et svar til Altinget.
Department of Management Engineering, Systems Analysis

Comment to debate on costs of particle emissions from wood stoves
08/02/2017
Altinget, Denmark
Comment in article: Altinget
Henrik Klinge Jacobsen
Department of Management Engineering, Systems Analysis
Press / Media

Nordisk Monitorering – svær overvægt i Danmark
Jeppe Matthiessen
08/02/2017
National Food Institute, Division of Risk Assessment and Nutrition

Danskeres indtag af sodavand
Sisse Fagt
07/02/2017
En udsendelse af Langt fra Borgen, hvor to politikere skal diskutere sunde og usunde fødevarer, og om vi i højere grad end i dag skal bruge afgifter for at regulere folks madvaner.

National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskeres indtag af sodavand
07/02/2017
DR Langt fra Borgen, Radio
Sidsel Miller Hansen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Press / Media

Zinkforbrug i svin
07/02/2017
Ingeniøren, Web
Magnus Bredsdorf
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Data om kost fra den nordiske monitorering med fokus på status og udvikling i Danmark
Jeppe Matthiessen
07/02/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Nordiske Monitorering - data for svær overvægt i Danmark
Jeppe Matthiessen
07/02/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskeres alkoholvaner og forskel på lovgivning og priser i de nordiske lande
Sisse Fagt
06/02/2017
Danskernes alkoholvænever og forskel på lovgivning og priser i de nordiske lande
06/02/2017
P1 Orientering, Radio
Christian Brandt
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Zinkforbrug i svin
Frank Møller Aarestrup
05/02/2017
National Food Institute, Research Group for Genomic Epidemiology

Kunstigt blod kan blive en realitet
Leticia Hosta-Rigau
03/02/2017

Subject
På DTU Nanotech vil man ved hjælp af hæmoglobinmolekyler fra dyr fremstille kunstigt blod, der kan transportere ilt rundt i kroppen. Der er især behov for alternativer til donorblod i lavindkomstlande, vurderer overlæge.
Department of Micro- and Nanotechnology, Colloids and Biological Interfaces

Fuldkorn og havregryn til unge
Sisse Fagt
01/02/2017
Havregryn er sundt, billigt, 100 % fuldkorn og hurtigt at lave. Det passer fint til en travl morgenmad blandt unge. En stor skål havregryn på 75 g dækker behovet for fuldkorn. Havregryn kan spises rå, udblødt over natten eller som grød – det er fortsat fuldkorn – og de unge skal bare finde den måde at spise havregryn der passer dem bedst.

National Food Institute, Division of Risk Assessment and Nutrition

Fuldkorn og havregryn til unge
01/02/2017
DR, Web
Lotte Reindahl Jansen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Danskernes alkohol og rygevaner - data fra den nordiske monitorering
Sisse Fagt
01/02/2017

Fuldkornspartnerskabet har startet kampagne for at få unge til at spise morgenmad med havregryn.

National Food Institute, Division of Risk Assessment and Nutrition

Æg og kolesterol
Heddie Mejborn
30/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Udvikling i zinkforbrug til svin
Flemming Bager
27/01/2017

Media contribution (1)

Danskernes kødforbrug
Sisse Fagt
27/01/2017

Media contribution (1)

Fremtidens fødevarer
Sisse Fagt
27/01/2017

Media contribution (1)

Affaldshåndtering halter i bygderne
Jens Olaf Pepke Pedersen
27/01/2017

Subject
Camp Century, oprydning på lossepladser og dumpe i Grønland
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)
No small deal: Evaluating nanomaterials with alternatives assessment, with Rune Hjorth
Rune Hjorth
27/01/2017
Department of Environmental Engineering

**Media contribution (1)**

No small deal: Evaluating nanomaterials with alternatives assessment, with Rune Hjorth
27/01/2017
IEAM Podcast, Web
Rune Hjorth
Department of Environmental Engineering

**Relations**
Research outputs:
The applicability of chemical alternatives assessment for engineered nanomaterials

Når vandet kommer
Carlo Sass Sørensen
26/01/2017

**Subject**
water related challenges and climate impacts
National Space Institute, Geodesy

**Media contribution (1)**

Når vandet kommer
26/01/2017
DR tv, Television
Primeview Aps v/ Jes Petersen
1 time
https://www.dr.dk/tv/se/nar-mennesket-leger-gud/-/nar-vandet-kommer
Carlo Sass Sørensen
National Space Institute, Geodesy

**Relations**
Projects:
Coastal flooding hazards due to storm surges and subsidence

Forskellige kaffetypers koffeinindhold
Anja Pia Billof-Jensen
26/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

Forskellige kaffetypers koffeinindhold
26/01/2017
Ritzau Fokus, Print
Kristine Dam Johansen
Anja Pia Billof-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Ekspert_ Forebyggelse af arbejdsulykker kræver ordentlig udredning
Frank Huess Hedlund
26/01/2017

Subject
Myndighederne bør have mere fokus på at opklare og lære af dødsulykker frem for straf og ansvar, mener risikoekspert.
Department of Applied Mathematics and Computer Science, Dynamical Systems, Statistics and Data Analysis

Media contribution (1)

Ekspert_ Forebyggelse af arbejdsulykker kræver ordentlig udredning
26/01/2017
Fagbladet 3F, Print
https://www.fagbladet3f.dk/artikel/ekspert-forebyggelse-af-arbejdssulykker-kraever-ordentlig-udredning
Frank Huess Hedlund
Department of Applied Mathematics and Computer Science, Dynamical Systems, Statistics and Data Analysis

Relations
Research outputs:
Erfaringer frem for ansvar.
Kraftig eksplosion efter sammenblanding af salpetersyre og 2-propanol
Støveksplosion ødelægger dansk træpillefabrik - igen
Press / Media

Hvor meget koffein er der i forskellig slags kaffe?
Sisse Fagt
25/01/2017

Subject
Hvor meget koffein er der i forskellig slags kaffe?
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Hvor meget koffein er der i forskellig slags kaffe?
25/01/2017
Ritzau Fokus, Print
Christine Damm
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Vitamintab i frugt og grønt ved opbevaring
Sisse Fagt
25/01/2017

Subject
Vitamintab i frugt og grønt ved opbevaring
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Vitamintab i frugt og grønt ved opbevaring
25/01/2017
Ritzau Fokus, Print
Majbritt Schultz
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark
Jeppe Matthiessen
Subject
Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark
25/01/2017
TV Avisen, Television
Katrine Overgaard
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark
Jeppe Matthiessen
25/01/2017
Nova FM - Bauer Media, Radio
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark
Jeppe Matthiessen
25/01/2017
Radio VLR, Jysk Fynske Medier, Radio
Ole B. Bernstrup
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark
Jeppe Matthiessen
25/01/2017
Berlingske Tidende, Print
Eva M. E. Østergaard Jensen
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark
25/01/2017
TV2 News / TV2 Nyhederne, Television
Brian Lindhoff
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Kejser på P1: Vejvrede
Mette Møller
25/01/2017
Department of Management Engineering, Technology and Innovation Management, Transport DTU

Media contribution (1)

Kejser på P1: Vejvrede
25/01/2017
DR, Radio
Mette Møller
Department of Management Engineering, Transport DTU, Technology and Innovation Management
Press / Media

Risikoekspert: Hvor mange skal dø, før vi lærer noget?
Frank Huess Hedlund
25/01/2017
Department of Applied Mathematics and Computer Science, Dynamical Systems, Statistics and Data Analysis

Media contribution (1)

Risikoekspert: Hvor mange skal dø, før vi lærer noget?
25/01/2017
Fagbladet 3F, Print
https://www.fagbladet3f.dk/artikel/risikoekspertvhormangeskaldovilaerernoget
Frank Huess Hedlund
Department of Applied Mathematics and Computer Science, Dynamical Systems, Statistics and Data Analysis
Press / Media

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark og Norden
Jeppe Matthiessen
24/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark og Norden
24/01/2017
DR Lev Nu, Web
Thomas Helsborg
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark og Norden
Jeppe Matthiessen
24/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark og Norden
Hvordan bruger man light produkter fornuftigt?
Heddie Mejborn
24/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark
Jeppe Matthiessen
24/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Fremtidens fødevarer
Heidi Kornholt
24/01/2017

Subject
Givet kontaktinformation på medarbejdere, som kan udtale sig om fremtidens fødevarer
National Food Institute

DTU's ingredienssektorudviklingsrapport
Egon Bech Hansen
20/01/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

DTU's ingredienssektorudviklingsrapport
20/01/2017
Food Navigator, Web
Niamh Michail
Egon Bech Hansen
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Zinkforbrug til svin
Flemming Bager
20/01/2017
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)

Innovationsfondsprojektet ALLEVIATE
Katrine Lindholm Begh
19/01/2017
National Food Institute, Research Group for Gut Microbiology and Immunology
Media contribution (1)

Nordisk Monitorering - med fokus på kosten
Sisse Fagt
19/01/2017
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)
Tackling the Threat of Lead Poisoning Posed by Game Meat: SelectScience interviews Senior Researcher, Katrin Löschner, on her recent research into lead nanoparticles
Katrin Löschner
19/01/2017

Subject
Lead is a highly toxic metal that can accumulate in the human body, causing serious adverse effects. Food is a major source of lead exposure, for example from the ingestion of contaminated water or cereals. Some game meat may contain high levels of lead fragments, as a result of being shot with lead bullets. A recently published study was able to detect lead nanoparticles in game meat using mass spectrometry technology. SelectScience® spoke to Senior Researcher, Katrin Löschner, to find out more.
National Food Institute, Research Group for Nano-Bio Science

Media contribution (1)
Tackling the Threat of Lead Poisoning Posed by Game Meat: SelectScience interviews Senior Researcher, Katrin Löschner, on her recent research into lead nanoparticles
19/01/2017
SelectScience, Web
Sonia Nicholas (Associate Editor)
Katrin Löschner
National Food Institute, Research Group for Nano-Bio Science
Press / Media

Nordisk Monitorering - med fokus på kosten
Sisse Fagt
18/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Nordisk Monitorering - med fokus på kosten
18/01/2017
Ritzau, Web
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nordisk Monitorering - med fokus på kosten
Sisse Fagt
18/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Nordisk Monitorering - med fokus på kosten
18/01/2017
DR Radioavisen, Radio
Sissel Vestergaard Hoe
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nordisk Monitorering - med fokus på kosten
Sisse Fagt
18/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Nordisk Monitoring - med fokus på kosten
18/01/2017
DR Nyhederne, Radio
Sine Pam
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Tikøb-virksomhed med fokus på kloak
Per Skougaard Kaspersen
18/01/2017

Description
Interview om vores samarbejde med virksomheden LNH Water i Water DTU VIS projektet UPS
(Udvikling af Planlægningsværktøj til prioritering af klimatilpasning og Skybrudsløsninger indenfor urban afstrømning)

Subject
Innovationsprojekter
Department of Management Engineering, Systems Analysis

DTU Fødevareinstituttets studie af tarmbakterier og fedme
Tine Rask Licht
16/01/2017
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Forbruget og kritikken af mælkeprodukter gennem tiden
Sisse Fagt
13/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Forbruget og kritikken af mælkeprodukter gennem tiden
13/01/2017
Politikens, Print
Line Felholt
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Hvorfor er måltidskasser populære?
Sisse Fagt
13/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Hvorfor er måltidskasser populære?
13/01/2017
DR Nordjylland, Radio
Jesper Knox
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Press / Media

Forskere uenige om forureningsfare
Jens Olaf Pepke Pedersen
13/01/2017

Description
Klimaforsker ved DTU mener, at man hellere skal bruge resourser på at få ryddet op på de lokale dumpe end at rydde op ved Camp Century.

Subject
Camp Century
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Forskere uenige om forureningsfare
13/01/2017
Sermitsiaq, Print
Trine Juncher Jørgensen
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy

Press / Media

Produktudvikling til modermælkserstatninger
Katrine Lindholm Bøgh
12/01/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Produktudvikling til modermælkserstatninger
12/01/2017
Food Supply, Web
Morten Vittrup Lund
Katrine Lindholm Bøgh
National Food Institute, Research Group for Gut Microbiology and Immunology

Press / Media

Platform giver forskere datamanagement for projekter
Alfred Heller
12/01/2017

Description
Interview fra DEIC til deres hjemmeside og nyhedsbrev om udvikling af science cloud for cities - CITIES data management platform og Cloud løsning.
Department of Civil Engineering, Centre for IT-Intelligent Energy Systems in Cities

Media contribution (1)

Platform giver forskere datamanagement for projekter
12/01/2017
Nyhedsbrev, Web
Alfred Heller
Department of Civil Engineering, Centre for IT-Intelligent Energy Systems in Cities
Press / Media

Kommenteret irsk studie om stress og bifidobakterier
Tine Rask Licht
11/01/2017
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

Kommenteret irsk studie om stress og bifidobakterier
11/01/2017
BT, Print
Sebastian Bjerring Jensen
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Undersøgelse af skolers forsøg med at inkorporere mere frugt, grønt og fuldkorn i skolemad
Lene Møller Christensen
11/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Undersøgelse af skolers forsøg med at inkorporere mere frugt, grønt og fuldkorn i skolemad
11/01/2017
Fagbladet FAO, Print
Ingrid Petersen
Lene Møller Christensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

P4 Weekend: 'The Sunday guest'
Carlo Sass Sørensen
08/01/2017

Description
The Sunday guest, (8 Jan 2017 9-10 am).

Subject
Climate changes, projections and adaptations - Coastal Floods, water-related challenges, and satellite based knowledge, in particular
National Space Institute, Geodesy

Media contribution (1)

P4 Weekend: 'The Sunday guest'
08/01/2017
DR P4 Midvest, Radio
Torben Møller
1 hour
http://www.dr.dk/playlister/p4vest/2017-01-08/p4-weekend-2017-01-08-07-03-2
Link to radio program
Carlo Sass Sørensen
National Space Institute, Geodesy
Press / Media
Derfor fryser din mobil sig selv ihjel i kulden
Tejs Vegge
07/01/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Media contribution (1)

Derfor fryser din mobil sig selv ihjel i kulden
07/01/2017
www.tv2.dk, Denmark, Web
http://livsstil.tv2.dk/forbrug/2017-01-06-derfor-fryser-din-mobil-sig-selv-ihjel-i-kulden
Tejs Vegge
Press / Media

Kom med kvantemekanikkens skyggejægere i laboratoriet
Ulrich Busk Hoff & Christian Scheffmann Jacobsen
07/01/2017
Quantum Physics and Information Technology, Department of Physics

Media contribution (1)

Kom med kvantemekanikkens skyggejægere i laboratoriet
07/01/2017
Videnskab.dk (National), Denmark, Web
Johanne Uhrenholt Kusnitzoff
http://videnskab.dk/naturvidenskab/kom-med-kvantemekanikkens-skyggejaegere-i-laboratoriet
Ulrich Busk Hoff & Christian Scheffmann Jacobsen
Department of Physics, Quantum Physics and Information Technology
Press / Media

Energy-saving ideas from science
Timothy Clifford Farrell
06/01/2017

Subject
Energy Efficiency
Department of Management Engineering, UNEP DTU Partnership

Media contribution (1)

Energy-saving ideas from science
06/01/2017
NDR, Radio
Hartmut Grawe
5 minutes
http://www.ndr.de/info/Energie-Spar-Ideen-aus-der-Wissenschaft,audio308036.html
Timothy Clifford Farrell
Department of Management Engineering, UNEP DTU Partnership
Press / Media

OECD conclusions about nanomaterials and test guidelines disputed
Steffen Foss Hansen
05/01/2017

Description
Danish, US researchers say further research needed to substantiate suitability claim
Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)

OECD conclusions about nanomaterials and test guidelines disputed
05/01/2017
Chemical Watch (International), Web
Andrew Turley
Danish, US researchers say further research needed to substantiate suitability claim
Steffen Foss Hansen

Relations
Activities:
A Critical and in-depth analysis of the environmental aspect of the OECD SP dossiers
Press / Media

Kageindtag på arbejde
Jeppe Matthiessen
05/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kageindtag på arbejde
05/01/2017
Berlingske, Print
Jens Rebensdorff
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Cephalosporiner og differentieret gult kort
Rene S. Hendriksen
04/01/2017
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Cephalosporiner og differentieret gult kort
04/01/2017
DR Nyhederne, Radio
Kristian Sloth
Rene S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

DTU-forskere: Forsyningsstrategi er risikabel for samfundsekonomin
Daniel Møller Sneum & Marie Münster
03/01/2017
Department of Management Engineering, Systems Analysis, Energy Systems Analysis

Media contribution (1)

DTU-forskere: Forsyningsstrategi er risikabel for samfundsekonomin
03/01/2017
Altinget.dk (National), Denmark, Web
http://www.altinget.dk/energi/artikel/dtu-forskere-forsyningsstrategi-er-risikabel-for-samfundsoekonomien
Daniel Møller Sneum & Marie Münster
Department of Management Engineering, Systems Analysis, Energy Systems Analysis
Press / Media

Fremtiden byder på flere digitale services i byggebranchen
Alfred Heller
01/01/2017
Department of Civil Engineering, Centre for IT-Intelligent Energy Systems in Cities

Media contribution (1)

Fremtiden byder på flere digitale services i byggebranchen
01/01/2017
Ingeniøren - Året Rundt 2016: Lang vej til nye batteriteknologier
Tejs Vegge
31/12/2016
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Media contribution (1)

Ingeniøren - Året Rundt 2016: Lang vej til nye batteriteknologier
31/12/2016
Ingeniøren, Print
https://ing.dk/artikel/lang-vej-nye-batteriteknologier-190102
Tejs Vegge
Department of Energy Conversion and Storage, Atomic scale modelling and materials
Press / Media

Invasiv fisk overtager Karrebæk fjord
Mads Christoffersen
23/12/2016
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management

Media contribution (1)

Invasiv fisk overtager Karrebæk fjord
23/12/2016
TV Øst, Television
Alexander Brun
2:30
Mads Christoffersen
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management
Press / Media

Danskernes svinekødsforbrug
Sisse Fagt
22/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes svinekødsforbrug
22/12/2016
Salling Avis, Print
Ture Damholt
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Myter om mad: Kan visse fødevarer, som hvidløg og ingefær, modvirke forkølelser?
Sisse Fagt
22/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Myter om mad: Kan visse fødevarer, som hvidløg og ingefær, modvirke forkølelser?
22/12/2016
Danskernes indtag af salt
Sisse Fagt
22/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes indtag af salt
22/12/2016
Politiken, Print
Emilie Rasmussen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Danskernes indtag af salt - og risikoen ved for højt indtag
Anne Dahl Lassen
22/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes svinekødsforbrug
Sisse Fagt
22/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kan visse madvarer modvirke forkølelse?
Sisse Fagt
22/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kan visse madvarer modvirke forkølelse?
22/12/2016
Videnskab.dk, Web
Asbjørn
Sisse Fagt
Sigurd and Snake trust science. They trust facts. But do they trust laws of nature so much that they are willing to put their life on the line? What would it for instance require to survive a fatal drop? Hopefully they will soon find out. Otherwise they'll be dead before the program ends.


**Subject**
TV education/entertainment
**National Space Institute, Measurement and Instrumentation Systems**

**Media contribution (1)**

**Med livet som indsats - Fatalt fald**
21/12/2016
Danish Radio, Television
Jonas Damstrup Fried
28 min
Danish Radio Link to the program expires 19/1-17
René Fléron
National Space Institute, Measurement and Instrumentation Systems
Press / Media

**Tarmbakterier og sundhed**
Tine Rask Licht
21/12/2016

Subject: Tarmbakterier og sundhed
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

**Media contribution (1)**

**Tarmbakterier og sundhed**
21/12/2016
Radio24Syv, Radio
Anders Nedergaard
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

**Alleviate forskningsprojekt - udvikling af produkter til forebyggelse og behandling af fødevareallergier**
Katrine Lindholm Bøgh
20/12/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

**Media contribution (1)**

**Alleviate forskningsprojekt - udvikling af produkter til forebyggelse og behandling af fødevareallergier**
20/12/2016
Ritzau, Print
Sabrina Melina Andersen
Katrine Lindholm Bøgh
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

**Inorganic arsenic, arsenolipids, iodine – tracking future feed controls**
Jens Jørgen Sloth
19/12/2016
National Food Institute, Research Group for Nano-Bio Science

**Media contribution (1)**

**Inorganic arsenic, arsenolipids, iodine – tracking future feed controls**
19/12/2016
feednavigator.com, Web
Jane Byrne
http://www.feednavigator.com/Regulation/Arsenic-iodine-tracking-future-feed-controls
Jens Jørgen Sloth
National Food Institute, Research Group for Nano-Bio Science
CEN standard for arsenik
Jens Jørgen Sloth
19/12/2016
National Food Institute, Research Group for Nano-Bio Science

Media contribution (1)

CEN standard for arsenik
19/12/2016
FeedNavigator.com, Print
Jane Byrne
Jens Jørgen Sloth
National Food Institute, Research Group for Nano-Bio Science

Danskernes brug af færdigretter
Sisse Fagt
16/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes brug af færdigretter
16/12/2016
Jysk fynske Medier/avisen Danmark, Print
Bruno Ingemann
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Tarmbakterier, fedme, mus
Tine Rask Licht
15/12/2016
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

Tarmbakterier, fedme, mus
15/12/2016
DR P1 Videnskabens Verden, Radio
Stine Blegvad
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology

Kalorieindholdet i burgere
Jeppe Matthiessen
13/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kalorieindholdet i burgere
13/12/2016
Fagbladet 3F, Print
Isa Kowalski Samuelsen
http://fagbladet3f.dk/artikel/kaempe-kalorieforskels-paa-fastfoodburgere
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
DTUs Sektorudviklingsrapport "Viden er den vigtigste ingrediens"
Egon Bech Hansen
12/12/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

DTUs Sektorudviklingsrapport "Viden er den vigtigste ingrediens"
12/12/2016
DR2 Dagen, Television
Mads Færch
Egon Bech Hansen
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Bisphenol A, BPF og BADGE i dåsesodavand
Sofie Christiansen
12/12/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Webinar: Visuals Matter: Using Effective Visuals to Support Project and Portfolio Decisions
Joana Geraldi
10/12/2016

Description
Dr Joana Geraldi (associate professor at the Engineering Systems Division) and Dr Mario Arlt (newly appointed adjunct professor) conducted a life webinar broadcasted by PMI and Projectmanagement.com on the impact of visuals on cognition and communication in projects, programs and portfolio decisions and communication practices. The goal of the webinar was to increase project practitioners’ and scholars’ awareness about the importance of visuals and to provide guidance on how to use visuals strategically. The webinar is based on a book published in 2015 about the topic. It is available for viewing at the projectmanagement.com, and has been viewed by over 3,000 people (as of January 2017).

Department of Management Engineering, Engineering Systems

Media contribution (1)

Webinar: Visuals Matter: Using Effective Visuals to Support Project and Portfolio Decisions
10/12/2016
PMI and ProjectManagement.com, Web
1 hour
Joana Geraldi
Department of Management Engineering, Engineering Systems

Press / Media

Hvordan påvirker koffeinpiller kroppen?
Marta Axelstad Petersen
09/12/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Hvordan påvirker koffeinpiller kroppen?
09/12/2016
Mælk og lactose intolerans
Inge Tetens
08/12/2016
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Mælk og lactose intolerans
08/12/2016
Kulør, Print
Elisabeth Hamerik Schwarz
Inge Tetens
National Food Institute, Research Group for Risk-Benefit

Drikker danske skolebørn for lidt vand
Sisse Fagt
08/12/2016

Subject
Danske skolebørns indtag af vand
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Drikker danske skolebørn for lidt vand
08/12/2016
DR Sjælland, Radio
Per Gade Gyldenkærne
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Tarmbakterier, fedme, mus
Tine Rask Licht
07/12/2016
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

Tarmbakterier, fedme, mus
07/12/2016
EatingWell magazine, Print
Marissa Donovan
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology

Sukker i ingrediensliste og næringsdeklaration
Heddie Mejborn
07/12/2016

Subject
Hvordan forskellige typer sukker skal skrives på ingredienslisten på fødevarer.
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)

**Sukker i ingrediensliste og næringsdeklaration**
07/12/2016
DR Kontant, Television
Thomas Lemke
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Universiteter: Vi skal uddanne Big data-ekspert**
Helle Rootzén
06/12/2016
Department of Applied Mathematics and Computer Science , Statistics and Data Analysis

Media contribution (1)

**Universiteter: Vi skal uddanne Big data-ekspert**
06/12/2016
Børsen, Print
Ernst Poulsen
Helle Rootzén
Department of Applied Mathematics and Computer Science , Statistics and Data Analysis
Press / Media

**Danskernes indtag af rugbrød**
Sisse Fagt
06/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

**Danskernes indtag af rugbrød**
06/12/2016
Søndagsavisen, Print
Louise A Poulsen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Universiteter: Vi skal uddanne Big data-ekspert**
Helle Rootzén
06/12/2016
Department of Applied Mathematics and Computer Science , Statistics and Data Analysis

Media contribution (1)

**Universiteter: Vi skal uddanne Big data-ekspert: -**
Helle Rootzén
06/12/2016
Department of Applied Mathematics and Computer Science , Statistics and Data Analysis

Media contribution (1)

**Universiteter: Vi skal uddanne Big data-ekspert: -**
06/12/2016
Er High Fructose Corn Sirup (HFCS) skadeligt?
Heddie Mejborn
05/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Danskernes indtag af frugt og grønt og kosttilskud
Sisse Fagt
05/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Ny forskning: Underbevidstheden sender dig fuld ud i trafikken
Laila Marianne Martinussen
02/12/2016

2015 tal for forekomsten af zoonoser
Birgitte Helwigh
01/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Subject
Spirituskørsel kan knytte sig til et mismatch mellem, hvad du tror, du mener og dine ubevidste holdninger, mener forsker fra DTU
Department of Management Engineering, Technology and Innovation Management

Media contribution (1)

Ny forskning: Underbevidstheden sender dig fuld ud i trafikken
02/12/2016
Villabyerne, Web
http://gentofte.lokalavisen.dk/ny-forskning--underbevidstheden-sender-dig-fuld-ud-i-trafikken-/Lokale-
yheder/20161202/artikler/712029922/1048
Laila Marianne Martinussen
Department of Management Engineering, Technology and Innovation Management
Press / Media

2015 tal for forekomsten af zoonoser
01/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Hård kritik af Total og kommune
Steffen Foss Hansen
01/12/2016

Description
HØRING: Prøveboring efter skifergas har slidt på kommune og borgere.

Subject
Shale gas extraction and environment
Department of Environmental Engineering, Environmental Chemistry

Media coverage (1)
Hård kritik af Total og kommune
01/12/2016
https://apps-infomedia-dk.proxy.findit.dtu.dk/mediearkiv/link?articles=e601d8de (Regional), Denmark, Print
Esben Agerlín Olsen
HØRING: Prøveboring efter skifergas har slidt på kommune og borgere.
Steffen Foss Hansen

Relations
Projects:
Shale gas in a Danish context

2015 tal for forekomsten af zoonoser
Birgitte Helwigh
01/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
2015 tal for forekomsten af zoonoser
01/12/2016
DR Nyhederne, Television
Anders Rasmussen
Birgitte Helwigh
National Food Institute, Division of Risk Assessment and Nutrition

Fakta om danskernes sukkerforbrug
Jeppe Matthiessen
01/12/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Fakta om danskernes sukkerforbrug
01/12/2016
DR Kontakt, Television
Kristine Selling Møller
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition

Nyt center skal koble læring med teknologi
Helle Rootzén
01/12/2016
Media contribution (1)

Nyt center skal koble læring med teknologi
01/12/2016
DTU Avisen, Print
Henrik Larsen
Helle Rootzén
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Press / Media

2015 tal for forekomsten af zoonoser
Birgitte Helwigh
30/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

2015 tal for forekomsten af zoonoser
30/11/2016
Ritzau, Print
Ida Meyer
Birgitte Helwigh
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Tarmbakteriers påvirkning af forbrændingen
Tine Rask Licht
30/11/2016
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

Tarmbakteriers påvirkning af forbrændingen
30/11/2016
Weekendavisen, Print
Jane Bennaroch
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Vindmølleparkers logistik er for omkostningstung
Charlotte Bay Hasager
30/11/2016

Subject
Logistik udgør næsten en femtedel af de samlede udgifter for en vindmøllepark i hele dens levetid. Det er en overraskende stor andel og derfor en væsentlig post at se nærmere på, hvis man vil bringe mølleparkernes udgifter ned.

Department of Wind Energy, Meteorology & Remote Sensing

Media contribution (1)

Vindmølleparkers logistik er for omkostningstung
30/11/2016
EnergySupply, Web
http://www.energy-supply.dk/article/view/303626/vindmolleparker_logicstik_er_for_omkostningstung
Vindmølleparkers logistik er for omkostningstung
Charlotte Bay Hasager
Danskernes brug af vitamin/mineralpiller
Anja Pia Biltoft-Jensen
29/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Er nogle typer juleslik værre end andre?
Anja Pia Biltoft-Jensen
29/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Tarmbakteriers påvirkning af forbrændingen
Tine Rask Licht
28/11/2016
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

Ål og Sortmundet kutling
Mads Christoffersen
28/11/2016
National Institute of Aquatic Resources, Section for Ecosystem Based Marine Management

Media contribution (1)
Mads Christoffersen
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management
Press / Media

Årsrapport for 2015 for den danske pesticidovervågning
Bodil Hamborg Jensen
24/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Saltindholdet i brød fra danske supermarkeder
Ellen Trolle
24/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Kommentar på Nature studie af tarmbakteriers 'hukommelse'
Henrik Munch Roager
22/11/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Kommentar på Nature studie af tarmbakteriers 'hukommelse'
22/11/2016
Videnskab.dk, Web
Rasmus Kragh Jakobsen
http://videnskab.dk/krop-sundhed/noeglen-til-varigt-vaegttab-kan-ligge-i-dine-tarme
Henrik Munch Roager
National Food Institute, Research Group for Gut Microbiology and Immunology

DTU Fødevareinstituttets rådgivning af Fødevarestyrelsens om MRSA
Frank Møller Aarestrup
17/11/2016
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

DTU Fødevareinstituttets rådgivning af Fødevarestyrelsens om MRSA
17/11/2016
Magisterbladet, Print
Thomas Kølln
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology

Er vi klar til et nyt læringskoncept?
Helle Rootzén
15/11/2016
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis

Media contribution (1)

Er vi klar til et nyt læringskoncept?
15/11/2016
Version2, Web
https://www.version2.dk/blog/vi-klar-nyt-læringskoncept-1039447
Helle Rootzén
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis

Udviklingen i det veterinære forbrug af antibiotika
Flemming Bager
15/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Udviklingen i det veterinære forbrug af antibiotika
15/11/2016
Ritzau, Print
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition

Udviklingen i det veterinære forbrug af antibiotika
Flemming Bager
15/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

Udviklingen i det veterinære forbrug af antibiotika
15/11/2016
TV2 News, Television
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition

Etisk råd flertal siger OK for GMO – hvad mener DTU?
Jan W. Pedersen
14/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

Etisk råd flertal siger OK for GMO – hvad mener DTU?
14/11/2016
DR, Television
Jan W. Pedersen
National Food Institute, Division of Risk Assessment and Nutrition

**Her jagter forskerne nøglen til kvantecomputeren**
Ulrich Busk Hoff
12/11/2016
Quantum Physics and Information Technology, Department of Physics

**Media contribution (1)**

Her jagter forskerne nøglen til kvantecomputeren
12/11/2016
Ingeniøren (National), Denmark, Web
Jens Ramskov
https://ing.dk/artikel/her-jagter-forskerne-noglen-kvantecomputeren-188154
Ulrich Busk Hoff

**DTU inviterer gymnasieelever og andet godtfolk til at lave kvanteeksperimenter**
Ulrich Busk Hoff
09/11/2016
Quantum Physics and Information Technology, Department of Physics

**Media contribution (1)**

DTU inviterer gymnasieelever og andet godtfolk til at lave kvanteeksperimenter
09/11/2016
Ingeniøren (National), Denmark, Web
Jens Ramskov
https://ing.dk/artikel/dtu-inviterer-gymnasieelever-andet-godtfolk-at-lave-kvanteeksperimenter-187928
Ulrich Busk Hoff

**Skype dialog på web-tv – Grøn omstilling: Panel diskusstion af den grønne omstilling med spørgsmål fra gymnasie elever**
Asger Bech Abrahamsen
07/11/2016

**Subject**
Grøn omstilling vind møller
Skype dialog på web-tv – Grøn omstilling: Panel diskussion af den grønne omstilling med spørgsmål fra gymnasie elever
07/11/2016
Mediehuset København, Web
Sune Gudmundsson
1,5 time
https://mediehuset-kbh.dk/groen-omstilling-svaert-kan-vaere/
Skype dialog on web-tv – Green Energy Transition
Asger Bech Abrahamsen
Department of Wind Energy, Wind Turbine Structures and Component Design
Press / Media

Danskernes fiskeindtag
Sisse Fagt
07/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Ville du købe en bil, der var programmeret til at slå føreren ihjel?
Martin Mose Bentzen
30/10/2016
Department of Management Engineering, Technology and Innovation Management

EFSA's opdaterede referenceværdi for D-vitamin
Inge Tetens
28/10/2016
National Food Institute, Research Group for Risk-Benefit

To astronomer med sensationel påstand: Vi har 234 tegn på liv i rummet: To amerikanske astronomer har fremlagt forskningsresultater, der antyder, at intelligent liv i rummet har prøvet at kontakte os.
Jens Olaf Pepke Pedersen
Liv i rummet
National Space Institute, Innovation and Research-based consultancy

To astronomer med sensationel påstand: Vi har 234 tegn på liv i rummet: To amerikanske astronomer har fremlagt forstærkningsresultater, der antyder, at intelligent liv i rummet har prøvet at kontakte os.
28/10/2016
BT, Web
Jonas Melander Hammer
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy

PhD, Sara Shafiee, DTU Management Engineering and Haldor Topsøe: PhD, Sara Shafiee, DTU Management Engineering and Haldor Topsøe
Sara Shafiee
28/10/2016

This film is produced for DTU’s celebration of the new PhD graduates 2016, and is about Sara Shafiee, how is doing an industrial PhD about: “Conceptual Modelling for Product Configuration Systems” in collaboration between DTU Management Engineering and Haldor Topsøe.

