Column leaching from a Danish forest soil amended with wood ashes: fate of major and trace elements

Application of wood ashes onto two Danish forest soil horizons (A- and O-horizons) was investigated through a series of column experiments for ash dosages of 3, 9 and 30 Mg ha\(^{-1}\). Developments in the composition of the percolating soil solutions were investigated both in a short- (below 0.5 m\(^3\) m\(^{-2}\) of infiltrating water) and long-term perspective (until 2.0 m\(^3\) m\(^{-2}\) of infiltrating water). The higher the ash dosage, the higher the percolation of readily soluble elements (K, Cl, Mg and S) occurred within a short-term perspective. This initial washout of soluble elements resulted in the exchange of ions in the soil, thereby causing other soil bound elements to be released and the pH to decrease temporarily. Wood ash application also promoted an increase in the long-term leaching of As, Cu, K, P and Si beyond the O-horizon layer (until ∼2.0 m\(^3\) m\(^{-2}\)), while the migration of trace elements through this soil horizon appeared to be of limited concern compared with Danish groundwater quality criteria. Relatively similar effects were observed for both the use of 3 and 9 Mg ha\(^{-1}\) dosages on the composition of the percolating soil solutions. Low mobility of Cd, Co, Cr, Cu, Mo, Ni, Pb, Se, V and Zn was observed. The released amounts were generally limited to a few percentage points of their total contents in the columns. The potential accumulation of trace elements within the forest soil should be evaluated with respect to the specific case, if high ash dosages are intended for spreading.
Cryogenic Preamplifiers for Magnetic Resonance Imaging

Pursuing the ultimate limit of detection in magnetic resonance imaging (MRI) requires cryogenics to decrease the thermal noise of the electronic circuits. As cryogenic coils for MRI are slowly emerging cryogenic preamplifiers are required to fully exploit their potential. A cryogenic preamplifier operated at 77 K is designed and implemented for C imaging at 3 T (32.13 MHz), using off-the-shelves components. The design is based on a high electron mobility transistor (ATF54143) in a common source configuration. Required auxiliary circuitry for optimal cryogenic preamplifier performance is also presented consisting of a voltage regulator (noise free supply voltage and optimal power consumption), switch, and trigger (for active detuning during transmission to protect the preamplifier). A gain of 18 dB with a noise temperature of 13.7 K is achieved. Performing imaging experiments in a 3 T scanner showed an 8% increased signal-to-noise ratio from 365 to 399 when lowering the temperature of the preamplifier from 296 to 77 K while keeping the coil at room temperature. This paper thus enables the merger of cryogenic coils and preamplifiers in the hopes of reaching the ultimate limit of detection for MRI.
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.
Linking secondary metabolites to gene clusters through genome sequencing of six diverse Aspergillus species

The fungal genus of Aspergillus is highly interesting, containing everything from industrial cell factories, model organisms, and human pathogens. In particular, this group has a prolific production of bioactive secondary metabolites (SMs). In this work, four diverse Aspergillus species (A. campestris, A. novofumigatus, A. ochraceoroseus, and A. steynii) have been whole-genome PacBio sequenced to provide genetic references in three Aspergillus sections. A. taichungensis and A. candidus also were sequenced for SM elucidation. Thirteen Aspergillus genomes were analyzed with comparative genomics to determine phylogeny and genetic diversity, showing that each presented genome contains 15–27% genes not found in other sequenced Aspergilli. In particular, A. novofumigatus was compared with the pathogenic species A. fumigatus. This suggests that A. novofumigatus can produce most of the same allergens, virulence, and pathogenicity factors as A. fumigatus, suggesting that A. novofumigatus could be as pathogenic as A. fumigatus. Furthermore, SMs were linked to gene clusters based on biological and chemical knowledge and analysis, genome sequences, and predictive algorithms. We thus identify putative SM clusters for aflatoxin, chlorflavonin, and ochrindol in A. ochraceoroseus, A. campestris, and A. steynii, respectively, and novofumigatoin, ent-cycloechinulin, and epiaszonalenins in A. novofumigatus. Our study delivers six fungal genomes, showing the large diversity found in the Aspergillus genus; highlights the potential for discovery of beneficial or harmful SMs; and supports reports of A. novofumigatus pathogenicity. It also shows how biological, biochemical, and genomic information can be combined to identify genes involved in the biosynthesis of specific SMs.

General information

State: Published
Organisations: Department of Biotechnology and Biomedicine, Network Engineering of Eukaryotic Cell factories, Fungal Chemodiversity, Natural Product Discovery, Department of Biotechnology, Eukaryotic Molecular Cell Biology, U.S. Department of Energy, University of Manchester
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Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 8.56 SJR 6.321 SNIP 2.629
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 6.767 SNIP 2.682 CiteScore 8.84
Web of Science (2015): Indexed yes
Fast and stable gratings inscription in POFs made of different materials with pulsed 248 nm KrF laser

This paper presents fiber Bragg grating (FBG) inscription with a pulsed 248 nm UV KrF laser in polymer optical fibers (POFs) made of different polymers, namely polymethyl methacrylate (PMMA), cyclic-olefin polymer and co-polymer, and Polycarbonate. The inscribed gratings and the corresponding inscription parameters are compared with grating inscribed in POFs made of the aforementioned materials but with the hitherto most used laser for inscription, which is a continuous wave 325 nm UV HeCd laser. Results show a reduction of the inscription time of at least 16 times. The maximum time reduction is more than 130 times. In addition, a reflectivity and a bandwidth close to or higher than the ones with the 325 nm laser are obtained.
nm laser were obtained. The polymer optical fiber Bragg gratings (POFBGs) inscribed with the 248 nm laser setup present high stability with small variations in their central wavelength, bandwidth, and reflectivity after 40 days.

**General information**

*State:* Published

*Organisations:* Department of Mechanical Engineering, Department of Photonics Engineering, Fiber Sensors and Supercontinuum Generation, Manufacturing Engineering, Universidad Politecnica de Valencia, University of Espirito Santo, Universidade de Aveiro

*Authors:* Marques, C. A. (Ekstern), Min, R. (Ekstern), Leal, A. (Ekstern), Antunes, P. (Ekstern), Fasano, A. (Intern), Woyessa, G. (Intern), Nielsen, K. (Intern), Rasmussen, H. K. (Intern), Ortega, B. (Ekstern), Bang, O. (Intern)

*Pages:* 2013-2022

*Publication date:* 22 Jan 2018

*Main Research Area:* Technical/natural sciences

**Publication information**

*Journal:* Optics Express

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- Web of Science (2018): Indexed yes
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- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 3.48 SJR 1.487 SNIP 1.589
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 1.976 SNIP 1.755 CiteScore 3.78
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 2.349 SNIP 2.166 CiteScore 4.18
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 2
- Scopus rating (2013): SJR 2.358 SNIP 2.226 CiteScore 4.38
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 2.587 SNIP 2.145 CiteScore 3.85
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 2.579 SNIP 2.606 CiteScore 4.04
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 2.943 SNIP 2.466
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 3.092 SNIP 2.669
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 2
- Scopus rating (2008): SJR 3.195 SNIP 2.393
- Web of Science (2008): Indexed yes
- Scopus rating (2007): SJR 3.27 SNIP 2.032
- Web of Science (2007): Indexed yes
I present a formalization in Isabelle/HOL of the resolution calculus for first-order logic with formal soundness and completeness proofs. To prove the calculus sound, I use the substitution lemma, and to prove it complete, I use Herbrand interpretations and semantic trees. The correspondence between unsatisfiable sets of clauses and finite semantic trees is formalized in Herbrand’s theorem. I discuss the difficulties that I had formalizing proofs of the lifting lemma found in the literature, and I formalize a correct proof. The completeness proof is by induction on the size of a finite semantic tree. Throughout the paper I emphasize details that are often glossed over in paper proofs. I give a thorough overview of formalizations of first-order logic found in the literature. The formalization of resolution is part of the IsaFoL project, which is an effort to formalize logics in Isabelle/HOL.
Radiative MRI Coil Design Using Parasitic Scatterers: MRI Yagi

Conventionally, radiofrequency (RF) coils used for magnetic resonance imaging (MRI) are electrically small and designed for nearfield operation. Therefore, existing antenna design techniques are mostly irrelevant for RF coils. However, the use of higher frequencies in ultrahigh field (UHF) MRI allows for antenna design techniques to be adapted to RF coil designs. This study proposes the use of parasitic scatterers to improve the performance of an existing 7T MRI coil called the single-sided adapted dipole (SSAD) antenna. The results reveal that scatterers arranged in a Yagi fashion can be applied to reduce local specific absorption rate (SAR) maxima of a reference SSAD by 40% with only a 6% decrease in the propagated $B_1^+$ field at the tissue depth of 15 cm. The higher directivity of the proposed design also decreasing the coupling with additional elements, making this antenna suitable for use in high density arrays. These findings show the potential of parasitic scatterers as an effective method to improve the performance of existing radiative MRI coils.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Hyperpolarization in Magnetic Resonance, Center for Magnetic Resonance, Lund University, Lite-On Mobile AB
Authors: Sanchez-Heredia, J. D. (Intern), Avendal, J. (Ekstern), Bibic, A. (Ekstern), Lau, B. K. (Ekstern)
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BFI (2018): BFI-level 2
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Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.98 SJR 1.362 SNIP 2.033
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.841 SNIP 2.526 CiteScore 3.48
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.828 SNIP 2.644 CiteScore 3.36
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.536 SNIP 2.256 CiteScore 3.65
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.471 SNIP 2.237 CiteScore 3.63
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.366 SNIP 2.16 CiteScore 3.42
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.141 SNIP 2.097
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Approximation of ruin probabilities via Erlangized scale mixtures

In this paper, we extend an existing scheme for numerically calculating the probability of ruin of a classical Cramér–Lundberg reserve process having absolutely continuous but otherwise general claim size distributions. We employ a dense class of distributions that we denominate Erlangized scale mixtures (ESM) that correspond to nonnegative and absolutely continuous distributions which can be written as a Mellin–Stieltjes convolution $\Pi \star G$ of a nonnegative distribution $\Pi$ with an Erlang distribution $G$. A distinctive feature of such a class is that it contains heavy-tailed distributions. We suggest a simple methodology for constructing a sequence of distributions having the form $\Pi \star G$ with the purpose of approximating the integrated tail distribution of the claim sizes. Then we adapt a recent result which delivers an explicit expression for the probability of ruin in the case that the claim size distribution is modeled as an Erlangized scale mixture. We provide simplified expressions for the approximation of the probability of ruin and construct explicit bounds for the error of approximation. We complement our results with a classical example where the claim sizes are heavy-tailed.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, University of Liverpool, University of Queensland
Authors: Peralta, O. (Intern), Rojas-Nandayapa, L. (Ekstern), Xie, W. (Ekstern), Yao, H. (Ekstern)
Pages: 136-156
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Journal: Insurance: Mathematics and Economics
Volume: 78
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Ratings:
Scopus rating (2016): CiteScore 1.55
Scopus rating (2015): CiteScore 1.57
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.

General information
State: Published
Organisations: Department of Photonics Engineering, Metro-Access and Short Range Systems, Networks Technology and Service Platforms, Electromagnetic Systems, Technical University of Denmark
Authors: Sayadi, M. (Ekstern), Rodríguez, S. (Intern), Olmos, J. J. V. (Intern), Tafur Monroy, I. (Intern)
Pages: 88-92
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Journal: Optical Switching and Networking
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Ratings:
Web of Science (2018): Indexed yes
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 1.95 SJR 0.392 SNIP 0.851
Scopus rating (2015): SJR 0.334 SNIP 0.722 CiteScore 1.33
Scopus rating (2014): SJR 0.314 SNIP 0.839 CiteScore 1.39
Scopus rating (2013): SJR 0.342 SNIP 0.736 CiteScore 1.36
ISI indexed (2013): ISI indexed yes
Scopus rating (2012): SJR 0.459 SNIP 1.146 CiteScore 1.28
ISI indexed (2012): ISI indexed yes
Scopus rating (2011): SJR 0.365 SNIP 1.064 CiteScore 1.43
ISI indexed (2011): ISI indexed no
Scopus rating (2010): SJR 0.331 SNIP 0.914
Scopus rating (2009): SJR 0.324 SNIP 0.958
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.339 SNIP 0.799
Scopus rating (2007): SJR 0.361 SNIP 0.903
Scopus rating (2006): SJR 0.788 SNIP 1.258
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Source-ID: 85030119521
Selecting of a cytochrome P450\textsubscript{cam} SeSaM library with 3-chloroindole and endosulfan – Identification of mutants that dehalogenate 3-chloroindole

Cytochrome P450\textsubscript{cam} (a camphor hydroxylase) from the soil bacterium Pseudomonas putida shows potential importance in environmental applications such as the degradation of chlorinated organic pollutants. Seven P450\textsubscript{cam} mutants generated from Sequence Saturation Mutagenesis (SeSaM) and isolated by selection on minimal media with either 3-chloroindole or the insecticide endosulfan were studied for their ability to oxidize 3-chloroindole to isatin. The wild-type enzyme did not accept 3-chloroindole as a substrate. Mutant (E156G/V247F/V253G/F256S) had the highest maximal velocity in the conversion of 3-chloroindole to isatin, whereas mutants (T56A/N116H/D297N) and (G60S/Y75H) had highest $k_{cat}/K_M$ values. Six of the mutants had more than one mutation, and within this set, mutation of residues 297 and 179 was observed twice. Docking simulations were performed on models of the mutant enzymes; the wild-type did not accommodate 3-chloroindole in the active site, whereas all the mutants did. We propose two potential reaction pathways for dechlorination of 3-chloroindole. This article is part of a Special Issue entitled: Cytochrome P450 biodiversity and biotechnology, edited by Erika Plettner, Gianfranco Gilardi, Luet Wong, Vlada Urlacher, Jared Goldstone.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Bacterial Cell Factory Optimization, Simon Fraser University, RWTH Aachen University
Authors: Kammoonah, S. (Ekstern), Prasad, B. (Ekstern), Balaraman, P. (Ekstern), Mundhada, H. (Intern), Schwaneberg, U. (Ekstern), Plettner, E. (Ekstern)
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.78 SJR 1.276 SNIP 0.831
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.468 SNIP 0.914 CiteScore 3.02
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.361 SNIP 0.872 CiteScore 2.65
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.809 SNIP 1.121 CiteScore 3.71
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.769 SNIP 1.097 CiteScore 3.44
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.726 SNIP 1.126 CiteScore 3.5
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.146 SNIP 0.863
2D hole gas seen

A p-type metallic sheet forms between two oxide insulators, LaAlO3 and SrTiO3. Suppression of oxygen vacancies in SrTiO3 plays a critical role in forming this sheet.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Electrofunctional materials
Authors: Chen, Y. (Intern), Pryds, N. (Intern)
Number of pages: 2
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Nature Materials
ISSN (Print): 1476-1122
Ratings:
BFI (2018): BFI-level 3
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 23.67 SJR 18.032 SNIP 9.667
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 14.946 SNIP 9.137 CiteScore 23.23
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 16.754 SNIP 9.273 CiteScore 23.3
ISI indexed (2013): ISI indexed yes
3D Hyperpolarized C-13 EPI with Calibrationless Parallel Imaging

With the translation of metabolic MRI with hyperpolarized $^{13}$C agents into the clinic, imaging approaches will require large volumetric FOVs to support clinical applications. Parallel imaging techniques will be crucial to increasing volumetric scan coverage while minimizing RF requirements and temporal resolution. Calibrationless parallel imaging approaches are well-suited for this application because they eliminate the need to acquire coil profile maps or auto-calibration data. In this work, we explored the utility of a calibrationless parallel imaging method (SAKE) and corresponding sampling strategies to accelerate and undersample hyperpolarized $^{13}$C data using 3D blipped EPI acquisitions and multichannel receive coils, and demonstrated its application in a human study of [1-13C]pyruvate metabolism.

General information
State: Accepted/In press
Organisations: Center for Hyperpolarization in Magnetic Resonance, Department of Electrical Engineering, Center for Magnetic Resonance, University of California at San Francisco
Authors: Gordon, J. W. (Ekstern), Hansen, R. B. (Intern), Shin, P. J. (Ekstern), Feng, Y. (Ekstern), Vigneron, D. B. (Ekstern), Larson, P. E. Z. (Ekstern)
Number of pages: 20
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A 380 V High Efficiency and High Power Density Switched-Capacitor Power Converter using Wide Band Gap Semiconductors

State-of-the-art switched-capacitor DC-DC power converters mainly focus on low voltage and/or high power applications. However, at high voltage and low power levels, new designs are anticipated to emerge and a power converter that has both high efficiency and high power density is highly desirable. This paper presents such a high voltage low power switched-capacitor DC-DC converter with an input voltageupto 380 V (compatible with rectified European mains) and an
output power experimentally validated up to 21.3 W. The wideband gap semiconductor devices of GaN switches and SiC diodes are combined to compose the proposed power stage. Their switching and loss characteristics are analyzed with transient waveforms and thermal images. Different isolated driving circuits are compared and a compact isolated halfbridge driving circuit is proposed. The full-load efficiencies of 98.3% and 97.6% are achieved for the power stage and the complete power converter, without heatsink or airflow. The corresponding power densities are 7.9 W/cm³ and 2.7 W/cm³, based on boxed volumes, respectively.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Electronics
Authors: Fan, L. (Intern), Knott, A. (Intern), Jørgensen, I. H. H. (Intern)
Number of pages: 6
Publication date: 2018
Conference: International Conference on Renewable Energies and Power Quality (ICREPO'18), Salamanca, Spain, 21/03/2018 - 21/03/2018
Main Research Area: Technical/natural sciences

Ab initio calculations and kinetic modeling of thermal conversion of methyl chloride: implications for gasification of biomass
Limitations in current hot gas cleaning methods for chlorine species from biomass gasification may be a challenge for end use such as gas turbines, engines, and fuel cells, all requiring very low levels of chlorine. During devolatilization of biomass, chlorine is released partly as methyl chloride. In the present work, the thermal conversion of CH₃Cl under gasification conditions was investigated. A detailed chemical kinetic model for pyrolysis and oxidation of methyl chloride was developed and validated against selected experimental data from the literature. Key reactions of CH₂Cl with O₂ and C₂H₄ for which data are scarce were studied by ab initio methods. The model was used to analyze the fate of methyl chlorofluor in gasification processes. The results indicate that CH₃Cl emissions will be negligible for most gasification technologies, but could be a concern for fluidized bed gasifiers, in particular in low-temperature gasification. The present work illustrates how ab initio theory and chemical kinetic modeling can help to resolve emission issues for thermal processes in industrial scale.

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Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre, Technical University of Denmark, Politecnico di Milano, University of North Texas
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Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.06 SJR 1.678 SNIP 1.117
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.771 SNIP 1.244 CiteScore 4.45
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.772 SNIP 1.253 CiteScore 4.29
A call for action: Improve reporting of research studies to increase the scientific basis for regulatory decision-making:

Improve reporting of research studies for regulatory decision-making

This is a call for action to scientific journals to introduce reporting requirements for toxicity and ecotoxicity studies. Such reporting requirements will support the use of peer-reviewed research studies in regulatory decision-making. Moreover, this could improve the reliability and reproducibility of published studies in general and make better use of the resources spent in research.

General information
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Organisations: National Food Institute, Research Group for Molecular and Reproductive Toxicology, Department of Environmental Engineering, Division of Risk Assessment and Nutrition
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)
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Bio-layer interferometry, Next-generation sequencing, RNA aptamer, SELEX, Small molecules

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General information
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Organisations: Department of Management Engineering, Systems Analysis, Campus Service
Authors: Nielsen, S. B. (Intern), Berg, R. B. (Intern)
Number of pages: 16
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Publication information
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.06 SJR 0.421 SNIP 1.217
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.369 SNIP 1.028 CiteScore 0.84
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.447 SNIP 1.291 CiteScore 1.1
Acclimation to extremely high ammonia levels in continuous biomethanation process and the associated microbial community dynamics

Acclimatized 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.
ISSN (Print): 0960-8524
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.948 SNIP 1.639
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.882 SNIP 1.3
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.541 SNIP 1.208
Scopus rating (2000): SJR 0.464 SNIP 1.049
Scopus rating (1999): SJR 0.669 SNIP 1.061
Original language: English
DOIs:
10.1016/j.biortech.2017.09.148
Accurate assessment of exposure using tracer gas measurements

Room airflow interaction, particularly in the breathing zone, is important to assess exposure to indoor air pollution. A breathing thermal manikin was used to simulate a room occupant with the convective boundary layer (CBL) generated around the body and the respiratory flow. Local airflow against the face of the manikin was applied to increase the complexity of the airflow interaction. CO2 was released at the armpits and N2O at the groin to simulate the respective bio-effluents generated at these two body sites. The tracer gas concentration at the mouth/nose of the manikin was measured with gas analyzers with short and long response times, respectively. The tracer gas concentration was characterized by the mean, standard deviation and 95th percentile values. The results revealed that the measurement time needed to determine, with sufficient accuracy, these parameters decreased substantially with a decrease in the response time of the gas analyzer. When only CBL was present, shorter measurement time was needed for the accurate concentration measurement of the tracer gas released close to the breathing zone. For more complex flow, as a result of CBL interaction with the exhalation flow, the needed measurement time was longer. It has been concluded that the accurate exposure assessment requires that the concentration measurements are performed only during the inhalation period. Therefore, gas analyzers with low response time and sampling time that is considerably shorter than the inhalation period have to be used.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Technical University of Denmark, Silesian University of Technology
Authors: Kierat, W. (Ekstern), Bivolarova, M. (Intern), Zavrl, E. (Ekstern), Popiolek, Z. (Intern), Melikov, A. (Intern)
Pages: 163-173
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Building and Environment
Volume: 131
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Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
A comparative study of methods for automatic detection of rapid eye movement abnormal muscular activity in narcolepsy