Primære aromatiske aminer (PAA) i fødevarekontaktmaterialer
Gitte Alsing Pedersen
27/10/2016

Hvor giftige er primære aromatiske aminer (PAA) i fødevarekontaktmaterialer?
National Food Institute, Division of Risk Assessment and Nutrition

Primære aromatiske aminer (PAA) i fødevarekontaktmaterialer
27/10/2016
Newsbreak, Web
Peter Koch
Gitte Alsing Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Vi har fundet signaler fra aliens
Jens Olaf Pepke Pedersen
27/10/2016
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Vi har fundet signaler fra aliens
27/10/2016
P4 København, Radio
5 min
http://www.dr.dk/radio/ondemand/p4kbh/p4-eftermiddag-2016-10-27-15-03-7#!/45:43
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy

Farligt, mindre hensynsfuldt og fyldt med egoister: Danskernes dom over trafikken er hård: Trafikken er blevet farligere de senere år, mener danskerne ifølge en undersøgelse, Kantar Gallup har lavet for Gjensidige Forsikring. Men billedet stemmer ikke overens med statistikkerne, påpeger forskere.
Laila Marianne Martinussen
27/10/2016
Department of Management Engineering, Technology and Innovation Management

Media contribution (1)

Farligt, mindre hensynsfuldt og fyldt med egoister: Danskernes dom over trafikken er hård: Trafikken er blevet farligere de senere år, mener danskerne ifølge en undersøgelse, Kantar Gallup har lavet for Gjensidige Forsikring. Men billedet stemmer ikke overens med statistikkerne, påpeger forskere.
27/10/2016
Berlingske, Web
Nationalt
Laila Marianne Martinussen
Department of Management Engineering, Technology and Innovation Management

Sensationel påstand: »Vi har fundet signaler fra aliens«: To astronomer hævder, at de har fundet signaler fra intelligente væsner fra 234 forskellige steder i rummet
Jens Olaf Pepke Pedersen
26/10/2016

Description
Man har ledt efter dem i århier. Men nu hævder to amerikanske astronomer, at de langt om længe har fundet dem - vaskeægte intelligente signaler fra rummet.

Subject
Aliens
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Sensationel påstand: »Vi har fundet signaler fra aliens«: To astronomer hævder, at de har fundet signaler fra intelligente væsner fra 234 forskellige steder i rummet
26/10/2016
Berlingske, Web
Lars Henrik Aagaard
http://www.b.dk/viden/sensationel-paastand-vi-har-fundet-signaler-fra-aliens
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy

Pesticidrester i friskpresset juice
Jens Hinge Andersen
Subject
Pesticidrest i friskpresset juice
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Pesticidrest i friskpresset juice
24/10/2016
Radio24Syv, Radio
Emma Juul Madsen,
Jens Hinge Andersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Selvkørende biler og etik: Ville du købe en bil, der var programmeret til at slå føreren ihjel?
Martin Mose Bentzen
24/10/2016
Department of Management Engineering, Technology and Innovation Management

Media contribution (1)

Selvkørende biler og etik: Ville du købe en bil, der var programmeret til at slå føreren ihjel?
24/10/2016
IDA Universe, Web
Rene Pedersen
Martin Mose Bentzen
Department of Management Engineering, Technology and Innovation Management
Press / Media

Computermodel skal overvåge kvægssygdom
Carsten Thure Kirkeby
20/10/2016

Description
Short communication about iCull in Ingeniøren
National Veterinary Institute, Section for Epidemiology

Media contribution (1)

Computermodel skal overvåge kvægssygdom
20/10/2016
Ingeniøren, Web
Carsten Thure Kirkeby
National Veterinary Institute, Section for Epidemiology
Press / Media

Fakta om GMO
Egon Bech Hansen
19/10/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Fakta om GMO
19/10/2016
Samvirke, Print
Kristian Laulund
Egon Bech Hansen
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media
Eksperter: Politikere har prioriteret de større byer
Kåre Hendriksen
19/10/2016

Subject
Landsplanredgørelse 2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Eksperter: Politikere har prioriteret de større byer
19/10/2016
KNR, Print
Anton Gundersen Lihn
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Press / Media

Dansk professor får prestigefuld toppost i Hamborg
Martin Meedom Nielsen
17/10/2016
Department of Physics, Neutrons and X-rays for Materials Physics

Media contribution (1)

Dansk professor får prestigefuld toppost i Hamborg
17/10/2016
Uddannelses og Forskningsministeriet, Web
http://ufm.dk/aktuelt/nyheder/2016/dansk-professor-far-prestigefuld-toppost-i-hamborg
Martin Meedom Nielsen
Department of Physics, Neutrons and X-rays for Materials Physics
Press / Media

Ekspert: Redegørelse kan ikke bruges som grundlag for prioritering
Kåre Hendriksen
17/10/2016

Subject
Landsplanredgørelse 2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Ekspert: Redegørelse kan ikke bruges som grundlag for prioritering
17/10/2016
KNR, Print
Anton Gundersen Lihn
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Press / Media

Flere bygder vil lukke
Kåre Hendriksen
14/10/2016

Subject
Landsplanredgørelse 2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Flere bygder vil lukke
14/10/2016
**Pesticidrester (glyphosat) i fødevarer**
Bodil Hamborg Jensen
14/10/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Pesticidrester (glyphosat) i fødevarer**
14/10/2016
Dansk Planteværn, Radio
Jakob Tilma
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition

**Cross-border auctions for solar PV - the first of a kind**
Lena Kitzing & Paul Wendring
13/10/2016 → 13/10/2016

**Description**
http://concito.dk/blog/danmark-tyskland-front-foerste-internationale-solcelleudbud

**Subject**
Renewable energy auctions in Denmark and Germany
Department of Management Engineering, Systems Analysis, Energy Economics and Regulation, CONCITO

**Media contributions (2)**

**Danmark og Tyskland i front med første internationale solcelleudbud**
13/10/2016
CONCITO-bloggen (National), Denmark, Web
CONCITO
https://concito.dk/blog/danmark-tyskland-front-foerste-internationale-solcelleudbud
Blog article - guest blog for CONCITO
https://concito.dk/blog/danmark-tyskland-front-foerste-internationale-solcelleudbud
CONCITO

**Netbutikker har markant flere antibakterielle sølvprodukter på hylderne**
Steffen Foss Hansen
13/10/2016

**Description**
Antallet af hverdagsprodukter med bakteriebekæmpende sølv i nanopartikelform er vokset med 80 procent på bare fire år, viser tal fra DTU Miljø. Men sølv kan skabe antibiotikaresistente bakterier og skade miljøet.
Department of Environmental Engineering, Environmental Chemistry

**Media contribution (1)**
Netbutikker har markant flere antibakterielle sølvprodukter på hylde
13/10/2016
DR (National), Denmark, Web
Thomas Lemke, Helle Slejborg, Simon Risum Pedersen
https://www.dr.dk/nyheder/penge/kontant/netbutikker-har-markant-flere-antibakterielle-soelvprodukter-paa-hylderne
Antallet af hverdagsprodukter med bakteriebekæmpende sølv i nanopartikelform er vokset med 80 procent på bare fire år, viser tal fra DTU Miljø. Men sølv kan skabe antibiotikaresistente bakterier og skade miljøet.
Steffen Foss Hansen
Press / Media

Den fødevarebarne sygdomsbyrde
Sara Monteiro Pires
13/10/2016

Subject
Den fødevarebarne sygdomsbyrde
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Den fødevarebarne sygdomsbyrde
Sara Monteiro Pires
13/10/2016
Jornal Público, Radio
Catarina Gomes
Sara Monteiro Pires
National Food Institute, Research Group for Risk-Benefit
Press / Media

Den fødevarebarne sygdomsbyrde
Sara Monteiro Pires
12/10/2016

Subject
Den fødevarebarne sygdomsbyrde
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Den fødevarebarne sygdomsbyrde
Sara Monteiro Pires
12/10/2016
Agência Lusa, Radio
Raquel Rio
Sara Monteiro Pires
National Food Institute, Research Group for Risk-Benefit
Press / Media

Den fødevarebarne sygdomsbyrde
Sara Monteiro Pires
12/10/2016

Subject
Den fødevarebarne sygdomsbyrde
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Den fødevarebarne sygdomsbyrde
Sara Monteiro Pires
12/10/2016
Radio TSF, Radio
Isabel Meira
Sara Monteiro Pires
National Food Institute, Research Group for Risk-Benefit
Press / Media
Danskernes fiskeindtag
Sisse Fagt
12/10/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes fiskeindtag
12/10/2016
P1 Orientering, Radio
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

DTU delivering equipment for Mars2020: PIXL instrument
David Arge Klevang Pedersen
12/10/2016

Description
Explanation of mission objective and DTU deliveries for the PIXL instrument onboard NASAs Mars2020 mission
National Space Institute, Measurement and Instrumentation Systems

Media contribution (1)

DTU delivering equipment for Mars2020: PIXL instrument
12/10/2016
DR2, Television
Dagen
https://www.dr.dk/tv/se/dr2-dagen/dr2-dagen-2016-10-12#!
David Arge Klevang Pedersen
Measurement and Instrumentation Systems, National Space Institute
Press / Media

Stigning i forbrug af antibiotika i kyllingeproduktionen
Lars Bogø Jensen
12/10/2016

Subject
Stigning i forbrug af antibiotika i kyllingeproduktionen
National Food Institute, Research Group for Microbial Food Safety and Quality

Media contribution (1)

Stigning i forbrug af antibiotika i kyllingeproduktionen
12/10/2016
P4 SYD, Radio
Henrik Kellberg
Lars Bogø Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality
Press / Media

Indslag om sortmundet kutting og projektet SORTMUND
Mads Christoffersen
10/10/2016

Description
Sendt kl 15.35
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management

Media contribution (1)

Indslag om sortmundet kutting og projektet SORTMUND
10/10/2016
Debatindlæg om MRSA og andre former for resistens
Frank Møller Aarestrup
09/10/2016
National Food Institute, Research Group for Genomic Epidemiology

Debatindlæg om MRSA og andre former for resistens
09/10/2016
Politiken, Print
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology

Der beste Laser der Welt
Martin Meedom Nielsen
06/10/2016
Department of Physics, Neutrons and X-rays for Materials Physics

Der beste Laser der Welt
06/10/2016
Die Zeit, Print
Martin Meedom Nielsen
Information om brug af fluorstoffer og deres toksicitet
Anne Marie Vinggaard
05/10/2016
National Food Institute, Research Group for Molecular Toxicology, Copenhagen Center for Health Technology

Media contribution (1)

Information om brug af fluorstoffer og deres toksicitet
05/10/2016
Samvirke, Print
Kristian Herlufsen
Anne Marie Vinggaard
Copenhagen Center for Health Technology, National Food Institute, Research Group for Molecular Toxicology

Er landbrugets brug af prosulfocarb farlig?
Bodil Hamborg Jensen
04/10/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Er landbrugets brug af prosulfocarb farlig?
04/10/2016
Landbrugsavisen, Print
Pia Lykke
http://landbrugsavisen.dk/skal-vi-frygte-prosulfocarb-i-dansk-landbrug
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition

Prosulfocarb i æbler og pesticidrester generelt i frugt og grønt
Bodil Hamborg Jensen
03/10/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Prosulfocarb i æbler og pesticidrester generelt i frugt og grønt
03/10/2016
Dansk Planteværn, Print
Jakob Tilma
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition

Sundhedsfarerne ved at drikke energidrikke
Marta Axelstad Petersen
03/10/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Sundhedsfarerne ved at drikke energidrikke
03/10/2016
Søndagsavisen, Print
Christina Ledertoug
Marta Axelstad Petersen
National Food Institute, Research Group for Reproductive Toxicology
Rosetta har en sidste opgave inden den styrter
Kristoffer Leer
30/09/2016
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Rosetta har en sidste opgave inden den styrter
30/09/2016
Pol.dk, Web
http://politiken.dk/viden/ECE3405803/rumfartoejet-rosetta-har-en-sidste-opgave-inden-det-styrter/
Kristoffer Leer
National Space Institute, Astrophysics and Atmospheric Physics

Findes der superfoods?
Heddie Mejborn
30/09/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Findes der superfoods?
30/09/2016
DR Lev Nu, Web
Dorthe Kyhn
http://www.dr.dk/levnu/mad/ekspert-om-superfood-der-findes-ikke-mirakel-mad
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition

Brug af emballage til fødevarer: Hvordan bruger man emballage til fødevarer korrekt?
Gitte Alsing Pedersen
29/09/2016

Subject
Brug af emballage til fødevarer
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Brug af emballage til fødevarer: Hvordan bruger man emballage til fødevarer korrekt?
29/09/2016
DR1 Videnskabens Verden, Radio
Ida Keliemann
Gitte Alsing Pedersen
National Food Institute, Division of Risk Assessment and Nutrition

Ph.d.-forsvar om at vurdere risikoen for udsættelse for nanomaterialer i arbejdsmiljøet ved hjælp af control-banding værktøjer
Steffen Foss Hansen
27/09/2016
Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)

Ph.d.-forsvar om at vurdere risikoen for udsættelse for nanomaterialer i arbejdsmiljøet ved hjælp af control-banding værktøjer
27/09/2016
Arbejdsmiljoforskning.dk (National), Denmark, Web
Kirsten Rydahl
Proteiner mæthed  
Inge Tetens  
27/09/2016  

Subject
Proteiner mæthed
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Proteiner mæthed  
27/09/2016  
DR Detektor, Television  
Jakob Bang Schmidt  
Inge Tetens  
National Food Institute, Research Group for Risk-Benefit
Press / Media

Om mikrobølgeovne og hvad der sker med mad, der opvarmes i en mikrobølgeovn  
Morten Poulsen  
27/09/2016  

Subject
Mikrobølgeovne
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Om mikrobølgeovne og hvad der sker med mad, der opvarmes i en mikrobølgeovn  
27/09/2016  
DR P1 Videnskabens Verden, Radio  
Ida Kellemann  
Morten Poulsen  
National Food Institute, Research Group for Risk-Benefit
Press / Media

Steget forbrug af antibiotika i kyllingeproduktionen  
Lars Bogø Jensen  
27/09/2016  

Subject
Steget forbrug af antibiotika i kyllingeproduktionen
National Food Institute, Research Group for Microbial Food Safety

Media contribution (1)

Steget forbrug af antibiotika i kyllingeproduktionen  
27/09/2016  
DR Nyhederne, Television  
Jens Norra  
Lars Bogø Jensen  
National Food Institute, Research Group for Microbial Food Safety
Press / Media

Steget forbrug af antibiotika i kyllingeproduktionen  
Lars Bogø Jensen  
27/09/2016  

Subject
Steget forbrug af antibiotika i kyllingeproduktionen
National Food Institute, Research Group for Microbial Food Safety

Media contribution (1)

Steget forbrug af antibiotika i kyllingeproduktionen
27/09/2016
DR Nyhederne, Television
Lars Boga Jensen
National Food Institute, Research Group for Microbial Food Safety
Press / Media

Definition af en kage
Sisse Fagt
26/09/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Definition af en kage
26/09/2016
Videnskab.dk, Print
Charlotte Price Persson
http://videnskab.dk/kultur-samfund/hvad-er-en-kage
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Water plumes på Europa
Kristoffer Leer
26/09/2016

Description
Interview om geysere på Europa (Jupiter månen) ca. kl 16.40
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Water plumes på Europa
26/09/2016
TV2 News, Television
Kristoffer Leer
National Space Institute, Astrophysics and Atmospheric Physics
Press / Media

Danskernes indtag af kosttilskud
Anja Pia Biltoft-Jensen
26/09/2016

Subject
Danskernes indtag af kosttilskud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes indtag af kosttilskud
26/09/2016
DR1, Television
Asgør Mow
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Gravides udsættelse for kemiske stoffer
Julie Boberg
23/09/2016

Subject
Gravides udsættelse for kemiske stoffer
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)
Gravides udsættelse for kemiske stoffer
23/09/2016
Tidsskrift for Jordemødre, Print
Maria Stove
Julie Boberg
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

 Hvordan bevares mikronæringsstoffer bedst ved opvarmning af grøntsager?
Jette Jakobsen
22/09/2016
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)
Hvordan bevares mikronæringsstoffer bedst ved opvarmning af grøntsager?
22/09/2016
Forbrugerrådet Tænk, Print
Tage Majland
Jette Jakobsen
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

Børneovervægt
Jeppe Matthiessen
21/09/2016

Subject
Børneovervægt
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Børneovervægt
21/09/2016
Vores Børn og Gravid, Print
Kristina Svith Villadsen
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Stort fokus på branchens vækstpotentiale ved Vandtek
20/09/2016

Description
Mention of Camilla Tang winning "Best Student Project" at Vandtek
Department of Environmental Engineering, Urban Water Systems

Media contribution (1)
Stort fokus på branchens vækstpotentiale ved Vandtek
20/09/2016
danskVAND, Print
Department of Environmental Engineering, Urban Water Systems
Press / Media
FremtidsUpdate: Genetisk Redigering i det 21 århundrede
Bjørn Gunnar Voldborg
20/09/2016

Subject
Novo Nordisk Foundation Center for Biosustainability, CHO Core

Media contribution (1)

FremtidsUpdate: Genetisk Redigering i det 21 århundrede
20/09/2016
IDA Universe, Web
Rolf Ask Clausen
1 time
https://universe.ida.dk/arrangement/fremtidsupdate-direkte-fra-idas-studie-7-319310/
Bjørn Gunnar Voldborg
Novo Nordisk Foundation Center for Biosustainability, CHO Core
Press / Media

Nanosilver
Katrin Löschner
20/09/2016

Subject
Nanosilver
National Food Institute, Research Group for Nano-Bio Science

Media contribution (1)

Nanosilver
20/09/2016
DR1 Kontant, Television
Katrin Löschner
National Food Institute, Research Group for Nano-Bio Science
Press / Media

Fluorindholdet i danskvand
Miriam Meister
20/09/2016

Subject
Fluorindholdet i danskvand
National Food Institute

Media contribution (1)

Fluorindholdet i danskvand
20/09/2016
Web
Miriam Meister
National Food Institute
Press / Media

MRSA bekæmpelse
Frank Møller Aarestrup
19/09/2016

Subject
MRSA bekæmpelse
National Food Institute, Research Group for Genomic Epidemiology
MRSA bekæmpelse
19/09/2016
Maskinbladet, Print
Erik
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Bedre smittesorping med supercomputer
Emma Elisabeth Hagberg
17/09/2016

Subject
gener og genomer; husdyrsygdomme; produktionsdyr; dataanalyse
Molecular Evolution, Department of Bio and Health Informatics, Disease Intelligence and Molecular Evolution

Bedre smittesorping med supercomputer
17/09/2016
Dynamo, Print
Julie Iben Schmidt
http://www.dtu.dk/Om-DTU/Nyheder-og-presse/Dynamo
Emma Elisabeth Hagberg
Molecular Evolution, Department of Bio and Health Informatics, Disease Intelligence and Molecular Evolution
Press / Media

Interview contribution: Article "Hamsterceller producerer medicin" in Dynamo
Helene Faustrup Kildegaard
16/09/2016

Subject
Dy
Novo Nordisk Foundation Center for Biosustainability, CHO Cell Line Engineering and Design

MRSA styregruppe
Flemming Bager
16/09/2016

Subject
MRSA styregruppe
National Food Institute, Division of Risk Assessment and Nutrition

MRSA styregruppe
16/09/2016
DR1, Television
Kasper
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Danskernes indtag af kosttilskud
Anja Pia Biltoft-Jensen
15/09/2016

Subject
Danskernes indtag af kosttilskud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes indtag af kosttilskud
15/09/2016
DR1, Television
Asger Mow og Peter gutrup Giesling
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition

Detektor
Mogens Fosgerau
15/09/2016
Department of Management Engineering, Transport policy and behaviour

Media contribution (1)

Detektor
15/09/2016
Television
https://www.dr.dk/tv/se/detektor-tv/detektor-2016-09-15
Mogens Fosgerau
Transport policy and behaviour, Department of Management Engineering

MRSA
Frank Møller Aarestrup
14/09/2016

Subject
MRSA
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

MRSA
14/09/2016
Politiken, Print
Maj Bak Madsen
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology

Vil vi bakke op om Jørgen Schlundts udtalelser til Politiken?
Christine Nellemann
14/09/2016

Subject
Vil vi bakke op om Jørgen Schlundts udtalelser til Politiken?
National Food Institute

Media contribution (1)
Vil vi bakke op om Jørgen Schlundts udtalelser til Politiken?
14/09/2016
Politiken, Web
Maj Bak Madsen
Christine Nellemann
National Food Institute
Press / Media

Ifm MRSA-dokumentar
Frank Møller Aarestrup
14/09/2016

Subject
Er der blevet lagt pres på mig?
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Ifm MRSA-dokumentar
14/09/2016
Politiken, Web
Maj Bak Madsen
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Hvad synes jeg om at DTU-foods anbefalinger om MRSA ikke er blevet fulgt
Frank Møller Aarestrup
14/09/2016

Subject
Hvad synes jeg om at DTU-foods anbefalinger om MRSA ikke er blevet fulgt
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Hvad synes jeg om at DTU-foods anbefalinger om MRSA ikke er blevet fulgt
14/09/2016
TV2, Television
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

FN's topmøde om resistens; hvad er situationen globalt og mine forhåbninger.
Frank Møller Aarestrup
14/09/2016

Subject
FN's topmøde om resistens; hvad er situationen globalt og mine forhåbninger.
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

FN's topmøde om resistens; hvad er situationen globalt og mine forhåbninger.
14/09/2016
Jyllandsposten, Print
Klaus Dohn
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

MRSA og DRs dokumentar
Frank Møller Aarestrup
13/09/2016
MRSA og DRs dokumentar
National Food Institute, Research Group for Genomic Epidemiology

MRSA og DRs dokumentar
13/09/2016
TV2, Television
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology

Fluorstoffer i Fødevarekontaktmaterialer (FKM)
National Food Institute, Division of Risk Assessment and Nutrition

Fluorstoffer i Fødevarekontaktmaterialer (FKM)
13/09/2016
Politiken, Print
Mette Guldagger
Gitte Alsing Pedersen
National Food Institute, Division of Risk Assessment and Nutrition

Indholdet af vitaminer og mineraler i vores fødevarer er lavere end tidligere
National Food Institute, Research Group for Bioactives – Analysis and Application

Indholdet af vitaminer og mineraler i vores fødevarer er lavere end tidligere
13/09/2016
DRs Sundhedsmagasin, Web
Asger Mow/Lillian Gjerulf
Jette Jakobsen
National Food Institute, Research Group for Bioactives – Analysis and Application

Mikroplastik
National Food Institute, Research Group for Analytical Food Chemistry

Mikroplastik
13/09/2016
Koncern TV og..., Television
Søs Noiesen
Kit Granby
National Food Institute, Research Group for Analytical Food Chemistry
Koffeinindtag
Marta Axelstad Petersen
12/09/2016
Subject
Koffeinindtag
National Food Institute, Research Group for Reproductive Toxicology
Media contribution (1)

Koffeinindtag
12/09/2016
TV2, Television
Camilla Carlson
Marta Axelstad Petersen
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

Tarmbakterier
Tine Rask Licht
12/09/2016
Subject
Tarmbakterier
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology
Media contribution (1)

Tarmbakterier
12/09/2016
Web
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Eksperter: Samsungs brandfarlige batterier er bekymrende
Tejs Vegge
11/09/2016
Atomic scale modelling and materials, Department of Energy Conversion and Storage
Media contribution (1)

Eksperter: Samsungs brandfarlige batterier er bekymrende
11/09/2016
www.dr.dk, Web
https://www.dr.dk/nyheder/indland/eksperter-samsungs-brandfarlige-batterier-er-bekymrende
Tejs Vegge
Atomic scale modelling and materials, Department of Energy Conversion and Storage
Press / Media

P1 eftermiddag
Kristoffer Leer
08/09/2016
Description
Interview om OSIRIS Rex missionen
National Space Institute, Astrophysics and Atmospheric Physics
Media contribution (1)
Er GMO farligt, nyttigt, overreguleret i EU?
Jan W. Pedersen
08/09/2016

Subject
Er GMO farligt, nyttigt, overreguleret i EU?
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Er GMO farligt, nyttigt, overreguleret i EU?
08/09/2016
Fra DK medie og journalisthøjskole, Web
Anders Worup
Jan W. Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

丹麦加大对无人机和格陵兰岛投入, 旨在支持北极主权宣示申请: 近期, 丹麦王国一直聚焦其北极领土, 不仅对北极一大块狭长地带宣示了主权, 还全力准备加强在北极的军事布防。丹麦拟发射卫星、投放无人侦察机, 并依靠格陵兰人来加强其在北极地区的安全。
Jens Olaf Pepke Pedersen
08/09/2016

Subject
Droner og satellitter i Arktis
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

D-vitamin
Inge Tetens
07/09/2016

Subject
D-vitamin
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)
Rumsinde forsvundet i to år på komet: Nu jubler forskerne igen
Kristoffer Leer
06/09/2016
National Space Institute, Astrophysics and Atmospheric Physics

Pesticidrester i fødevarer
Bodil Hamborg Jensen
06/09/2016

Bornholms miljøplan helt uden klimaeffekt: Bornholms Regionskommunes stort anlagte klimapolitik betyder absolut intet for klimaet.
Jens Olaf Pepke Pedersen
06/09/2016
National Space Institute, Innovation and Research-based consultancy

Vitaminer og mineraler fra kosten og kosttilskud
Anja Pia Biltoft-Jensen
05/09/2016

Subject
Svenske folk vil have more hjerte i hjertefonden
National Food Institute, Research Group for Risk-Benefit

Bornholms miljøplan helt uden klimaeffekt: Bornholms Regionskommunes stort anlagte klimapolitik betyder absolut intet for klimaet.
Jens Olaf Pepke Pedersen
06/09/2016
National Space Institute, Innovation and Research-based consultancy

Vitaminer og mineraler fra kosten og kosttilskud
Anja Pia Biltoft-Jensen
05/09/2016

Subject
Vitaminer og mineraler fra kosten og kosttilskud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Vitaminer og mineraler fra kosten og kosttilskud
05/09/2016
Ritzau Fokus, Web
Mathias Sinius Mølgaard
Anja Pia Bítloft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Næringsværdi af 'kernen' fra en ananas
Miriam Meister
05/09/2016

Subject
Næringsværdi af 'kernen' fra en ananas
National Food Institute

Media contribution (1)

Næringsværdi af 'kernen' fra en ananas
05/09/2016
Metroexpress, Print
Julie Schoen
Miriam Meister
National Food Institute
Press / Media

Danmarks klimahensigter betyder intet for klimaet: Regeringens 2025-plan har fået hug for ikke at være ambitiøs nok på klimaområdet. Men danske klima-tiltag har ingen større betydning, siger klimaforsker. De er ren symbolpolitik
Jens Olaf Pepke Pedersen
05/09/2016
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Danmarks klimahensigter betyder intet for klimaet: Regeringens 2025-plan har fået hug for ikke at være ambitiøs nok på klimaområdet. Men danske klima-tiltag har ingen større betydning, siger klimaforsker. De er ren symbolpolitik
05/09/2016
Kristeligt Dagblad, Print
Camilla Beer Arnsberg
http://www.kristeligt-dagblad.dk/danmark/danmarks-klima-hensigter-betyder-intet-klimaet
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy

Press / Media

Teenageres indtag af grøntsager
Sisse Fagt
02/09/2016

Subject
Teenageres indtag af grøntsager
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Teenageres indtag af grøntsager
02/09/2016
Ritzau Fokus, Web
Anne-Cathrine Jensen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Plantebaseret kosttilskud
Sisse Fagt
02/09/2016

Subject
Plantebaseret kosttilskud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Plantebaseret kosttilskud
02/09/2016
NutralIngredients , Print
Anne-Rose Dunn
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

24 spørgsmål til professoren
Tine Rask Licht
02/09/2016

Subject
24 spørgsmål til professoren
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

24 spørgsmål til professoren
02/09/2016
Radio 24Syv, Radio
Lone Frank
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Plantebaserede kosttilskud
Sisse Fagt
02/09/2016

Subject
Plantebaserede kosttilskud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Plantebaserede kosttilskud
02/09/2016
BT, Web
Heidi Petersen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Mystisk signal fra rummet skal undersøges: Prøver nogen at skabe kontakt?
Søren Brandt
01/09/2016
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Mystisk signal fra rummet skal undersøges: Prøver nogen at skabe kontakt?
01/09/2016
Danmarks første astronaut bliver forfatter
Jens Olaf Pepke Pedersen
01/09/2016

Subject
Andreas Mogensen og effekten på forskning og uddannelse
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Danmarks første astronaut bliver forfatter
01/09/2016
DR2 Morgen, Television
10 min
https://www.dr.dk/tv/se/dr2-morgen/dr2-morgen-2016-09-01#!/01:31:41
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy

Description
Recently, the Kingdom of Denmark has been focusing on its Arctic domains. Besides making a territorial claim on large swaths of the Arctic, Denmark is all set to bolster its military presence in the region. Copenhagen aims to launch satellite and drone surveillance, but is also counting on Greenlanders to strengthen the region's security.