Objective: To evaluate rapid eye movement (REM) muscular activity in narcolepsy by applying five algorithms to electromyogram (EMG) recordings, and to investigate its value for narcolepsy diagnosis. Patients/methods: A modified version of phasic EMG metric (mPEM), muscle activity index (MAI), REM atonia index (RAI), supra-threshold REM EMG activity metric (STREAM), and Frandsen method (FR) were calculated from polysomnography recordings of 20 healthy controls, 18 clinic controls (subjects suspected with narcolepsy but finally diagnosed without any sleep abnormality), 16 narcolepsy type 1 without REM sleep behavior disorder (RBD), 9 narcolepsy type 1 with RBD, and 18 narcolepsy type 2. Diagnostic value of metrics in differentiating between groups was quantified by area under the receiver operating characteristic curve (AUC). Correlations among the metrics and cerebrospinal fluid hypocretin-1 (CSF-hcrt-1) values were calculated using linear models. Results: All metrics excluding STREAM found significantly higher muscular activity in narcolepsy 1 cases versus controls (p<0.05). Moreover, RAI showed high sensitivity in the detection of RBD. The mPEM achieved the highest AUC in differentiating healthy controls from narcoleptic subjects. The RAI best differentiated between narcolepsy 1 and 2. Lower CSF-hcrt-1 values correlated with high muscular activity quantified by mPEM, sMAI, lMAI, PEM and FR (p<0.05). Conclusions: This automatic analysis showed higher number of muscle activations in narcolepsy 1 compared to controls. This finding might play a supportive role in diagnosing narcolepsy and in discriminating narcolepsy subtypes. Moreover, the negative correlation between CSF-hcrt-1 level and REM muscular activity supported a role for hypocretin in the control of motor tone during REM sleep.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Biomedical Engineering, Glostrup University Hospital, Stanford University, Copenhagen University Hospital
Authors: Olesen, A. N. (Intern), Cesari, M. (Intern), Christensen, J. A. E. (Ekstern), Sørensen, H. B. D. (Intern), Mignot, E. (Ekstern), Jennum, P. (Ekstern)
Number of pages: 29
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Sleep Medicine
A Comparison Between the Accuracy of Two-Dimensional and Three-Dimensional Strain Measurements

This investigation determined the effect of specimen out-of-plane movement on the accuracy of strain measurement made applying two-dimensional (2D) and three-dimensional (3D) measurement approaches using the representative, state-of-the-art digital image correlation (DIC)-based tool ARAMIS. DIC techniques can be used in structural health monitoring (SHM) by measuring structural strains and correlating them to structural damage. This study was motivated by initially undetected damage at low strains in connections of a real-world bridge, whose detection would have prevented its propagation, resulting in lower repair costs. This study builds upon an initial investigation that concluded that out-of-plane specimen movement results in noise in DIC-based strain measurements. The effect of specimen out-of-plane displacement on the accuracy of strain measurements using the 2D and 3D measurement techniques was determined over a range of strain values and specimen out-of-plane displacements. Based upon the results of this study, the 2D system could measure strains as camera focus was being lost, and the effect of the loss of focus became apparent at 1.0 mm beam out-of-plane displacement while measuring strain of the order of magnitude of approximately 0.12%. The corresponding results for the 3D system demonstrate that the beam out-of-plane displacement begins to affect the accuracy of the strain measurements at approximately 0.025% strain for all magnitudes of out-of-plane displacement, and the 3D ARAMIS system can make accurate strain measurements at up to 2.5 mm amplitude at this strain. Finally, based upon the magnitudes of strain and out-of-plane displacement amplitudes that typically occur in real steel bridges, it is advisable to use the 3D system for SHM of stiff structures instead of the 2D system.
A comprehensive and quantitative comparison of text-mining in 15 million full-text articles versus their corresponding abstracts

Across academia and industry, text mining has become a popular strategy for keeping up with the rapid growth of the scientific literature. Text mining of the scientific literature has mostly been carried out on collections of abstracts, due to their availability. Here we present an analysis of 15 million English scientific full-text articles published during the period 1823-2016. We describe the development in article length and publication sub-topics during these nearly 250 years. We showcase the potential of text mining by extracting published protein-protein, disease-gene, and protein subcellular associations using a named entity recognition system, and quantitatively report on their accuracy using gold standard benchmark data sets. We subsequently compare the findings to corresponding results obtained on 16.5 million abstracts included in MEDLINE and show that text mining of full-text articles consistently outperforms using abstracts only.
A comprehensive study of cryogenic cooled millimeter-wave frequency multipliers based on GaAs Schottky-barrier varactors

The benefit of cryogenic cooling on the performance of millimeter-wave GaAs Schottky-barrier varactor-based frequency multipliers has been studied. For this purpose, a dedicated compact model of a GaAs Schottky-barrier varactor using a triple-anode diode stack has been developed for use with a commercial RF and microwave CAD tool. The model implements critical physical phenomena such as thermionic-field emission current transport at cryogenic temperatures, temperature dependent mobility, reverse breakdown, self-heating, and high-field velocity saturation effects. A parallel conduction model is employed in order to include the effect of barrier inhomogeneities which is known to cause deviation from the expected I--V characteristics at cryogenic temperatures. The developed model is shown to accurately fit the I--V - T dataset from 25 to 295 K measured on the varactor diode stack. Harmonic balance simulations using the model are used to predict the efficiency of a millimeter-wave balanced doubler from room to cryogenic temperatures. The estimation is verified experimentally using a 188 GHz balanced doubler cooled down to 77 K. The model has been further verified down to 14 K using a 78 GHz balanced doubler.

General information
State: Published
Authors: Johansen, T. K. (Intern), Rybalko, O. (Intern), Zhurbenko, V. (Intern), Bulcha, B. (Ekstern), Hesler, J. (Ekstern)
Number of pages: 10
Pages: 1-10
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Microwave and Wireless Technologies
ISSN (Print): 1759-0787
Ratings:
Web of Science (2018): Indexed yes
Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 0.65 SJR 0.234 SNIP 0.481
A conceptual magnetic fabric development model for the Paks loess in Hungary

We describe magnetic fabric and depositional environments of aeolian (loess) deposits from Paks, Hungary, and develop a novel, complex conceptual sedimentation model based on grain size and low-field magnetic susceptibility anisotropy data. A plot of shape factor (magnetic fabric parameter) and dry deposition velocity estimated from grain-size reveals primary and secondary depositional processes during the sedimentation of loess. Primary ones are driven by gravity, with poorly oriented MF for fine grain materials, and by tangential stress, with flow-aligned or flow-transverse fabric for coarser grain sediments. The fabric developed by a primary process is called depositional magnetic fabric. Secondary processes develop in unconsolidated sediments, beginning right after deposition and terminating before the start of diagenesis. Under slow sedimentation conditions, deposited materials are likely to be exposed near the surface for longer periods. Therefore, relatively strong winds with a stable direction can alter the fabric of non-buried surficial sediments. As a result, grain orientations may change from scattered, non-flow oriented fabric to flow-oriented fabric. This type of fabric, developed by a secondary process, is called transformed magnetic fabric, and is characterized by relatively well-defined grain orientation, which allows us to estimate a dominant wind direction.
Acoustic Streaming and Its Suppression in Inhomogeneous Fluids

We present a theoretical and experimental study of boundary-driven acoustic streaming in an inhomogeneous fluid with variations in density and compressibility. In a homogeneous fluid this streaming results from dissipation in the boundary layers (Rayleigh streaming). We show that in an inhomogeneous fluid, an additional nondissipative force density acts on the fluid to stabilize particular inhomogeneity configurations, which markedly alters and even suppresses the streaming flows. Our theoretical and numerical analysis of the phenomenon is supported by ultrasound experiments performed with inhomogeneous aqueous iodixanol solutions in a glass-silicon microchip.

General information
State: Published
Organisations: Department of Physics, Biophysics and Fluids, Lund University
Authors: Karlsen, J. T. (Intern), Qiu, W. (Intern), Augustsson, P. (Ekstern), Bruus, H. (Intern)
Number of pages: 6
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Publication information
Journal: Physical Review Letters
Volume: 120
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Article number: 054501
ISSN (Print): 0031-9007
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.33 SJR 3.56 SNIP 2.133
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.823 SNIP 2.205 CiteScore 5.76
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 5.027 SNIP 2.646 CiteScore 6.62
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 5.674 SNIP 2.796 CiteScore 7.46
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 6.243 SNIP 2.845 CiteScore 7.19
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 6.252 SNIP 2.886 CiteScore 7.02
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
Activation energy of time-dependent martensite formation in steel

General information
State: Accepted/In press
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering
Authors: Villa, M. (Intern), Somers, M. A. J. (Intern)
Number of pages: 8
Publication date: 2018

Host publication information
Title of host publication: Proceedings of the International Conference on Martensitic Transformations (ICOMAT 2017)
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Publication: Research - peer-review › Article in proceedings – Annual report year: 2018
Active targeted delivery of immune therapeutics to lymph nodes

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Harvard Medical School
Authors: Bahmani, B. (Ekstern), Vohra, I. (Ekstern), Kamaly, N. (Intern), Abdi, R. (Ekstern)
Pages: 8-14
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Current Opinion in Organ Transplantation
Volume: 23
Issue number: 1
ISSN (Print): 1531-7013
Ratings:
Web of Science (2018): Indexed yes
Scopus rating (2016): CiteScore 2.69
Scopus rating (2015): CiteScore 2.56
Scopus rating (2014): CiteScore 2.59
Scopus rating (2013): CiteScore 2.52
Scopus rating (2012): CiteScore 2.73
Scopus rating (2011): CiteScore 2.56
Original language: English
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Source: FindIt
Source-ID: 2393693290
Publication: Research - peer-review › Journal article – Annual report year: 2018

Activity-based DEVS modeling
Use of model-driven approaches has been increasing to significantly benefit the process of building complex systems. Recently, an approach for specifying model behavior using UML activities has been devised to support the creation of DEVS models in a disciplined manner based on the model driven architecture and the UML concepts. In this paper, we further this work by grounding Activity-based DEVS modeling and developing a fully-fledged modeling engine to demonstrate applicability. We also detail the relevant aspects of the created metamodel in terms of modeling and simulation. A significant number of the artifacts of the UML 2.5 activities and actions, from the vantage point of DEVS behavioral modeling, is covered in details. Their semantics are discussed to the extent of time-accurate requirements for simulation. We characterize them in correspondence with the specification of the atomic model behavior. We demonstrate the approach with simple, yet expressive DEVS models.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science , Embedded Systems Engineering, Arizona State University
Authors: Alshareef, A. (Ekstern), Sarjoughian, H. S. (Ekstern), Zarrin, B. (Intern)
Number of pages: 16
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Publication information
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Ratings:
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Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 2.4
Scopus rating (2015): CiteScore 2.26
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: Published
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)
Pages: 260-267
Publication date: 2018
Main Research Area: Technical/natural sciences

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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
Adaptive differences between wild and farmed trout: linking traits with genomic variation

General information
State: Accepted/In press
Organisations: National Institute of Aquatic Resources, Section for Marine Living Resources
Authors: Frank-Gopolos, T. (Intern)
Publication date: 2018

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Original language: English
Main Research Area: Technical/natural sciences
Publication: Research › Ph.D. thesis – Annual report year: 2018
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.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Centre for Ocean Life, University of Gothenburg, Consejo Superior de Investigaciones Científicas
Authors: Kiørboe, T. (Intern), Saiz, E. (Ekstern), Tiselius, P. (Ekstern), Andersen, K. H. (Intern)
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Main Research Area: Technical/natural sciences

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Journal: Limnology and Oceanography
Volume: 63
Issue number: 1
ISSN (Print): 0024-3590
Ratings:
BFI (2018): BFI-level 2
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BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.5 SJR 1.712 SNIP 1.225
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.472 SNIP 1.422 CiteScore 3.93
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.112 SNIP 1.584 CiteScore 3.73
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.256 SNIP 1.587 CiteScore 3.98
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.456 SNIP 1.5 CiteScore 3.81
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.374 SNIP 1.445 CiteScore 3.59
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.38 SNIP 1.425
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Added Value of uncertainty Estimates of SOurce term and Meteorology (AVESOME)

In the early phase of a nuclear accident, two large sources of uncertainty exist: one related to the source term and one associated with the meteorological data. Operational methods are being developed in AVESOME for quantitative estimation of uncertainties in atmospheric dispersion prediction resulting from uncertainties in assessments of both the release of radionuclides from the accident and their dispersion. Previously, due to lack of computer power, such methods could not be applied to operational real-time decision support. However, with modern supercomputing facilities, available e.g. at national meteorological services, the proposed methodology is feasible for real-time use, thereby adding value to decision support. In the recent NKS-B projects MUD, FAUNA and MESO, the implications of meteorological uncertainties for nuclear emergency preparedness and management have been studied, and means for operational real-time assessment of the uncertainties in a nuclear DSS have been described and demonstrated. In AVESOME, we address the uncertainty of the radionuclide source term, i.e. the amounts of radionuclides released and the temporal evolution of the release. Furthermore, the combined uncertainty in atmospheric dispersion model forecasting stemming from both the source term and the meteorological data is examined. Ways to implement the uncertainties of forecasting in DSSs, and the impacts on real-time emergency management are described.

The proposed methodology allows for efficient real-time calculations. Accordingly, the computer-resource demanding calculations should be carried out at the high-performance computing facilities available e.g. at the national meteorological services, whereas less demanding post-processing could be carried out at the computer hosting the DSS. The former tasks include the atmospheric dispersion model calculations; the latter includes interactive communication with the supercomputer as well as presentation of final results.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radiation Physics, Swedish Defence Research Agency, PDC-ARGOS, Danish Meteorological Institute, Norwegian Meteorological Institute, Danish Emergency Management Agency, Swedish Radiation Safety Authority
Authors: Sørensen, J. H. (Ekstern), Schönfeldt, F. (Ekstern), Sigg, R. (Ekstern), Pehrsson, J. (Ekstern), Lauritzen, B. (Intern), Bartnicki, J. (Ekstern), Klein, H. (Ekstern), Cordt Hoe, S. (Ekstern), Lindgren, J. (Ekstern)
Number of pages: 70
Publication date: 2018

Publisher: Nordic Nuclear Safety Research
A deep X-ray view of the bare AGN Ark120. IV. XMM-Newton and NuSTAR spectra dominated by two temperature (warm, hot) Comptonization processes.

Context. The physical characteristics of the material closest to supermassive black holes (SMBHs) are primarily studied through X-ray observations. However, the origins of the main X-ray components such as the soft X-ray excess, the FeKα line complex, and the hard X-ray excess are still hotly debated. This is particularly problematic for active galactic nuclei (AGN) showing a significant intrinsic absorption, either warm or neutral, which can severely distort the observed continuum. Therefore, AGN with no (or very weak) intrinsic absorption along the line of sight, so-called “bare AGN”, are the best targets to directly probe matter very close to the SMBH.

Aims. We perform an X-ray spectral analysis of the brightest and cleanest bare AGN known so far, Ark 120, in order to determine the process(es) at work in the vicinity of the SMBH.

Methods. We present spectral analyses of data from an extensive campaign observing Ark 120 in X-rays with XMM-Newton (4 × 120 ks, 2014 March 18–24), and NuSTAR (65.5 ks, 2014 March 22).

Results. During this very deep X-ray campaign, the source was caught in a high-flux state similar to the earlier 2003 XMM-Newton observation, and about twice as bright as the lower-flux observation in 2013. The spectral analysis confirms the "softer when brighter" behavior of Ark 120. The four XMM-Newton/pn spectra are characterized by the presence of a prominent soft X-ray excess and a significant FeKα complex. The continuum is very similar above about 3 keV, while significant variability is present for the soft X-ray excess. We find that relativistic reflection from a constant-density, flat accretion disk cannot simultaneously produce the soft excess, broad FeKα complex, and hard X-ray excess. Instead, Comptonization reproduces the broadband (0.3–79 keV) continuum well, together with a contribution from a mildly relativistic disk reflection spectrum.

Conclusions. During this 2014 observational campaign, the soft X-ray spectrum of Ark 120 below ~0.5 keV was found to be dominated by Comptonization of seed photons from the disk by a warm (kTe ~ 0.5 keV), optically-thick corona (τ ~ 9). Above this energy, the X-ray spectrum becomes dominated by Comptonization from electrons in a hot optically thin corona, while the broad FeKα line and the mild Compton hump result from reflection off the disk at several tens of gravitational radii.
Adherence to the Danish food-based dietary guidelines and risk of myocardial infarction: a cohort study

A direct way to evaluate food-based dietary guidelines is to assess if adherence is associated with development of non-communicable diseases. Thus, the objective was to develop an index to assess adherence to the 2013 Danish food-based dietary guidelines and to investigate the association between adherence to the index and risk of myocardial infarction (MI).

Population-based cohort study with recruitment of participants in 1993-1997. Information on dietary intake was collected at baseline using an FFQ and an index ranging from 0 to 6 points was created to assess adherence to the 2013 Danish food-based dietary guidelines. MI cases were identified by record linkage to the Danish National Patient Register and the Causes of Death Register. Cox proportional hazards models were used to estimate hazard ratios (HR) of MI. Greater areas of Aarhus and Copenhagen, Denmark. Men and women aged 50-64 years (n 55 021) from the Diet, Cancer and Health study. A total of 3046 participants were diagnosed with first-time MI during a median follow-up of 16·9 years. A higher Danish Dietary Guidelines Index score was associated with a lower risk of MI. After adjustment for potential confounders, the hazard of MI was 13 % lower among men with a score of 3-

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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.087 SNIP 1.116 CiteScore 2.15
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ISI indexed (2012): ISI indexed yes
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Scopus rating (2011): SJR 1.088 SNIP 1.105 CiteScore 1.86
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BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.077 SNIP 0.991
Web of Science (2010): Indexed yes
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Scopus rating (2009): SJR 1.322 SNIP 1.283
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.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Cognitive Systems
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Adipose tissue fatty acids present in dairy fat and risk of stroke: the Danish Diet, Cancer and Health cohort: the Danish Diet, Cancer and Health cohort

The role of dairy fat for the risk of stroke is not yet clear. Adipose tissue reflects long-term fatty acid intake and metabolism. We, therefore, investigated associations for percentages of adipose tissue fatty acids, for which dairy products are a major source (12:0, 14:0, 14:1 cis-9, 15:0, 17:0, 18:1 trans-11 and 18:2 cis-9, trans-11), with incident total stroke and stroke subtypes. We conducted a case-cohort study within the Danish Diet, Cancer and Health cohort, including all incident stroke cases (n=2108) and a random sample of the total cohort (n=3186). The fatty acid composition of adipose tissue biopsies was determined by gas chromatography and specific fatty acids were expressed as percentage of total fatty acids. Stroke cases were identified in the Danish National Patient Registry and the diagnoses were individually verified. We recorded 2108 stroke cases of which 1745 were ischemic, 249 were intracerebral hemorrhages and 102 were subarachnoid hemorrhages. We observed a lower rate of ischemic stroke for a higher adipose tissue percentage of 12:0, 14:0, 15:0, 17:0, 18:1 trans-11 and 18:2 cis-9, trans-11. Adipose tissue percentages of 15:0 and 18:1 trans-11 were also inversely associated with intracerebral hemorrhage, whereas no associations between the adipose tissue fatty acids and subarachnoid hemorrhage were observed. No associations between 14:1 cis-9 and ischemic or hemorrhagic stroke were found. Our results suggest that a larger percentage in adipose tissue of fatty acids for which dairy products are a major source is associated with a lower rate of ischemic stroke.

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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.273 SNIP 1.227 CiteScore 3.28
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.021 SNIP 1.135 CiteScore 3.2
ISI indexed (2013): ISI indexed yes
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BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.961 SNIP 1.022 CiteScore 2.91
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Scopus rating (2011): SJR 1.13 SNIP 1.107 CiteScore 3.02
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.207 SNIP 1.217
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.043 SNIP 1.171
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.811 SNIP 0.876
Adolescents' associations between travel behaviour and environmental impact: A qualitative study based on the Norm-Activation Model

The negative environmental impact of car-dependent daily transport is well known. Young people of today are the potential drivers of the future and their mode choice will influence the environment for many years. This study explores the associations drawn between daily transport and environmental impact among 15-year-old Danish adolescents. We conducted 50 in-depth interviews and analysed them using a data-driven inductive thematic approach. We interpret differences in pro-environmental awareness and engagement on the background of the Norm-Activation Model (Schwartz, 1977). Based on their personal norm and the denial of consequences and responsibility of own behaviour, we identified five sub-groups of adolescents called Environmentalists, Pragmatics, Indifferent, De-emphasisers, and Deniers. Results indicate a need for measures to increase adolescents' awareness and acceptance of daily transport as a relevant issue in relation to sustainability. Such measures should include tangible feedback in a daily context while taking different coping strategies with regard to climate change into account.