National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Denmark Stakes on Drones and Greenlanders to Back Its Arctic Claims
Jens Olaf Pepke Pedersen
01/09/2016

'Mystisk' signal fra rummet er formentlig en fejl
Søren Brandt
31/08/2016
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

'Mystisk' signal fra rummet er formentlig en fejl
31/08/2016
Videnskab.dk, Web
Charlotte Price Persson
Søren Brandt
National Space Institute, Astrophysics and Atmospheric Physics

I relation til DTU presse-meddelse: Mapping foods' DNA can reveal fraud*
Rene S. Hendriksen
30/08/2016

Subject
I relation til DTU presse-meddelse: Mapping foods’ DNA can reveal fraud
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

I relation til DTU presse-meddelse: Mapping foods’ DNA can reveal fraud
30/08/2016
FoodQualityNews.com, Web
Joseph James Whitworth
Rene S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology

WGS capable of revealing food fraud but limitations identified
Rene S. Hendriksen
30/08/2016
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

WGS capable of revealing food fraud but limitations identified
30/08/2016
FoodQualityNews.com, Web
Rene S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology

Pesticidrester i fødevarer, er det farligt
Bodil Hamborg Jensen
30/08/2016

Subject
Pesticidrester i fødevarer, er det farligt
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Pesticidrester i fødevarer, er det farligt
30/08/2016
BT, Web
Andreas Hovgaard
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition

Listeria vækst i vakuumpakkede fødevarer
Miriam Meister
30/08/2016

Subject
Listeria vækst i vakuumpakkede fødevarer
National Food Institute

Media contribution (1)

Listeria vækst i vakuumpakkede fødevarer
30/08/2016
NTV Broadcasting Company, Television
Producer Daria Lyubina
Miriam Meister
National Food Institute

Jens Olaf Pepke Pedersen
29/08/2016
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)


29/08/2016
Politiken, Print
Adam Hannestad
http://politiken.dk/indland/premium/ECE3360153/forskere-tror-paa-fagre-nye-droneverden/
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media

Satellitter og droner i Arktis
Jens Olaf Pepke Pedersen
29/08/2016
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Satellitter og droner i Arktis
29/08/2016
P1 morgen, Radio
6 minutes
http://www.dr.dk/radio/ondemand/p1/p1-morgen-2016-08-29#!/
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media

6 mennesker på Hawaii i Marsforsøg
Kristoffer Leer
29/08/2016

Subject
I programmet Datolinien, sidste indslag
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

6 mennesker på Hawaii i Marsforsøg
29/08/2016
Radio 24/7, Radio
8 minutter
http://www.radio24syv.dk/programmer/datolinjen/
Sidste indslag d. 29. august
Kristoffer Leer
National Space Institute, Astrophysics and Atmospheric Physics
Press / Media

Danmark skal investere i droner og satellitter i Arktis
Jens Olaf Pepke Pedersen
29/08/2016
National Space Institute, Innovation and Research-based consultancy
Danmark skal investere i droner og satellitter i Arktis
29/08/2016
DR2 Dagen, Television
12 min
https://www.dr.dk/tv/se/dr2-dagen/dr2-dagen-2016-08-29
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media

Droner og satellitter skal sikre retten til Nordpolens havbund
Jens Olaf Pepke Pedersen
29/08/2016
National Space Institute, Innovation and Research-based consultancy

Droner og satellitter er fremtiden for Arktis: Forskere fra DTU Space har undersøgt potentialet i at investere i rumbaseret overvågning
Jens Olaf Pepke Pedersen
29/08/2016
National Space Institute, Innovation and Research-based consultancy

Storstilet satsning på droner kan styrke Danmarks rolle i Arktis: En eksplosiv udvikling i teknologien bag droner får forskere til at anbefale en storstilet satsning på de flyvende maskiner i Arktis. Anbefalingen fremgår af en regeringsbestilt rapport, som DTU Space fremlægger mandag
Jens Olaf Pepke Pedersen
29/08/2016
Storstilet satsning på droner kan styrke Danmarks rolle i Arktis: En eksplosiv udvikling i teknologien bag droner får forskere til at anbefale en storstilet satsning på de flyvende maskiner i Arktis. Anbefalingen fremgår af en regeringsbestilt rapport, som DTU Space fremlægger mandag 29/08/2016
Sermitsiaq, Web
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy

Доклад: отправляйте в Арктику беспилотники: В результате стремительного развития технологий специалисты рекомендуют в Арктике делать ставку на беспилотники.
Jens Olaf Pepke Pedersen
29/08/2016
National Space Institute, Innovation and Research-based consultancy

Mars simulation på Hawaii
Kristoffer Leer
29/08/2016

Description
Interview om Mars simulering på Hawaii

Subject
DR2 dagen
National Space Institute, Astrophysics and Atmospheric Physics

Mars simulation på Hawaii
29/08/2016
DR2, Television
5 minutter
https://www.dr.dk/tv/se/dr2-dagen/dr2-dagen-2016-08-29#!/
Ved ca 55 min, 5 min indslag
Kristoffer Leer
National Space Institute, Astrophysics and Atmospheric Physics

Seks personer har været på Mars
Kristoffer Leer
29/08/2016

Description
Indslag i TV-Avisen om Mars forsøg på Hawaii
National Space Institute, Astrophysics and Atmospheric Physics

Seks personer har været på Mars
Rapport: Send droner til Arktis: En eksplosiv udvikling i teknologi får forskere til anbefale satsning på droner i Arktis.
Jens Olaf Pepke Pedersen
29/08/2016
National Space Institute, Innovation and Research-based consultancy

Media contribution (1)

Cocktail effekter og fødevarekontaktmaterialer
Anne Marie Vinggaard
29/08/2016

Subject
Cocktail effekter og fødevarekontaktmaterialer
National Food Institute, Research Group for Molecular Toxicology, Copenhagen Center for Health Technology

Media contribution (1)

Hvis Solen lå 25 m fra Jorden ville Proxima b ligge i Chicago
Kristoffer Leer
27/08/2016

Description
Interview om ny exoplanet
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Danskernes indtag af salt
Anne Dahl Lassen
26/08/2016
Subject
Danskernes indtag af salt
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes indtag af salt
26/08/2016
Søndagsavisen, Print
Christina Ledertoug
Anne Dahl Lassen
National Food Institute, Division of Risk Assessment and Nutrition

Virker kampagner?
Sisse Fagt
24/08/2016

Subject
Virker kampagner?
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Virker kampagner?
24/08/2016
DR P1 Morgen, Radio
Mia Ulfgaard
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Virker kampagner?
Sisse Fagt
24/08/2016

Subject
Virker kampagner?
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Virker kampagner?
24/08/2016
Radioavisen P1/P4, Radio
Anne Ølgaard
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Transittidsstudiet
Tine Rask Licht
24/08/2016

Subject
Interview (ca. 1 time, klippes ned) i forbindelse med vores studie af sammenhængen mellem tarmens transittid, mikrobiota, og bakterielle metabolitter (Nature Microbiology, Juni 2016)
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

Transittidsstudiet
24/08/2016
DR P1, Radio
Kristoffer Frøkjær
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Streetfood
Sisse Fagt
24/08/2016

Subject
Streetfood
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Streetfood
24/08/2016
DR Østjylland P4, Radio
Eigil Andersen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Virker kampagner?
Sisse Fagt
23/08/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Virker kampagner?
23/08/2016
Jyllandsposten, Web
Morten Zahle
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

bromerede flammehæmmere
Eva Bay Wedebye
23/08/2016

Subject
Projektet for MST om gruppering og kategori-tilgang af bromerede flammehæmmere, MST projektrapport nr. 1872 2016.
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

bromerede flammehæmmere
23/08/2016
Chemical Watch, Web
Andrew Turley
Eva Bay Wedebye
National Food Institute, Research Group for Molecular Toxicology
Press / Media

21 Søndag
Martin Mose Bentzen
21/08/2016

Description
Interviewed about ethical dilemmas of autonomous vehicles
Department of Management Engineering, Technology and Innovation Management
Media contribution (1)

21 Søndag
21/08/2016
Danmarks Radio, Television
Martin Mose Bentzen
Department of Management Engineering, Technology and Innovation Management
Press / Media

Artikel i Søndagsavisen
Heddie Mejborn
18/08/2016

Subject
Artikel i Søndagsavisen
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Artikel i Søndagsavisen
18/08/2016
Søndagsavisen, Print
Christina Ledertoug
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

kogebog med 'god mad til tarmens bakterier'
Tine Rask Licht
18/08/2016

Subject
Der skal udkomme en ny kogebog med 'god mad til tarmens bakterier' eller noget i den retning. Den vil de skrive om, og kombinere det med lidt viden om området
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

kogebog med 'god mad til tarmens bakterier'
18/08/2016
Metroexpress, Print
Maria Cuculiza
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Indtaget af kød
Sisse Fagt
17/08/2016

Subject
Indtaget af kød
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtaget af kød
17/08/2016
DR Madmagasinet, Television
Maria Morten Brink Iwersen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Hygiejne, mikrobiologi, forbrugeradfærd
Lisbeth Truelstrup Hansen
17/08/2016

Subject
Hygiejne, mikrobiologi, forbrugeradfærd
National Food Institute, Research Group for Analytical and Predictive Microbiology

Media contribution (1)

Hygiejne, mikrobiologi, forbrugeradfærd
17/08/2016
TV2 Digital, Web
Camilla Carlson
Lisbeth Truelstrup Hansen
National Food Institute, Research Group for Analytical and Predictive Microbiology
Press / Media

Interview with the University of Eastern Finland: Työ tekijää myöten
Kasper Edwards
16/08/2016

Description
Interview with the University of Eastern Finland

Subject
Ergonomics
Department of Management Engineering, Management Science, Implementation and Performance Management

Media contribution (1)

Interview with the University of Eastern Finland: Työ tekijää myöten
16/08/2016
Web
University of Eastern Finland
30min
http://www.uef.fi/en/-/tyo-tekijaa-myoten
Kasper Edwards
Department of Management Engineering, Management Science, Implementation and Performance Management
Press / Media

Testmetode af virus på overflader
Anna Charlotte Schultz
16/08/2016

Subject
Testmetode af virus på overflader
National Food Institute, Research Group for Microbial Food Safety

Media contribution (1)

Testmetode af virus på overflader
16/08/2016
TV2, Television
Jon Mikkelsen
Anna Charlotte Schultz
National Food Institute, Research Group for Microbial Food Safety
Press / Media

Hygiejne af dirkkevandsfalsker
Lars Bøge Jensen
13/08/2016
**Subject**
Hygiejne af dirkkevandsfalsker
National Food Institute, Research Group for Microbial Food Safety

**Media contribution (1)**

**Hygiejne af dirkkevandsfalsker**
13/08/2016
Ekstra bladet, Print
Ronja Ryde
Lars Bøg Jensen
National Food Institute, Research Group for Microbial Food Safety

**indholdsstoffer i kosttilskud**
Kirsten Pilegaard
12/08/2016

**Subject**
Analyse af indholdsstoffer i kosttilskud (svar på e-mail), samt efterfølgende telefonsamtale om bivirkningsindberetninger af kosttilskud, kinesiske urter m.m.
National Food Institute, Research Group for Risk-Benefit

**Media contribution (1)**

**indholdsstoffer i kosttilskud**
12/08/2016
DR, Sundhedsmagasinet, Television
Asger Mow
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit

**Jagten på bølgerne fra universet**
Søren Brandt
10/08/2016
National Space Institute, Astrophysics and Atmospheric Physics

**Media contribution (1)**

**Jagten på bølgerne fra universet**
10/08/2016
DR P1 Videnskabens Verden, Radio
Kristoffer Frøkjær, Marie Hougaard
http://www.dr.dk/p1/videnskabens-verden/videnskabens-verden-2016-08-10
Søren Brandt
National Space Institute, Astrophysics and Atmospheric Physics

**Relations**
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

**Veterinaet antibiotikaforbrug**
Flemming Bager
09/08/2016

**Subject**
Veterinaet antibiotikaforbrug
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Veterinaet antibiotikaforbrug**
Projects:
Flatfish nursery grounds (38176)
Habitat Suitability for Recreationally Important Finfish of the Inner Danish Waters

Activities:
ICES - Working Group on the value of Coastal Habitats for Exploited Species - WGVHES (External organisation)

Press / Media

Afrikansk svinepest: Danmark kan let blive ramt
Anette Bøtner
05/08/2016

Subject
Afrikansk svinepest
National Veterinary Institute, Section for Diagnostics and Scientific Advice

Media contribution (1)

Afrikansk svinepest: Danmark kan let blive ramt
05/08/2016
LandbrugsAvisen, Print
5. august 2016
Anette Bøtner
National Veterinary Institute, Section for Diagnostics and Scientific Advice

mælkesyrebakterier
Tine Rask Licht
04/08/2016

Subject
mælkesyrebakterier
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

mælkesyrebakterier
04/08/2016
Bonnier Publications, Web
Karen Lyager Horve
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology

Press / Media

Danskernes kødforbrug
Anja Pia Biltoft-Jensen
02/08/2016

Subject
Danskernes kødforbrug
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes kødforbrug
02/08/2016
Information, Print
Jørgen Steen Nielsen
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition

Press / Media
Opdrætsfisk, specielt norske laks
Heddie Mejborn
01/08/2016

Subject
Opdrætsfisk, specielt norske laks
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Opdrætsfisk, specielt norske laks
01/08/2016
P4, Radio
Henrik
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fødevarer risici, sommer, spise ude, grill etc.
Dorte Lau Baggesen
29/07/2016

Subject
Fødevarer risici, sommer, spise ude, grill etc.
National Food Institute

Media contribution (1)

Fødevarer risici, sommer, spise ude, grill etc.
29/07/2016
TV2 Vejret, Television
Ellen Nybo
Dorte Lau Baggesen
National Food Institute
Press / Media

Meet Europes New Science Advice Brigade
Henrik Caspar Wegener
28/07/2016

Description
Presentation of the High Level Group of the EC Scientific Advice Mechanism (HLG SAM) by Science Magazine

The chair of the HLG SAM is the main interview person in the article

Subject
Presentation of the High Level Group of the EC Scientific Advice Mechanism (HLG SAM)
Rector's office

Media contribution (1)

Meet Europes New Science Advice Brigade
28/07/2016
Science, Print
Henrik Caspar Wegener
Rector's office
Press / Media

Nanotubes help engineer attractive electrons
Kristen Kaasbjerg
21/07/2016 → 22/07/2016
Department of Micro- and Nanotechnology, Theoretical Nanotechnology, Center for Nanostructured Graphene
Electrons normally repel each other. This basic property may change, however, in certain solids such as superconductors, in which electrons coupled to lattice vibrations (or phonons) attract each other, forming bound pairs that then travel freely together through the material. Now, researchers in Israel, Germany, the US and Denmark have observed another type of "excitonic" electron attraction that does not involve phonons but actual repulsion between electrons. This mechanism, first predicted 50 years ago, but never yet seen in a laboratory experiment, could help make stronger and more exotic superconductors and be used to study the fundamental physical properties of these structures.

Kristen Kaasbjerg

Condensed-matter physics: Attractive electrons from nanoengineering
21/07/2016
Nature (International), Print
Takis Kontos
https://www.nature.com/articles/535362a
Electrons repel each other because they are negatively charged. An experiment now confirms a fifty-year-old theory that electrons can also attract one another as a result of repulsion from other electrons.
Kristen Kaasbjerg
Center for Nanostructured Graphene, Department of Micro- and Nanotechnology, Theoretical Nanotechnology

Relations
Research outputs:
Electron attraction mediated by Coulomb repulsion
Press / Media

Indtaget af kød
Sisse Fagt
19/07/2016

Subject
Indtaget af kød
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtaget af kød
19/07/2016
DR P1, Radio
Maria Praetholm
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Sommertema i DR P1 Orientering
Søren Bang Korsholm
18/07/2016

Description
http://www.dr.dk/radio/ondemand/p1/orientering-2016-07-18/#!/01:00:11
Søren Bang Korsholm was one of three scientists being interviewed about current and status of science.
Department of Physics, Plasma Physics and Fusion Energy

Media contribution (1)

Sommertema i DR P1 Orientering
18/07/2016
DR, Radio
Chris Lehmann
53 minutes
The marine biologist from the car warehouse
Ole Henriksen
13/07/2016
National Institute of Aquatic Resources, Section for Marine Living Resources, Section for Marine Ecology and Oceanography

Media coverage (1)

Havbiologen fra autolageret
13/07/2016
JyskeVestkysten (National), Denmark, Print
Yvonn Tittel
http://www.jv.dk/varde/Havbiologen-fra-autolageret/artikel/2343390
Ole Henriksen
Section for Marine Ecology and Oceanography, National Institute of Aquatic Resources, Section for Marine Living Resources

I Qaanaaq har de kun vand fire måneder om året
Kåre Hendriksen
12/07/2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Om at spise sundt til frokost i kantinen eller med madpakken
Sisse Fagt
12/07/2016
National Food Institute, Division of Risk Assessment and Nutrition

Subject
Om at spise sundt til frokost i kantinen eller med madpakken
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Om at spise sundt til frokost i kantinen eller med madpakken
Anne Dahl Lassen
12/07/2016
National Food Institute, Division of Risk Assessment and Nutrition
**Media contribution (1)**

*Om at spise sundt til frokost i kantinen eller med madpakken*

12/07/2016  
Magasinet Sundhed, Print  
Maria Præst  
Anne Dahl Lassen  
National Food Institute, Division of Risk Assessment and Nutrition  

**Spørg Scientariet: Hvorfor er vindmøller ikke udstyret med winglets som fly?**

Christian Bak  
12/07/2016  

**Description**

"Spørg Scientariet" (eng: "Ask the scientists" - approximately) is a part of the weekly magazine "Ingeniøren" (eng: "The Engineer"), where people can ask all sorts of technical questions and scientists will answer.

Department of Wind Energy, Aerodynamic design  

**Media contribution (1)**

*Spørg Scientariet: Hvorfor er vindmøller ikke udstyret med winglets som fly?*

12/07/2016  
Ingeniøren, Print  
https://ing.dk/artikel/spoerg-scientariet-hvorfor-vindmoeller-ikke-udstyret-med-winglets-fly-
185491?utm_source=nyhedsbrev&utm_medium=email&utm_campaign=daglig&cx_newsletter=daglig&cx_newsletterid=18
4835  
Christian Bak  
Department of Wind Energy, Aerodynamic design  

**Forskere på jagt efter plast i fiskene vi spiser**

Ole Henriksen  
12/07/2016  
National Institute of Aquatic Resources, Section for Marine Ecology and Oceanography  

**Media coverage (1)**

*Forskere på jagt efter plast i fiskene vi spiser*

12/07/2016  
TV2 Lorry (Regional), Denmark, Web  
Peter Boye  
https://www.tv2lorry.dk/artikel/forskere-paa-jagt-efter-plast-i-fiskene-vi-spiser  
Ole Henriksen  
Section for Marine Ecology and Oceanography, National Institute of Aquatic Resources  

**Relations**

Research outputs:

Microplastics  
Microplastic exposure studies should be environmentally realistic  
Marine microplastics - Method development for detection of plastic particles from sea water down to 10 μm  
Et hav fuld af mikroplastik  
A critical assessment of visual identification of marine microplastic using Raman spectroscopy for analysis improvement  
Analyse af marint affald i sild og hvilling fra det nordlige Storebælt  
Abundance, size and polymer composition of marine microplastics ≥10μm in the Atlantic Ocean and their modelled vertical distribution  

**Indtaget af kød**

Sisse Fagt  
11/07/2016
Subject
Indtaget af kød
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtaget af kød
11/07/2016
Dagbladenes Bureau, Web
Lene Terkel sen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Subject
Økologiske fødevare, stigende forbrug, forbrugernes motivation
Dorte Lau Baggesen
11/07/2016

Media contribution (1)

Økologiske fødevare, stigende forbrug, forbrugernes motivation
11/07/2016
TV2 Go’ morgen Danmark, Television
Søren Øhlers
Dorte Lau Baggesen
National Food Institute

Subject
Færdigretter/hurtigmad – udvikling gennem tiden
Sisse Fagt
05/07/2016

Media contribution (1)

Færdigretter/hurtigmad – udvikling gennem tiden
05/07/2016
DI Business, Web
Niels Brandt Petersen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Subject
DTU’s rapport om kød og kræft.
Max Hansen
04/07/2016

Media contribution (1)

DTU’s rapport om kød og kræft.
04/07/2016
Food Navigator, Web
Natalie Morrison
Max Hansen
DTU's rapport om kød og kræft.
Heddie Mejborn
04/07/2016

Subject
DTU's rapport om kød og kræft.
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

DTU's rapport om kød og kræft.
04/07/2016
Food Navigator, Web
Natalie Morrison
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Funding eller forskning: Hvad er bedst for produktiviteten?: Der skal fokus på vidensdeling mellem forskermiljø og SMVer og investeringer, hvis Danmark skal få sat skub i produktiviteten.
Jens Olaf Pepeke Pedersen
01/07/2016

Subject
Smart Innovation
National Space Institute, Sunclimate

Media contribution (1)

Funding eller forskning: Hvad er bedst for produktiviteten?: Der skal fokus på vidensdeling mellem forskermiljø og SMVer og investeringer, hvis Danmark skal få sat skub i produktiviteten.
01/07/2016
Trendsonline, Web
Karen Sofie Teglgaard Andersen
http://trendsonline.dk/2016/07/01/funding-eller-forskning-hvad-er-bedst-produktiviteten/
Jens Olaf Pepeke Pedersen
National Space Institute, Sunclimate
Press / Media

Børn i køkkenet
Sisse Fagt
30/06/2016

Subject
Børn i køkkenet
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Børn i køkkenet
30/06/2016
Samvirke, Print
Inger Abildgaard
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Døden kom med nødhjælpen
Rene S. Hendriksen
30/06/2016


**Description**

no 18/2016

**Subject**

Cholera in Haiti
National Food Institute, Research Group for Genomic Epidemiology

**Media contribution (1)**

**Døden kom med nødhjælp**
30/06/2016
Illustreret Videnskab, Web
Rene S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology

**The Haiti /Nepal Cholera connection**
Rene S. Hendriksen
30/06/2016

**Subject**

The Haiti /Nepal Cholera connection
National Food Institute, Research Group for Genomic Epidemiology

**Media contribution (1)**

**Transittid**
Henrik Munch Roager
28/06/2016

**Subject**

Transittid
National Food Institute, Research Group for Gut Microbiology and Immunology

**Media contribution (1)**

**Transittid**
Henrik Munch Roager
28/06/2016

**Subject**

Transittid
National Food Institute, Research Group for Gut Microbiology and Immunology

**Media contribution (1)**

**Transittid**
Henrik Munch Roager
28/06/2016

**Subject**

Transittid
National Food Institute, Research Group for Gut Microbiology and Immunology

**Media contribution (1)**

**Transittid**
Henrik Munch Roager
28/06/2016

**Subject**

Transittid
National Food Institute, Research Group for Gut Microbiology and Immunology

**Media contribution (1)**

Jens Olaf Pepke Pedersen
**Media contribution (1)**

Global opvarmning kan få overset selvforstærkende effekt: Drivhusselsvirkningen af CO2 bliver tilsyneladende kraftigere, når temperaturerne på Jorden stiger. Dermed kan den globale opvarmning få en hidtil overset selvforstærkende effekt, der kan gjøre kloden varmere, end antaget. Det viser et nyt studie, som DTU Space har været med til at udføre.

**27/06/2016**

IDA Universe, Web

Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate

---

**Transittid**

Tine Rask Licht
27/06/2016

**Subject**

Transittid
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

**Media contribution (1)**

**Transittid**
27/06/2016
videnskab.dk, Web
Malene Sommer Christiansen
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology

---

**Transittid**

Tine Rask Licht
27/06/2016

**Subject**

Transittid
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

**Media contribution (1)**

**Transittid**
27/06/2016
DR Lev Nu, Web
Susanne Vigsø Grøn
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology

---

**Transittid**

Tine Rask Licht
27/06/2016

**Subject**

Transittid
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Jens Olaf Pepke Pedersen
24/06/2016
National Space Institute, Sunclimate

Communication seeks input to third nanomaterials regulatory review

Steffen Foss Hansen
23/06/2016

Description

Interplay between REACH and CLP key, says NGO
Department of Environmental Engineering, Environmental Chemistry

Selvforstærkende klimaeffekt opdaget: CO2-effekten øges, når temperaturen stiger: Forskere fra bl.a. DTU og KU har vist, at den globale opvarmning som følge af udledning af CO2 til atmosfæren vokser mere og mere, i takt med at temperaturen øges.

Jens Olaf Pepke Pedersen
23/06/2016
National Space Institute, Sunclimate

Selvforstærkende klimaeffekt opdaget: CO2-effekten øges, når temperaturen stiger: Forskere fra bl.a. DTU og KU har vist, at den globale opvarmning som følge af udledning af CO2 til atmosfæren vokser mere og mere, i takt med at temperaturen øges.

23/06/2016
Ingeniøren, Web
The season of birth can influence the health of your child
Susanne Brix Pedersen
23/06/2016

Subject
www.klikk.no/foreldre/baby/immunforsvar-hos-baby-1678677.ece
Department of Systems Biology, Center for Biological Sequence Analysis

Media contribution (1)

Asthma-free with no hay fever? Thank your older sibling
Susanne Brix Pedersen
22/06/2016
Department of Systems Biology, Center for Biological Sequence Analysis

Media contribution (1)

Pesticidrester i urinen – hvad kan forbrugerne gøre
Heidi Kornholt
22/06/2016
National Food Institute

Subject
Pesticidrester i urinen – hvad kan forbrugerne gøre
National Food Institute
Min Vidensby
Susanne Balslev Nielsen
21/06/2016

Subject
Lyngby Vidensby
Department of Management Engineering, Systems Analysis, DTU Climate Centre, Centre for Facilities Management

Media contribution (1)

Min Vidensby
21/06/2016
Det Grønne Område, Print
http://vidensby.dk/medlemskab-af-vidensbyen/#susanne-balslev-nielsen-dtu-management
Susanne Balslev Nielsen
Department of Management Engineering, Centre for Facilities Management, Systems Analysis, DTU Climate Centre

Bisphenol a's indvirkning på brystudvikling
Julie Boberg
20/06/2016

Subject
Bisphenol a's indvirkning på brystudvikling
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Bisphenol a's indvirkning på brystudvikling
20/06/2016
Motherboard, Vice media (web nyhedsmedie, Holland), Web
Ellemiek de Wit
Julie Boberg
National Food Institute, Research Group for Reproductive Toxicology

citronsyrebehandling af nye kartofler
Kirsten Pilegaard
16/06/2016

Subject
Et EU-Kommissionsforslag om citronsyrebehandling af nye kartofler for at undgå at de bliver grønne.
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

citronsyrebehandling af nye kartofler
16/06/2016
BT, Web
Michala Rosendahl
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit
Gourmetpizza og sundhed
Sisse Fagt
15/06/2016

Subject
Gourmetpizza og sundhed
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Gourmetpizza og sundhed
15/06/2016
Politiken, Web
Annemette Grundtvig
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Dioxin og store laks fra Østersøen
Tommy Licht Cederberg
08/06/2016
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Dioxin og store laks fra Østersøen
08/06/2016
P4 Bornholm, Radio
Nina Soelberg
Tommy Licht Cederberg
National Food Institute, Research Group for Analytical Food Chemistry

Kamelmælk
Egon Bech Hansen
07/06/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Kamelmælk
07/06/2016
BT Søndag, Web
Charlotte Nielsen
Egon Bech Hansen
National Food Institute, Research Group for Gut Microbiology and Immunology

Om koldskål er sundt
Sisse Fagt
07/06/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Om koldskål er sundt
07/06/2016
Ritzau, Web
Amalie Kraaer
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Press / Media
Kamelmælk
Egon Bech Hansen
06/06/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Kamelmælk
06/06/2016
TV2, Television
Christian Sejer Rasmussen
Egon Bech Hansen
National Food Institute, Research Group for Gut Microbiology and Immunology

EU kriterier for hormonforstyrrende stoffer
Ulla Hass
03/06/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

EU kriterier for hormonforstyrrende stoffer
03/06/2016
Information, Print
Jørgen Steen Nielsen
Ulla Hass
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Bakterier kan frigøre os fra olie
Torbjørn Ølshøj Jensen
01/06/2016
Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization

Media contribution (1)

Bakterier kan frigøre os fra olie
01/06/2016
Maskinmesteren -management and technology, Print
Torbjørn Ølshøj Jensen
Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization

Media contribution (1)

Forureninger i fisk
Max Hansen
01/06/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Forureninger i fisk
01/06/2016
Magasinet Handelsinvest, Print
Elisabeth Hamerik Schwarz
Max Hansen
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

hormonforstyrrende stoffers indvirkning på hunlig reproduktion
Julie Boberg
31/05/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Hormonforstyrrende stoffers indvirkning på hunlig reproduktion
31/05/2016
Ritzau, Web
Susanne Andersen
Julie Boberg
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

Koralrev i Grønland
31/05/2016
National Food Institute, National Institute of Aquatic Resources, Arctic Section

Media contribution (1)

Koralrev i Grønland
31/05/2016
Videnskab.dk, Web
Sedsel Brøndum
National Institute of Aquatic Resources, Arctic Section, National Food Institute
Press / Media

Hormonforstyrrende stoffer og kvinders fertilitet
Julie Boberg
31/05/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Hormonforstyrrende stoffer og kvinders fertilitet
31/05/2016
DR, Web
Rikke Bondesen
Julie Boberg
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

Sølv
Max Hansen
30/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Sølv
30/05/2016
Ingeniøren, Web
Mia Stage
Max Hansen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

4. International Vitamin Conference
Jette Jakobsen
30/05/2016
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

4. International Vitamin Conference
30/05/2016
Danskernes forbrug af kød
Anja Pia Biltoft-Jensen
30/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes forbrug af kød
30/05/2016
DR Nyheder, Web
Merian Garde Grås
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Hygiejne, mikrobiologi, og genbrug af vandflasker
Lisbeth Truelstrup Hansen
26/05/2016
National Food Institute, Research Group for Diagnostic Engineering

Media contribution (1)

Hygiejne, mikrobiologi, og genbrug af vandflasker
26/05/2016
MetroXpress, Print
Julie Schoon
Lisbeth Truelstrup Hansen
National Food Institute, Research Group for Diagnostic Engineering
Press / Media

Kommentering af Arbejdstilsynets redegørelse om Siemens Wind Power
Kåre Hendriksen
26/05/2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Kommentering af Arbejdstilsynets redegørelse om Siemens Wind Power
26/05/2016
DR TV1 TVA, Television
7 min.
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Press / Media

P1 Morgen om skimmelsvampe i gipsplader
Birgitte Andersen
25/05/2016
Department of Systems Biology

Media contribution (1)

P1 Morgen om skimmelsvampe i gipsplader
25/05/2016
Radio
Birgitte Andersen
Department of Systems Biology
Penge: Pas på skimmelsvamp
Birgitte Andersen
25/05/2016
Department of Systems Biology

Media contribution (1)

Penge: Pas på skimmelsvamp
25/05/2016
DR Penge, Television
https://www.dr.dk/tv/se/penge/penge-2016-05-25
Birgitte Andersen
Department of Systems Biology

Gipsplader er fulde af skimmelsvamp
Birgitte Andersen
25/05/2016
Department of Systems Biology

Media contribution (1)

Gipsplader er fulde af skimmelsvamp
25/05/2016
DR.DK/nyheder, Web
http://www.dr.dk/nyheder/penge/gipsplader-er-fulde-af-skimmelsvamp
Birgitte Andersen
Department of Systems Biology

DTU PIXL
David Arge Klevang Pedersen
24/05/2016

Subject
Mars2020, PIXL
National Space Institute, Measurement and Instrumentation Systems

Media contribution (1)

DTU PIXL
24/05/2016
Alt Om Data, Web
http://www.altomdata.dk/dtu-kamera-gaar-paa-jagt-liv-paa-mars
David Arge Klevang Pedersen
Measurement and Instrumentation Systems, National Space Institute

Faæervarens vitaminindhold
Miriam Meister
24/05/2016
National Food Institute

Media contribution (1)

Faæervarens vitaminindhold
24/05/2016
DR’s Lev Nu redaktion, Web
Susanne Vigsø Grøn
Miriam Meister
National Food Institute

Press / Media
Kronesmily og arbejdslidelser på Vestas
Kåre Hendriksen
19/05/2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Kronesmily og arbejdslidelser på Vestas
19/05/2016
DR TV2 Morgen, Television
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Press / Media

Forbrug af surmælksprodukter, skyr m.m.
Sisse Fagt
19/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Forbrug af surmælksprodukter, skyr m.m.
19/05/2016
Politiken, Web
Line Felholt
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

rapport om organophosphater
Bodil Hamborg Jensen
19/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

rapport om organophosphater
19/05/2016
Ingeniøren, Web
Magnus Bredtoft
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

DTU-undersøgelse: Gipsplader smugler skimmelsvamp ind i boligen
Birgitte Andersen
18/05/2016
Department of Systems Biology

Media contribution (1)

DTU-undersøgelse: Gipsplader smugler skimmelsvamp ind i boligen
18/05/2016
Ingeniøren, Web
https://ing.dk/artikel/dtu-undersogelse-gipsplader-smugler-skimmelsvamp-ind-i-boligen-182913
Birgitte Andersen
Department of Systems Biology
Press / Media

Et nyt håb på Grønlands ’bagside’?
Kåre Hendriksen
18/05/2016
Bygden Kulusuk har som resten af Grønland store potentialer; Østkystens bedste skole, egen lufthavn og daglige afgange til Island. Så hvorfor er det, at næsten ingen af de lokale forsøger at tjene penge på turisterne?

Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

**Media contribution (1)**

**Et nyt håb på Grønlands 'bagside'?**

18/05/2016
Information, Print
Emil Rottbøll
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

**Ekspert: Kontrolfirma skulle have fjernet Siemens' kronesmiley**

Kåre Hendriksen
18/05/2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

**Media contribution (1)**

**Ekspert: Kontrolfirma skulle have fjernet Siemens' kronesmiley**

18/05/2016
Avisen DK, Print
Michael Brømer og Gitte Redder
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

**Skimmel stortrives i genbrugspap på gipsplader**

Birgitte Andersen
18/05/2016
Department of Systems Biology

**Media contribution (1)**

**Skimmel stortrives i genbrugspap på gipsplader**

18/05/2016
Ingeniøren, Web
https://ing.dk/artikel/skimmel-stortrives-i-genbrugspap-pa-gipsplader-182920
Birgitte Andersen
Department of Systems Biology

**Kokosolie's fortræffelige egenskaber**

Heddie Mejborn
18/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Kokosolie's fortræffelige egenskaber**

18/05/2016
TV 2 Digital, Web
CHRISTIAN SEJER RASMUSSEN
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition

**En ny rapport fra MST om organophosphater: Organophosphate metabolites in urine samples from Danish children and women.**

Bodil Hamborg Jensen
18/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**En ny rapport fra MST om organophosphater: Oragnophosphate metabolites in urine samples from Danish children and women.**
18/05/2016
DR, Television
Anne Sofie Ellesøe
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition

**Køds rolle i kosten m.m.**
Sisse Fagt
17/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Public Service Obligation - Financing renewable energy support**
Lena Kitzing
13/05/2016

**Description**
Interview related to PSO reform

**Subject**
DR2 Dagen, National Television, 13 May 2016
Department of Management Engineering, Systems Analysis

**Media contribution (1)**

**PSO reform in Denmark**
13/05/2016
DR2 Dagen (National), Denmark, Television
Danmarks Radio
5 minutes interview
Lena Kitzing

**Food Hacking - sensorik**
Grethe Hyldig
13/05/2016
National Food Institute, Research Group for Bioactives – Analysis and Application

**Food Hacking - sensorik**
13/05/2016
Politiken, Print
Maj Bach Madsen
Grethe Hyldig
National Food Institute, Research Group for Bioactives – Analysis and Application
Hvilke konsekvenser de kemikalier og giftstoffer, man kommer i nærheden af i sin hverdag, kan have for gravide og deres fostre.
Sofie Christiansen
13/05/2016
National Food Institute, Research Group for Reproductive Toxicology

**Media contribution (1)**

Hvilke konsekvenser de kemikalier og giftstoffer, man kommer i nærheden af i sin hverdag, kan have for gravide og deres fostre.
13/05/2016
TV 2 Lorry, Television
Diana Bengtsen, Journaliststudenterende
Sofie Christiansen
National Food Institute, Research Group for Reproductive Toxicology

**Arbejdsmiljøcertificering og fritagelse for Arbejdstilsynets almindelige tilsyn**
Kåre Hendriksen
12/05/2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

**Media contribution (1)**

Arbejdsmiljøcertificering og fritagelse for Arbejdstilsynets almindelige tilsyn
12/05/2016
DR P1 Orientering, Radio
Jesper Tynell
15 min
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

**Veganisme m.m.**
Sisse Fagt
12/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

Veganisme m.m.
12/05/2016
TV2 Lorry/RUC, Television
Linne Brade
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

**Sundhedseffekter af rødvin og fiskeolie**
Charlotte Jacobsen
12/05/2016
National Food Institute, Research Group for Bioactives – Analysis and Application

**Media contribution (1)**

Sundhedseffekter af rødvin og fiskeolie
12/05/2016
Jyllandsposten JP Premium net, Web
Majbritt Schultze
Charlotte Jacobsen
National Food Institute, Research Group for Bioactives – Analysis and Application

Press / Media
Feedback on nano-survey
Katrin Löschner
10/05/2016
National Food Institute, Research Group for Nano-Bio Science

Media contribution (1)

Feedback on nano-survey
10/05/2016
Politiken, Web
Thorstein T. Nielsen
Katrin Löschner
National Food Institute, Research Group for Nano-Bio Science

Press / Media

Tarmbakterier/probiotika
Martin Iain Bahl
09/05/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Tarmbakterier/probiotika
09/05/2016
Politiken, Web
Lars Igum Rasmussen
Martin Iain Bahl
National Food Institute, Research Group for Gut Microbiology and Immunology

Press / Media

Arktisk milliardfond skal sætte skub i Grønland: Ambassadør Peter Taksøe-Jensens forslag om en særlig arktisk fond til investeringer i Grønland vækker jubel i Grønland og i PensionDanmark. Statsminister Lars Løkke Rasmussen (V) siger, at han afventer et udspil i sagen fra det officielle Grønland.
Jens Olaf Pepke Pedersen
06/05/2016

Description
Faktaboks: "Satellitter og droner – en gave til Grønland"

Subject
Satellites in Arctic, telecommunication
National Space Institute, Sunclimate

Media contribution (1)

Arktisk milliardfond skal sætte skub i Grønland: Ambassadør Peter Taksøe-Jensens forslag om en særlig arktisk fond til investeringer i Grønland vækker jubel i Grønland og i PensionDanmark. Statsminister Lars Løkke Rasmussen (V) siger, at han afventer et udspil i sagen fra det officielle Grønland.
06/05/2016
Berlingske, Print
Bent Højgaard Sørensen
Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate

Press / Media

Kødvaner
Sisse Fagt
05/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kødvaner
Kødvaner
Sisse Fagt
05/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kødvaner
05/05/2016
Jyllandsposten, Print
Amalie Kønigsfeldt
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Millionærklubben
Tejs Vegge
04/05/2016
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Media contribution (1)

Millionærklubben
04/05/2016
Radio24Syv, Radio
1 hour
http://www.radio24syv.dk/programmer/millionaerklubben/13444666/millionaerklubben-04-05-2016/
Tejs Vegge
Department of Energy Conversion and Storage, Atomic scale modelling and materials
Press / Media

Kødvaner
Sisse Fagt
04/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Siemens Wind Power's arbejdsmiljøproblemer og Kronesmiley
Kåre Hendriksen
03/05/2016

Description
Om Siemens Wind Power, arbejdsmiljøcertificering og Kronesmiley
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)
TAKSØE-RAPPORT DTU Space ser gerne flere droner over Grønland: Seniorforsker Jens Olaf Pepke Pedersen fra DTU Space er begejstret over den netop offentliggjorte Taksøe-rapports anbefalinger om at Danmark bør fokusere mere på sin indsats i Arktis og afsøge mulighederne for satellitbaserede løsninger i Arktis.

Jens Olaf Pepke Pedersen
03/05/2016
National Space Institute, Sunclimate

Media contribution (1)

TAKSØE-RAPPORT Satellitovervågning af Grønland koster 1-2 milliarder: Et større dansk engagement i Arktis er blandt de anbefalinger, som Peter Taksøe-Jensen har gransket sig frem til i sin rapport om fremtiden for dansk udenrigs- og forskningspolitik.

Jens Olaf Pepke Pedersen
03/05/2016
National Space Institute, Sunclimate

Media contribution (1)

Arktis skal overvåges af satellitter
Jens Olaf Pepke Pedersen
03/05/2016

Description
Interview til DR2 Morgen

Subject
Overvågning af arktis med satellitter

Media contribution (1)

Arktis skal overvåges af satellitter
03/05/2016
DR2, Television
5:00 min
https://www.dr.dk/tv/se/dr2-morgen/dr2-morgen-2016-04-25#!/25:48
Jens Olaf Pepke Pedersen
National Space Institute
Det giver meget bedre mening at satse på satellitter fremfor kampfly i Arktis.
Jens Olaf Pepke Pedersen
03/05/2016

Description
Det giver meget bedre mening at satse på satellitter fremfor kampfly i Arktis. Sådan lyder anbefalingen fra det såkaldte taksekø-udvalg. Og der er både meget bedre mulighed for vækst og bedre overvågning af det grønlandske territorium, lyder det fra DTU Space.
National Space Institute, Suneclimate

Media contribution (1)

Satellitter i Arktis
Jens Olaf Pepke Pedersen
03/05/2016
National Space Institute

Media contribution (1)

galdeblære i frossen kyllingelevere
Jens Kirk Andersen
03/05/2016
National Food Institute, Research Group for Microbial Food Safety and Quality

Media contribution (1)

Siemens undgik besøg af Arbejdstilsynet med elitesmiley
Kåre Hendriksen
02/05/2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)
Ny satellit i Grønland skal advare om soludbrud
Kristoffer Leer
02/05/2016

Subject
Soludbrud
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Ny satellit i Grønland skal advare om soludbrud
02/05/2016
JP, Web
http://jyllands-posten.dk/nyviden/ECE8624994/ny-satellit-i-groenland-skal-advare-om-soludbrud/
Kristoffer Leer
National Space Institute, Astrophysics and Atmospheric Physics

Farmakonomen
Tine Rask Licht
02/05/2016
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

Farmakonomen
02/05/2016
Farmakonomen (fagblad), Print
Karoline Lawætz
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology

Stress er ikke en selvfølge
Christine Ipsen
01/05/2016
Department of Management Engineering, Management Science, Implementation and Performance Management

Media contribution (1)

Stress er ikke en selvfølge
01/05/2016
Firmaidræt, Print
Dansk Firmaidræts Forbund
http://www.swiflet.com/jto/firmaidraet/49/32
Christine Ipsen
Department of Management Engineering, Management Science, Implementation and Performance Management

Interview i TV2 News - New Science - om Viborg Mercantec fusoren: Indslag i forbindelse med Viborg Tekniske Gymnasiums åbningsceremoni for deres fusor
Søren Bang Korsholm
28/04/2016

Subject
I forbindelse med Viborg Tekniske Gymnasiums åbningsceremoni for deres fusor
Department of Physics, Plasma Physics and Fusion Energy
**Media contribution (1)**

**Interview i TV2 News - New Science - om Viborg Mercantec fusoren: Indslag i forbindelse med Viborg Tekniske Gymnasiums åbningsceremoni for deres fusor**

28/04/2016
TV2 News, Television
5 minutter
Søren Bang Korsholm
Department of Physics, Plasma Physics and Fusion Energy
Press / Media

**Subject**
Indslaget var indledt med en rapport fra dagens åbning af fusoren i Viborg Tekniske Gymnasium og afsluttedes med et interview i Skammelsens studie af Søren Bang Korsholm.
Emnet var uddannelse og behov for teknisk- og naturvidenskabeligt interesserede unge med udgangspunkt i dagens åbningsceremoni for Viborg Tekniske Gymnasiums fusor.
Department of Physics, Plasma Physics and Fusion Energy

**Media contribution (1)**

**Interview i TV2 Nyhederne med Skammelsen: TV2s 22-Nyhederne med Poul Erik Skammelsen**

Søren Bang Korsholm
28/04/2016

**Koffeins påvirkning af kroppen**
Lea Bredsdorff
28/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Energidrikke**
Jeppe Matthiessen
27/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Koffeins påvirkning af kroppen**
28/04/2016
Ritzau Fokus, Web
Amalie Kraaer
Lea Bredsdorff
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Energidrikke**
27/04/2016
TV2 MIDTVEST, Television
Kåre Rolf Hansen
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Børn og overvægt
Jeppe Matthiessen
27/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Børn og overvægt
27/04/2016
Vores Børn, Web
Eline Holm
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

yogurth sød starterkultur
Jens Kirk Andersen
26/04/2016
National Food Institute, Research Group for Microbial Food Safety and Quality

Media contribution (1)

yogurth sød starterkultur
26/04/2016
videnskab.dk, Web
Sedsel Brøndum Lange
Jens Kirk Andersen
National Food Institute, Research Group for Microbial Food Safety and Quality
Press / Media

Kødvaner
Sisse Fagt
26/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kødvaner
26/04/2016
Politiken, Web
Mette Guldagger
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nye løsninger kan tage livet af den irriterende kloks på ledningen
Michael A. E. Andersen
25/04/2016
Department of Electrical Engineering, Electronics

Media contribution (1)

Nye løsninger kan tage livet af den irriterende kloks på ledningen
25/04/2016
Videnskab dk, Web
Michael A. E. Andersen
Department of Electrical Engineering, Electronics
Press / Media
Hvor meget ansvar er vi klar til at give den selvkørende bil?
Martin Mose Bentzen
25/04/2016
Department of Management Engineering, Technology and Innovation Management

Media contribution (1)

Can I use mathematics to win in Lotto?
Anders Stockmarr
25/04/2016
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis

Media contribution (1)

Er mælk farligt
Sisse Fagt
25/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

800.000 gode grunde til datalogi i skolen
Helle Rootzén
20/04/2016
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis

Media contribution (1)
Media contribution (1)

800,000 gode grunde til datalogi i skolen
20/04/2016
Berlingske Tidende, Print
Stephen Alstrup, Ole Lehmann Madsen, and Helle Rootzén
Helle Rootzén
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Press / Media

Ramsløg, hvordan kender man forskel på ramsløgblade m.m. Hvad sker der hvis man tager fejl?
Kirsten Pilegaard
20/04/2016
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Ramsløg, hvordan kender man forskel på ramsløgblade m.m. Hvad sker der hvis man tager fejl?
20/04/2016
Netavisen, Web
Michelle Løvstrup
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit
Press / Media

Stalddørssalg
Flemming Bager
20/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Stalddørssalg
20/04/2016
JyskeVestkysten, Print
Daniel Jørgensen
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Stalddørssalg
Flemming Bager
19/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Stalddørssalg
19/04/2016
JyskeVestkysten, Print
Daniel Jørgensen
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Mikroplastik
Kit Granby
18/04/2016
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Mikroplastik
18/04/2016
Skimmelsvamp gør batterier bedre?
Tejs Vegge  
17/04/2016  
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Media contribution (1)

Danskernes indtag af kød
Anja Pia Biltoft-Jensen  
15/04/2016  
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

mikrobølgeovn
Miriam Meister  
15/04/2016  
National Food Institute

Media contribution (1)

PAA vask af kyllinger
Louise Boysen  
15/04/2016  
National Food Institute, Division of Risk Assessment and Nutrition, Research Group for Risk-Benefit

Media contribution (1)
Sødestoffer, bivirkninger hos mennesker
Lea Bredsdorff
15/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Sødestoffer, bivirkninger hos mennesker
15/04/2016
Ritzau Finans, Web
Dan Petersen
Lea Bredsdorff
National Food Institute, Division of Risk Assessment and Nutrition

Energitæthed i måltider
Jeppe Matthiessen
14/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Energitæthed i måltider
14/04/2016
Politiken, Web
Line Felholt
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition

Stegeolier, oxidation og dannelse af transfedtsyrer ved opvarmning
Heddie Mejborn
14/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Stegeolier, oxidation og dannelse af transfedtsyrer ved opvarmning
14/04/2016
TV 2 Digital, Web
CHRISTIAN SEJER RASMUSSEN
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition

Akrylamid fra hvilke fødevarer
Heidi Kornholt
13/04/2016
National Food Institute

Media contribution (1)

Akrylamid fra hvilke fødevarer
13/04/2016
Magasinet Danske Kartoffler, Print
Redaktør Helge Lyngaard
Heidi Kornholt
National Food Institute

Press / Media
Europæisk standard metode (CEN) Uorganisk arsen i fødevarer
Jens Jørgen Sloth
12/04/2016
National Food Institute, Research Group for Nano-Bio Science

Media contribution (1)

Europæisk standard metode (CEN) Uorganisk arsen i fødevarer
12/04/2016
FoodNavigator.com, Web
Niamh Michail
Jens Jørgen Sloth
National Food Institute, Research Group for Nano-Bio Science

Indtag af Oksekød
Anja Pia Biltoft-Jensen
11/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af Oksekød
11/04/2016
DR, Web
Emma Toft
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af Oksekød
Anja Pia Biltoft-Jensen
11/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Spørgsmål om Stevia-planten og ADI for sødestoffer
Kirsten Pilegaard
11/04/2016
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Spørgsmål om Stevia-planten og ADI for sødestoffer
11/04/2016
Print
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit

Press / Media

Tid til tang
Susan Løvstad Holdt
10/04/2016
Tid til tang
10/04/2016
Fagblad (Køkkenfagbundet): Kost, ernæring og sundhed, Print
Sanne Hansen
Susan Løvstad Holdt
National Food Institute, Research Group for Bioactives – Analysis and Application

Spildmålinger i forbindelse med økologiømægninger
Anne Vibeke Thorsen
06/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Spildmålinger i forbindelse med økologiømægninger
Anne Vibeke Thorsen
06/04/2016
FOA Bladet, Print
Ingrid Pedersen
Anne Vibeke Thorsen
National Food Institute, Division of Risk Assessment and Nutrition

Spildmålinger i forbindelse med økologiømægninger
Anne Vibeke Thorsen
06/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Klimaorienterede kostråd
Anne Vibeke Thorsen
05/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Klimaorienterede kostråd
Anne Vibeke Thorsen
05/04/2016
Aller Press, Web
Christina E. Ledertoug
Anne Vibeke Thorsen
National Food Institute, Division of Risk Assessment and Nutrition

Klimavenlige kostråd
Anne Vibeke Thorsen
05/04/2016
National Food Institute, Division of Risk Assessment and Nutrition
klimavenlige kostråd
05/04/2016
Aller press, Web
Christina E. Ledertoug
Anne Vibeke Thorsen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

fungicider i bananer
Ulla Hass
01/04/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

fungicider i bananer
01/04/2016
Madmagasinet - DR1, Television
Kathrine Lenschau
Ulla Hass
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

Mord på film: Batman
Alexander Weider King
30/03/2016

Description
Demonstrated and explained how sound can break glass.
Acoustic Technology, Department of Electrical Engineering

Media contribution (1)

Mord på film: Batman
30/03/2016
DR (National), Denmark, Television
Alexander Weider King
Department of Electrical Engineering, Acoustic Technology
Press / Media

bakteriesamfund
Tine Rask Licht
30/03/2016

Subject
Det korte svar er nej. Har elaboreret omkring bakteriesamfund, resistensspredning, konkurrence mellem bakterier i forskellige miljøer.
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

bakteriesamfund
30/03/2016
DR, P1, Videnskabens Verden, Radio
Anne Mette Simonsen
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media
Mapping of ground movements to target climate adaptation
Carlo Sass Sørensen
24/03/2016
National Space Institute, Geodesy

Media coverage (1)

Kortlægning af jordbevægelser skal målrette klimatilpasningen
24/03/2016
Ingeniører (National), Denmark, Print
Julie Lykke-Nedergaard
1 p
https://ing.dk/artikel/kortlaegning-af-jordbevaegelser-skal-malrette-klimatilpasningen-182925
Carlo Sass Sørensen

Relations
Projects:
Coastal flooding hazards due to storm surges and subsidence
Press / Media

DHI's new integrated technology provides improved rainfall modelling
Morten Andreas Dahl Larsen
24/03/2016
Department of Management Engineering, Systems Analysis, DTU Climate Centre

Media contribution (1)

DHI's new integrated technology provides improved rainfall modelling
24/03/2016
Print
Morten Andreas Dahl Larsen
Department of Management Engineering, Systems Analysis, DTU Climate Centre
Press / Media

Insekter i mad
Heidi Kornholt
22/03/2016
National Food Institute

Media contribution (1)

Insekter i mad
22/03/2016
Illustreret Videnskab, Print
Mikkel Skovbo
Heidi Kornholt
National Food Institute
Press / Media

Forskere: Disse fund kan vi forvente af tyngdebolger
Søren Brandt
20/03/2016
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Forskere: Disse fund kan vi forvente af tyngdebolger
20/03/2016
Videnskab.dk, Web
Charlotte Price Persson
Søren Brandt
National Space Institute, Astrophysics and Atmospheric Physics

Relations
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

Press / Media

Returning to the Rails.: Rail Safety: Back in the Spotlight.
Anne Elisabeth Haxthausen
18/03/2016

Description
Article and interview made by Jean Christophe-Piot.

Subject
Rail safety.
Department of Applied Mathematics and Computer Science, Software Engineering

Media contribution (1)

Returning to the Rails.: Rail Safety: Back in the Spotlight.
18/03/2016
Technologist magazine issue no.9, pages 42-43, July 2016, Print
EuroTech Universities
Printed in July 2016.
http://www.technologist.eu/returning-to-the-rails/
Anne Elisabeth Haxthausen
Department of Applied Mathematics and Computer Science, Software Engineering
Press / Media

Ingefær
Inge Tetens
17/03/2016
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Ingefær
17/03/2016
DR, Television
Dorthe Boss Kyhn
Inge Tetens
National Food Institute, Research Group for Risk-Benefit
Press / Media

Zoonoser og resistens – forskelle mellem konventionel og økologisk kødproduktion
Dorte Lau Baggesen
17/03/2016
National Food Institute

Media contribution (1)

Zoonoser og resistens – forskelle mellem konventionel og økologisk kødproduktion
17/03/2016
Politikkens forlag, Web
Andreas Linquist
Dorte Lau Baggesen
National Food Institute
Press / Media

Hvor meget usundt spiser man efter aftensmaden?
Sisse Fagt
16/03/2016
Hvor meget usundt spiser man efter aftensmaden?
16/03/2016
DR Fakta, Television
Jakob Stobbe
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Er chokolade sundt
Heddie Mejborn
16/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

BPA og dåsemad.
Ulla Hass
16/03/2016
National Food Institute, Research Group for Reproductive Toxicology

Hvor meget brød spiser danskerne?
Sisse Fagt
16/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

DANMAP
Flemming Bager
16/03/2016
National Food Institute, Division of Risk Assessment and Nutrition
DANMAP
16/03/2016
Culture (publikation, der udgives af American Society for Microbiology), Web
Peter Geoghan
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Holdbarhed af brød
Heidi Kornholt
16/03/2016
National Food Institute

Media contribution (1)

Holdbarhed af brød
16/03/2016
TV2, Television
Christian Sejer Rasmussen
Heidi Kornholt
National Food Institute
Press / Media

Google-computers triumf er et lille skridt mod store samfundsomvæltninger
Thomas Bolander
16/03/2016
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Media contribution (1)

Google-computers triumf er et lille skridt mod store samfundsomvæltninger
16/03/2016
videnskab.dk, Web
http://videnskab.dk/teknologi/google-computers-triumf-er-et-lille-skridt-mod-store-samfundsomvaeltninger
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic
Press / Media

Nyudviklet nedbørsmodel i NATURE's Scientific Reports
Morten Andreas Dahl Larsen
15/03/2016
Department of Management Engineering, Systems Analysis, DTU Climate Centre

Media contribution (1)

Nyudviklet nedbørsmodel i NATURE's Scientific Reports
15/03/2016
DTU, Print
http://www.man.dtu.dk/Nyheder/Nyhed?id=3D87444C-C4FD-4715-928C-22BD4126F408
Morten Andreas Dahl Larsen
Department of Management Engineering, Systems Analysis, DTU Climate Centre
Press / Media

Er brune bananer sundere at spise end gule bananer (overmodne kontra almindelig modningsgrad)
Anja Pia Biltoft-Jensen
14/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Er brune bananer sundere at spise end gule bananer (overmodne kontra almindelig modningsgrad)
14/03/2016
Ekstra Bladet, Web
Jacob Andersen
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

følfod
Kirsten Pilegaard
14/03/2016
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

følfod
14/03/2016
DR 1 Morgen, Television
Helge Frandsen
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit
Press / Media

Generel tarmmikrobiologi
Martin Iain Bahl
14/03/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Generel tarmmikrobiologi
14/03/2016
Sempers fagblad "Om spænd og småbørn", Print
Eline Holm, Freelancejournalist
Martin Iain Bahl
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Tilbage til start - Grønlands unge: Måske skal de blive i bygderne
Kåre Hendriksen
12/03/2016

Description
Baggrundsartikel i serie om Grønlands unge
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Tilbage til start - Grønlands unge: Måske skal de blive i bygderne
12/03/2016
Moderne Tider, Print
Information
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Press / Media

DTU PIXL
David Arge Klevang Pedersen
11/03/2016

Subject
Mars 2020, PIXL
National Space Institute, Measurement and Instrumentation Systems

Media contribution (1)
Danskernes madvaner om aftenen
Heidi Kornholt
11/03/2016
National Food Institute

Media contribution (1)

Danskernes madvaner om aftenen
11/03/2016
DR Fakta, Television
Jakob Stubbe
Heidi Kornholt
National Food Institute

Vi kan blive langt bedre til at forudsige oversvømmelser og tørke
Morten Andreas Dahl Larsen
11/03/2016
Department of Management Engineering, Systems Analysis, DTU Climate Centre

Media contribution (1)

Vi kan blive langt bedre til at forudsige oversvømmelser og tørke
11/03/2016
Videnskab.dk, Print
Morten Andreas Dahl Larsen
Department of Management Engineering, Systems Analysis, DTU Climate Centre

Fremtidens klima: Mere vand i nedbørsmodellerne
Morten Andreas Dahl Larsen
10/03/2016
Department of Management Engineering, Systems Analysis, DTU Climate Centre

Media contribution (1)

Fremtidens klima: Mere vand i nedbørsmodellerne
10/03/2016
DMI.dk, Print
http://www.dmi.dk/nyheder/arkiv/nyheder-2016/marts/fremtidens-klima-mere-vand-i-nedboersmodellerne/
Morten Andreas Dahl Larsen
Department of Management Engineering, Systems Analysis, DTU Climate Centre

hormonforstyrrende
Julie Boberg
10/03/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

hormonforstyrrende
10/03/2016
Tænk, Print
Maria Stove
Julie Boberg
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

Udsigt til bedre prognoser for oversvømmelser og tørke
Morten Andreas Dahl Larsen
10/03/2016
Department of Management Engineering, Systems Analysis, DTU Climate Centre

Media contribution (1)

Udsigt til bedre prognoser for oversvømmelser og tørke
10/03/2016
GEUS.dk, Print
http://www.geus.dk/cgi-bin/webbasen_nyt.pl?id=1457627223|cgifunction=form
Morten Andreas Dahl Larsen
Department of Management Engineering, Systems Analysis, DTU Climate Centre
Press / Media

hormonforstyrrende
Ulla Hass
09/03/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

hormonforstyrrende
09/03/2016
Tænk, Print
Maria Stove
Ulla Hass
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

Indtag af kosttilskud
Anja Pia Biltoft-Jensen
09/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af kosttilskud
09/03/2016
Nutraingredients.com, Web
Annie-Rose Harrison-Dunn
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Artikel om overgangskostens betydning på tarmflora udvikling
Martin Frederik Laursen
08/03/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Artikel om overgangskostens betydning på tarmflora udvikling
08/03/2016
Sempers fagblad om spæd og småbørn, Print
Eline Holm (Freelance)
Martin Frederik Laursen
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media
Indtag af D-vitamin og kosttilskud
Anja Pia Biltoft-Jensen
08/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af kosttilskud
Anja Pia Biltoft-Jensen
08/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af kosttilskud
Anja Pia Biltoft-Jensen
08/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af kosttilskud
Anja Pia Biltoft-Jensen
08/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af kosttilskud
Anja Pia Biltoft-Jensen
08/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af kosttilskud
Anja Pia Biltoft-Jensen
08/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af kosttilskud
Anja Pia Biltoft-Jensen
08/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Energiøvolutionen er lige om hjørnet
Tejs Vegge
08/03/2016
**Energirevolutionen er lige om hjørnet**

08/03/2016
Berlingske Business, Print
http://www.business.dk/energi/energirevolutionen-er-lige-om-hjoernet

Tejs Vegge
Department of Energy Conversion and Storage, Atomic scale modelling and materials

**Avocadosten**

Kirsten Pilegaard
07/03/2016

**Avocadosten**

Kirsten Pilegaard

**Subject**

Avocadosten har været omtalt som en sundheds explosion og fuld af antioxidanter i Søndagsavisen og MetroXpress. FVST har en facebook nyhed skrevet på baggrund af et notat fra os, hvor vi fraråder anvendelse af stenen.

National Food Institute, Research Group for Risk-Benefit

**Indtag af forarbejdet kød blandt børn**

Anja Pia Biltoft-Jensen
07/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Campylobacter kontrol**

Louise Boysen
04/03/2016

**Subject**

Mail-korrespondance

Har kort beskrevet de primære danske kontroltiltag for Campylobacter i primærproduktion og på slagterier. Har henvist til GUS i FVST for mere detaljeret beskrivelse af nyeste tiltag.

National Food Institute, Division of Risk Assessment and Nutrition, Research Group for Risk-Benefit

**Media contribution (1)**
Ny undersøgelse vedr. Round Up og hjælpestoffers effekt på aromatase aktivitet
Anne Marie Vinggaard
03/03/2016
National Food Institute, Research Group for Molecular Toxicology, Copenhagen Center for Health Technology

Media contribution (1)

Ny undersøgelse vedr. Round Up og hjælpestoffers effekt på aromatase aktivitet
03/03/2016
Ingeniøren, Web
Mia Stage
Anne Marie Vinggaard
Copenhagen Center for Health Technology, National Food Institute, Research Group for Molecular Toxicology

Avocadosten
Kirsten Pilegaard
03/03/2016

Subject
Avocadosten har været omtalt som en sundhedseksplosion og fuld af antioxidanter i Søndagsavisen og MetroXpress. FVST har en facebooknyhed skrevet på baggrund af et notat fra os, hvor vi fraråder anvendelse af stenen.
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Avocadosten
03/03/2016
Ritzau, Web
Amalie Kraaer
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit

Bliver batterier ikke snart bedre?
Tejs Vegge
03/03/2016
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Media contribution (1)

Bliver batterier ikke snart bedre?
03/03/2016
www.videnskab.dk, Web
http://videnskab.dk/sporg-videnskaben/bliver-batterier-ikke-snart-bedre
Tejs Vegge
Department of Energy Conversion and Storage, Atomic scale modelling and materials

Solving a nanotechnology riddle – what makes gold atoms stick together
Arnab Halder & Jens Ulstrup
02/03/2016

Description
NanoChemistry, Department of Chemistry

Media coverage (1)

Solving a nanotechnology riddle – what makes gold atoms stick together
02/03/2016
Gold surfaces and nanoparticles are protected by Au(0)-thiyl species and are destroyed when Au(I)-thiolates form.

Details

Gold nanoparticles riddle solved – offering medical hope
Arnab Halder & Jens Ulstrup
01/03/2016

Gold surfaces and nanoparticles are protected by Au(0)-thiyl species and are destroyed when Au(I)-thiolates form.

Details

Record-breaking Reach for Low-cost Data Transmission between Data Centers
Juan José Vegas Olmos
01/03/2016
Department of Photonics Engineering, Metro-Access and Short Range Systems

Gold surfaces and nanoparticles are protected by Au(0)-thiyl species and are destroyed when Au(I)-thiolates form.

Details
Akrylamid og mepiquat i kaffe
Kit Granby
29/02/2016
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Akrylamid og mepiquat i kaffe
29/02/2016
søndagsavisen, Print
Louise A. Poulsen
Kit Granby
National Food Institute, Research Group for Analytical Food Chemistry

Rygter: LIGO har målt flere tyngdebølger
Søren Brandt
29/02/2016
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Rygter: LIGO har målt flere tyngdebølger
29/02/2016
Videnskab.dk, Web
Charlotte Price Persson
http://videnskab.dk/miljo-naturvidenskab/rygter-ligo-har-malt-flere-tyngdebolger
Søren Brandt
National Space Institute, Astrophysics and Atmospheric Physics

Relations
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

LED-pæren er blevet boligegnet
Anders Thorseth
28/02/2016
Department of Photonics Engineering, Diode Lasers and LED Systems

Media contribution (1)

LED-pæren er blevet boligegnet
28/02/2016
Berlingske Boligen, Print
Berlingske Media
Anders Thorseth
Department of Photonics Engineering, Diode Lasers and LED Systems

Relations
Projects:
Global Test of SSL Products - IEA-4E-SSL
Center for LED metrology

Er æg sunde?
Heddie Mejborn
24/02/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Er æg sunde?
24/02/2016
Søndagsavisen, Print
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Debat: Nej, skifergas er da alt andet end forsvarligt
Steffen Foss Hansen
23/02/2016

Description
SKIFERGAS Politikerne må enten forbyde skifergas eller indrømme, at de gambler med miljø og sundhed.
Department of Environmental Engineering, Environmental Chemistry

Media coverage (1)

Debat: Nej, skifergas er da alt andet end forsvarligt
23/02/2016
Politiken (National), Denmark, Print
Jens Voldby Crumlin
374 words
SKIFERGAS Politikerne må enten forbyde skifergas eller indrømme, at de gambler med miljø og sundhed.
Steffen Foss Hansen

Relations
Projects:
Shale gas in a Danish context
Press / Media

QSAR database
Eva Bay Wedebye
22/02/2016

Subject
Instituttets online QSAR database som blev offentliggjort på vores hjemmeside i november 2015.
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

QSAR database
22/02/2016
DYNAMO, Print
Karoline Lawætz (SCIENCECPH)
Eva Bay Wedebye
National Food Institute, Research Group for Molecular Toxicology
Press / Media

Naturstyrelsen kortlægger erfaringer 36 farer ved skifergas i Danmark
Steffen Foss Hansen
19/02/2016

Description
Naturstyrelsen advarer om, at udvinding af skifergas kan føre til forurening af grundvandet, og at der er brug for mere viden om de kemikalier, der bruges til at udvinding.
Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)

Naturstyrelsen kortlægger erfaringer 36 farer ved skifergas i Danmark
19/02/2016
Arbejderen (National), Denmark, Web
http://arbejderen.dk/indland/36-farer-ved-skifergas-i-danmark
Naturstyrelsen advarer om, at udvinding af skifergas kan føre til forurening af grundvandet, og at der er brug for mere viden om de kemikalier, der bruges til at udvinding.
Intelligens i væggene og elektronik på byggepladsen
Jan Karlshøj
19/02/2016

Description
Article in an advertising supplement on construction to Jyllands-posten, which is a national distributed newspaper.

Subject
Use of sensors in buildings.
Department of Civil Engineering, Section for Building Design

Media contribution (1)

Jyllands-posten
19/02/2016
Jyllands-posten (National), Denmark, Print
Jyllands-posten
http://jyllands-posten.dk
Jan Karlshøj
Press / Media

Hvad gør vi, når maskiner har en højere moral end mennesker?
Martin Mose Bentzen
18/02/2016

Subject
Ethical robots
Department of Management Engineering, Technology and Innovation Management

Media contribution (1)

Hvad gør vi, når maskiner har en højere moral end mennesker?
18/02/2016
Føljeton, Web
Martin Mose Bentzen
Department of Management Engineering, Technology and Innovation Management
Press / Media

Kost, tarmflora, småbørn
Tine Rask Licht
18/02/2016
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

Kost, tarmflora, småbørn
18/02/2016
DR1, Sundhedsmagasinet, Television
Lasse Lindhardt Jensen
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Trenden med øget salg af laktose- og glutenfri varer
Charlotte Bernhard Madsen
17/02/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)
Trenden med øget salg af laktose- og glutenfri varer
17/02/2016
TV 2 digital, Web
Camilla Carlson
Charlotte Bernhard Madsen
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Danskernes mælkeforbrug gennem tiderne/officielle mælkestatistikker
17/02/2016
National Food Institute, Division of Risk Assessment and Nutrition

ESAs Philae: P1 Morgen
Kristoffer Leer
17/02/2016
Description
P1 Morgen ca kl 7.55
National Space Institute, Astrophysics

ESA ogiver Philae
Kristoffer Leer
17/02/2016
Description
Interview om ESAs Philaes afslutning
National Space Institute, Astrophysics

Research til artikel om for lidt koordinering af hvad de forskellige kasser bevilliger penge til
Annette Nygaard Jensen
16/02/2016
Subject
Journalisten researcher på en artikel om, hvorvidt kasserne, der giver støtte til forskning, taler godt nok sammen. Han har derfor sendt to DTU-Food projektbeskrivelser som han ville have min hjælp til at vurdere om har noget (for meget!) til
fælles. Han kontakter flere for at få denne hjælp.

Under den første telefonisk samtale indikerede jeg, at det umiddelbart virkede lidt for delikat at skulle vurdere kollegaers arbejde og det har jeg senere bekræftet i mail efter fremsendelse af de aktuelle forskningsprojektsbeskrivelser

National Food Institute, Research Group for Microbial Food Safety and Quality

Media contribution (1)

Research til artikel om for lidt koordinering af hvad de forskellige kasser bevilliger penge til
16/02/2016
Berlingske Business, Web
Michael Korsgaard Nielsen
Annette Nygaard Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality
Press / Media

alternativer til energidrikke
Marta Axelstad Petersen
16/02/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

alternativer til energidrikke
16/02/2016
Ritzau Fokus, Web
Christina E. Ledertoug
Marta Axelstad Petersen
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

Skolebørns morgenmad
Lene Møller Christensen
16/02/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Skolebørns morgenmad
16/02/2016
Flensborg Avis, Print
Lise Christoffersen
Lene Møller Christensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Skolebørns morgenmad
Inge Tetens
16/02/2016
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Skolebørns morgenmad
16/02/2016
Flensborg Avis, Print
Lise Christoffersen
Inge Tetens
National Food Institute, Research Group for Risk-Benefit
Press / Media

Danskernes kødindtag
Sisse Fagt
De fleste har jo tre-fire milliarder linjer kunstig intelligens-kode i lommen
Thomas Bolander
15/02/2016
Department of Applied Mathematics and Computer Science, Algorithms and Logic

De fleste har jo tre-fire milliarder linjer kunstig intelligens-kode i lommen
15/02/2016
Computerworld, Print
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Fysikerne jubler: Vi har fundet tyngdebølger!
Søren Brandt
12/02/2016
National Space Institute, Astrophysics and Atmospheric Physics

Fysikerne jubler: Vi har fundet tyngdebølger!
12/02/2016
Videnskab.dk, Web
Charlotte Price Persson, Bo Karl Christensen
http://videnskab.dk/miljo-naturvidenskab/fysikerne-jubler-vi-har-fundet-tyngdeboelger
Søren Brandt
National Space Institute, Astrophysics and Atmospheric Physics

Relations
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

Danske forskere: Tyngdebølger den største opdagelse i 100 år
Søren Brandt & Alex Nielsen
11/02/2016
National Space Institute, Astrophysics and Atmospheric Physics, Albert-Einstein-Institut, Max-Planck-Institut für Gravitationsphysik, D-30167 Hannover, Germany

Danske forskere: Tyngdebølger den største opdagelse i 100 år
11/02/2016
DR Viden (National), Denmark, Web
Søren Bjørn-Hansen
https://www.dr.dk/nyheder/viden/danske-forskere-tyngdeboelger-den-stoerste-opdagelse-i-100-aar#!/00:38
Søren Brandt & Alex Nielsen
Albert-Einstein-Institut, Max-Planck-Institut für Gravitationsphysik, D-30167 Hannover, Germany

Relations
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

Press / Media

FAKTA: Tyngdebølger er krusninger i rumtiden: De kaldes århundredets opdagelse. Men hvad er de såkaldte gravitationsbølger egentlig for noget?
Søren Brandt
11/02/2016
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

FAKTA: Tyngdebølger er krusninger i rumtiden: De kaldes århundredets opdagelse. Men hvad er de såkaldte gravitationsbølger egentlig for noget?
11/02/2016
DR Viden, Web
Søren Bjørn-Hansen
http://www.dr.dk/nyheder/viden/fakta-tyngdeboelger-er-krusninger-i-rumtiden
Søren Brandt
National Space Institute, Astrophysics and Atmospheric Physics

Relations
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO
Press / Media

Opdagelse af tyngdebølger
Søren Brandt
11/02/2016
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Opdagelse af tyngdebølger
11/02/2016
DR2 (National), Denmark, Television
http://www.dr.dk/nyheder/viden/rygterne-var-sande-forskere-har-opdaget-tyngdeboelger#!/
Søren Brandt
National Space Institute, Astrophysics and Atmospheric Physics

Relations
Research outputs:
Localization and Broadband Follow-Up of the Gravitational-Wave Transient GW150914
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO
Press / Media

Svinekød og sundhed
Anja Pia Biltoft-Jensen
11/02/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Svinekød og sundhed
11/02/2016
videnskab.dk, Web
Sedsel Brøndum Lange
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Videnskabelig sensation: Forskere bekræfter Einstein-teori: Den største videnskabelige opdagelse i det nye årtusinde er netop blevet afsløret  
Søren Brandt  
11/02/2016

Subject  
Gravitationsbølger  
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Videnskabelig sensation: Forskere bekræfter Einstein-teori: Den største videnskabelige opdagelse i det nye årtusinde er netop blevet afsløret  
11/02/2016  
Ekstrabladet, Web  
Jonas Skov Nielsen  
http://ekstrabladet.dk/nyheder/samfund/videnskabelig-sensation-forskere-bekraefter-einstein-teori/5948615  
Søren Brandt  
National Space Institute, Astrophysics and Atmospheric Physics

Relations  
Projects:  
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO  
Press / Media

Rygtebørsen koger over: Forskere har fundet bevis for tyngdebølger  
Søren Brandt  
10/02/2016  
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Rygtebørsen koger over: Forskere har fundet bevis for tyngdebølger  
10/02/2016  
DR.dk Viden, Web  
Søren Bjørn-Hansen  
https://www.dr.dk/nyheder/viden/rygteboersen-koger-over-forskere-har-fundet-bevis-tyngdeboelger  
Søren Brandt  
National Space Institute, Astrophysics and Atmospheric Physics

Relations  
Projects:  
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO  
Press / Media

historie om komplementærkost og mikrobiota  
Tine Rask Licht  
10/02/2016

Subject  
historie om komplementærkost og mikrobiota  
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

historie om komplementærkost og mikrobiota  
10/02/2016  
Videnskab.dk, Web  
Malene Sommer Christiansen  
Tine Rask Licht  
National Food Institute, Research Group for Gut Microbiology and Immunology  
Press / Media
Forskere står med mange ubesvarede skifergasspørgsmål: Der er stadig mange ubesvarede spørgsmål om skifergasboringernes konsekvenser for miljøet og grundvandet.