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Organisations: Department of Management Engineering, Technology and Innovation Management, Transport DTU, Technical University of Denmark
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Advancing food, nutrition, and health research in Europe by connecting and building research infrastructures in a DISH-RI: Results of the EuroDISH project

Background
Research infrastructures (RIs) are essential to advance research on the relationship between food, nutrition, and health. RIs will facilitate innovation and allow insights at the systems level which are required to design (public health) strategies that will address societal challenges more effectively.
Approach
In the EuroDISH project we mapped existing RIs in the food and health area in Europe, identified outstanding needs, and synthesised this into a conceptual design of a pan-European DISH-RI. The DISH model was used to describe and structure the research area: Determinants of food choice, Intake of foods and nutrients, Status and functional markers of nutritional health, and Health and disease risk.

Key findings
The need to develop RIs in the food and health domain clearly emerged from the EuroDISH project. It showed the necessity for a unique interdisciplinary and multi-stakeholder RI that overarches the research domains. A DISH-RI should bring services to the research community that facilitate network and community building and provide access to standardised, interoperable, and innovative data and tools. It should fulfil the scientific needs to connect within and between research domains and make use of current initiatives. Added value can also be created by providing services to policy makers and industry, unlocking data and enabling valorisation of research insights in practice through public-private partnerships. The governance of these services (e.g. ownership) and the centralised and distributed activities of the RI itself (e.g. flexibility, innovation) needs to be organised and aligned with the different interests of public and private partners.

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Scopus rating (2016): CiteScore 6 SJR 2.279 SNIP 2.694
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.218 SNIP 2.6 CiteScore 5.51
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.183 SNIP 2.789 CiteScore 5.17
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Scopus rating (2011): SJR 1.877 SNIP 2.623 CiteScore 3.81
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
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Web of Science (2010): Indexed yes
A Dynamic Logic for Learning Theory

Building on previous work that bridged Formal Learning Theory and Dynamic Epistemic Logic in a topological setting, we introduce a Dynamic Logic for Learning Theory (DLLT), extending Subset Space Logics with dynamic observation modalities, as well as with a learning operator, which encodes the learner’s conjecture after observing a finite sequence of data. We completely axiomatise DLLT, study its expressivity and use it to characterise various notions of knowledge, belief, and learning.

General information
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A facile molecularly imprinted polymer-based fluorometric assay for detection of histamine

Histamine is a biogenic amine naturally present in many body cells. It is also a contaminant that is mostly found in spoiled food. The consumption of foods containing high levels of histamine may lead to an allergy-like food poisoning. Analytical methods that can routinely screen histamine are thus urgently needed. In this paper, we developed a facile and cost-effective molecularly imprinted polymer (MIP)-based fluorometric assay to directly quantify histamine. Histamine-specific MIP nanoparticles (nanoMIPs) were synthesized using a modified solid-phase synthesis method. They were then immobilized in the wells of a microplate to bind the histamine in aqueous samples. After binding, o-phthaldialdehyde (OPA) was used to label the bound histamine, which converted the binding events into fluorescent signals. The obtained calibration curve of histamine showed a linear correlation ranging from 1.80 to 44.98 mM with the limit of detection of 1.80 μM. This method was successfully used to detect histamine in spiked diary milk with a recovery rate of more than 85%.

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.

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Scopus rating (2014): SJR 1.589 SNIP 1.401 CiteScore 4.16
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ISI indexed (2013): ISI indexed yes
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Scopus rating (2012): SJR 1.639 SNIP 1.366 CiteScore 4.04
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BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.668 SNIP 1.483 CiteScore 4.08
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.538 SNIP 1.357
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BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.491 SNIP 1.356
Web of Science (2009): Indexed yes
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.
Africa–Europe Collaborations for Climate Change Research and Innovation: What Difference Have They Made?

This chapter critically assesses Africa–Europe collaborations on climate change research and innovation. Its authors argue that the complexity of research and innovation challenges on this topic calls for subtler collaborative and evaluation programmes. More importantly, they emphasise the need for greater harmonisation between scientific and political priorities on climate change, and point out that project goals should be more precisely defined, so as to ensure that results can be measured concretely and solutions can be progressively improved. In the absence of this clarity, they argue, climate change research and innovation programmes run the risk of being reduced to mere rhetorical statements.
A generic framework for individual-based modelling and physical-biological interaction

The increased availability of high-resolution ocean data globally has enabled more detailed analyses of physical-biological interactions and their consequences to the ecosystem. We present IBMlib, which is a versatile, portable and computationally effective framework for conducting Lagrangian simulations in the marine environment. The purpose of the framework is to handle complex individual-level biological models of organisms, combined with realistic 3D oceanographic model of physics and biogeochemistry describing the environment of the organisms without assumptions about spatial or temporal scales. The open-source framework features a minimal robust interface to facilitate the coupling between individual-level biological models and oceanographic models, and we provide application examples including forward/backward simulations, habitat connectivity calculations, assessing ocean conditions, comparison of physical circulation models, model ensemble runs and recently posterior Eulerian simulations using the IBMlib framework. We present the code design ideas behind the longevity of the code, our implementation experiences, as well as code performance benchmarking. The framework may contribute substantially to progresses in representing, understanding, predicting and eventually managing marine ecosystems.
A hamiltonian cycle in the square of a 2-connected graph in linear time

Fleischner's theorem says that the square of every 2-connected graph contains a Hamiltonian cycle. We present a proof resulting in an $O(|E|)$ algorithm for producing a Hamiltonian cycle in the square $G^2$ of a 2-connected graph $G = (V, E)$. The previous best was $O(|V|^2)$ by Lau in 1980. More generally, we get an $O(|E|)$ algorithm for producing a Hamiltonian path between any two prescribed vertices, and we get an $O(|V|^2)$ algorithm for producing cycles $C$ of lengths $3, 4, \ldots, |V|$, respectively.

**General information**

State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic, University of Copenhagen, University of Warwick
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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.
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 laser heating facility for energy-dispersive X-ray absorption spectroscopy
A double-sided laser heating setup for diamond anvil cells installed on the ID24 beamline of the ESRF is presented here. The setup geometry is specially adopted for the needs of energy-dispersive X-ray absorption spectroscopic (XAS) studies of materials under extreme pressure and temperature conditions. We illustrate the performance of the facility with a study on metallic nickel at 60 GPa. The XAS data provide the temperature of the melting onset and quantitative information on the structural parameters of the first coordination shell in the hot solid up to melting.

General information
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Organisations: Department of Physics, Neutrons and X-rays for Materials Physics, European Synchrotron Radiation Facility
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Scopus rating (2016): CiteScore 1.2 SJR 0.585 SNIP 0.855
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BFI (2015): BFI-level 1
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Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.922 SNIP 1.211 CiteScore 1.45
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.898 SNIP 1.117 CiteScore 1.28
ISI indexed (2013): ISI indexed yes
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BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.012 SNIP 1.267 CiteScore 1.45
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.861 SNIP 1.105 CiteScore 1.43
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.214 SNIP 1.415
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.001 SNIP 1.065
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.293 SNIP 1.355
Altered auditory processing and effective connectivity in 22q11.2 deletion syndrome

22q11.2 deletion syndrome (22q11.2DS) is one of the most common copy number variants and confers a markedly increased risk for schizophrenia. As such, 22q11.2DS is a homogeneous genetic liability model which enables studies to delineate functional abnormalities that may precede disease onset. Mismatch negativity (MMN), a brain marker of change detection, is reduced in people with schizophrenia compared to healthy controls. Using dynamic causal modelling (DCM), previous studies showed that top-down effective connectivity linking the frontal and temporal cortex is reduced in schizophrenia relative to healthy controls in MMN tasks. In the search for early risk-markers for schizophrenia we investigated the neural basis of change detection in a group with 22q11.2DS. We recorded high-density EEG from 19 young non-psychotic 22q11.2 deletion carriers, as well as from 27 healthy non-carriers with comparable age distribution and sex ratio, while they listened to a sequence of sounds arranged in a roving oddball paradigm. Despite finding no significant reduction in the MMN responses, whole-scalp spatiotemporal analysis of responses to the tones revealed a greater fronto-temporal N1 component in the 22q11.2 deletion carriers. DCM showed reduced intrinsic connection within right primary auditory cortex as well as in the top-down, connection from the right inferior frontal gyrus to right superior temporal gyrus for 22q11.2 deletion carriers although not surviving correction for multiple comparison. We discuss these findings in terms of reduced adaptation and a general increased sensitivity to tones in 22q11.2DS.
Tightened restrictions call for cleaner transportation fuels to minimize environmental and societal problems caused by the presence of sulfur in transportation fuels. This emphasizes the need for new and better catalysts in the field of hydrodesulfurization (HDS), which aims at removing the refractory sulfur from different petroleum streams mostly found in the form of the alkyl-substituted dibenzothiophenes (β-DBTs). In this work we demonstrate how a setup dedicated to testing minute amounts (nanogram) of well-defined catalytic systems in μ-reactors can be used in the gas-phase HDS of the model compounds DBT and 4,6-dimethyldibenzothiophene (4,6-DMDBT) and the reaction pathways revealed by time-of-flight mass spectrometry. Specifically, we investigate HDS of DBT and 4,6-DMDBT on mass-selected Pt nanoparticles and show that only the direct desulfurization products are formed. The setup is a means to bridge the gap between structural characterization of model catalysts and their related activity in the HDS of DBT and 4,6-DMDBT.
A multifunctional molecularly imprinted polymer-based biosensor for direct detection of doxycycline in food samples

In this study, we developed a new type of multifunctional molecularly imprinted polymer (MIP) composite as an all-in-one biosensor for the low-cost, rapid and sensitive detection of doxycycline in pig plasma. The MIP composite consisted of a magnetic core for ease of manipulation, and a shell of fluorescent MIPs for selective recognition of doxycycline. By simply incorporating a small amount of fluorescent monomer (fluorescein-Oacrylate), the fluorescent MIP layer was successfully grafted onto the magnetic core via a surface imprinting technique. The resultant MIP composites showed significant doxycycline-dependent fluorescence quenching in an aqueous environment. Good linearity ranging from 0.2 to 6 μM was achieved, and the limit of detection was determined to be 117 nM. The biosensor also showed good selectivity towards doxycycline when compared to other common antibiotic residues. The multifunctional MIP composites were used to directly extract doxycycline from spiked pig plasma samples and quantify the antibiotics based on the quenched fluorescence signals. Recoveries of doxycycline were found in the range of 88–107%.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology
Authors: Ashley, J. (Intern), Feng, X. (Intern), Sun, Y. (Intern)
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Web of Science (2017): Indexed Yes
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Scopus rating (2016): CiteScore 4.19 SJR 1.162 SNIP 1.27
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
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 (IEEE802.11). 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.

Analysing impact of oxygen and water exposure on roll-coated organic solar cell performance using impedance spectroscopy

In this work we study the degradation of roll-coated flexible inverted organic solar cells in different atmospheres. We demonstrate that impedance spectroscopy is a powerful tool for elucidating degradation mechanisms; it is used here to distinguish the different degradation mechanisms due to water and oxygen. Identical cells were exposed to different
accelerated degradation environments using water only, oxygen only, and both water and oxygen simultaneously, all of them enhanced with UV light. The photocurrent is dramatically reduced in the oxygen-degraded samples. Impedance measurements indicate that this phenomenon is attributed to defects introduced by absorption of oxygen, which results in an increase of the acceptor impurity (NA) at the cathode interface obtained from a Mott-Schottky analysis. Simultaneously, at the anode interface where PEDOT:PSS is not shielded by the substrate, the nature of degradation differs for the water and oxygen degraded samples. While oxygen + UV light decreases the conductivity of the PEDOT:PSS layer, water + UV light changes the PEDOT:PSS work function inducing a depletion region at the anode.
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.
Colorectal cancer (CRC) is a leading cause of death worldwide. Surgical intervention is a successful treatment for stage I patients, whereas other more advanced cases may require adjuvant chemotherapy. The selection of effective adjuvant treatments remains, however, challenging. Accurate patient stratification is necessary for the identification of the subset of patients likely responding to treatment, while sparing others from pernicious treatment. Targeted sequencing approaches may help in this regard, enabling rapid genetic investigation, and at the same time easily applicable in routine diagnosis.

We propose a set of guidelines for the identification, including variant calling and filtering, of somatic mutations driving tumorigenesis in the absence of matched healthy tissue. We also discuss the inclusion criteria for the generation of our gene panel. Furthermore, we evaluate the prognostic impact of individual genes, using Cox regression models in the context of overall survival and disease-free survival. These analyses confirmed the role of commonly used biomarkers,
and shed light on controversial genes such as CYP2C8.

Applying those guidelines, we created a novel gene panel to investigate the onset and progression of CRC in 273 patients. Our comprehensive biomarker set includes 266 genes that may play a role in the progression through the different stages of the disease. Tracing the developmental state of the tumour, and its resistances, is instrumental in patient stratification and reliable decision making in precision clinical practice.

**General information**

State: Accepted/In press

Organisations: Department of Biotechnology and Biomedicine, Department of Bio and Health Informatics, Integrative Systems Biology, Department of Systems Biology, Intomics A/S, Vejle Hospital, Exiqon A/S


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BFI (2015): BFI-level 1
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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.521 SNIP 1.277 CiteScore 4.96
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 3.041 SNIP 1.268 CiteScore 5.26
ISI indexed (2013): ISI indexed yes
Scopus rating (2012): SJR 2.474 SNIP 1.096 CiteScore 6.54
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Scopus rating (2011): SJR 1.481 SNIP 0.494 CiteScore 3.38
ISI indexed (2011): ISI indexed no
Original language: English
Electronic versions:
24138_338283_1_PB.pdf
DOIs: 10.18632/oncotarget.24138

**Bibliographical note**

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Source-ID: 2395360446
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Analysis of MRI by fractals for prediction of sensory attributes: A case study in loin**

This study investigates the use of fractal algorithms to analyse MRI of meat products, specifically loin, in order to determine sensory parameters of loin. For that, the capability of different fractal algorithms was evaluated (Classical Fractal Algorithm, CFA; Fractal Texture Algorithm, FTA and One Point Fractal Texture Algorithm, OPFTA). Moreover, the influence of the acquisition sequence of MRI (Gradient echo, GE; Spin Echo, SE and Turbo 3D, T3D) and the predictive technique of data mining (Isotonic regression, IR and Multiple Linear regression, MLR) on the accuracy of the prediction was analysed. Results on this study firstly demonstrate the capability of fractal algorithms to analyse MRI from meat product. Different combinations of the analysed techniques can be applied for predicting most sensory attributes of loins adequately (R > 0.5). However, the combination of SE, OPFTA and MLR offered the most appropriate results. Thus, it could be proposed as an alternative to the traditional food technology methods.
General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Image Analysis & Computer Graphics, University of Extremadura, University of Copenhagen
Authors: Caballero, D. (Ekstern), Antequera, T. (Ekstern), Caro, A. (Ekstern), Amigo, J. M. (Ekstern), Ersbøll, B. K. (Intern) , Dahl, A. B. (Intern), Pérez-Palacios, T. (Ekstern)
Number of pages: 10
Pages: 1-10
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
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Ratings:
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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
Scopus rating (2010): SJR 1.439 SNIP 1.793
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.411 SNIP 1.623
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.301 SNIP 1.521
Scopus rating (2007): SJR 1.044 SNIP 1.958
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.101 SNIP 1.546
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.808 SNIP 1.441
Scopus rating (2004): SJR 0.857 SNIP 1.454
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.882 SNIP 1.6
Scopus rating (2002): SJR 1.202 SNIP 1.481
Analysis of Track Responses to Train Braking

General information
State: Published
Organisations: Department of Civil Engineering, Section for Geotechnics and Geology
Authors: Bose, T. (Intern), Levenberg, E. (Intern), Zania, V. (Intern)
Number of pages: 4
Publication date: 2018
Main Research Area: Technical/natural sciences
Electronic versions:
Untitled.pdf. Embargo ended: 12/01/2018

Bibliographical note
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Source-ID: 139718704
Publication: Research - peer-review › Paper – Annual report year: 2018

Analytic 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: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Distributed energy resources
Authors: Zaccino, A. (Intern), Marinelli, M. (Intern)
Number of pages: 11
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Main Research Area: Technical/natural sciences

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Volume: 97
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BFI (2018): BFI-level 2
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BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
An Asynchronous-Switched-Capacitor DC-DC Converter Based on GaN and SiC Devices

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Electronics
An automated flow-injection enzyme-linked immunosorbent assay for the detection of Zearalenone

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Nanoprobes, Lund University
Authors: Jantra, J. (Ekstern), Zor, K. (Intern), Hedström, M. (Ekstern), Mattiasson, B. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences
Zearalenone, Flow-ELISA, Biosensor
Electronic versions: Untitled.pdf

Relations
Activities:
An automated flow-injection enzyme-linked immunosorbent assay for the detection of Zearalenone
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2018

An engineered cell-imprinted substrate directs osteogenic differentiation in stem cells

A cell-imprinted poly(dimethylsiloxane)/hydroxyapatite nanocomposite substrate was fabricated to engage topographical, mechanical, and chemical signals to stimulate and boost stem cell osteogenic differentiation. The physicochemical properties of the fabricated substrates, with nanoscale resolution of osteoblast morphology, were probed using a wide range of techniques including scanning electron microscopy, atomic force microscopy, dynamic mechanical thermal analysis, and water contact angle measurements. The osteogenic differentiation capacity of the cultured stem cells on these substrates was probed by alizarin red staining, ALP activity, osteocalcin measurements, and gene expression analysis. The outcomes revealed that the concurrent roles of the surface patterns and viscoelastic properties of the substrate provide the capability of directing stem cell differentiation toward osteogenic phenotypes. Besides the physical and mechanical effects, we found that the chemical signaling of osteoinductive hydroxyapatite nanoparticles, embedded in the nanocomposite substrates, could further improve and optimize stem cell osteogenic differentiation.

General information
State: Published
Organisations: Department of Chemistry, Amirkabir University of Technology, Pasteur Institute of Iran, Tehran University of Medical Sciences
Authors: Kamguyan, K. (Ekstern), Katbab, A. A. (Ekstern), Mahmoudi, M. (Ekstern), Thormann, E. (Intern), Moghaddam, S. Z. (Intern), Moradi, L. (Ekstern), Bonakdar, S. (Ekstern)
Number of pages: 11
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Main Research Area: Technical/natural sciences

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Original language: English
A new method for estimating transmission rates of mastitis-causing pathogens

General information
State: Published
Organisations: National Veterinary Institute, Epidemiology, Department of Applied Mathematics and Computer Science
Authors: Kirkeby, C. (Intern), Halasa, T. (Intern), Gussmann, M. K. (Intern), Græsbøll, K. (Intern)
Publication date: 2018
Main Research Area: Technical/natural sciences
Electronic versions:
NMC_2018_poster_v5.pdf
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Source-ID: 143856174
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A New Technique for Deep In situ Measurements of the Soil Water Retention Behaviour
In situ measurements of soil suction and water content in deep soil layers still represent an experimental challenge. Mostly developed within agriculture related disciplines, field techniques for the identification of soil retention behaviour have been so far employed in the geotechnical context to monitor shallow landslides and seasonal volume changes beneath shallow foundations, within the most superficial ground strata. In this paper, a novel installation technique is presented, discussed and assessed, which allows to extend the use of commercially available low cost and low maintenance instruments to characterise deep soil layers. Multi-depth installations have been successfully carried out using two different sensors to measure the soil suction and water content up to 7m from the soil surface. Preliminary laboratory investigations were also shown to provide a reasonable benchmark to the field data. The results of this study offer a convenient starting point to accommodate important geotechnical works such as river and road embankments in the traditional monitoring of unsaturated soil variables.