Steffen Foss Hansen
10/02/2016
Department of Environmental Engineering, Environmental Chemistry

**Media contribution (1)**

Forskere står med mange ubesvarede skifergasspørgsmål: Der er stadig mange ubesvarede spørgsmål om skifergasboringernes konsekvenser for miljøet og grundvandet.
10/02/2016
Energisten, Web
Morten Kammersgaard
http://energisten.mediajungle.dk/2016/02/10/forskere-staar-med-mange-ubesvarede-skifergasspoergsmaal/
Steffen Foss Hansen
Department of Environmental Engineering, Environmental Chemistry

**Relations**
**Projects:**
Shale gas in a Danish context
Press / Media

**New Universal Robots Driver Makes Manipulation Research Easier**
Thomas Timm Andersen
09/02/2016
Automation and Control, Department of Electrical Engineering

**Media contribution (1)**

**New Universal Robots Driver Makes Manipulation Research Easier**
09/02/2016
ROS Spotlight, Web
Clearpath Robotics
http://www.clearpathrobotics.com/2016/02/new-universal-robots-driver-makes-manipulation-easier/
Thomas Timm Andersen
Automation and Control, Department of Electrical Engineering

**Relations**
**Research outputs:**
Optimizing the Universal Robots ROS driver.
Press / Media

**Ekspert om tysk togkollision: "Besynderlig ulykke"**
Anne Elisabeth Haxthausen
09/02/2016

**Description**
Interviewed for an article in the Danish newspaper Politiken concerning a train accident in Germany

**Subject**
A train accident in Germany
Department of Applied Mathematics and Computer Science , Software Engineering

**Media contribution (1)**

**Ekspert om tysk togkollision: "Besynderlig ulykke"**
09/02/2016
Politiken, Print
http://politiken.dk/udland/ECE3058885/ekspert-om-tysk-togkollision-besynderlig-ulykke/
Anne Elisabeth Haxthausen
Department of Applied Mathematics and Computer Science , Software Engineering
Press / Media
Danskerne rapporterer: Mystiske lysglimt og høje brag fra nattehimlen
Kristoffer Leer
07/02/2016
National Space Institute, Astrophysics

Media contribution (1)

Danskerne rapporterer: Mystiske lysglimt og høje brag fra nattehimlen
07/02/2016
TV2 nyhederne, Web
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Lysglimt og stort brag på Sjælland skabt af meteor
Kristoffer Leer
07/02/2016
National Space Institute, Astrophysics

Media contribution (1)

Lysglimt og stort brag på Sjælland skabt af meteor
07/02/2016
JP, Web
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Rumforsker efter mystisk lysglimt: Her er der god chance for at finde meteorsten
Kristoffer Leer
07/02/2016
National Space Institute, Astrophysics

Media contribution (1)

Rumforsker efter mystisk lysglimt: Her er der god chance for at finde meteorsten
07/02/2016
Web
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Se videoer: Slog meteor ned på Sjælland lørdag aften?
Kristoffer Leer
07/02/2016
National Space Institute, Astrophysics

Media contribution (1)

Se videoer: Slog meteor ned på Sjælland lørdag aften?
07/02/2016
Se og Hør, Web
http://www.seoghoer.dk/wild/se-videoerne-slog-meteor-ned-paa-sjaelland-loerdag-aften
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media
Så du det? Mystisk lysglimt over Danmark kan være meteor
Kristoffer Leer
07/02/2016
National Space Institute, Astrophysics

Media contribution (1)

Så du det? Mystisk lysglimt over Danmark kan være meteor
07/02/2016
Lokalavisen, Web
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Meteorit i Danmark
Kristoffer Leer
07/02/2016

Description
Interview om meteoritfald over Danmark d. 6 februar 2016 Sendt ca kl 7 d. 7 februar på TV2 News
National Space Institute, Astrophysics

Media contribution (1)

Meteorit i Danmark
07/02/2016
TV2 News, Television
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Læserstorm efter brag og lysglimt: Slog meteor ned i Danmark i nat?
Kristoffer Leer
07/02/2016
National Space Institute, Astrophysics

Media contribution (1)

Læserstorm efter brag og lysglimt: Slog meteor ned i Danmark i nat?
07/02/2016
TV2, Web
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Kødforbruget
Sisse Fagt
06/02/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kødforbruget
06/02/2016
Politiken, Web
Annemette Grundtvig
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Vedr indtag af kød og vegetarisme
Agnes N. Pedersen
06/02/2016

Subject
Vedr indtag af kød og vegetarisme
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Vedr indtag af kød og vegetarisme
06/02/2016
Politiken, Web
Annemette Grundtvig
Agnes N. Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Safety expert doubtful if root causes will be identified after Fredericia fire
Frank Huess Hedlund
05/02/2016

Description
Major fire in palm oil tank, possibly initiated by explosion of solution of urea ammonium nitrate, although many details are vague at this point in time

Subject
http://ing.dk/artikel/sikkerhedsekspert-tror-ikke-paa-opklaring-af-branden-i-fredericia-182045
Department of Applied Mathematics and Computer Science, Dynamical Systems, Statistics and Data Analysis

Media contribution (1)

Safety expert doubtful if root causes will be identified after Fredericia fire
05/02/2016
Ingeniøren, Print
Frank Huess Hedlund
Department of Applied Mathematics and Computer Science, Dynamical Systems, Statistics and Data Analysis
Press / Media

Kan man leve af kartofler og batater i et år?
Heddie Mejborn
04/02/2016

Subject
Kan man leve af kartofler og batater i et år?
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kan man leve af kartofler og batater i et år?
04/02/2016
Jyllands-Posten, Web
Edith Rasmussen Krabbe
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Udviklingen i fysisk aktivitet blandt voksne danskere
Jeppe Matthiessen
04/02/2016

Subject
Udviklingen i fysisk aktivitet blandt voksne danskere
National Food Institute, Division of Risk Assessment and Nutrition
Udviklingen i fysisk aktivitet blandt voksne danskere
04/02/2016
P1 Morgen, Radio
Jan Falkentoft og Jette Dambgaard
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition

Artikel Kosttilskud med antioxidanter
Charlotte Jacobsen
04/02/2016

36 risici ved at bore efter skifergas
Steffen Foss Hansen
03/02/2016

Wolfgang Puffitsch
03/02/2016

Department of Applied Mathematics and Computer Science, Embedded Systems Engineering

**Media contribution (1)**

03/02/2016
Ö1, Radio
Mariann Unterluggauer
25:00
http://oe1.orf.at/programm/427011

Wolfgang Puffitsch
Department of Applied Mathematics and Computer Science, Embedded Systems Engineering

**Rapport: Sådan gør vi skifergas miljøvenlig**
Steffen Foss Hansen
02/02/2016

*Description*
Der er en række miljømæssige risici ved at bore efter skifergas, men en ny rapport fra Naturstyrelsen bringer mulige løsninger for dagen.
Department of Environmental Engineering, Environmental Chemistry

**Media contribution (1)**

*Rapport: Sådan gør vi skifergas miljøvenlig*
02/02/2016
Ingeniøren (National), Denmark, Web
Julie Lykke-Nedergaard
461 words
https://ing.dk/artikel/rapport-saadan-gor-vi-skifergas-miljoevenlig-181929

Der er en række miljømæssige risici ved at bore efter skifergas, men en ny rapport fra Naturstyrelsen bringer mulige løsninger for dagen.
Steffen Foss Hansen

**Relations**
Projects:
Shale gas in a Danish context

**Sådan gør vi skifergas miljøvenlig: Der er en række miljømæssige risici ved at bore efter skifergas, men en ny rapport fra Naturstyrelsen bringer mulige løsninger for dagen**
Steffen Foss Hansen
02/02/2016
Department of Environmental Engineering, Environmental Chemistry

**Media contribution (1)**

*Sådan gør vi skifergas miljøvenlig: Der er en række miljømæssige risici ved at bore efter skifergas, men en ny rapport fra Naturstyrelsen bringer mulige løsninger for dagen*
02/02/2016
Ingeniøren, Web
Julie Lykke-Nedergaard
http://ing.dk/artikel/rapport-saadan-henter-vi-skifergas-op uden-skade-miljoet-181929
Steffen Foss Hansen
Department of Environmental Engineering, Environmental Chemistry

**Teknologisk HOT OG NOT i 2016: IN OG OUT, Plastsolceller, fusionsenergi og virtual reality bliver populære teknologier i 2016, hvis man spørger fem DTU-forskere. De giver også et bud på, hvilke teknologier, vi ikke vil høre mere til.**
Peter Behrensdrorff Poulsen
01/02/2016
Department of Photonics Engineering, Diode Lasers and LED Systems
Teknologisk HOT OG NOT i 2016: IN OG OUT, Plastsolceller, fusionsenergi og virtual reality bliver populære teknologier i 2016, hvis man spørger fem DTU-forskere. De giver også et bud på, hvilke teknologier, vi ikke vil høre mere til.

01/02/2016
DTU Avisen, Print
Peter Behrensdorff Poulsen
Department of Photonics Engineering, Diode Lasers and LED Systems
Press / Media

Smart idé fik designet til at virke
Peter Behrensødorf Poulsen
01/02/2016
Department of Photonics Engineering, Diode Lasers and LED Systems

Forskere tænder nyt lys for glødepæren
Anders Thorseth
01/02/2016
Department of Photonics Engineering, Diode Lasers and LED Systems

Pesticidrester i øl
Bodil Hamborg Jensen
01/02/2016
National Food Institute, Division of Risk Assessment and Nutrition

Pesticidrester i øl
01/02/2016
Landbrug og Fødevarer. Foodculture.dk, Web
Maria Strube
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Erhvervsudvikling i Qaanaaq
Kåre Hendriksen
31/01/2016

Subject
Erhvervsudvikling i Qaanaaq
Department of Civil Engineering

Media contribution (1)

Erhvervsudvikling i Qaanaaq
31/01/2016
KNR Qanarooq, Television
Kåre Hendriksen
Department of Civil Engineering
Press / Media

Udviklingen i fysisk aktivitet blandt voksne danskere
Jeppe Matthiessen
29/01/2016

Subject
Udviklingen i fysisk aktivitet blandt voksne danskere
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Udviklingen i fysisk aktivitet blandt voksne danskere
29/01/2016
Ritzaus Bureau, Web
Christina Raabæk
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Udviklingen i fysisk aktivitet blandt voksne danskere
Jeppe Matthiessen
29/01/2016

Subject
Udviklingen i fysisk aktivitet blandt voksne danskere
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Udviklingen i fysisk aktivitet blandt voksne danskere
29/01/2016
DR’s Lev Nu, Television
Dorthe Boss Kyhn
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nu tager robotterne også specialistjob
Thomas Bolander
29/01/2016
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Media contribution (1)

Nu tager robotterne også specialistjob
29/01/2016
Ingeniører, Print
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic
Udviklingen i fysisk aktivitet blandt voksne
Jeppe Matthiessen
26/01/2016

Subject
Udviklingen i fysisk aktivitet blandt voksne
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Udviklingen i fysisk aktivitet blandt voksne
26/01/2016
P3 Nyheder, Radio
Camilla Høj Eggers
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Regionalisering af sundhedsvæsenet og udfordringer i Qaanaaq
Kåre Hendriksen
25/01/2016

Description
Regionalisering af sundhedsvæsenet og udfordringer i Qaanaaq
Department of Civil Engineering

Media contribution (1)

Regionalisering af sundhedsvæsenet og udfordringer i Qaanaaq
25/01/2016
KNR Qanorooq, Television
Kåre Hendriksen
Department of Civil Engineering
Press / Media

Det store D-vitamin-paradoks
Inge Tetens
25/01/2016

Subject
Det store D-vitamin-paradoks
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Det store D-vitamin-paradoks
25/01/2016
Videnskab.dk, Web
Dorthe Boss Kyhn
Inge Tetens
National Food Institute, Research Group for Risk-Benefit
Press / Media

Fluorerede stoffer i tekstiler
Xenia Trier
24/01/2016

Subject
Fluorerede stoffer i tekstiler
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)
Fluorerede stoffer i tekstiler
24/01/2016
Ekstra Bladet, Print
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Kemiske fødevareanalyser
Heidi Kornholt
23/01/2016

Subject
Kemiske fødevareanalyser
National Food Institute

Media contribution (1)

Kemiske fødevareanalyser
23/01/2016
Søndagsavisen, Print
Louise A. Poulsen
Heidi Kornholt
National Food Institute
Press / Media

Fuldkorn og risiko for sygdom
Heddie Mejborn
22/01/2016

Subject
Fuldkorn og risiko for sygdom
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Fuldkorn og risiko for sygdom
22/01/2016
P3-nyheder, Radio
SISEL RAVN
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Energidrik
Jeppe Matthiessen
22/01/2016

Subject
Energidrik
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Energidrik
22/01/2016
BT, Web
Bo Poulsen
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fuldkorn
Heddie Mejborn
21/01/2016
Subject
Fuldkorn
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Fuldkorn
21/01/2016
Ritzau, Web
NIELS NØRGAARD
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

konventionelt landbrug vs økologisk landbrug
Helle Bisgaard Korsgaard
21/01/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

konventionelt landbrug vs økologisk landbrug
21/01/2016
freelancejournalist og skriver for Jyllands-Posten, Web
Maria Stove
Helle Bisgaard Korsgaard
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fedt fra vegetabilier vs. fisk
Nina Skall Nielsen
15/01/2016

Subject
Fedt fra vegetabilier vs. fisk
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

Fedt fra vegetabilier vs. fisk
15/01/2016
Ing.dk/fokus, Web
Mia Stage
Nina Skall Nielsen
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

Spacewalk på TV2 News
Kristoffer Leer
15/01/2016

Description
Om spacewalk 46, 15. jan 2016
ca kl 14 om spacewalk
National Space Institute, Astrophysics

Media contribution (1)

Spacewalk på TV2 News
15/01/2016
TV2 News, Television
Kristoffer Leer
National Space Institute, Astrophysics
42% wind power in Danish power system 2015: Go'morgen P3 2016-01-15
Poul Ejnar Sørensen
15/01/2016
Department of Wind Energy, Wind Energy Systems

Media contribution (1)

42% wind power in Danish power system 2015: Go'morgen P3 2016-01-15
15/01/2016
DR P3, Radio
Mads Møller Lauritsen
4 minutes
http://www.dr.dk/radio/ondemand/p3/go-morgen-p3-2016-01-15#!/
begin 1:04:10 end 1:08:40
Poul Ejnar Sørensen
Department of Wind Energy, Wind Energy Systems
Press / Media

Saxocon
Eva Bay Wedebye
13/01/2016

Subject
Saxocon
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

Saxocon
13/01/2016
DTU avisen, Print
Bertel Henning Jensen, freelance journalist
Eva Bay Wedebye
National Food Institute, Research Group for Molecular Toxicology
Press / Media

Meget høje indhold af PCB fundet i hvaler.
Jørn Smedsgaard
12/01/2016

Subject
Meget høje indhold af PCB fundet i hvaler.
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Meget høje indhold af PCB fundet i hvaler.
12/01/2016
Videnskab.dk, Web
Charlotte Price Persson
Jørn Smedsgaard
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Slankemidler, hindbærketon, manglende risikovurdering
Lea Bredsdorff
11/01/2016

Subject
Slankemidler, hindbærketon, manglende risikovurdering
National Food Institute, Division of Risk Assessment and Nutrition
Pressekontakt-Anvendelse af nitrit til opretholdelse af mikrobiologisk sikre kødprodukter.
Susan Strange Herrmann
11/01/2016

Subject
Pressekontakt-Anvendelse af nitrit til opretholdelse af mikrobiologisk sikre kødprodukter.
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Pressekontakt-Anvendelse af nitrit til opretholdelse af mikrobiologisk sikre kødprodukter.
11/01/2016
Premieres lignes, television, Television
Sandrine Rigaud
Susan Strange Herrmann
National Food Institute, Research Group for Analytical Food Chemistry

Sick solar cells open up new diagnostic market
Peter Behrensdorff Poulsen
07/01/2016
Department of Photonics Engineering, Diode Lasers and LED Systems

Media contribution (1)

Sick solar cells open up new diagnostic market
07/01/2016
DTU avis - web, Print
http://www.dtu.dk/english/News/2016/01/DTUavisen-Sick-solar-cells-open-up-new-diagnostic-market?id=d0b90b80-0a0d-4d96-ba7f-a96e725eab6b
Peter Behrensdorff Poulsen
Department of Photonics Engineering, Diode Lasers and LED Systems

Nanopartikler i fødevarer
Jens Jørgen Sloth
07/01/2016

Subject
Nanopartikler i fødevarer
National Food Institute, Research Group for Nano-Bio Science

Media contribution (1)

Nanopartikler i fødevarer
07/01/2016
Politiken, Web
Adam Hannestad
Jens Jørgen Sloth
National Food Institute, Research Group for Nano-Bio Science

Press / Media
Data sharing: An open mind on open data: The move to make scientific findings transparent can be a major boon to research, but it can be tricky to embrace the change.

Ivo Grigorov
06/01/2016

Subject
Research data, Research Data Management
National Institute of Aquatic Resources, Research Secretariat

Media contribution (1)

Avanceret måler afslører solcellers produktivitet i al slags vejr
Peter Behrensdorff Poulsen
06/01/2016
Department of Photonics Engineering, Diode Lasers and LED Systems

Media contribution (1)

Syge solceller åbner nyt diagnosemarked: VEDLIGEHOLD | Et nyt system, som kan gøre solceller endnu mere driftsikre, skal testes i samarbejde med DTU Fotonik og DTU Nanotech.
Peter Behrensdorff Poulsen
01/01/2016
Syge solceller åbner nyt diagnosemarked: VEDLIGEHOLD | Et nyt system, som kan gøre solceller endnu mere driftsikre, skal testes i samarbejde med DTU Fotonik og DTU Nanotech.

01/01/2016
DTU avisen, Print
Peter Behrensdorff Poulsen
Department of Photonics Engineering, Diode Lasers and LED Systems
Press / Media

Du lægger ud som Luke Skywalker – hvordan undgår du at ende som Darth Vader?
Martin Mose Bentzen
01/01/2016

Langzeitspeicherung von Wärme mittels Phasenwechselmaterialien
Gerald Englmair
01/01/2016

DTU Wind Energy plans 2nd stage of offshore wind farms project planning tool
Charlotte Bay Hasager
01/01/2016

Description
DTU Wind Energy's streamlined project planning tool for offshore wind farms is now being commercialised. An upgrade of the tool, involving strategic planners, is already in the pipeline

https://issuu.com/energyinsight/docs/energy_insight_yearbook_2016/1
Department of Wind Energy, Meteorology & Remote Sensing
Press / Media

DTU Wind Energy plans 2nd stage of offshore wind farms project planning tool
Bacteria Monitoring in 3D
Hans-Jørgen Albrechtsen
01/01/2016

Description
Article on new 3D monitor that DTU Environment (Hans-Jørgen Albrechtsen) is collaborating on with Grundfos and HOFOR A/S. Published in Water online August 10, 2016
Department of Environmental Engineering, Urban Water Systems

Dansk teknologi revolutionerer vindmåling
Torben Krogh Mikkelsen
01/01/2016
Department of Wind Energy, Meteorology & Remote Sensing

Kommentarer til nyt studie af paracetamols indvirkning på follikelreserve og hunlig fertilitet i rotter
Julie Boberg
22/12/2015

Subject
Kommentarer til nyt studie af paracetamols indvirkning på follikelreserve og hunlig fertilitet i rotter
National Food Institute, Research Group for Reproductive Toxicology

Tarmbakterier
Tine Rask Licht
17/12/2015

Subject
Tarmbakterier
Live fra stjernerne
René Fléron
14/12/2015

Description
Do you know about Star Wars than the stars on the sky? What's a light-year, a meteor shower and distant galaxies? To night we'll have a hole through to space when DR3 transmits LIVE from the telescope at La Palma in order to fact check the Star Wars films. Is it pure imagination or is there live out there?

Ask questions at #DR3stjernekik.

Ved du mere om Star Wars end om stjernehimlen? Hvad er et lysår, en meteorregn og fjerne galakser? I aften har vi hul igennem til verdensrummet, når DR3 sender LIVE fra stjernekikkerten på La Palma for at faktatjekke Star Wars-filmene. Er det ren fantasi eller er der liv der ude?

Stil spørgsmål på #DR3stjernekik.

Invited as expert to appear in the studio during the event

Subject
Live TV event
National Space Institute, Measurement and Instrumentation Systems

Media contribution (1)

Live fra stjernerne
14/12/2015
Danish Radio, Television
Lars Ostenfeldt
2h
René Fléron
National Space Institute, Measurement and Instrumentation Systems
Press / Media

Meteorsværm sender masser af stjerneskud over himlen
Kristoffer Leer
14/12/2015
National Space Institute, Astrophysics
Meteorsværm sender masser af stjerneskud over himlen
14/12/2015
DR, Web
http://www.dr.dk/nyheder/indland/meteorsvaerm-sender-masser-af-stjerneskud-over-himlen
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Her kan du masser af stjerneskud i nat
Kristoffer Leer
14/12/2015
National Space Institute, Astrophysics

En illusion at kloden er reddet af en politisk klimaaftale
Jens Olaf Pepke Pedersen
14/12/2015
National Space Institute, Sunclimate

Computerome - Kopenhagen Fur
Emma Elisabeth Hagberg
10/12/2015
Molecular Evolution, Department of Bio and Health Informatics, Disease Intelligence and Molecular Evolution

Fuld fart på forskningen i fusionskraft: Interview på videnskab.dk
Søren Bang Korsholm
09/12/2015

Subject
Statusartikel om fusionsforskningen.
Department of Physics, Plasma Physics and Fusion Energy
Media contribution (1)

Fuld fart på forskningen i fusionskraft: Interview på videnskab.dk
09/12/2015
videnskab.dk, Web
Henrik Bendix
http://videnskab.dk/teknologi/fuld-fart-pa-forskningen-i-fusionskraft
Søren Bang Korsholm
Department of Physics, Plasma Physics and Fusion Energy
Press / Media

Adfærdsøvelser kan måske forhindre spritkørsel
Laila Marianne Martinussen
08/12/2015

Subject
Forskning på holdninger til spirituskørsel
Department of Management Engineering, Transport policy and behaviour, Technology and Innovation Management

Media contribution (1)

Adfærdsøvelser kan måske forhindre spritkørsel
Laila Marianne Martinussen
08/12/2015
DTU Avisen, Print
DTU
http://www.dtu.dk/Nyheder/2015/12/Adfaerdsoevelser-kan-maaske-forhindre-spritkoersel?id=ac2463a0-6aba-4efb-a184-a3637d6d6884
Laila Marianne Martinussen
Transport policy and behaviour, Department of Management Engineering, Technology and Innovation Management
Press / Media

Adfærdsøvelser kan måske forhindre spritkørsel
Laila Marianne Martinussen
08/12/2015
Department of Management Engineering, Transport policy and behaviour, Technology and Innovation Management

Media contribution (1)

Adfærdsøvelser kan måske forhindre spritkørsel
Laila Marianne Martinussen
08/12/2015
DTU Avisen, Web
DTU
http://www.dtu.dk/Nyheder/2015/12/Adfaerdsoevelser-kan-maaske-forhindre-spritkoersel?id=ac2463a0-6aba-4efb-a184-a3637d6d6884
Laila Marianne Martinussen
Transport policy and behaviour, Department of Management Engineering, Technology and Innovation Management
Press / Media

Ekspert: Danskerne har det med kød, som amerikanerne har det med skydevåben: Kødet er danskernes hellige ko, lyder det fra forsker i bæredygtighed
Henrik Saxe
07/12/2015

Subject
Kødforbrug og klima
Department of Management Engineering, Quantitative Sustainability Assessment

Media contribution (1)

Ekspert: Danskerne har det med kød, som amerikanerne har det med skydevåben: Kødet er danskernes hellige ko, lyder det fra forsker i bæredygtighed
07/12/2015
DR Nyheder, Web
Maya Nissen
Danskerne spiser mindre kød: hvad hvis udviklingslandene spiste kød som i Danmark
Henrik Saxe
07/12/2015

Subject
cost, kød, klima, miljø
Department of Management Engineering, Quantitative Sustainability Assessment

Media contribution (1)

Danskerne spiser mindre kød: hvad hvis udviklingslandene spiste kød som i Danmark
07/12/2015
DR2, P1, P3 morgen, Television
Lasse Berg Sørensen
6 min
https://www.dr.dk/tv/se/dr2-morgen/dr2-morgen-2015-12-07#!/
Henrik Saxe
Department of Management Engineering, Quantitative Sustainability Assessment

Gener, D-vitamin
Ioanna Nissen
04/12/2015

Subject
Gener, D-vitamin
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Gener, D-vitamin
04/12/2015
DR, Television
Henrik Tüchsen
Ioanna Nissen
National Food Institute, Research Group for Risk-Benefit

Bill Gates forgylder tre energiteknologier
Tejs Vegge
04/12/2015
Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design

Media contribution (1)

Bill Gates forgylder tre energiteknologier
04/12/2015
Ingeniøren, Print
Tejs Vegge
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials

Bill Gates med energi nummer 1: Flowbatterier
Tejs Vegge
04/12/2015
Gener, D-vitamin
Ioanna Nissen
02/12/2015

Subject
Gener, D-vitamin
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Gener, D-vitamin
02/12/2015
Genetic Engineering and Biotechnology News, Web
John Sterling
Ioanna Nissen
National Food Institute, Research Group for Risk-Benefit
Press / Media

Gener, D-vitamin
Ioanna Nissen
01/12/2015

Subject
Gener, D-vitamin
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Gener, D-vitamin
01/12/2015
dr.dk, Web
Susanne Vigsø Grøn
Ioanna Nissen
National Food Institute, Research Group for Risk-Benefit
Press / Media

Gener, D-vitamin
Ioanna Nissen
01/12/2015

Subject
Gener, D-vitamin
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Gener, D-vitamin
01/12/2015
videnskab.dk, Web
Susanne Vigsø Grøn
Ioanna Nissen
National Food Institute, Research Group for Risk-Benefit
Press / Media

Vedr nye nature artikler om biologisk containment
Peter Ruhald Jensen
01/12/2015
National Food Institute, Division of Industrial Food Research, Systems Biotechnology

Media contribution (1)

Vedr nye nature artikler om biologisk containment
01/12/2015
Description

Department of Management Engineering, Systems Analysis, DTU Climate Centre, Energy Systems Analysis, Centre for Facilities Management

Media contribution (1)

Status på ESCO-projekter i Danmark?
Susanne Balslev Nielsen
27/11/2015

Bygge- & Anlægsavisen, Print
November 2015
http://bygge-anlaegsavisen.dk/
Susanne Balslev Nielsen
Department of Management Engineering, Centre for Facilities Management, Systems Analysis, DTU Climate Centre, Energy Systems Analysis

Press / Media

Derfor er det kun én frugt, der bliver dårlig
Ulf Thrane
27/11/2015
Department of Systems Biology

Media contribution (1)

Derfor er det kun én frugt, der bliver dårlig
27/11/2015
Metro Express, Web
Ulf Thrane
Department of Systems Biology

Press / Media

(Q)SAR database publicering
Eva Bay Wedebye
26/11/2015

Subject
(Q)SAR database publicering
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

(Q)SAR database publicering
26/11/2015
DR, Television
Jonas Andreasen
Eva Bay Wedebye
National Food Institute, Research Group for Molecular Toxicology

Press / Media

Ny (Q)SAR database.
Eva Bay Wedebye
25/11/2015

Subject
Ny (Q)SAR database.
National Food Institute, Research Group for Molecular Toxicology

**Media contribution (1)**

**Ny (Q)SAR database.**
25/11/2015
ENDS Europe Daily, Web
Eva Bay Wedebye
National Food Institute, Research Group for Molecular Toxicology
Press / Media

**Ny (Q)SAR database**
Eva Bay Wedebye
24/11/2015

**Subject**
Ny (Q)SAR database
National Food Institute, Research Group for Molecular Toxicology

**Media contribution (1)**

**Ny (Q)SAR database**
24/11/2015
ENDS Europe Daily, Web
Eva Bay Wedebye
National Food Institute, Research Group for Molecular Toxicology
Press / Media

**Smoothies og sundhed**
Pia Knuthsen
23/11/2015

**Subject**
Smoothies og sundhed
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Smoothies og sundhed**
23/11/2015
Print
Pia Knuthsen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**(Q)SAR database publicering**
Eva Bay Wedebye
23/11/2015

**Subject**
(Q)SAR database publicering
National Food Institute, Research Group for Molecular Toxicology

**Media contribution (1)**

**(Q)SAR database publicering**
23/11/2015
DR2 Morgen, Television
Jacob Frische og Jytte Bergmann Moll
Eva Bay Wedebye
National Food Institute, Research Group for Molecular Toxicology
Press / Media
(Q)SAR database publicering
Eva Bay Wedebye
23/11/2015

Subject
(Q)SAR database publicering
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

(Q)SAR database publicering
23/11/2015
DR P1 morgen, Radio
Louise Hededam
Eva Bay Wedebye
National Food Institute, Research Group for Molecular Toxicology
Press / Media

Smartphones and watches under the researcher's microscope
Julia Rosemary Thorpe
20/11/2015
Department of Management Engineering, Production and Service Management, Engineering Systems Group, Copenhagen Center for Health Technology

Media contribution (1)

Smartphones and watches under the researcher's microscope
20/11/2015
Magasinet Pleje, Print
http://www.magasinetpleje.dk/article/view/229623/smarte_ure_under_forskernes_lup#.VnpcAv6FNes
Smarte telefoner og ure under forskernes lup, af Lotte Brochmann
Julia Rosemary Thorpe
Copenhagen Center for Health Technology, Department of Management Engineering, Production and Service Management, Engineering Systems Group
Press / Media

(Q)SAR database publicering
Eva Bay Wedebye
20/11/2015

Subject
(Q)SAR database publicering
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

(Q)SAR database publicering
20/11/2015
DR, Web
Jonas Andreasen
Eva Bay Wedebye
National Food Institute, Research Group for Molecular Toxicology
Press / Media

Cocktail effekter
Anne Marie Vinggaard
20/11/2015

Subject
Cocktail effekter
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

Cocktail effekter
Spørg Scientariat: Kunne man nedsætte CO₂-udslippet med mikroorganismer i skorstenen?
Torbjørn Ølshøj Jensen
19/11/2015
Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization

Media contribution (1)

Chlorpyrifos. Anvendelsen bliver begrænset i en række afgrøder, men hvorfor ikke citrus.
Bodil Hamborg Jensen
19/11/2015

Subject
Chlorpyrifos. Anvendelsen bliver begrænset i en række afgrøder, men hvorfor ikke citrus.
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Distanceledelse – en udfordring over tid, sted og kultur
Christine Ipsen
17/11/2015

Description
Department of Management Engineering, Production and Service Management, Management Science, Implementation and Performance Management

Media contribution (1)
Fremtiden er sammentænkte energiløsninger  
Jacob Østergaard  
15/11/2015

Subject
Danmark skal i fremtiden leve af at udvikle intelligente energiløsninger, som vi kan vise frem og eksportere til udlandet. Og vi er godt i gang allerede. Københavns Nordhavn er f.eks. blevet demonstrationsplatform for morgendagens energiløsninger.
Department of Electrical Engineering, Center for Electric Power and Energy

Media contribution (1)

Ny dansk forskning underbygger: Din fødselsmåned kan afgøre om du får gigt eller astma
Susanne Brix Pedersen
13/11/2015
Department of Systems Biology, Center for Biological Sequence Analysis