General information
State: Accepted/In press
Organisations: Department of Civil Engineering, Section for Geotechnics and Geology, University of Bologna, METER Group, University of Newcastle
Authors: Rocchi, I. (Intern), Gragnano, C. G. (Ekstern), Govoni, L. (Ekstern), Mentani, A. (Ekstern), Bittelli, M. (Ekstern), Castiglione, P. (Ekstern), Buzzi, O. (Ekstern), Gottardi, G. (Ekstern)
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Publication: Research - peer-review › Journal article – Annual report year: 2018
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.
An Integrated Framework to Specify Domain-Specific Modeling Languages

In this paper, we propose an integrated framework that can be used by DSL designers to implement their desired graphical domain-specific languages. This framework relies on Microsoft DSL Tools, a meta-modeling framework to build graphical domain-specific languages, and an extension of ForSpec, a logic-based specification language. The drawback of MS DSL Tools is that it does not provide a formal and rigorous approach for semantics specifications. In this framework, we use Microsoft DSL Tools to define the metamodel and graphical notations of DSLs, and an extended version of ForSpec as a formal language to define their semantics. Integrating these technologies under the umbrella of Microsoft Visual Studio IDE allows DSL designers to utilize a single development environment for developing their desired domain-specific languages.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Embedded Systems Engineering, Software Engineering
Authors: Zarrin, B. (Intern), Baumeister, H. (Intern)
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Publication date: 2018

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Domain-Specific Modeling Languages, Formal Approach, Semantics Specification, DSL-Tools, FORMULA

Another paradigm lost? Autumn downstream migration of juvenile brown trout: Evidence for a presmolt migration

General information
State: Published
A novel catalyst layer structure based surface-patterned Nafion® membrane for high-performance direct methanol fuel cell

Conventional catalyst layer with a smooth surface exists the larger area of catalytic dead zone and reduces the utilization of catalyst. Based on this, a novel catalyst layer structure based surface-patterned Nafion® membrane was designed to achieve more efficient electrochemical reaction in this work. Surface-patterned Nafion® membranes were prepared by hot pressing with different pressures, and their swelling degrees reduced obviously with the increase of pressure, but proton conductivities of the membranes were almost unchanged. Pre-swelling and direct-spraying deposition methods were used to prepare the novel catalyst layer, and the effect of pressure on the performance of MEA was investigated. The results suggested that the peak power density of DMFC with optimal novel catalyst layer structure increased by 28.84%, the charge transfer resistances of anode and cathode reduced by 28.8% and 26.5% respectively, compared with the conventional catalyst layer. Performance improvement is attributed to the fact that the novel catalyst layer structure optimizes the electrolyte membrane/catalyst layer and gas diffusion layer/catalyst layer interfacial structure, which increases the electrochemical reaction region and reaction sites. The novel catalyst layer with a three-dimensional curved surface structure enlarges the “three-phase boundaries (TPB)” and electrochemical active surface area (ECSA) of membrane electrode assembly (MEA). Therefore, this work provides an effective solution to achieve the high performance of DMFC by optimizing the internal interface structure of electrode, which is helpful to the future development of DMFC.

General information
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Organisations: Department of Energy Conversion and Storage, Proton conductors, University of Science and Technology Beijing, University of Science and Technology of China
Authors: Chen, M. (Ekstern), Wang, M. (Ekstern), Ding, X. (Ekstern), Li, Q. (Intern), Wang, X. (Ekstern)
Number of pages: 26
Publication date: 2018
Main Research Area: Technical/natural sciences

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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
A Novel Multimedia Streaming System for Urban Rail Environments Using Wi-Fi Peer-to-Peer Technology

The amount of streaming multimedia data delivered to mobile devices is growing at a high rate. Research shows that a large number of daily commuters stream audio and video to their mobile devices during their travels. This makes urban rail environments a suitable platform for delivering entertainment, information and advertisements using novel delivery techniques. In order to do so, the system presented in this paper utilizes the unused bandwidth of a Communications-Based Train Control link to transmit multimedia to urban trains. Once on the train, multimedia is distributed to passenger devices using Wi-Fi Peer-to-Peer (P2P) technology. Such a multimedia distribution system can be deployed incrementally, as it can function concurrently with Wi-Fi connections already available in a number of trains. This paper presents the results obtained by emulating multimedia streaming in an urban rail use-case. Namely, it evaluates the received streaming multimedia quality parameters when new users arrive or existing users are replaced during the train stops.

General information
State: Accepted/In press
Organisations: Department of Photonics Engineering, Networks Technology and Service Platforms
Authors: Poderys, J. (Intern), Farooq, J. (Intern), Soler, J. (Intern)
Number of pages: 6
Publication date: 2018

Host publication information
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.
AntibIoTic: Protecting IoT Devices Against DDoS Attacks

The 2016 is remembered as the year that showed to the world how dangerous Distributed Denial of Service attacks can be. Gauge of the disruptiveness of DDoS attacks is the number of bots involved: the bigger the botnet, the more powerful the attack. This character, along with the increasing availability of connected and insecure IoT devices, makes DDoS and IoT the perfect pair for the malware industry. In this paper we present the main idea behind AntibIoTic, a palliative solution to prevent DDoS attacks perpetrated through IoT devices.

General information

State: Published
Organisations: Department of Applied Mathematics and Computer Science, Embedded Systems Engineering, Orebro University, Innopolis University
Authors: De Donno, M. (Intern), Dragoni, N. (Intern), Giaretta, A. (Ekstern), Mazzara, M. (Ekstern)
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Host publication information

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Publisher: Springer
Editors: Ciancarini, P., Litvinov, S., Messina, A., Sillitti, A., Succi, G.
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Volume: 717
ISSN: 2194-5357
Main Research Area: Technical/natural sciences
Conference: 5th International Conference in Software Engineering for Defence Applications, Rome, Italy, 10/05/2016 - 10/05/2016
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.
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.

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Approaches to assess IgE mediated allergy risks (sensitization and cross-reactivity) from new or modified dietary proteins

The development and introduction of new dietary protein sources has the potential to improve food supply sustainability. Understanding the potential allergenicity of these new or modified proteins is crucial to ensure protection of public health. Exposure to new proteins may result in de novo sensitization, with or without clinical allergy, or clinical reactions through cross-reactivity.

In this paper we review the potential of current methodologies (in silico, in vitro degradation, in vitro IgE binding, animal models and clinical studies) to address these outcomes for risk assessment purposes for new proteins, and especially to identify and characterise the risk of sensitization for IgE mediated allergy from oral exposure. Existing tools and tests are capable of assessing potential crossreactivity. However, there are few possibilities to assess the hazard due to de novo sensitization. The only methods available are in vivo models, but many limitations exist to use them for assessing risk. We conclude that there is a need to understand which criteria adequately define allergenicity for risk assessment purposes, and from these criteria develop a more suitable battery of tests to distinguish between proteins of high and low allergenicity, which can then be applied to assess new proteins with unknown risks.
A regularization method for solving the Poisson equation for mixed unbounded-periodic domains

Abstract Regularized Green's functions for mixed unbounded-periodic domains are derived. The regularization of the Green's function removes its singularity by introducing a regularization radius which is related to the discretization length and hence imposes a minimum resolved scale. In this way the regularized unbounded-periodic Green's functions can be implemented in an FFT-based Poisson solver to obtain a convergence rate corresponding to the regularization order of the Green's function. The high order is achieved without any additional computational cost from the conventional FFT-based Poisson solver and enables the calculation of the derivative of the solution to the same high order by direct spectral differentiation. We illustrate an application of the FFT-based Poisson solver by using it with a vortex particle mesh method for the approximation of incompressible flow for a problem with a single periodic and two unbounded directions.

General information
State: Published
Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering
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Scopus rating (2009): SJR 2.439 SNIP 2.219
Web of Science (2009): Indexed yes
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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.

General information
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Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, Utah State University, Environment and Climate Change Canada, Hill Air Force Base, ExxonMobil Biomedical Sciences, University of Toronto
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BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.446 SNIP 1.055 CiteScore 3
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.506 SNIP 1.129 CiteScore 2.89
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.653 SNIP 1.092 CiteScore 2.88
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Scopus rating (2012): SJR 1.642 SNIP 1.107 CiteScore 2.81
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
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Scopus rating (2011): SJR 1.937 SNIP 1.168 CiteScore 3.05
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Scopus rating (2010): SJR 1.708 SNIP 0.997
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BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.613 SNIP 1.047
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BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.48 SNIP 1.049
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.691 SNIP 1.144
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.604 SNIP 1.144
Web of Science (2006): Indexed yes
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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.
Ascaris Suum Infection Downregulates Inflammatory Pathways in the Pig Intestine In Vivo and in Human Dendritic Cells In Vitro.

Ascaris suum is a helminth parasite of pigs closely related to its human counterpart, A. lumbricoides, which infects almost 1 billion people. Ascaris is thought to modulate host immune and inflammatory responses, which may drive immune hyporesponsiveness during chronic infections. Using transcriptomic analysis, we show here that pigs with a chronic A. suum infection have a substantial suppression of inflammatory pathways in the intestinal mucosa, with a broad downregulation of genes encoding cytokines and antigen-processing and costimulatory molecules. A. suum body fluid (ABF) suppressed similar transcripational pathways in human dendritic cells (DCs) in vitro. DCs exposed to ABF secreted minimal amounts of cytokines and had impaired production of cyclooxygenase-2, altered glucose metabolism, and reduced capacity to induce interferon-gamma production in T cells. Our in vivo and in vitro data provide an insight into mucosal immune modulation during Ascaris infection, and show that A. suum profoundly suppresses immune and inflammatory pathways.

General information

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Organisations: National Veterinary Institute, Innate Immunology, University of Copenhagen, Universidad de Cartagena, VU University Medical Centre, Aarhus University
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Scopus rating (2012): SJR 3.32 SNIP 1.708 CiteScore 5.43
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A Simulation Study on the Performance of Radiant Ceilings Combined with Free-Hanging Horizontal Sound Absorbers

Radiant heating and cooling systems, and Thermally Active Building Systems (TABS) in particular, have several advantages such as benefiting from the low temperature heating and high temperature cooling principle, coupling with renewable energy sources, peak shifting and peak load reductions.

When using TABS, most building simulation models assume an uncovered ceiling; however, this might not be the case in practice, due to the use of free-hanging horizontal (or vertical) sound absorbers for the control of room acoustic conditions. The use of sound absorbers will decrease the performance of radiant ceiling cooling systems. Therefore, the quantification of the effects during the design phase is important for predicting the resulting thermal indoor environment and for system dimensioning.

In this study, a two-person office room equipped with TABS was simulated using a commercially available simulation software with a recently developed plug-in that allows simulating the effects of horizontal sound absorbers on the performance of TABS and on the thermal indoor environment. The change in thermal indoor environment and in performance of TABS were quantified, and the simulation results were compared to measurement results.

The measurement results show that with horizontal sound absorbers, the cooling performance of TABS decreases by 11%, 23% and 36% for ceiling coverage ratios of 43%, 60% and 80%, respectively. The developed simulation model was able to predict closely the cooling performance reduction of TABS, the ceiling surface temperature, and the thermal indoor environment in most cases. While the model can be improved in certain aspects (prediction of mean radiant temperature and cooling capacity coefficient), the accurate prediction of the surface temperature of the TABS makes the model useful for further studies, which may use differently constructed radiant surface heating and cooling systems.

General information

State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Technical University of Denmark
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A spectral geometric model for Compton single scatter in PET based on the single scatter simulation approximation: Paper

We investigate the idealized mathematical model of single scatter in PET for a detector system possessing excellent energy resolution. The model has the form of integral transforms estimating the distribution of photons undergoing a single Compton scattering with a certain angle. The total single scatter is interpreted as the volume integral over scatter points that constitute a rotation body with a football shape, while single scattering with a certain angle is evaluated as the surface integral over the boundary of the rotation body. The equations for total and sample single scatter calculations are derived using a single scatter simulation approximation. We show that the three-dimensional slice-by-slice filtered backprojection algorithm is applicable for scatter data inversion provided that the attenuation map is assumed to be constant. The results of the numerical experiments are presented.
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.