Media contribution (1)

The birth season influences your unborn childs immune response
Susanne Brix Pedersen
12/11/2015
Department of Systems Biology, Center for Biological Sequence Analysis

Media contribution (1)

Fluorerede stoffer og bisphenol A i fødevareemballage
Xenia Trier
12/11/2015

Subject
Fluorerede stoffer og bisphenol A i fødevareemballage
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)
Akrylamid
Pelle Thonning Olesen
11/11/2015

Subject
Akrylamid
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Akrylamid
11/11/2015
Alt for damerne, Print
Kicki Thomsen
Pelle Thonning Olesen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nanoteknologien buldrer frem på arbejdsplassen
Steffen Foss Hansen
11/11/2015

Subject
Nr. 11 - 2015
Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)

Nanoteknologien buldrer frem på arbejdsplassen
11/11/2015
Arbejdsmiljø, Print
Birgit Bruun Christensen
Steffen Foss Hansen
Department of Environmental Engineering, Environmental Chemistry
Press / Media

MRSA
Frank Møller Aarestrup
10/11/2015

Subject
MRSA
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

MRSA
10/11/2015
DR, Television
Kasper Vidsmann
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Danskernes madvaner
Sisse Fagt
10/11/2015

Subject
Danskernes madvaner
National Food Institute, Division of Risk Assessment and Nutrition
Danskernes madvaner

10/11/2015

DR, Television
Christina Øager
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Nordiske kostvaner og sundhed

Sisse Fagt
09/11/2015

Subject
Nordiske kostvaner og sundhed
National Food Institute, Division of Risk Assessment and Nutrition

Mineralske olier i julekalender-chokolade til børn

Gitte Alsing Pedersen
09/11/2015

Subject
Mineralske olier i julekalender-chokolade til børn
National Food Institute, Division of Risk Assessment and Nutrition

Research om abrikoskerner

Kirsten Pilegaard
06/11/2015

Subject
Research om abrikoskerner. Der er kommet chokoladeovertrukne abrikoskerner i handlen (helsebutikker). De kan også købes på Nettet fra UK. Journalisten kender til en person, der har været på skadestue med symptomer på HCN-forgiftning. Om det er med de chokoladeovertrukne eller om det er med andre abrikoskerner, der er i handlen er uvist
National Food Institute, Research Group for Risk-Benefit

Research om abrikoskerner

06/11/2015

MetroXpress, Print
Christian Hansen
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit
MAVEN results
Kristoffer Leer
05/11/2015

Description
Interview on latest results from the MAVEN mission to Mars

Started at 20.45
National Space Institute, Astrophysics

Media contribution (1)

MAVEN results
05/11/2015
TV2 News, Television
Kristoffer Leer
National Space Institute, Astrophysics

Overvægtsudviklingen blandt børn og voksne i Danmark
Jeppe Matthiessen
04/11/2015

Subject
Overvægtsudviklingen blandt børn og voksne i Danmark
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Overvægtsudviklingen blandt børn og voksne i Danmark
04/11/2015
Søndagsavisen, Print
Sanne Fahnøe
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition

Philip Granjean nye bog "Only one chance" om kemiske stoffers effekt på hjerneudvikling.
Ulla Hass
04/11/2015

Subject
Philip Granjean nye bog "Only one chance" om kemiske stoffers effekt på hjerneudvikling.
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Philip Granjean nye bog "Only one chance" om kemiske stoffers effekt på hjerneudvikling.
04/11/2015
Jyllandsposten, Print
Morten Zahle (MZ)
Ulla Hass
National Food Institute, Research Group for Reproductive Toxicology

24syv Morgen
Martin Mose Bentzen
03/11/2015

Subject
Ethical dilemmas for social robots
Department of Management Engineering, Technology and Innovation Management
Nanoteknologien buldrer frem på arbejdsplassen
Steffen Foss Hansen
02/11/2015

Description
Man kan ikke se en nanopartikel med det blotte øje. Nogle er sundhedsskadelige, mens andre er helt ufarlige. En af de store udfordringer for arbejdsplassen er at få overblik over, om der er nano i arbejdsmiljøet – og derefter at tage de rigtige forholdsregler.
Department of Environmental Engineering, Environmental Chemistry

Interview
02/11/2015
Magasinet Arbejdsmiljø (National), Denmark, Print
Birgit Bruun Christensen
Magasinet Arbejdsmiljø Nr. 11 2015 side 20-24
https://mitarbejdsmiljo.dk/search/node/steffen%20foss%20hansen
Steffen Foss Hansen
Press / Media

Overvægtsudviklingen blandt danske kvinder
Jeppe Matthiessen
02/11/2015

Subject
Overvægtsudviklingen blandt danske kvinder
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Overvægtsudviklingen blandt danske kvinder
02/11/2015
Foodculture.dk, Web
Christian Erin Madsen
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Overvægtsudviklingen blandt danske kvinder
Jeppe Matthiessen
02/11/2015

Subject
Overvægtsudviklingen blandt danske kvinder
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Overvægtsudviklingen blandt danske kvinder
02/11/2015
Foodculture.dk, Web
Christian Erin Madsen
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Overvægtsudviklingen blandt danske kvinder
Jeppe Matthiessen
02/11/2015

Subject
Overvægtsudviklingen blandt danske kvinder
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Overvægtsudviklingen blandt danske kvinder
02/11/2015
Berlingske Media/Midtjyske Medier, Web
Henrik H. Breum
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Er økologiske fødevarer mere ernæringsrige end ikke-økologiske ? (ernæring, protein, energi osv.).
Pia Knuthsen
02/11/2015

Subject
Er økologiske fødevarer mere ernæringsrige end ikke-økologiske ? (ernæring, protein, energi osv.).
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Er økologiske fødevarer mere ernæringsrige end ikke-økologiske ? (ernæring, protein, energi osv.).
02/11/2015
Jyllandsposten, Print
Anette Ester Andersen
Pia Knuthsen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Brugen af iRNA og lignende teknikker til bl.a insektbekæmpelse og risikoen ved denne teknik.
Jan W. Pedersen
02/11/2015

Subject
Brugen af iRNA og lignende teknikker til bl.a insektbekæmpelse og risikoen ved denne teknik.
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Brugen af iRNA og lignende teknikker til bl.a insektbekæmpelse og risikoen ved denne teknik.
02/11/2015
Web
Jan W. Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Information til køkkenpersonale, cocktail projektet
Xenia Trier
01/11/2015

Subject
Information til køkkenpersonale, cocktail projektet
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)
Information til køkkenpersonale, cocktail projektet
01/11/2015
Kost og Ernæringsbladet, Print
Jeanette Ulinit
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Debat om bosætningsmønsteret i Grønland
Kåre Hendriksen
31/10/2015
Department of Civil Engineering

Media contribution (1)

Debat om bosætningsmønsteret i Grønland
31/10/2015
KNR TV, Television
Kåre Hendriksen
Department of Civil Engineering
Press / Media

Forskellige typer af slankekure
Heddie Mejborn
30/10/2015

Subject
Forskellige typer af slankekure
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Forskellige typer af slankekure
30/10/2015
Jyllandsposten og jp.dk, Web
MORTEN ZAHLE
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Kvartalsrapporter
Jens Hinge Andersen
30/10/2015

Subject
Kvartalsrapporter
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kvartalsrapporter
30/10/2015
Landbrugssavisen, Print
Frederik Talbitser
Jens Hinge Andersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Hvor mange danske børn der har medansvar for madlavning
Anja Pia Biltoft-Jensen
30/10/2015

Subject
Hvor mange danske børn der har medansvar for madlavning
Hvor mange danske børn der har medansvar for madlavning
30/10/2015
Nyhedsmargasinet Danske Kommuner, Print
Simon Lessel
Anja Pia Bilton-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Har din robot forstået dig i dag?
Thomas Bolander
30/10/2015
Department of Applied Mathematics and Computer Science, Algorithms and Logic
Press / Media

Forbrug af kebab/shawarma
Sisse Fagt
28/10/2015

DTUs sektorudviklingsrapport for Big Data der kommer den 29/10 2015
Jørn Smedsgaard
28/10/2015

DTUs sektorudviklingsrapport for Big Data der kommer den 29/10 2015
Jørn Smedsgaard
28/10/2015

DTUs sektorudviklingsrapport for Big Data der kommer den 29/10 2015
Jørn Smedsgaard
28/10/2015
COOP fjerner mikrobølgepopcorn pga fluorstoffer i emballage
Xenia Trier
27/10/2015

Subject
COOP fjerner mikrobølgepopcorn pga fluorstoffer i emballage
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

COOP fjerner mikrobølgepopcorn pga fluorstoffer i emballage
27/10/2015
Environmental Health News / Scientific American, Print
Brian Bienkowski
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Batterier der virkelig batter
Tejs Vegge
27/10/2015
Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design

Media contribution (1)

Batterier der virkelig batter
27/10/2015
Børsen Gadget, Print
Tejs Vegge
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials
Press / Media

Fuldkorn og tarmflora
Tine Rask Licht
26/10/2015

Subject
Fuldkorn og tarmflora
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Fuldkorn og tarmflora
26/10/2015
Videnskab.dk, Web
Sedsel brændum Lange
Tine Rask Licht
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Danskernes indtag af forarbejdet kød og kødpålæg
Sisse Fagt
26/10/2015

Subject
Danskernes indtag af forarbejdet kød og kødpålæg
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes indtag af forarbejdet kød og kødpålæg
26/10/2015
DR TVavisen, Television
Unges indtag af fuldkorn
Sisse Fagt
26/10/2015
Subject
Unges indtag af fuldkorn
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Unges indtag af fuldkorn
26/10/2015
Fuldkornspartnerskabet, Web
Rikke Iben Ness
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Hvor finder du dine vitaminer og mineraler
Inge Tetens
26/10/2015
Subject
Hvor finder du dine vitaminer og mineraler
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)
Hvor finder du dine vitaminer og mineraler
26/10/2015
DR, Television
Dorthe Boss Kyhn
Inge Tetens
National Food Institute, Research Group for Risk-Benefit
Press / Media

So ein Ding: Solstrøm og Megabatterier
Tejs Vegge
25/10/2015
Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design

Media contribution (1)
So ein Ding: Solstrøm og Megabatterier
25/10/2015
DR2, Television
Danmarks Radio
Tejs Vegge
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials
Press / Media

Genbrugspapir genbrugsemballage af papir og pap, cocktail studierne, Hormonforstyrrende stoffer
Xenia Trier
24/10/2015
Subject
Genbrugspapir genbrugsemballage af papir og pap, cocktail studierne, Hormonforstyrrende stoffer
**Media contribution (1)**

**Genbrugs papir genbrugsemballage af papir og pøp, cocktail studierne, Hormonforstyrrende stoffer**
24/10/2015
Radioavisen, Radio
Mikael Olesen
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry

**Danskernes forbrug af rodfugter**
Sisse Fagt
22/10/2015

**Subject**
Danskernes forbrug af rodfugter
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Sprøjtemidler i kartofler, herunder aclonifen**
Bodil Hamborg Jensen
22/10/2015

**Subject**
Sprøjtemidler i kartofler, herunder aclonifen
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Køds rolle i kosten**
Sisse Fagt
22/10/2015

**Subject**
Køds rolle i kosten
National Food Institute, Division of Risk Assessment and Nutrition
Fluorstoffer i mademballage, mad og andre kilder, Norge, Mattilsynet
Xenia Trier
21/10/2015

Subject
Fluorstoffer i mademballage, mad og andre kilder, Norge, Mattilsynet
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Fluorstoffer i mademballage, mad og andre kilder, Norge, Mattilsynet
21/10/2015
Dagbladet, Norge, Print
Jorun Garden
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry

Danskernes brug af kosttildkud
Sisse Fagt
20/10/2015

Subject
Danskernes brug af kosttildkud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes brug af kosttildkud
20/10/2015
Politiken, Print
Eva Lange
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

ESBL i kyllinger. Pressemeddelelse om Danmap
Lars Bogø Jensen
20/10/2015

Subject
ESBL i kyllinger. Pressemeddelelse om Danmap
National Food Institute, Research Group for Microbial Food Safety and Quality

Media contribution (1)

ESBL i kyllinger. Pressemeddelelse om Danmap
20/10/2015
Fødevarewatch (en del af JP/Politikkens hus), Web
Sacha Sennov
Lars Bogø Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality

ESBL i kyllinger. Pressemeddelelse om Danmap
Lars Bogø Jensen
20/10/2015

Subject
ESBL i kyllinger. Pressemeddelelse om Danmap
National Food Institute, Research Group for Microbial Food Safety and Quality

Media contribution (1)
ESBL in chickens. Press release on Danmap
20/10/2015
Radioavisen, Radio
Rene
Lars Bogø Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality
Press / Media

Mendelian Randomization studies: The use of a new study type to deduce causality in humans
Lasse Westergaard Folkersen
20/10/2015
Department of Systems Biology, Center for Biological Sequence Analysis, Integrative Systems Biology

Media contribution (1)

Mendelian Randomization studies: The use of a new study type to deduce causality in humans
20/10/2015
Videnskab.dk, Print
Jonas Salomonsen
http://videnskab.dk/krop-sundhed/mendelsk-randomisering-ny-metode-er-forskernes-vises-sten
Lasse Westergaard Folkersen
Department of Systems Biology, Center for Biological Sequence Analysis, Integrative Systems Biology
Press / Media

Genbrugsemballage – kemikalier og sundhed
Anne Marie Vinggaard
19/10/2015

Subject
Genbrugsemballage – kemikalier og sundhed
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

Genbrugsemballage – kemikalier og sundhed
19/10/2015
Politiken, Print
Mette Lützhøft
Anne Marie Vinggaard
National Food Institute, Research Group for Molecular Toxicology
Press / Media

Nødder
Heddie Mejborn
19/10/2015

Subject
Nødder
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Nødder
19/10/2015
Samvirke, Print
INGER HOUMAN ABILDGAARD
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Mendelian Randomization and Alcohol
Lasse Westergaard Folkersen
19/10/2015
Description
Interview about Mendelian Randomization and Alcohol

Subject
http://www.dr.dk/radio/ondemand/p1-radioavis/radioavisen-2015-10-19-12-00-2#!/
Department of Systems Biology, Center for Biological Sequence Analysis, Integrative Systems Biology

Media contribution (1)

Mendelian Randomization and Alcohol
19/10/2015
DR1, Radio
5 minutes
http://www.dr.dk/radio/ondemand/p1-radioavis/radioavisen-2015-10-19-12-00-2#!/
Lasse Westergaard Folkersen
Department of Systems Biology, Center for Biological Sequence Analysis, Integrative Systems Biology
Press / Media

Large study investigates the beneficial effect of alcohol, by using genetics
Lasse Westergaard Folkersen
19/10/2015
Department of Systems Biology, Center for Biological Sequence Analysis, Integrative Systems Biology

Media contribution (1)

Large study investigates the beneficial effect of alcohol, by using genetics
19/10/2015
Videnskab.dk, Print
Jonas Salomonsen
http://videnskab.dk/krop-sundhed/kaempestudie-sar-tvivl-om-alkohols-gavnlige-virkning
Lasse Westergaard Folkersen
Department of Systems Biology, Center for Biological Sequence Analysis, Integrative Systems Biology
Press / Media

Tænks test af emballager, fluorstoffer, genbrugsemballage af papir og pap
Xenia Trier
17/10/2015

Subject
Tænks test af emballager, fluorstoffer, genbrugsemballage af papir og pap
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Tænks test af emballager, fluorstoffer, genbrugsemballage af papir og pap
17/10/2015
Politiken, Print
Kristian Trojaborg
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Bisphenol A (BPA), sundhedseffekter
Ulla Hass
15/10/2015

Subject
Bisphenol A (BPA), sundhedseffekter
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Bisphenol A (BPA), sundhedseffekter
15/10/2015
DR Fakta/KONTANT, Television
Stigning i forbrug af antibiotika i kyllingeproduktionen
Lars Bogø Jensen
12/10/2015

Subject
Stigning i forbrug af antibiotika i kyllingeproduktionen
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Stigning i forbrug af antibiotika i kyllingeproduktionen
12/10/2015
DR, Web
Cathrine Lakmann
Lars Bogø Jensen
National Food Institute, Research Group for Reproductive Toxicology

Danske forskere vil gøre bakterier til de nye oliesheiker
Torbjørn Ølshøj Jensen
11/10/2015

Subject
Potentialet ved anaerobe bakterier
Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization

Media contribution (1)

Danske forskere vil gøre bakterier til de nye oliesheiker
11/10/2015
Ingeniøren, Print
Mie Stage
http://ing.dk/artikel/danske-forskere-vil-goere-bakterier-til-de-nye-oliesheiker-179335
Torbjørn Ølshøj Jensen
Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization

Opkvikkende virkning af koffein
Marta Axelstad Petersen
09/10/2015

Subject
Opkvikkende virkning af koffein
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Opkvikkende virkning af koffein
09/10/2015
Ekstrabladet, Web
Esben Skrumsager
Marta Axelstad Petersen
National Food Institute, Research Group for Reproductive Toxicology

Antibiotikaforbrug hos fjærkæ
Flemming Bager
08/10/2015
Subject
Antibiotikaforbrug hos fjærkæ
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Antibiotikaforbrug hos fjærkæ
08/10/2015
DR Syd, Television
Per Helberg
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition

Antibiotikaforbrug til svin; MRSA
Flemming Bager
08/10/2015

Subject
Antibiotikaforbrug til svin; MRSA
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Antibiotikaforbrug til svin; MRSA
08/10/2015
Berlingske Medier, Web
Ida Arendt
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition

Udvikling i forbrug af tetracyklin til svin
Flemming Bager
08/10/2015

Subject
Udvikling i forbrug af tetracyklin til svin
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Udvikling i forbrug af tetracyklin til svin
08/10/2015
DR, Web
?
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition

Genbrugseballage af papir og pap, cocktaileffekter, cocktailprojektet
Xenia Trier
08/10/2015

Subject
Genbrugseballage af papir og pap, cocktaileffekter, cocktailprojektet
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Genbrugseballage af papir og pap, cocktaileffekter, cocktailprojektet
08/10/2015
Politiken / Forbrugerliv, Web
Mette Lütze
Xenia Trier
Danmap
Lars Bogø Jensen
07/10/2015

Subject
Danmap
National Food Institute, Research Group for Microbial Food Safety and Quality

Media contribution (1)

Danmap
07/10/2015
Ingeniøren, Web
Mie
Lars Bogø Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality
Press / Media

Overvægtsudviklingen blandt voksne danskere
Jeppe Matthiessen
06/10/2015

Subject
Overvægtsudviklingen blandt voksne danskere
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Overvægtsudviklingen blandt voksne danskere
06/10/2015
P1 Morgen, Radio
Mette Walsted Vestergaard
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

DANMAP
Frank Møller Aarestrup
06/10/2015

Subject
DANMAP
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

DANMAP
06/10/2015
DR, Television
kristian Sloth Møller
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Indsamling af planter fra naturen, hvilke muligheder er der for at komme galt afsted.
Kirsten Pilegaard
05/10/2015

Subject
Indsamling af planter fra naturen, hvilke muligheder er der for at komme galt afsted.
National Food Institute, Research Group for Risk-Benefit
Indsamling af planter fra naturen, hvilke muligheder er der for at komme galt afstæd.
05/10/2015
Ekstrabladet, Print
Amalie Larsen
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit
Press / Media

Børns madpakker
Sisse Fagt
05/10/2015

Subject
Børns madpakker
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Børns madpakker
05/10/2015
DR Madmagasinet, Television
Adam Aaman
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Tang-Havets grøntsag
Susan Løvstad Holdt
05/10/2015

Subject
Tang-Havets grøntsag
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

Tang-Havets grøntsag
05/10/2015
Dansk Magisterforenings hjemmeside, Web
Anna Dalsgaard
Susan Løvstad Holdt
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

Pesticider i kosten – 1.kvt - 2015
Jens Hinge Andersen
05/10/2015

Subject
Pesticider i kosten – 1.kvt - 2015
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Pesticider i kosten – 1.kvt - 2015
05/10/2015
Erhvervsfilosofi, Web
Joachim Kattrup
Jens Hinge Andersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Bisphenol A (BPA) i fødevarerkontaktmaterialer (FKM) og fødevarer.
Gitte Alsing Pedersen
02/10/2015

Subject
Bisphenol A (BPA) i fødevarerkontaktmaterialer (FKM) og fødevarer.
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Bisphenol A (BPA) i fødevarerkontaktmaterialer (FKM) og fødevarer.
02/10/2015
DR Fakta/KONTANT, Television
Mette Lund
Gitte Alsing Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Overvægtsudviklingen blandt voksne danskere
Jeppe Matthiessen
02/10/2015

Subject
Overvægtsudviklingen blandt voksne danskere
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Overvægtsudviklingen blandt voksne danskere
02/10/2015
P1 Morgen, Radio
Luna Svarrer
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Bisphenol A (BPA) i fødevarekontaktmaterialer (FKM) og fødevarer.
Ulla Hass
02/10/2015

Subject
Bisphenol A (BPA) i fødevarekontaktmaterialer (FKM) og fødevarer.
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Bisphenol A (BPA) i fødevarekontaktmaterialer (FKM) og fødevarer.
02/10/2015
DR Fakta/KONTANT, Television
Mette Lund
Ulla Hass
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

Overvægtsudviklingen blandt voksne danskere
Jeppe Matthiessen
01/10/2015

Subject
Overvægtsudviklingen blandt voksne danskere
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Overvægtsudviklingen blandt voksne danskere
01/10/2015
BT, Print
Charlotte Bo Qvist
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Drengene fra DTU?
Henrik Caspar Wegener
01/10/2015

Description
Interview

Subject
DTU's syn på kønsaspektet i Horizon 2020
Rector's office

Media contribution (1)

Drengene fra DTU?
01/10/2015
EU Information, Print
Forsknings og Innovationsstyrelsen
Henrik Caspar Wegener
Rector’s office
Press / Media

Overvægtsudviklingen blandt voksne danskere
Jeppe Matthiessen
01/10/2015

Subject
Overvægtsudviklingen blandt voksne danskere
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Overvægtsudviklingen blandt voksne danskere
01/10/2015
Jyllands-Posten, Print
Morten Zahle
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Skemalagt undervisning skal gøre Danmark verdensmester i bæredygtigt byggeri
Morten Birkved
30/09/2015

Subject
Undervisning i bæredygtighedskvantificering
Department of Management Engineering, Quantitative Sustainability Assessment

Media contribution (1)

Skemalagt undervisning skal gøre Danmark verdensmester i bæredygtigt byggeri
30/09/2015
Ritzau, Print
Morten Birkved
Department of Management Engineering, Quantitative Sustainability Assessment
Telefoninterview. Forinden havde journalisten sendt mig en kommende artikel fra Science Translational Medicine (embargo til 30. sept), som han bad om mine kommentarer til.

Tine Rask Licht
29/09/2015

Subject
Telefoninterview. Forinden havde journalisten sendt mig en kommende artikel fra Science Translational Medicine (embargo til 30. sept), som han bad om mine kommentarer til.
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Telefoninterview. Forinden havde journalisten sendt mig en kommende artikel fra Science Translational Medicine (embargo til 30. sept), som han bad om mine kommentarer til.

29/09/2015
Weekendavisen (Tillægget 'Idéer'), Print
Henrik Prætorius
Tine Rask Licht
National Food Institute, Research Group for Gut Microbiology and Immunology

Akrylamid
Pelle Thonning Olesen
29/09/2015

Subject
Akrylamid
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Akrylamid
29/09/2015
DR, Madmagasinet, Television
Frederik Wiese
Pelle Thonning Olesen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Friturestegning, akrylamid.
Pelle Thonning Olesen
29/09/2015

Subject
Friturestegning, akrylamid.
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Friturestegning, akrylamid.
29/09/2015
DR, Madmagasinet, Print
Frederik Wiese
Pelle Thonning Olesen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Skolemad versus madpakker
Marianne Sabinsky
29/09/2015

Subject
Skolemad versus madpakker
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Skolemad versus madpakker**
29/09/2015
Madmagasinet DR, Television
Mette Frisk
Marianne Sabinsky
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Overvægtsudviklingen i Danmark**
Jeppe Matthiessen
25/09/2015

**Subject**
Overvægtsudviklingen i Danmark
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Overvægtsudviklingen i Danmark**
25/09/2015
søndagsavisen, Print
Sanne Fahnøe
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Skriftigt ’interview ’om tarmbakterier og kostens betydning**
Tine Rask Licht
24/09/2015

**Subject**
Skriftigt ’interview ’om tarmbakterier og kostens betydning
National Food Institute, Research Group for Gut Microbiology and Immunology

**Media contribution (1)**

**Skriftigt ’interview ’om tarmbakterier og kostens betydning**
24/09/2015
Kost & Ernæringsforbundets fagblad:, Print
Tina Juul Rasmussen
Tine Rask Licht
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

**Kulstofnanorør kan blive vor tids asbest**
Steffen Foss Hansen
21/09/2015
Department of Environmental Engineering, Environmental Chemistry

**Media contribution (1)**

**Kulstofnanorør kan blive vor tids asbest**
21/09/2015
Ingeniøren (National), Denmark, Web
https://apps-infomedia-dk.proxy.findit.dtu.dk/mediearkiv/link?articles=e538ebaa
Steffen Foss Hansen
Press / Media
Første maling i Danmark med kulstofnanorør vækker bekymring
Steffen Foss Hansen
21/09/2015

Description
Kulstofnanorørerne er så mikroskopiske, at de kan udrette betydelig skade på lungerne, hvis de bliver indåndet. Den første maling med kulstofnanorør er netop kommet på makredet til professionelle. For fire år siden blev malingen Tesla Nanocoating kåret som en af de 100 bedste opfindelser af R & D Magazine. Nu er malingen kommet på det danske marked for professionelle malere - og nu vækker malingen bekymring hos flere eksperter. Årsagen er malingens indhold af kulstofnanorør. Det skriver dagbladet Ingeniøren.
Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)

Første maling i Danmark med kulstofnanorør vækker bekymring
21/09/2015
Byggecentrum.dk (National), Denmark, Web
Byggecentrum.dk
https://molio.dk/bygnet/nyhed/article/foerste-maling-i-danmark-med-kulstofnanoroer-vaekker-bekymring/
Kulstofnanorørerne er så mikroskopiske, at de kan udrette betydelig skade på lungerne, hvis de bliver indåndet. Den første maling med kulstofnanorør er netop kommet på makredet til professionelle. For fire år siden blev malingen Tesla Nanocoating kåret som en af de 100 bedste opfindelser af R & D Magazine. Nu er malingen kommet på det danske marked for professionelle malere - og nu vækker malingen bekymring hos flere eksperter. Årsagen er malingens indhold af kulstofnanorør. Det skriver dagbladet Ingeniøren.
Steffen Foss Hansen
Press / Media

Kulstofnanorør kan angripe lungerne
Steffen Foss Hansen
21/09/2015

Description
Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)

Kulstofnanorør kan angripe lungerne
21/09/2015
Ingeniøren, Print
Bjørn Godske
Steffen Foss Hansen
Department of Environmental Engineering, Environmental Chemistry
Press / Media

Er brun (papir) emballage bedre en hvid emballage?
Xenia Trier
21/09/2015

Subject
Er brun (papir) emballage bedre en hvid emballage?
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Er brun (papir) emballage bedre en hvid emballage?
21/09/2015
Politiken, Web
Mette Lützhøft
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Sundhed og kostråd
Sisse Fagt
21/09/2015

Subject
Sundhed og kostråd
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Sundhed og kostråd
21/09/2015
BT, Print
Line Felholt
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Kobling mellem resistens for zink og antibiotika
Lars Bogø Jensen
18/09/2015

Subject
Kobling mellem resistens for zink og antibiotika
National Food Institute, Research Group for Microbial Food Safety and Quality

Media contribution (1)

Kobling mellem resistens for zink og antibiotika
18/09/2015
DR, Web
Christian S
Lars Bogø Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality
Press / Media

Akrylamid i fødevarer
Kit Granby
18/09/2015

Subject
Akrylamid i fødevarer
National Food Institute, Research Group for Food Production Engineering

Media contribution (1)

Akrylamid i fødevarer
18/09/2015
Madmagasinet DR1, Television
Anne Henderson
Kit Granby
National Food Institute, Research Group for Food Production Engineering
Press / Media

Cocktail effekter
Anne Marie Vinggaard
17/09/2015

Subject
Cocktail effekter
Cocktail effekter
17/09/2015
Altinget-miljø, Web
Emma Holst
Anne Marie Vinggaard
National Food Institute, Research Group for Molecular Toxicology
Press / Media

Hormonforstyrrende stoffer effekt på brystudviklingen
Karen Mandrup Egebjerg
15/09/2015

Miljøgarantisagen vedr. nitrit
Pelle Thonning Olesen
11/09/2015

Mennesker hæmmer it-vækst
Jan Karlshøj
10/09/2015
Department of Civil Engineering, Section for Building Design

Mennesker hæmmer it-vækst
10/09/2015
Børsen, Print
Børsen
http://borsen.dk/nyheder/aviser/artikel/11/120810/artikel.html
Jan Karlshøj
Department of Civil Engineering, Section for Building Design
Press / Media
Interview om tarmbakterier og kostens betydning til brug for en eller flere populærvidenskabelige artikler
Tine Rask Licht
08/09/2015

Subject
Interview om tarmbakterier og kostens betydning til brug for en eller flere populærvidenskabelige artikler
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Interview om tarmbakterier og kostens betydning til brug for en eller flere populærvidenskabelige artikler
08/09/2015
TV2 digital, Web
CHRISTIAN SEJER RASMUSSEN
Tine Rask Licht
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

The journal of proposals, ideas, data and more: New journal aims to publish from ‘all stages of the research cycle’.
Ivo Grigorov
03/09/2015

Description
With so many science journals already in existence, it is rare for a new title to draw attention. But researchers and publishing experts are taking notice of Research Ideas and Outcomes, or RIO, an open-access journal that launched on 1 September. As well as standard articles, the journal will publish proposals, experimental designs, data and software, and aims to cover "research from all stages of the research cycle".

Subject
Open Science, Research publishing, Open Scholarship
National Institute of Aquatic Resources, Research Secretariat

Media contribution (1)

The journal of proposals, ideas, data and more: New journal aims to publish from ‘all stages of the research cycle’.
03/09/2015
Nature Research Highlights: Social Selection, Web
NPG
Ivo Grigorov
National Institute of Aquatic Resources, Research Secretariat

Relations
Research outputs:
An open science peer review oath
Open Marine Science
Projects:
Facilitating open science to European research (FOSTER, GA 612 425)(39146)
Press / Media

Live fra verdensrummet
René Fléron
02/09/2015

Description
DR3 will transmit live from space and you may follow it. We'll send a balloon to the edge of the atmosphere and see how far we'll get before either the connection is lost or the balloon explodes. A TV experiment which no one knows where ends.
DR3 science geeks will be at the ready to answer all questions at #DR3rum.

DR3 sender live fra rummet, og du kan følge med. Vi sender en ballon ud til kanten af atmosfæren og ser hvor langt vi når, inden forbindelsen forsvinder eller ballonen eksploderer. Et tv-eksperiment ingen ved hvor ender. DR3s videnskabsnærder sidder klar og svarer på alle spørgsmål på #DR3rum.

Helped in experiment design, planning and manufacturing. Participated as expert in the studio during the TV event.
Subject
Live TV experiment
National Space Institute, Measurement and Instrumentation Systems

Media contribution (1)

Live fra verdensrummet
02/09/2015
Danish Radio, Television
Lars Ostenfeldt
2h
René Fléron
National Space Institute, Measurement and Instrumentation Systems
Press / Media

Matematisk gennembrud øger tog sikkerheden
Anne Elisabeth Haxthausen
01/09/2015
Department of Applied Mathematics and Computer Science, Software Engineering

Media contribution (1)

Matematisk gennembrud øger tog sikkerheden
01/09/2015
DTU Avisen, Print
Iben Julie Schmidt
Anne Elisabeth Haxthausen
Department of Applied Mathematics and Computer Science, Software Engineering
Press / Media

Sundhedsdebatten
Sisse Fagt
01/09/2015

Subject
Sundhedsdebatten
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Sundhedsdebatten
01/09/2015
Information, Print
Maja Mackintosh
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Om Andreas Mogensens Mission i rummet
Kristoffer Leer
01/09/2015

Description
kl. 16 om Andreas mission til ISS
National Space Institute, Astrophysics

Media contribution (1)

Om Andreas Mogensens Mission i rummet
01/09/2015
TV2 News, Television
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media
Denmark: Early adopter of water and climate solutions
Sara Maria Lerer
01/09/2015
Department of Environmental Engineering, Urban Water Engineering

Media contribution (1)

Denmark: Early adopter of water and climate solutions
01/09/2015
Asian Water, Print
PERCETAKAN OSACAR SDN BHD
http://www.asianwater.com.my/?startpage=22&iid=121939
Sara Maria Lerer
Department of Environmental Engineering, Urban Water Engineering
Press / Media

Økologiske versus konventionelle fødevarer i sundhedsmæssigt perspektiv.
Pia Knuthsen
28/08/2015

Subject
Økologiske versus konventionelle fødevarer i sundhedsmæssigt perspektiv.
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Økologiske versus konventionelle fødevarer i sundhedsmæssigt perspektiv.
28/08/2015
Sygeforsikringen "danmarks" e-nyhedsbrev, Web
Kenneth Toulstrup
Pia Knuthsen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Tarmbakterier – især i relation til psyke/humør
Tine Rask Licht
27/08/2015

Subject
Tarmbakterier – især i relation til psyke/humør
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Tarmbakterier – især i relation til psyke/humør
27/08/2015
Samvirke, Print
Emma Libner
Tine Rask Licht
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Tarmbakterier – især i relation til psyke/humør
Tine Rask Licht
27/08/2015

Subject
Tarmbakterier – især i relation til psyke/humør
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Tarmbakterier – især i relation til psyke/humør
Fluorerede stoffer grundvand under forurenede grunde (lufthavne, tekstil virksomheder mm)
Xenia Trier
27/08/2015

Subject
Fluorerede stoffer grundvand under forurenede grunde (lufthavne, tekstil virksomheder mm)
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Fluorerede stoffer grundvand under forurenede grunde (lufthavne, tekstil virksomheder mm)
27/08/2015
ingeniøren, Web
Magnus Bredsdorff
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry

Cocktail effekter
Anne Marie Vinggaard
26/08/2015

Subject
Cocktail effekter
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

Cocktail effekter
26/08/2015
BT, Web
Dorthe Kristensen
Anne Marie Vinggaard
National Food Institute, Research Group for Molecular Toxicology

Tilsætningsstoffer i flødeboller – bekymrende?
Lea Bredsdorff
25/08/2015

Subject
Tilsætningsstoffer i flødeboller – bekymrende?
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Tilsætningsstoffer i flødeboller – bekymrende?
25/08/2015
Politken, Print
Mette Guldagger
Lea Bredsdorff
National Food Institute, Division of Risk Assessment and Nutrition

Zoonoserapporten, salmonellasmittekilderegnskabet, svinekød, kyllingekød, udlandsrejse
Birgitte Helwigh
25/08/2015
Zoonoserapporten, salmonellasmittekilderegnskabet, svinekød, kyllingekød, udlandsrejse
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Zoonoserapporten, salmonellasmittekilderegnskabet, svinekød, kyllingekød, udlandsrejse
25/08/2015
DR2, Television
Matthias Valsgard
Birgitte Helwigh
National Food Institute, Division of Risk Assessment and Nutrition

Zoonoserapporten, salmonellasmittekilderegnskabet, svinekød, kyllingekød, udlandsrejse, campylobacter
Birgitte Helwigh
25/08/2015

Kvartalsrapporten for 2014 for pesticidrester i fødevarer. Multiple fund i prøver
Bodil Hamborg Jensen
25/08/2015

Kvartalsrapporten for 2014 for pesticidrester i fødevarer. Multiple fund i prøver
National Food Institute, Division of Risk Assessment and Nutrition

Zoonoserapporten, Listeria
Birgitte Helwigh
25/08/2015

Zoonoserapporten, Listeria
National Food Institute, Division of Risk Assessment and Nutrition
Zoonoserapporten, Listeria
Birgitte Helwigh
24/08/2015

Subject
Zoonoserapporten, Listeria
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Zoonoserapporten, Listeria
24/08/2015
Ritzau, Web
Simone Etwil-Mayland
Birgitte Helwigh
National Food Institute, Division of Risk Assessment and Nutrition

Interview i forbindelse med udnævnelse som afdelingschef
Anette Schnipper
24/08/2015

Subject
Interview i forbindelse med udnævnelse som afdelingschef
National Food Institute

Media contribution (1)

Interview i forbindelse med udnævnelse som afdelingschef
24/08/2015
Food Culture, Web
Christian Erin-Madsen
Anette Schnipper
National Food Institute

Fluorkemikalier. Grandjean & Co har publiceret en artikel om fluorkemikalier i nyfødte
Anne Marie Vinggaard
19/08/2015

Subject
Fluorkemikalier. Grandjean & Co har publiceret en artikel om fluorkemikalier i nyfødte
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

Fluorkemikalier. Grandjean & Co har publiceret en artikel om fluorkemikalier i nyfødte
19/08/2015
Politikken, Print
Lars igum Rasmussen
Anne Marie Vinggaard
National Food Institute, Research Group for Molecular Toxicology

Skolemad - herunder madpakker og madordninger
Lene Møller Christensen
17/08/2015

Subject
Skolemad - herunder madpakker og madordninger
National Food Institute, Division of Risk Assessment and Nutrition
Skolemad - herunder madpakker og madordninger
17/08/2015
DR, Television
Tilde Danielsen
Lene Møller Christensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Chance igen i nat: Sværmen af stjerneskud fortsætter
Kristoffer Leer
13/08/2015
National Space Institute, Astrophysics

Perihlion Rosetta
Kristoffer Leer
13/08/2015
National Space Institute, Astrophysics

Reduktion i forbrug
Frank Møller Aarestrup
04/08/2015

Subject
Reduktion i forbrug
National Food Institute, Research Group for Genomic Epidemiology

Madpakker – og emballage
Gitte Alsing Pedersen
04/08/2015

Subject
Madpakker – og emballage
National Food Institute, Division of Risk Assessment and Nutrition
**Media contribution (1)**

**Madpakker – og emballage**

04/08/2015  
TV2, Television  
Christian Sejer Rasmussen  
Gitte Alsing Pedersen  
National Food Institute, Division of Risk Assessment and Nutrition  
Press / Media

**Salmonella, fjerkræ, Danmark, EU, USA,**  
Birgitte Helwig  
03/08/2015

**Subject**  
Salmonella, fjerkræ, Danmark, EU, USA,  
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Salmonella, fjerkræ, Danmark, EU, USA,**  
03/08/2015  
The Takeaway | Reveal + Center for Investigative Reporting, Web  
Jillian Weinberger  
Birgitte Helwig  
National Food Institute, Division of Risk Assessment and Nutrition  
Press / Media

**Skal vi frygte robotter?**  
Thomas Bolander  
02/08/2015  
Department of Applied Mathematics and Computer Science , Algorithms and Logic

**Media contribution (1)**

**Skal vi frygte robotter?**  
02/08/2015  
BT, Print  
Thomas Bolander  
Department of Applied Mathematics and Computer Science , Algorithms and Logic  
Press / Media

**Spildevand er ikke spildevand**  
Ravi Kumar Chhetri  
01/08/2015

**Description**  
Our field work on wastewater treatment in Kangerlussuaq, Greenland was published in this newspaper.  
Department of Environmental Engineering, Urban Water Engineering

**Media contribution (1)**

**Spildevand er ikke spildevand**  
01/08/2015  
Sermitsiaq, Print  
Ravi Kumar Chhetri  
Department of Environmental Engineering, Urban Water Engineering  
Press / Media

**Manglende overvågning af Arktis: Der er næsten ingen dansk overvågning af Arktis**  
Jens Olaf Pepke Pedersen  
01/08/2015  
National Space Institute, Sunclimate
Manglende overvågning af Arktis: Der er næsten ingen dansk overvågning af Arktis
01/08/2015
Ekstra Bladet, Print
Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate
Press / Media

Vand til småbørn
Heidi Kornholt
30/07/2015

Subject
Vand til småbørn
National Food Institute

Danskernes top tyve retter
Sisse Fagt
28/07/2015

Subject
Danskernes top tyve retter
National Food Institute, Division of Risk Assessment and Nutrition

Danskernes top tyve retter
Sisse Fagt
28/07/2015

Subject
Danskernes top tyve retter
National Food Institute, Division of Risk Assessment and Nutrition

Danskernes top tyve retter
Sisse Fagt
28/07/2015

Subject
Danskernes top tyve retter
National Food Institute, Division of Risk Assessment and Nutrition
Antallet af Vegetarer
Sisse Fagt
28/07/2015

Subject
Antallet af Vegetarer
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Antallet af Vegetarer
28/07/2015
Ritzau, Web
Rasmus Dalgaard
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Danskernes top tyve retter
Sisse Fagt
28/07/2015

Subject
Danskernes top tyve retter
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes top tyve retter
28/07/2015
Food Culture, Web
Nanna Birk
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Danskernes fedtindtag
Sisse Fagt
28/07/2015

Subject
Danskernes fedtindtag
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes fedtindtag
28/07/2015
Food Culture, Web
Maria Stove
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Forsker: Vindmøllekonflikter skyldes misundelse
Kristian Borch
24/07/2015

Subject
Vindmølle kontroverser
Department of Management Engineering, Technology and Innovation Management

Media contribution (1)

Forsker: Vindmøllekonflikter skyldes misundelse
24/07/2015  
Danmarks Radio P4 Syd, Radio  
Andreas Foldberg  
4 min  
Kristian Borch  
Department of Management Engineering, Technology and Innovation Management

**Relations**
Projects:  
Controversies on wind power Wind2050

**Liv i rummet?**  
Kristoffer Leer  
23/07/2015  
National Space Institute, Astrophysics

**Media contribution (1)**

**Liv i rummet?**  
23/07/2015  
TV2, Television  
Kristoffer Leer  
National Space Institute, Astrophysics

**Efter TESLA: Danske forskere giver deres bud på fremtidens energilagring**  
Tejs Vegge  
18/07/2015  
Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design

**Media contribution (1)**

**Efter TESLA: Danske forskere giver deres bud på fremtidens energilagring**  
18/07/2015  
Videnskab.dk, Web  
Tejs Vegge  
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials

**Media contribution (1)**

**Farvel til en gammel drøm**  
Anders Peter Andersen  
17/07/2015  
Biophysics and Fluids, Department of Physics

**Media contribution (1)**

**Farvel til en gammel drøm**  
17/07/2015  
Weekendavisen, Print  
Henrik Prætorius  
Anders Peter Andersen  
Department of Physics, Biophysics and Fluids

**Media contribution (1)**

**Pluto**  
Kristoffer Leer  
17/07/2015  
National Space Institute, Astrophysics

**Media contribution (1)**
Storkøbenhavn får mindre kalk i drikkevandet: Når Hovedstadsområdets Forsyningsselskab frem mod 2024 reducerer kalken i drikkevandet, vil københavnernes vaskemaskiner og opvaskemaskiner holde lige så længe som de midt- og vestjyske. Samtidig vil de spare energi og bruge mindre sæbe.

Martin Rygaard
16/07/2015
Department of Environmental Engineering, Urban Water Engineering

Media contribution (1)

Storkøbenhavn får mindre kalk i drikkevandet: Når Hovedstadsområdets Forsyningsselskab frem mod 2024 reducerer kalken i drikkevandet, vil københavnernes vaskemaskiner og opvaskemaskiner holde lige så længe som de midt- og vestjyske. Samtidig vil de spare energi og bruge mindre sæbe.

16/07/2015
Bolius, Print
Thomas Lemke
Martin Rygaard
Department of Environmental Engineering, Urban Water Engineering

Energidrikke
Jeppe Matthiessen
09/07/2015

Subject
Energidrikke
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Energidrikke
09/07/2015
Berlingske Media, Web
Anne Lavendt
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition

Sundhedsværdien af at drikke eller spise en frugt eller grøntsag
Inge Tetens
09/07/2015

Subject
Sundhedsværdien af at drikke eller spise en frugt eller grøntsag
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Sundhedsværdien af at drikke eller spise en frugt eller grøntsag
09/07/2015
Netdoktor, Web
Sille Rasmussen
Inge Tetens
National Food Institute, Research Group for Risk-Benefit
Energidrikke
Jeppe Matthiessen
08/07/2015

Subject
Energidrikke
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Energidrikke
08/07/2015
Jyllandsposten, Print
Morten Zahle
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Unges forhold til protein og kulhydrat
Sisse Fagt
06/07/2015

Subject
Unges forhold til protein og kulhydrat
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Unges forhold til protein og kulhydrat
06/07/2015
Food Culture, Web
Christian Erin-Madsen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Uddannelsens betydning for kostindtag
Sisse Fagt
02/07/2015

Subject
Uddannelsens betydning for kostindtag
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Uddannelsens betydning for kostindtag
02/07/2015
Berlingske, Print
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Uddannelsens betydning for kostindtag
Sisse Fagt
02/07/2015

Subject
Uddannelsens betydning for kostindtag
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Uddannelsens betydning for kostindtag
02/07/2015
Uddannelsens betydning for kostindtag
Sisse Fagt
02/07/2015

Subject
Uddannelsens betydning for kostindtag
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Uddannelsens betydning for kostindtag
02/07/2015
DR Radioavisen, Radio
Nanna
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Alger kan blive big business for Danmark
Susan Løvstad Holdt
02/07/2015

Subject
Alger kan blive big business for Danmark
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

Alger kan blive big business for Danmark
02/07/2015
Foodculture.dk, Web
Susan Løvstad Holdt
National Food Institute, Research Group for Bioactives – Analysis and Application

Bakterier kan frigøre os fra olie
Torbjørn Ølshøj Jensen
01/07/2015
Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization

Media contribution (1)

Bakterier kan frigøre os fra olie
01/07/2015
Aktuelt Naturvidenskab, Print
Carsten Rabæk Kjaer
Torbjørn Ølshøj Jensen
Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization

Alger er fremtidens biofabrikker
Susan Løvstad Holdt
01/07/2015

Subject
Alger er fremtidens biofabrikker
National Food Institute, Research Group for Bioactives – Analysis and Application
Media contribution (1)

**Alger er fremtidens biofabrikker**
01/07/2015
ingenioren.dk, Web
Thomas Møller Larsen
Susan Løvstad Holdt
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

**Interview af Fagbladet 3F**
Kasper Edwards
29/06/2015
Department of Management Engineering, Production and Service Management, Implementation and Performance Management

Media contribution (1)

**Interview af Fagbladet 3F**
29/06/2015
Fagbladet 3F, Web
5 min
Kasper Edwards
Department of Management Engineering, Production and Service Management, Implementation and Performance Management
Press / Media

**Koffein og energidrikke**
Jeppe Matthiessen
26/06/2015

Subject
Koffein og energidrikke
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

**Koffein og energidrikke**
26/06/2015
Ingeniøren , Web
Mie Stage
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Is på komet overflade er lidt af en gåde**
Kristoffer Leer
25/06/2015
National Space Institute, Astrophysics

Media contribution (1)

**Is på komet overflade er lidt af en gåde**
25/06/2015
DR, Web
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

**Koffein**
Jeppe Matthiessen
25/06/2015
Subject
Koffein
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Koffein
25/06/2015
Ingeniøren, Web
Mie Stage
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Go morgen P3
Ole Ravn
24/06/2015

Description
Talking about Terminator
Automation and Control, Department of Electrical Engineering

Media contribution (1)
Go morgen P3
24/06/2015
Radio
Ole Ravn
Department of Electrical Engineering, Automation and Control
Press / Media

Et forstudie med Manchego
Grethe Hyldig
24/06/2015

Subject
Et forstudie med Manchego til vores Innovationsansøgning – "When words taste" sammen med CDS og Dansk Sprognavn.
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)
Et forstudie med Manchego
24/06/2015
Politikken, Print
Emma Oehlenschläger
Grethe Hyldig
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

Grillstegning og dannelse af PAH. Kul kontra gas.
Lene Duedahl-Olesen
23/06/2015

Subject
Grillstegning og dannelse af PAH. Kul kontra gas.
National Food Institute, Research Group for Food Production Engineering

Media contribution (1)
Grillstegning og dannelse af PAH. Kul kontra gas.
23/06/2015
Politikken, Print
Helle Sindal
Lene Duedahl-Olesen
Sukker og føde
Jeppe Matthiessen
23/06/2015

Subject
Sukker og føde
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Sukker og føde
23/06/2015
Kost og Ernæringsforbundet, Web
Signe Kierkegaard Cain
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Sukker og børn
Jeppe Matthiessen
23/06/2015

Subject
Sukker og børn
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Sukker og børn
23/06/2015
Vores Brøn, Print
Mads Olrik
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Kombinationseffekter af hormonforstyrrende stoffer
Julie Boberg
18/06/2015

Subject
Kombinationseffekter af hormonforstyrrende stoffer, resultater fra vores undersøgelser af brystvæv i rottestudier
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Kombinationseffekter af hormonforstyrrende stoffer
18/06/2015
Chemical Watch, Web
Emma Davies
Julie Boberg
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

MRSA i svinækød
Miriam Meister
18/06/2015

Subject
MRSA i svinækød
National Food Institute
MRSA i svinekød
18/06/2015
Ingeniøren, Web
Magnus Bredtoft
Miriam Meister
National Food Institute
Press / Media

Fremtidens Energiforsyning
Tejs Vegge
15/06/2015
Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design

Video af "Thue og monopolet" i Folkets Hus på Folkemødet 2015
Kasper Edwards
13/06/2015
Department of Management Engineering, Production and Service Management, Implementation and Performance Management

Folkemøde: Slå ring om Bo og sig: "Det accepterer vi ikke!"
Kasper Edwards
13/06/2015
Department of Management Engineering, Production and Service Management, Implementation and Performance Management

Gode tips til bedre ledelse på folkemødet
Kasper Edwards
13/06/2015
Department of Management Engineering, Production and Service Management, Implementation and Performance Management

Media contribution (1)

Gode tips til bedre ledelse på folkemødet
13/06/2015
FTF Aktuelt, Web
FTF
Kasper Edwards
Department of Management Engineering, Production and Service Management, Implementation and Performance Management
Press / Media

Gode tips til bedre ledelse på folkemødet
13/06/2015

Spådommen, der blev til lov: Gordon Moore forudså smartphones og iPads i 1965
Ivan Harald Holger Jørgensen
11/06/2015

Description
Article about Moore's Law
Department of Electrical Engineering, Electronics

Media contribution (1)

Spådommen, der blev til lov: Gordon Moore forudså smartphones og iPads i 1965
11/06/2015
Politiken.dk, Web
Ivan Harald Holger Jørgensen
Department of Electrical Engineering, Electronics
Press / Media

Spådommen, der blev til lov: Gordon Moore forudså smartphones og iPads i 1965
11/06/2015

Christian Scheffmann Jacobsen
11/06/2015

Subject
Kvantefysik og informationssikkerhed
Quantum Physics and Information Technology, Department of Physics

Media contribution (1)

11/06/2015
Videnskab.dk, Web
Vibeke Hjortlund
http://videnskab.dk/teknologi/kvantemekanik-bruges-til-super-sikker-kommunikation
Christian Scheffmann Jacobsen
Quantum Physics and Information Technology, Department of Physics
Press / Media

Cocktailprojektet
Anne Marie Vinggaard
09/06/2015

Subject
Cocktailprojektet
National Food Institute, Research Group for Molecular Toxicology
Media contribution (1)

Cocktailprojektet
09/06/2015
DR P1, Radio
Johanne Friis Mariager
Anne Marie Vinggaard
National Food Institute, Research Group for Molecular Toxicology

Press / Media

Akrylamid
Kit Granby
08/06/2015

Subject
Akrylamid
National Food Institute, Research Group for Food Production Engineering

Media contribution (1)

Akrylamid
08/06/2015
BT, Web
Laurids Lyck
Kit Granby
National Food Institute, Research Group for Food Production Engineering

Press / Media

EU-krav tvinger 20 år gammel teknologi ind i danske tog
José Soler
06/06/2015

Subject
GSM-R, ERTMS
Department of Photonics Engineering, Networks Technology and Service Platforms

Media contribution (1)

EU-krav tvinger 20 år gammel teknologi ind i danske tog
06/06/2015
Ingeniøren, Print
José Soler
Department of Photonics Engineering, Networks Technology and Service Platforms

Press / Media

EU-krav tvinger 20 år gammel teknologi ind i danske tog
José Soler
06/06/2015

Subject
GSM-R, ERTMS, Banedanmarks Signal Program
Department of Photonics Engineering, Networks Technology and Service Platforms

Media contribution (1)

EU-krav tvinger 20 år gammel teknologi ind i danske tog
06/06/2015
Ingeniøren, Web
http://ing.dk/artikel/eu-krav-tvinger-20-aar-gammel-teknologi-ind-i-danske-tog-176590
José Soler
Department of Photonics Engineering, Networks Technology and Service Platforms

Relations
Research outputs:
EU-krav tvinger 20 år gammel teknologi ind i danske tog
Aleksander Sniady
04/06/2015

Subject
Ingeniøren nr. 23 2015
Department of Photonics Engineering, Networks Technology and Service Platforms

Media contribution (1)

EU-krav tvinger 20 år gammel teknologi ind i danske tog
04/06/2015
Ingeniøren, Print
Christian Østergaard
http://ing.dk/artikel/eu-krav-tvinger-20-aar-gammel-teknologi-ind-i-danske-tog-176590
The article on Ingeniøren website
Aleksander Sniady
Department of Photonics Engineering, Networks Technology and Service Platforms

Relations
Research outputs:
Communication Technologies Support to Railway Infrastructure and Operations
Press / Media

Dresseret skimmelsvamp kan danne det nye antibiotikum
Jane Lind Nybo Rasmussen
31/05/2015

Subject
Aspergillus comparative genomics.
Department of Systems Biology, Network Engineering of Eukaryotic Cell Factories

Media contribution (1)

Dresseret skimmelsvamp kan danne det nye antibiotikum
31/05/2015
Ingeniøren, Print
Mie Stage
https://ing.dk/artikel/dresseret-skimmelsvamp-kan-danne-det-nye-antibiotikum-176404
Jane Lind Nybo Rasmussen
Department of Systems Biology, Network Engineering of Eukaryotic Cell Factories
Press / Media

Biofibre på spring til industrien
Bo Madsen
29/05/2015
Department of Wind Energy, Composites and Materials Mechanics

Media contribution (1)

Biofibre på spring til industrien
29/05/2015
Nyt robothotel udfordrer vores menneskelighed
Martin Mose Bentzen
27/05/2015
Department of Management Engineering, Technology and Innovation Management, Risk Research Group

**Media contribution (1)**

Nyt robothotel udfordrer vores menneskelighed
27/05/2015
Kristeligt Dagblad, Print
http://www.etik.dk/danmark/nyt-robothotel-udfordrer-vores-menneskelighed
Martin Mose Bentzen
Department of Management Engineering, Risk Research Group, Technology and Innovation Management
Press / Media

**Article for bulletins-electroniques.com: Découverte d’une étoile à neutrons et d’un trou noir dans la direction du centre de notre Galaxie**
Jérôme Chenevez
27/05/2015

**Description**
Popular article in french about the discovery of two new X-ray sources with INTEGRAL/JEM-X. Published 27/05/2015.

**Subject**
Article published on-line by the french Embassy in Denmark.
National Space Institute, Astrophysics

**Media contribution (1)**

Article for bulletins-electroniques.com: Découverte d’une étoile à neutrons et d’un trou noir dans la direction du centre de notre Galaxie
27/05/2015
BE Danemark, Web
French ministry of Foreign Affairs
http://www.bulletins-electroniques.com/actualites/78514.htm
Jérôme Chenevez
National Space Institute, Astrophysics
Press / Media

Simulatorbransjen satsar på vind
Kalle A. Piirainen
27/05/2015

**Subject**
Simulator training in offshore wind services
Department of Management Engineering, Technology and Innovation Management

**Media contribution (1)**

Simulatorbransjen satsar på vind
27/05/2015
Nett.no, Web
Kalle A. Piirainen
Department of Management Engineering, Technology and Innovation Management

**Relations**
Projects:
European Clusters for Offshore Wind Servicing
Press / Media
Tænk i en temaartikel om uønsket kemi i fødevarer
Ulla Hass
27/05/2015

Subject
Artikle i Tænk
temaartikel om uønsket kemi i fødevarer
National Food Institute, Research Group for Reproductive Toxicology

Interview relateret til indlæg ved Mejeriforskningens Dag
Paw Dalgaard
26/05/2015

Subject
Interview relateret til indlæg ved Mejeriforskningens Dag 2015 vedr. Listeria monocytogenes og mejeriprodukter.
National Food Institute

Forskningsprojekt skal give mejerierne et nyt værktøj til at forudse vækst af listeria og andre uønskede bakterier i mejeriprodukter
Paw Dalgaard
26/05/2015
National Food Institute, Research Group for Microbial Food Safety and Quality
mejeri, Print
Paw Dalgaard
National Food Institute, Research Group for Microbial Food Safety and Quality
Press / Media

På falderebet: Siemens ude af el-færgeprojekt
Tejs Vegge
26/05/2015
Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design

Media contribution (1)

På falderebet: Siemens ude af el-færgeprojekt
26/05/2015
Fyens.dk, Web
Tejs Vegge
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials
Press / Media

Cocktail effekter
Anne Marie Vinggaard
22/05/2015

Subject
Cocktail effekter
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

Cocktail effekter
22/05/2015
Tænk, Print
Anne-Helene Terkelsen
Anne Marie Vinggaard
National Food Institute, Research Group for Molecular Toxicology
Press / Media

Den sundhedsmæssige effekt af nødder
Heddie Mejborn
20/05/2015

Subject
Den sundhedsmæssige effekt af nødder
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Den sundhedsmæssige effekt af nødder
20/05/2015
TV2 Digital, Web
Christian Sejer Rasmussen
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Ja tak til vindenergi - bare ikke lige her
Kristian Borch
19/05/2015

Subject
Konflikter om kystnære vindmøller ved Kalundborg
Department of Management Engineering, Technology and Innovation Management
Media contribution (1)

Ja tak til vindenergi - bare ikke lige her
19/05/2015
Danmarks Radio, Radio
Lis Vibeke Læsøe Olsen
4 min
http://www.dr.dk/nyheder/regionale/sjaelland/ja-tak-til-vindenergi-bare-ikke-lige-her
Kristian Borch
Department of Management Engineering, Technology and Innovation Management

Relations
Projects:
Controversies on wind power Wind2050
Press / Media

Vedr. toksicitet af PFC i emballager
Anne Marie Vinggaard
18/05/2015

Subject
Vedr. toksicitet af PFC i emballager
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

Vedr. toksicitet af PFC i emballager
18/05/2015
Søndagsavisen, Print
Stine Daugaard
Anne Marie Vinggaard
National Food Institute, Research Group for Molecular Toxicology
Press / Media

Memristor-hjerne kan revolutionere kunstig intelligens
Thomas Bolander
15/05/2015
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Media contribution (1)

Memristor-hjerne kan revolutionere kunstig intelligens
15/05/2015
videnskab.dk, Print
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic
Press / Media

Farlige slankekosttilskud
Kirsten Pilegaard
15/05/2015

Subject
Farlige slankekosttilskud
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Farlige slankekosttilskud
15/05/2015
Ekstra Baldet, Web
Peter Jeppesen
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit
Dit immoforsvar slapper af om sommeren
Susanne Brix Pedersen
13/05/2015
Department of Systems Biology, Center for Biological Sequence Analysis

Media contribution (1)

Pressekontakt - Mikrobiel production af protein
Peter Ruhdal Jensen
13/05/2015

Subject
Pressekontakt - Mikrobiel production af protein
National Food Institute, Systems Biotechnology, Research Group for Microbial Biotechnology and Biorefining

Media contribution (1)

Dit immoforsvar slapper af om sommeren
12/05/2015
Politiken, Web
Susanne Brix Pedersen
Department of Systems Biology, Center for Biological Sequence Analysis

Media contribution (1)

Børnefamilier og indtag af frugt og grønt
Sisse Fagt
11/05/2015

Subject
Børnefamilier og indtag af frugt og grønt
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Artikler omkring vancomycin og husdyrproduktion
Lars Bogø Jensen
11/05/2015

Subject
Artikler omkring vancomycin og husdyrproduktion
National Food Institute, Research Group for Microbial Food Safety and Quality

Media contribution (1)

Artikler omkring vancomycin og husdyrproduktion
11/05/2015
BT, Print
Charlotte Quist
Lars Bogø Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality
Press / Media

"Forsvundet nyhed" om danske erfaringer med at nedbringe antibiotikaforbruget
Heidi Kornholt
08/05/2015

Subject
"Forsvundet nyhed" om danske erfaringer med at nedbringe antibiotikaforbruget
National Food Institute

Media contribution (1)

"Forsvundet nyhed" om danske erfaringer med at nedbringe antibiotikaforbruget
08/05/2015
baeredygtighed.dk, Web
Kjeld Hansen
Heidi Kornholt
National Food Institute
Press / Media

Om Blade Runner og menneskelig vs. kunstig intelligens
Thomas Bolander
07/05/2015
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Media contribution (1)

Om Blade Runner og menneskelig vs. kunstig intelligens
07/05/2015
DR P1, Radio
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic
Press / Media

Problemet ved at bruge bregner som mad
Kirsten Pilegaard
06/05/2015

Subject
Problemet ved at bruge bregner som mad
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Problemet ved at bruge bregner som mad
06/05/2015
Hjemmekraftværk rammer tidens ånd
04/05/2015
Berlingske, Print
Tejs Vegge
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials, Department of Physics
Press / Media

Gourmet og hurtig mad
Sisse Fagt
04/05/2015

Listeria typning
Dorte Lau Baggesen
04/05/2015

En ny undersøgelse fra Gartneriernes afsætningsudvalg viser at danskerne synes det er svært at spise frugt og grønt til alle måltider
Sisse Fagt
04/05/2015

Subject
En ny undersøgelse fra Gartneriernes afsætningsudvalg viser at danskerne synes det er svært at spise frugt og grønt til alle måltider
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)

En ny undersøgelse fra Gartneriernes afsætningsudvalg viser at danskerne synes det er svært at spise frugt og grønt til alle måltider
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)
Owners of wood pellet stoves risk carbon monoxide poisoning in poorly ventilated pellet storage rooms
Frank Huess Hedlund
03/05/2015

Subject
Nordjyske Stiftstidende, Søndag 3. maj 2015, Erhverv s38
Department of Applied Mathematics and Computer Science

Media contribution (1)

Nyt batteri kan forsyne dit hus med strøm
Tejs Vegge
01/05/2015
Department of Physics, Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design

Media contribution (1)

Når kompleksitet er et grundvilkår for ledelse
Kasper Edwards
01/05/2015
Department of Management Engineering, Production and Service Management, Implementation and Performance Management

Media contribution (1)

Fluorstoffer i emballage
Xenia Trier
29/04/2015
Private households with wood pellet stoves face risk of carbon monoxide poisoning
Frank Huess Hedlund
29/04/2015
Department of Applied Mathematics and Computer Science

Mysli og sundhed
Sisse Fagt
27/04/2015

Ny undersøgelse vedr. sammenhæng mel. abortrisiko og perfluorerede kemikalier
Anne Marie Vinggaard
24/04/2015

Ny undersøgelse vedr. sammenhæng mel. abortrisiko og perfluorerede kemikalier
24/04/2015
Fyns Stifttidendende, Print
Cecilie Lyngby
Anne Marie Vinggaard
National Food Institute, Division of Toxicology and Risk Assessment
Tag iPad'en med hjem
Jari Due Jessen
23/04/2015
Automation and Control, Department of Electrical Engineering, Centre for Playware

Media contribution (1)

Tag iPad'en med hjem
23/04/2015
Børn og Unge, Print
http://www.epaper.dk/buplforbund/b%C3%B8rnogunge/2015/072015/
Interview for theme in "Børn og Unge" about digital technology and programming in daycare.
Jari Due Jessen
Centre for Playware, Automation and Control, Department of Electrical Engineering

Institutdirektør på DTU Fødevareinstituttet
Heidi Kornholt
20/04/2015

Subject
Institutdirektør på DTU Fødevareinstituttet
National Food Institute, Communications and Management Secretariat

Media contribution (1)

Institutdirektør på DTU Fødevareinstituttet
20/04/2015
Ritzau, Web
Peter Trads - redaktør
Heidi Kornholt
National Food Institute, Communications and Management Secretariat

Subject
Institutdirektør på DTU Fødevareinstituttet
National Food Institute, Division of Food Chemistry

Media contribution (1)

Pizzabakker, popcornposer (herunder fluorstoffer), Cocktail effekter, Genbrugspapir, Cirkulær økonomi
Xenia Trier
20/04/2015

Subject
Pizzabakker, popcornposer (herunder fluorstoffer), Cocktail effekter, Genbrugspapir, Cirkulær økonomi
National Food Institute, Division of Food Chemistry

Media contribution (1)

Pizzabakker, popcornposer (herunder fluorstoffer), Cocktail effekter, Genbrugspapir, Cirkulær økonomi
20/04/2015
DocEye, laver programmer for TV2, Television
Niklas Flagstad
Xenia Trier
National Food Institute, Division of Food Chemistry

Subject
Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn - opfølgning
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn - opfølgning
Xenia Trier
19/04/2015

Subject
Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn - opfølgning
National Food Institute, Research Group for Analytical Food Chemistry
Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn - opfølgning
Xenia Trier
19/04/2015

Subject
Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn - opfølgning
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn - opfølgning
19/04/2015
Politiken, Print
Helle Sindahl
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Fluorstoffer / PFAS generelt
Xenia Trier
19/04/2015

Subject
Fluorstoffer / PFAS generelt
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Fluorstoffer / PFAS generelt
19/04/2015
DR Dokumentar, Television
Maria Andersen
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn - opfølgning
Xenia Trier
18/04/2015

Subject
Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn - opfølgning
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn - opfølgning
18/04/2015
Politiken, Print
Stine Dauggaard
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Forbedring af batterier er et langt, søjt træk
Tejs Vegge
17/04/2015
Media contribution (1)

Forbedring af batterier er et langt, sejt træk
17/04/2015
Ingeniøren, Print
Tejs Vegge
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials, Department of Physics
Press / Media

Energidrikke
Jeppe Matthiessen
16/04/2015

Subject
Energidrikke
National Food Institute, Division of Nutrition

Media contribution (1)

Energidrikke
16/04/2015
Politiken, Print
Lasse Foghsgaard
Jeppe Matthiessen
National Food Institute, Division of Nutrition
Press / Media

Pesticider i te
Annette Petersen
16/04/2015

Subject
Pesticider i te
National Food Institute, Division of Food Chemistry

Media contribution (1)

Pesticider i te
16/04/2015
Jyllands Posten, Print
Maria
Annette Petersen
National Food Institute, Division of Food Chemistry
Press / Media

En times interview – populærvidskabelig formidling om tarmbakterier
Tine Rask Licht
16/04/2015

Subject
En times interview – populærvidskabelig formidling om tarmbakterier
National Food Institute, Division of Food Microbiology

Media contribution (1)

En times interview – populærvidskabelig formidling om tarmbakterier
16/04/2015
Politiken, Print
Line Felholt
Tine Rask Licht
National Food Institute, Division of Food Microbiology
**Sikker brug af planter i fødevarer**
Heidi Kornholt
14/04/2015

**Subject**
Sikker brug af planter i fødevarer
National Food Institute, Communications and Management Secretariat

**Media contribution (1)**

**Sikker brug af planter i fødevarer**
14/04/2015
Food Processing & Wellness Foods Magazines, Print
Dave Fusaro – Editor in Chief
Heidi Kornholt
National Food Institute, Communications and Management Secretariat
Press / Media

**Cocktail effekter**
Anne Marie Vinggaard
14/04/2015

**Subject**
Cocktail effekter
National Food Institute, Division of Toxicology and Risk Assessment

**Media contribution (1)**

**Cocktail effekter**
14/04/2015
Radio Køge, Radio
Martin Andersen
Anne Marie Vinggaard
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

**Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn**
Xenia Trier
14/04/2015

**Subject**
Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn
National Food Institute, Research Group for Analytical Food Chemistry

**Media contribution (1)**

**Fluorstoffer i emballage / COOP holder op med at sælge mikrobølgeovnspopcorn**
14/04/2015
Politiken (i samarbejde med COOP), Print
COOP ansvarlig (Malene Teller Blume)
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

**Social kapital: samarbejde til glæde for alle**
Kasper Edwards
13/04/2015
Department of Management Engineering, Production and Service Management, Implementation and Performance Management

**Media contribution (1)**
Social kapital: samarbejde til glæde for alle
13/04/2015
Grafisk BAR, Print
http://www.swiflet.com/grab/gb/35/13/
Kasper Edwards
Department of Management Engineering, Production and Service Management, Implementation and Performance Management
Press / Media

Analyse af kemikalier fra prøver fra Vietnam
Heidi Kornholt
12/04/2015

Subject
Analyse af kemikalier fra prøver fra Vietnam
National Food Institute, Communications and Management Secretariat

Media contribution (1)

Analyse af kemikalier fra prøver fra Vietnam
12/04/2015
Bergergs Film & Tv – DR2 tv-dokumentar, Television
Rikke Dyrberg
Heidi Kornholt
National Food Institute, Communications and Management Secretariat
Press / Media

Hvad er sundest/mindst usundt: smør, Nutella, marmelade, honning, pålægschokolade?
Karin Hess Ygil
08/04/2015

Subject
Hvad er sundest/mindst usundt: smør, Nutella, marmelade, honning, pålægschokolade?
National Food Institute, Division of Nutrition

Media contribution (1)

Hvad er sundest/mindst usundt: smør, Nutella, marmelade, honning, pålægschokolade?
08/04/2015
videnskab.dk, Web
Marie Barse
Karin Hess Ygil
National Food Institute, Division of Nutrition
Press / Media

Rapporten, Pesticidrester i fødevarer 2013
Bodil Hamborg Jensen
08/04/2015

Subject
Rapporten, Pesticidrester i fødevarer 2013
National Food Institute, Division of Food Chemistry

Media contribution (1)

Rapporten, Pesticidrester i fødevarer 2013
08/04/2015
Geelmuyden Kiese, Print
Christinal Lildholdt Jensen (CLJ)
Bodil Hamborg Jensen
National Food Institute, Division of Food Chemistry
Press / Media
Kunstig intelligens får højere IQ
Thomas Bolander
07/04/2015
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Media contribution (1)

Kunstig intelligens får højere IQ
07/04/2015
DR P1, Radio
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Interview på DR P1 Videnskabens verden
Jérôme Chenevez
07/04/2015

Subject
Interview om opdagelsen af to nye galakstiske røntgenkilder med INTEGRAL/JEM-X
National Space Institute, Astrophysics

Media contribution (1)

Interview på DR P1 Videnskabens verden
07/04/2015
Danmarks Radio P1, Radio
http://www.dr.dk/p1/videnskabens-verden/videnskabens-verden-kunstig-intelligens-far-hoejere-iq
Jérôme Chenevez
Astrophysics, National Space Institute

Relations
Projects:
The JEM-X X-ray monitor on INTEGRAL

Press / Media

Dansk laser-radar skal redde bier og andre små truede dyr
Carsten Thure Kirkeby
03/04/2015

Subject
Insects, vectorborne diseases, laser
National Veterinary Institute, Section for Epidemiology

Media contribution (1)

Dansk laser-radar skal redde bier og andre små truede dyr
03/04/2015
Politiken, Print
Link to the article.
Carsten Thure Kirkeby
National Veterinary Institute, Section for Epidemiology

Press / Media

Forårets solstråler gør godt
Aikaterini Argyraki
01/04/2015

Subject
Sundhed & Helbred
Department of Photonics Engineering, Diode Lasers and LED Systems

Media contribution (1)
Forårets solstråler gør godt
01/04/2015
Kristeligt Dagblad, Print
Aikaterini Argyraki
Department of Photonics Engineering, Diode Lasers and LED Systems
Press / Media

Cocktail effekter
Anne Marie Vinggaard
31/03/2015

Subject
Cocktail effekter
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Cocktail effekter
31/03/2015
Institute for Global Food Security, UK, Web
Simon Haughey
Anne Marie Vinggaard
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

DTU vil bruge Vestas’ pensionist-mølle til forskning
Thomas Buhl
31/03/2015
Department of Wind Energy, Wind Turbines

Media contribution (1)

DTU vil bruge Vestas’ pensionist-mølle til forskning
31/03/2015
EnergiWatch, Web
Mathias Ørsborg Johansen
http://energiwatch.dk/secure/Energinyt/Renewables/article7593957.ece
Thomas Buhl
Department of Wind Energy, Wind Turbines
Press / Media

Vestas-mølle til Risø: DTU Vindenergi har investeret i en Vestas V52-mølle fra et strandet projekt i Italien, der har proportionerne til at kunne stå i DTU Risø Campus møllerrække
Thomas Buhl
30/03/2015
Department of Wind Energy, Wind Turbines

Media contribution (1)

Vestas-mølle til Risø: DTU Vindenergi har investeret i en Vestas V52-mølle fra et strandet projekt i Italien, der har proportionerne til at kunne stå i DTU Risø Campus møllerrække
30/03/2015
www.teknovation.dk, Web
Thore Dam Mortensen
http://www.teknovation.dk/?type=page&id=750&itemid=7010
Thomas Buhl
Department of Wind Energy, Wind Turbines
Press / Media

Mættet fedt og ost
Agnes N. Pedersen
30/03/2015
Mættet fedt og ost
National Food Institute, Division of Nutrition

Media contribution (1)

Mættet fedt og ost
30/03/2015
Politiken, Print
Lars dahlager
Agnes N. Pedersen
National Food Institute, Division of Nutrition
Press / Media

Ny og større forskningsvindmølle til Rissø Campus: Den karakteristiske vindmøllerække på DTU Rissø Campus får til april et nyt medlem – ”et ungt frisk pust til plejehjemmet,”
Thomas Buhl
27/03/2015
Department of Wind Energy, Wind Turbines

Media contribution (1)

Ny og større forskningsvindmølle til Rissø Campus: Den karakteristiske vindmøllerække på DTU Rissø Campus får til april et nyt medlem – ”et ungt frisk pust til plejehjemmet,”
27/03/2015
jernindustri, Web
http://www.jernindustri.dk/article/view/199994/ny_og_storre_forskningsvindmolle_til_riso_campus#.VcHE0_ntlBc
Thomas Buhl
Department of Wind Energy, Wind Turbines
Press / Media

Bisphenol A (BPA) og alternative bisphenoler i fødevarerkontaktmaterialer (FKM).
Gitte Alsing Pedersen
26/03/2015

Subject
Bisphenol A (BPA) og alternative bisphenoler i fødevarerkontaktmaterialer (FKM).
National Food Institute, Division of Food Chemistry

Media contribution (1)

Bisphenol A (BPA) og alternative bisphenoler i fødevarerkontaktmaterialer (FKM).
26/03/2015
DR Fakta/KONTANT, Television
Mette Lund
Gitte Alsing Pedersen
National Food Institute, Division of Food Chemistry
Press / Media

Spiser du det rigtige fedt
Agnes N. Pedersen
26/03/2015

Subject
Spiser du det rigtige fedt
National Food Institute, Division of Nutrition

Media contribution (1)

Spiser du det rigtige fedt
26/03/2015
BT on line, Web
Gitte Holm
Agnes N. Pedersen
Hensigtsmæssig opbevaring af smør
Per Sand Rosshaug
25/03/2015

Subject
Hensigtsmæssig opbevaring af smør
National Food Institute, Division of Industrial Food Research

Media contribution (1)

Cocktail effekter
Anne Marie Vinggaard
24/03/2015

Subject
Cocktail effekter
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Interview på DR P1 Videnskabs verden: Det største sorte hul er fundet
Jérôme Chenevez
24/03/2015

Subject
Interview om det mest massive sorte hul
National Space Institute, Astrophysics

Media contribution (1)

Kumarin og kanel
Kirsten Pilegaard
23/03/2015

Subject
Kumarin og kanel
National Food Institute, Division of Toxicology and Risk Assessment
Kumarin og kanel
23/03/2015
Godaføn Danmark, Television
Mette
Kirsten Pilegaard
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

Mikroplast i fødevarer
Heidi Kornholt
23/03/2015

En snak i Eigtveds Pakhus d. 19/3 2015 og en telefonopringning - Bisphenol A
Sofie Christiansen
23/03/2015

Danskernes indtag af slik og chokolade
Anja Pia Biltoft-Jensen
23/03/2015
Akrylamid
Pelle Thonning Olesen
23/03/2015

Subject
Akrylamid
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Akrylamid
23/03/2015
RASK Magasinet, Print
Nanna Bisbjerg
Pelle Thonning Olesen
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

Om solformørkelse
Kristoffer Leer
20/03/2015
National Space Institute, Astrophysics

Media contribution (1)

Om solformørkelse
20/03/2015
P1 Morgen, Radio
http://www.dr.dk/radio/ondemand/p1/p1-morgen-2015-03-20/#l/00:37:28
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

DR2 Morgen: Om solformørkelse
Kristoffer Leer
20/03/2015
National Space Institute, Astrophysics

Media contribution (1)

DR2 Morgen: Om solformørkelse
20/03/2015
DR, Television
https://www.dr.dk/tv/se/dr2-morgen/dr2-morgen-2015-03-20
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Om solformærlkelsen næste dag
Kristoffer Leer
19/03/2015
National Space Institute, Astrophysics

Media contribution (1)

Om solformærlkelsen næste dag
19/03/2015
TV2 News, Radio
TV2
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media
Cocktail effekter
Anne Marie Vinggaard
19/03/2015

Subject
Cocktail effekter
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Cocktail effekter
Anne Marie Vinggaard
19/03/2015

Subject
Cocktail effekter
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Cocktail effekter
Anne Marie Vinggaard
19/03/2015

Subject
Cocktail effekter
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Sådan ville Jorden blive uden sin Måne
Kristoffer Leer
19/03/2015
National Space Institute, Astrophysics

Media contribution (1)

Sådan ville Jorden blive uden sin Måne
Kristoffer Leer
19/03/2015
National Space Institute, Astrophysics

Media contribution (1)

MRSA handlingsplan
Frank Møller Aarestrup
18/03/2015

Subject
MRSA handlingsplan
National Food Institute, Division of Epidemiology and Microbial Genomics

Media contribution (1)

MRSA handlingsplan
Frank Møller Aarestrup
18/03/2015

Subject
MRSA handlingsplan
National Food Institute, Division of Epidemiology and Microbial Genomics

Media contribution (1)
MRSA handlingsplan, specifikt om reduktion i forbrug
Frank Møller Aarestrup
18/03/2015

Subject
MRSA handlingsplan, specifikt om reduktion i forbrug
National Food Institute, Division of Epidemiology and Microbial Genomics

Media contribution (1)
MRSA handlingsplan, specifikt om reduktion i forbrug
18/03/2015
Berlingskes nyhedsbureau, Print
Jan Bjerre
Frank Møller Aarestrup
National Food Institute, Division of Epidemiology and Microbial Genomics

Cocktail effekter
Anne Marie Vinggaard
18/03/2015

Subject
Cocktail effekter
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)
Cocktail effekter
18/03/2015
Dr.dk Lev.nu, Web
Lisa Kristensen
Anne Marie Vinggaard
National Food Institute, Division of Toxicology and Risk Assessment

Mikrobølgeovne, myter, sundhed
Morten Poulsen
18/03/2015

Subject
Mikrobølgeovne, myter, sundhed
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)
Mikrobølgeovne, myter, sundhed
18/03/2015
journaliststuderende - freelance, Web
Mathias Meier
Morten Poulsen
National Food Institute, Division of Toxicology and Risk Assessment

Fordelene ved bioforgasning af organisk affald
Morten Bang Jensen
17/03/2015

Description
https://www.dakofa.dk/element/fordelene-ved-bioforgasning-af-organisk-affald/
Højlunds Helte: Tre DTU'ers løsninger på fremtidens problemer med CO2
Anne Hauch
15/03/2015

Description
Three researchers from DTU Energy participate in the Sunday morning programme ‘Højlund's Heroes’ on the radio channel Radio24syv. They go live in the radio at 08:25 to approx. 09:00 on Sunday morning, 15 March.

In the programme Højlund's Heroes, PhD student Søren Lyng Ebbehøj, senior researcher Anne Hauch and Professor Jens Oluf Jensen will talk about the following energy research topic: How do we get fuel in the future?

Højlund's Heroes is a programme that tells the positive story. The media landscape is fraught with problems, concerns and disasters, but every time there is something to worry about, there are also some ambitious people trying to find the solution. The objective of Højlund's Heroes is to focus on those people and their work.

Energy is very important in climate perspective and policy perspectives, and many are worried about how we get energy in the future. DTU Energy has been invited to talk about its research in energy technologies, because - as journalist Grethe Højlund says - there's something inspiring about people moving into the unknown territory to find the solutions of tomorrow.

You can follow our researchers (in Danish) at http://www.radio24syv.dk/programmer/hoejlunds-helte/ this Sunday morning from 08.25 in the morning.

Subject
CO2 capture, electrolysis, fuel cells - Manufacturing Green Fuels from Renewable Energy
Applied Electrochemistry, Department of Energy Conversion and Storage

Media contribution (1)
Højlund's Heroes: Tre DTU'ers løsninger på fremtidens problemer med CO2
15/03/2015
Radio24syv, Radio
Danmarks Radio
25 minutes
The interview of Søren Lyng Ebbehøj, I and Jens Oluf Jensen starts approximately after 24 minutes of the program
Anne Hauch
Department of Energy Conversion and Storage, Applied Electrochemistry
Press / Media

**Indsamling af vilde planter og mulige sundhedsskadelige effekter**
Kirsten Pilegaard
15/03/2015

**Subject**
Indsamling af vilde planter og mulige sundhedsskadelige effekter
National Food Institute, Division of Toxicology and Risk Assessment

**Media contribution (1)**

**Indsamling af vilde planter og mulige sundhedsskadelige effekter**
15/03/2015
MetroXpress, Print
Christian Hansen
Kirsten Pilegaard
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

**Forskere find tegn på flydende vand i rummet**
Kristoffer Leer
14/03/2015
National Space Institute, Astrophysics

**Media contribution (1)**

**Forskere find tegn på flydende vand i rummet**
14/03/2015
DR, Web
5 minuter
http://www.dr.dk/radio/ondemand/p1/p1-morgen-2015-03-14#!/
ca. kl 8.30
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

**Mennesker og medier: Fikseringsfejl**
Jens Olaf Pepke Pedersen
13/03/2015

**Description**
Der er én lighed mellem læger og journalist: De laver begge fejl. Faktisk laver de den samme type fejl, de såkaldte
fikseringsfejl, hvor man er så fikseret på at finde netop de symptomer eller citater, som bekræfter ens diagnose eller
historie, at man glemmer alt det andet. Men der er også en forskel: Hvor lægerne i årevis har arbejdet med at løse
fikseringsfejlene, er journalisterne først blevet opmærksomme på problemet nu, mener forfatterne til den nye bog
'Forelsket i vinklen'. Konsekvensen kan være en dårligere og mere konfliktfyldt debat.

Drejfede kommunikationsafhandling fra RUC i lyset af "fikseringsfejl" samt mediernes valg af kilder i klimadækningen
National Space Institute

**Media contribution (1)**

**Mennesker og medier: Fikseringsfejl**
13/03/2015
DR P1, Radio
Hakon Mosbech
1 hour
Jens Olaf Pepke Pedersen
Håndtering af klausuleret pressemeddelelse
Heidi Kornholt
13/03/2015

Subject
Håndtering af klausuleret pressemeddelelse
National Food Institute, Communications and Management Secretariat

Media contribution (1)

Håndtering af klausuleret pressemeddelelse
13/03/2015
TV2 Nyhederne, Television
Martin Vestergaard-Hasen
Heidi Kornholt
National Food Institute, Communications and Management Secretariat
Press / Media

Akrylamid
Kit Granby
13/03/2015

Subject
Akrylamid
National Food Institute, Division of Food Chemistry

Media contribution (1)

Akrylamid
13/03/2015
Foodculture.dk, Web
Clavs Mark Sylvest
Kit Granby
National Food Institute, Division of Food Chemistry
Press / Media

Danskernes kostvaner
Sisse Fagt
13/03/2015

Subject
Danskernes kostvaner
National Food Institute, Division of Nutrition

Media contribution (1)

Danskernes kostvaner
13/03/2015
Radio Nova FM, Radio
Christina Sander
Sisse Fagt
National Food Institute, Division of Nutrition
Press / Media

Akrylamid
Kit Granby
13/03/2015

Subject
Akrylamid
National Food Institute, Division of Food Chemistry
Akrylamid
13/03/2015
Ekstrabladet, Print
Gitte Laasby
Kit Granby
National Food Institute, Division of Food Chemistry
Press / Media

Subject
Akrylamid
National Food Institute, Division of Food Chemistry

Besøg på DTU's historiske samling
Laila Zwisler
13/03/2015

Subject
Opfindelsernes historie
Department of Physics

Lanceringen af rapporten om danskernes kostvaner
Agnes N. Pedersen
12/03/2015

Subject
Lanceringen af rapporten om danskernes kostvaner
National Food Institute, Division of Nutrition

Lanceringen af rapporten om danskernes kostvaner
12/03/2015
BT, Web
Bavngaard
Agnes N. Pedersen
National Food Institute, Division of Nutrition
Danskernes kostvaner
Sisse Fagt
12/03/2015

Subject
Danskernes kostvaner
National Food Institute, Division of Nutrition

Media contribution (1)

Danskernes kostvaner
12/03/2015
Food Culture, Web
Christian Erin-Madsen
Sisse Fagt
National Food Institute, Division of Nutrition
Press / Media

GMO planter: tilstedeværelse af nptII i visse bomuldskonstruktioner
Folmer Damsted Eriksen
12/03/2015

Subject
GMO planter: tilstedeværelse af nptII i visse bomuldskonstruktioner
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Skal vi bekymrede for udviklingen indenfor kunstig intelligens?
Thomas Bolander
12/03/2015
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Media contribution (1)
Lanceringen af rapporten om danskernes kostvaner
Agnes N. Pedersen
11/03/2015

Subject
Lanceringen af rapporten om danskernes kostvaner
National Food Institute, Division of Nutrition

Media contribution (1)

Lanceringen af rapporten om danskernes kostvaner
11/03/2015
P1, morgen og DR2, Radio
Agnes N. Pedersen
National Food Institute, Division of Nutrition
Press / Media

Danskernes kostvaner
Sisse Fagt
11/03/2015

Subject
Danskernes kostvaner
National Food Institute, Division of Nutrition

Media contribution (1)

Danskernes kostvaner
11/03/2015
TV2 News, Television
Rasmus Lilholt
Sisse Fagt
National Food Institute, Division of Nutrition
Press / Media

Akrylamid
Kit Granby
11/03/2015

Subject
Akrylamid
National Food Institute, Division of Food Chemistry

Media contribution (1)

Akrylamid
11/03/2015
MetroExpress, Print
Maria Cuculiza
Kit Granby
National Food Institute, Division of Food Chemistry
Press / Media

Dansk Fjernvarme
Morten Bang Jensen
10/03/2015

Description
Akrylamid
Pelle Thonning Olesen
06/03/2015

Subject
Akrylamid
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Akrylamid
06/03/2015
JP, Print
Pelle Thonning Olesen
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

Sikkerhed af sødestoffer
Alicja Mortensen
06/03/2015

Subject
Sikkerhed af sødestoffer
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Sikkerhed af sødestoffer
06/03/2015
videnskab.dk, Web
Rune Sørensen
Alicja Mortensen
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

Historisk: Rumsonde besøger dværgplanet idag
Kristoffer Leer
06/03/2015
National Space Institute, Astrophysics

Media contribution (1)

Historisk: Rumsonde besøger dværgplanet idag
06/03/2015
Ingeniøren, Web
http://ing.dk/artikel/historisk-rumsonde-besoeger-dvaergplanet-i-dag-174588
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Antibiotikaforbrug, McDonald, USA
Frank Møller Aarestrup
05/03/2015

Subject
Antibiotikaforbrug, McDonald, USA
National Food Institute, Division of Epidemiology and Microbial Genomics

Media contribution (1)

Antibiotikaforbrug, McDonald, USA
05/03/2015
Bill Kimball, Television
BBC World
Frank Møller Aarestrup
National Food Institute, Division of Epidemiology and Microbial Genomics
Press / Media

Burden of disease
Ulla Hass
05/03/2015

Subject
Burden of disease
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Burden of disease
05/03/2015
Politiken, Print
Ulla Hass
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

Antibiotikaresistens, antibiotikaforbrug, EFSA
Frank Møller Aarestrup
04/03/2015

Subject
Antibiotikaresistens, antibiotikaforbrug, EFSA
National Food Institute, Division of Epidemiology and Microbial Genomics

Media contribution (1)

Antibiotikaresistens, antibiotikaforbrug, EFSA
04/03/2015
Landbrugsavisen, Print
peter kirkegaard
Frank Møller Aarestrup
National Food Institute, Division of Epidemiology and Microbial Genomics
Press / Media

News
Morten Bang Jensen
03/03/2015

Description
http://www.tvsyd.dk/node/24510

Subject
Crossborder biowaste
Department of Environmental Engineering, Residual Resource Engineering

Media contribution (1)

News
03/03/2015
TVSyd, Television
2:00
Morten Bang Jensen
Department of Environmental Engineering, Residual Resource Engineering
Press / Media
De kloge flygter fra Grønlands problemer
Kåre Hendriksen
28/02/2015
Department of Civil Engineering

Media contribution (1)

De kloge flygter fra Grønlands problemer
28/02/2015
Ritzau, Print
Kåre Hendriksen
Department of Civil Engineering
Press / Media

Bidrag med 'facts' til artikel om aldring
Tine Rask Licht
27/02/2015

Subject
Bidrag med 'facts' til artikel om aldring.
National Food Institute, Division of Food Microbiology

Media contribution (1)

Bidrag med 'facts' til artikel om aldring
27/02/2015
Technologist Magazine, Print
Line Fedders
Tine Rask Licht
National Food Institute, Division of Food Microbiology
Press / Media

Slik
Jeppe Matthiessen
27/02/2015

Subject
Slik
National Food Institute, Division of Nutrition

Media contribution (1)

Slik
27/02/2015
Michael Rothenborg, Print
Politiken
Jeppe Matthiessen
National Food Institute, Division of Nutrition
Press / Media

Sundhedsrisiko ved cadmium i chokolade
Max Hansen
25/02/2015

Subject
Sundhedsrisiko ved cadmium i chokolade
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Sundhedsrisiko ved cadmium i chokolade
25/02/2015
DR3, Television
Sidsel Marie Miller Hansen
Max Hansen
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

**En artikel som blev publiceret i dag i NATURE af Chassaing et al.**
Alicja Mortensen
24/02/2015

**Subject**
En artikel som blev publiceret i dag i NATURE af Chassaing et al.
Journalisten kendte til artiklen fra eurekalert.org
National Food Institute, Division of Toxicology and Risk Assessment

**Media contribution (1)**

**En artikel som blev publiceret i dag i NATURE af Chassaing et al.**
24/02/2015
experimentarium.dk, Web
Christoffer Muusmann
Alicja Mortensen
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

**DTU vurdering af EFSA's nye TDI**
Ulla Hass
23/02/2015

**Subject**
DTU vurdering af EFSA's nye TDI
National Food Institute, Division of Toxicology and Risk Assessment

**Media contribution (1)**

**DTU vurdering af EFSA's nye TDI**
23/02/2015
Videnskab.dk, Web
Irene Petersen
Ulla Hass
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

**Cadmium i chokolade**
Rie Romme Rasmussen
23/02/2015

**Subject**
Cadmium i chokolade
National Food Institute, Division of Food Chemistry

**Media contribution (1)**

**Cadmium i chokolade**
23/02/2015
DR Videnskab, Television
Sidsel Miller Hansen
https://vimeo.com/130973651
Short video
Rie Romme Rasmussen
National Food Institute, Division of Food Chemistry
Press / Media

**DTU vurdering af EFSA's nye TDI**
Ulla Hass
23/02/2015
DTU vurdering af EFSA's nye TDI
National Food Institute, Division of Toxicology and Risk Assessment

DTU vurdering af EFSA's nye TDI
23/02/2015
Web
Ulla Hass
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

Antibiotikaresistens, antibiotikaforbrug, MRSA, rådgivning og roller
Frank Møller Aarestrup
20/02/2015

Antibiotikaresistens, antibiotikaforbrug, MRSA, rådgivning og roller
National Food Institute, Division of Epidemiology and Microbial Genomics

Risikorangering af frugt og grønt
Louise Boysen
19/02/2015

Risikorangering af frugt og grønt
National Food Institute, Division of Epidemiology and Microbial Genomics

Om planter og sundhed
Kirsten Pilegaard
18/02/2015
National Food Institute, Division of Toxicology and Risk Assessment

Om planter og sundhed
18/02/2015
Sundhed, Print
Karin Svennevig
Kirsten Pilegaard
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media
Brændt mad er kræftfremkaldende
Kit Granby
18/02/2015
National Food Institute, Division of Food Chemistry

Media contribution (1)

DTU vurdering af EFSA's nye TDI
Ulla Hass
17/02/2015

Subject
DTU vurdering af EFSA's nye TDI
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Nyt værktøj skal lukke huller i klimamodeller
Morten Andreas Dahl Larsen
17/02/2015
Department of Management Engineering, Systems Analysis, DTU Climate Centre

Media contribution (1)
Madmagasinet: Leverpostej (skimmelsvampe)
Ulf Thrane
17/02/2015
Department of Systems Biology

Media contribution (1)

Madmagasinet: Leverpostej (skimmelsvampe)
17/02/2015
DR, Television
Ulf Thrane
Department of Systems Biology
Press / Media

GM æbler der ikke bliver brune
Folmer Damsted Eriksen
16/02/2015
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

GM æbler der ikke bliver brune
16/02/2015
Ingeniøren, Web
Mie Stage
Folmer Damsted Eriksen
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

Glem dommedagsprofetierne om kunstig intelligens
Thomas Bolander
13/02/2015
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Media contribution (1)

Glem dommedagsprofetierne om kunstig intelligens
13/02/2015
Ingeniøren, Print
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic
Press / Media

Kobling af grundvandsmodellen med den regionale klimamodel
Morten Andreas Dahl Larsen
12/02/2015
Department of Management Engineering, Systems Analysis, DTU Climate Centre

Media contribution (1)

Kobling af grundvandsmodellen med den regionale klimamodel
12/02/2015
DHI.dk, Print
Morten Andreas Dahl Larsen
Department of Management Engineering, Systems Analysis, DTU Climate Centre
Press / Media
**Myter om mælk**
Gitte Gross
11/02/2015

**Subject**
Myter om mælk
National Food Institute, Division of Nutrition

**Media contribution (1)**

**Myter om mælk**
11/02/2015
Go Aften Danmark, Television
Stig Nissen
Gitte Gross
National Food Institute, Division of Nutrition

**Radioavisen**
Jens Olaf Pepke Pedersen
11/02/2015

**Subject**
Anvendelse af droner i Grønland
National Space Institute

**Media contribution (1)**

**Radioavisen**
11/02/2015
DR P1, Radio
Kirsten Rosing
2 min
http://www.dr.dk/radio/ondemand/p1/radioavisen-1716#!/
Jens Olaf Pepke Pedersen
National Space Institute

**DTU-rapport: Send droner til Grønland**
Jens Olaf Pepke Pedersen
11/02/2015
National Space Institute

**Media contribution (1)**

**DTU-rapport: Send droner til Grønland**
11/02/2015
Ingeniøren, Print
Steffen McGhie
http://ing.dk/artikel/dtu-rapport-send-droner-til-groenland-174036
Jens Olaf Pepke Pedersen
National Space Institute

**Reduktion af mikroorganismer på frugt og grønt og tilstrækkelighed ved vask**
Louise Boysen
10/02/2015
National Food Institute, Division of Epidemiology and Microbial Genomics

**Media contribution (1)**

**Reduktion af mikroorganismer på frugt og grønt og tilstrækkelighed ved vask**
10/02/2015
Vores mad – landbrug og fødevarer, Web
Rapporter: Sådan skal Arktis overvåges
Jens Olaf Pepke Pedersen
10/02/2015
National Space Institute

Media contribution (1)

Rapporter: Sådan skal Arktis overvåges
10/02/2015
Sermitsiaq, Print
Søren Duran Duus
http://sermitsiaq.ag/rapporter-arktis-overvaages
Jens Olaf Pepke Pedersen
National Space Institute
Press / Media

Vil droner og satellitter overtage Arktis?
Jens Olaf Pepke Pedersen
10/02/2015
National Space Institute

Media contribution (1)

Vil droner og satellitter overtage Arktis?
10/02/2015
Jyllands Posten, Print
Lars From
Jens Olaf Pepke Pedersen
National Space Institute
Press / Media

Nalunaarusiat: Issittoq ima nakkutigineqassaaq
Jens Olaf Pepke Pedersen
10/02/2015

Description
Kalaallit Nunaat siunissami qanoq nakkutigineqarsinnaansersog DTU Spacemit Illersomissamut ministeriaqarfimmiillu misissomeqaleruttorpoq. Qaammataasat atorlugit nakkutiginninnissaq tamanit siunnersuutigineqarpoq

Subject
Satellites and drones in the Arctic
National Space Institute

Media contribution (1)

Nalunaarusiat: Issittoq ima nakkutigineqassaaq
10/02/2015
Sermitsiaq, Print
Nukappiaaluk Hansen
http://sermitsiaq.ag/kl/nalunaarusiat-issittoq-ima-nakkutigineqassaaq
Jens Olaf Pepke Pedersen
National Space Institute
Press / Media

IXV test: Artikel på DR om opsendelse
Kristoffer Leer
10/02/2015
National Space Institute, Astrophysics
IXV test: Artikel på DR om opsendelse
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Svindel med kosttildskud (På baggrund af udenlandske analyse, DNA barcoding)
Pelle Thonning Olesen
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media

AB forbrug
Flemming Bager
National Food Institute, Division of Epidemiology and Microbial Genomics
Press / Media

Nogle forskere frygter, at deres tro kan svække deres troværdighed
Jens Olaf Pepke Pedersen
National Space Institute
Press / Media

DEHP fundet i plastikarmbånd til børn
Anne Marie Vinggaard
Press / Media
DEHP fundet i plastikarmbånd til børn
05/02/2015
Politiken, Web
Anne Marie Vinggaard
National Food Institute, Division of Toxicology and Risk Assessment

Risikorangering af frisk frugt og grønt
Louise Boysen
04/02/2015
National Food Institute, Division of Epidemiology and Microbial Genomics

Jeg skulle lige udfordre mig selv en gang til
Helle Rootzén
01/02/2015
Subject
Campusliv / Campus Life
Department of Applied Mathematics and Computer Science

Interview til Videnskab.dk
Karsten Rottwitt
01/02/2015
Subject
Fysik, hvad er lys.
Department of Photonics Engineering, Fiber Optics, Devices and Non-linear Effects, Centre of Excellence for Silicon Photonics for Optical Communications

**Media contribution (1)**

**Interview til Videnskab.dk**
01/02/2015
Videnskab.dk, Print
Karsten Rottwitt
Department of Photonics Engineering, Fiber Optics, Devices and Non-linear Effects, Centre of Excellence for Silicon Photonics for Optical Communications
Press / Media

**DTU: Derfor forsker vi i olie og gas**
Henrik Caspar Wegener
28/01/2015

**Subject**
DTU DHRC
Rector's office

**Media contribution (1)**

**DTU: Derfor forsker vi i olie og gas**
28/01/2015
Videnskab.DK, Print
Andreas Abildlund
http://videnskab.dk/kultur-samfund/dtu-derfor-forsker-vi-i-olie-og-gas
Henrik Caspar Wegener
Rector's office
Press / Media

**Monster-asteroide tæt på jorden**
Allan Hornstrup
26/01/2015
National Space Institute, Astrophysics, IT-Department

**Media contribution (1)**

**Monster-asteroide tæt på jorden**
26/01/2015
TV2 Nyhederne, Print
Morten Bolvinkel
Allan Hornstrup
National Space Institute, Astrophysics, IT-Department
Press / Media

**Hvorfor er der nordlys?**
Jens Olaf Pepke Pedersen
23/01/2015

**Subject**
Nordlys
National Space Institute

**Media contribution (1)**

**Hvorfor er der nordlys?**
23/01/2015
Politiken, Print
Lasse Foghsgaard
Magasinet Penge: Trafikulykker koster dyrt
Laila Marianne Martinussen
21/01/2015

Description
Interviewed about the psychological reasons behind reckless driving.
Department of Management Engineering, Transport policy and behaviour, Technology and Innovation Management

Media contribution (1)

Magasinet Penge: Trafikulykker koster dyrt
21/01/2015
Magasinet penge, Television
DR 1
https://www.dr.dk/tv/se/penge/penge-113
Laila Marianne Martinussen
Transport policy and behaviour, Department of Management Engineering, Technology and Innovation Management
Press / Media

Penge: Trafikulykker koster dyrt
Laila Marianne Martinussen
21/01/2015
Department of Transport, Transport policy and behaviour

Media contribution (1)

Penge: Trafikulykker koster dyrt
21/01/2015
DR1, Television
DR
25 minutt
http://www.dr.dk/tv/se/penge/penge-113
Laila Marianne Martinussen
Department of Transport, Transport policy and behaviour
Press / Media

Akrylamid
Pelle Thonning Olesen
20/01/2015

Subject
Akrylamid
National Food Institute, Division of Toxicology and Risk Assessment

Media contribution (1)

Akrylamid
20/01/2015
Ekstra Bladet, Print
Christian Kloster
Pelle Thonning Olesen
National Food Institute, Division of Toxicology and Risk Assessment
Press / Media