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Authors: Jakočiūnas, T. (Intern), Jensen, E. D. (Intern), Jensen, M. K. (Intern), Keasling, J. D. (Intern)
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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 CT 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.
Assessing stakeholder's experience and sensitivity on key issues for the economic growth of organic aquaculture production
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.

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Organisations: National Institute of Aquatic Resources, Section for Aquaculture, COISPA, Stazione Sperimentale per lo Studio delle Risorse del Mare
Authors: Lembo, G. (Ekstern), Jokumsen, A. (Intern), Spedicato, M. T. (Ekstern), Facchini, M. T. (Ekstern), Bitetto, I. (Ekstern)
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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.
Associations between adherence to the Danish Food-Based Dietary Guidelines and cardiometabolic risk factors in a Danish adult population: the DIPI study

Diet is recognised as one modifiable lifestyle factor for ischaemic heart disease (IHD). We aimed at investigating the associations between adherence to the Danish Food-Based Dietary Guidelines (FBDG) indicated by a Dietary Quality Index (DQI) and selected cardiometabolic risk factors in a cross-sectional study with 219 Danish adult participants (59% women; age 31-65 years) with a minimum of one self-rated risk marker of IHD. Information regarding diet was obtained using web-based dietary assessment software and adherence to the Danish FBDG was expressed by a DQI calculated from 5 food and nutrient indicators (whole grain, fish, fruit and vegetables, energy from saturated fat and from added sugar). Background information, blood samples and anthropometrics were collected and blood pressure was measured. Linear regression analyses were used to evaluate the association between DQI and cardiometabolic risk factors. DQI was inversely associated with LDL:HDL ratio and TAG (-0.089 per unit; 95% CI -0.177, -0.002 and -5% per unit; 95% CI -9, 0, respectively) and positively associated with HDL-cholesterol (0.047 mmol/l per unit; 95% CI 0.007, 0.088). For men, DQI was inversely associated with BMI (-3% per unit; 95% CI -5, -1), trunk fat (-1% per unit; 95% CI -2, -1), high-sensitivity C-reactive protein (-30% per unit; 95% CI -41, -16%), HbA1c (-0.09% per unit; 95% CI -0.14, -0.04), insulin (-13% per unit; 95% CI -19, -7) and homeostatic model assessment-insulin resistance (-14% per unit; 95% CI -21, -7). In women, DQI was positively associated with systolic blood pressure (2.6 mmHg per unit; 95% CI 0.6, 4.6). In conclusion, higher adherence to the current Danish FBDG was associated with a more beneficial cardiometabolic risk profile in a Danish adult population with a minimum of one self-rated risk factor for IHD.
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**

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**Organisations:** Department of Environmental Engineering, Urban Water Systems, Department of Management Engineering, Quantitative Sustainability Assessment  
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Scopus rating (2013): SJR 1.527 SNIP 1.759 CiteScore 3.73  
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Scopus rating (2011): SJR 1.798 SNIP 1.681 CiteScore 3.61  
ISI indexed (2011): ISI indexed yes  
Web of Science (2011): Indexed yes  
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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  
Web of Science (2008): Indexed yes  
Scopus rating (2007): SJR 1.407 SNIP 1.491  
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A Stochastic Market Design With Revenue Adequacy and Cost Recovery by Scenario: Benefits and Costs

Two desirable properties of electricity market mechanisms include: i) revenue adequacy for the market, and ii) cost recovery for all generators. Previously proposed stochastic market-clearing mechanisms satisfy both properties in expectation only, or satisfy one property by scenario and another in expectation. Consequently, market parties may perceive significant risks from market participation, and therefore be discouraged from making offers or perhaps even investing. We develop a stochastic two-stage market-clearing model including day-ahead and real-time settlements with an energy-only pricing scheme that ensures both properties by scenario. However, this approach is cost-inefficient in general and may sacrifice other desirable market attributes. Undesirable consequences include: one group of participants will have to pay more to ensure that all other participants have their costs covered, and thus their prices will not be equilibrium supporting; and day-ahead and real-time prices are not arbitraged in expectation, although this can be fixed by allowing virtual bidders to arbitrage but at the potential cost of increased market inefficiency. Considering these pros and cons, we propose our model as an appropriate tool for market analysis, and not for clearing actual markets. Numerical results from case studies illustrate the benefits and costs of the proposed stochastic market design.
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.

General information
State: Published
Organisations: Department of Management Engineering, Management Science, Operations Research, University of Auckland
Authors: Lindahl, M. (Intern), Mason, A. (Ekstern), Stidsen, T. J. R. (Intern), Sørensen, M. (Intern)
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Main Research Area: Technical/natural sciences

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Scopus rating (2016): CiteScore 3.83 SJR 2.505 SNIP 2.339
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
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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
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: Published
Organisations: Department of Management Engineering, Management Science, Operations Research, Transport DTU
Authors: Lusby, R. M. (Intern), Larsen, J. (Intern), Bull, S. H. (Intern)
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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
A systematic comparison of on-axis and off-axis transmission Kikuchi diffraction

Abstract The capabilities of the novel on-axis transmission Kikuchi diffraction (TKD) technique were explored in a systematic comparison with conventional off-axis TKD. The effect of experimental parameters on the appearance of on-axis and off-axis Kikuchi patterns was measured and discussed. In contrast to off-axis TKD, on-axis TKD is more sensitive to changes in beam current and beam energy and less sensitive to changes in working distance and detector distance. Moreover, on-axis TKD has a distinct advantage over off-axis TKD due to enhanced pattern intensity, which allows reduction of the beam current or an increase in the acquisition rate. The physical and effective spatial resolution were measured with detector-typical parameters. Even though the spatial resolution of both configurations did not differ significantly under test conditions, on-axis TKD enables measurement over large areas with the determined resolution, whereas off-axis TKD is more sensitive to beam drift. Band detection by the Hough-transform led to indexing of, on average, one additional Kikuchi band when measuring with on-axis TKD compared to off-axis TKD and operated more stable on on-axis patterns.

General information
State: Published
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, Center for Electron Nanoscopy
Authors: Niessen, F. (Intern), Burrows, A. (Intern), Fanta, A. B. D. S. (Intern)
Pages: 158-170
Publication date: 2018
Main Research Area: Technical/natural sciences
A theoretical and experimental benchmark study of core-excited states in nitrogen

vibrational structure of the core-excited states. This makes nitrogen well suited for assessing the accuracy of different electronic structure methods for core excitations. We report high resolution experimental measurements performed at the SOLEIL synchrotron facility. These are compared with theoretical spectra calculated using coupled cluster theory and algebraic diagrammatic construction theory. The coupled cluster singles and doubles with perturbative triples model known as CC3 is shown to accurately reproduce the experimental excitation energies as well as the spacing of the vibrational transitions. The computational results are also shown to be systematically improved within the coupled cluster hierarchy, with the coupled cluster singles, doubles, triples, and quadruples method faithfully reproducing the experimental vibrational structure.

General information
State: Published
Organisations: Department of Chemistry, University of Oslo, Stanford University, Johns Hopkins University, Synchrotron Soleil, Norwegian University of Science and Technology
Authors: Myhre, R. H. (Ekstern), Wolf, T. J. A. (Ekstern), Cheng, L. (Ekstern), Nandi, S. (Ekstern), Coriani, S. (Intern), Gühr, M. (Ekstern), Koch, H. (Ekstern)
Number of pages: 7
Publication date: 2018
Main Research Area: Technical/natural sciences

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  BFI (2016): BFI-level 2
  Scopus rating (2016): CiteScore 2.13 SJR 1.073 SNIP 0.755
  Web of Science (2016): Indexed yes
  BFI (2015): BFI-level 2
  Scopus rating (2015): SJR 0.953 SNIP 0.767 CiteScore 1.98
  Web of Science (2015): Indexed yes
  BFI (2014): BFI-level 2
  Scopus rating (2014): SJR 1.386 SNIP 0.989 CiteScore 2.54
  Web of Science (2014): Indexed yes
  BFI (2013): BFI-level 2
  Scopus rating (2013): SJR 1.532 SNIP 1.17 CiteScore 2.95
  ISI indexed (2013): ISI indexed yes
  Web of Science (2013): Indexed yes
  BFI (2012): BFI-level 2
  Scopus rating (2012): SJR 1.787 SNIP 1.118 CiteScore 2.86
  ISI indexed (2012): ISI indexed yes
  Web of Science (2012): Indexed yes
  BFI (2011): BFI-level 2
  Scopus rating (2011): SJR 1.805 SNIP 1.207 CiteScore 3.07
  ISI indexed (2011): ISI indexed yes
  Web of Science (2011): Indexed yes
A three-dimensional coupled thermo-hydro-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.
Automatic, ECG-based detection of autonomic arousals and their association with cortical arousals, leg movements, and respiratory events in sleep

The current definition of sleep arousals neglects to address the diversity of arousals and their systemic cohesion. Autonomic arousals (AA) are autonomic activations often associated with cortical arousals (CA), but they may also occur in isolation in relation to a respiratory event, a leg movement event or spontaneously, without any other physiological associations. AA should be acknowledged as essential events to understand and explore the systemic implications of
arousals. We developed an automatic AA detection algorithm based on intelligent feature selection and advanced machine learning using the electrocardiogram. The model was trained and tested with respect to CA systematically scored in 258 (181 training size/77 test size) polysomnographic recordings from the Wisconsin Sleep Cohort. A precision value of 0.72 and a sensitivity of 0.63 were achieved when evaluated with respect to CA. Further analysis indicated that 81% of the non-CA-associated AAs were associated with leg movement (38%) or respiratory (43%) events. The presented algorithm shows good performance when considering that more than 80% of the false positives (FP) found by the detection algorithm appeared in relation to either leg movement or respiratory events. This indicates that most FP constitute autonomic activations that are indistinguishable from those with cortical cohesion. The proposed algorithm provides an automatic system trained in a clinical environment, which can be utilized to analyse the systemic and clinical impacts of arousals.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Biomedical Engineering, Stanford University, University of Wisconsin , Copenhagen University Hospital
Authors: Olsen, M. (Intern), Schneider, L. D. (Ekstern), Cheung, J. (Ekstern), Peppard, P. E. (Ekstern), Jennum, P. J. (Ekstern), Mignot, E. (Ekstern), Sørensen, H. B. D. (Intern)
Number of pages: 40
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Journal: Sleep
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.1 SJR 2.377 SNIP 1.708
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.668 SNIP 1.78 CiteScore 4.29
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.407 SNIP 2.038 CiteScore 4.22
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.597 SNIP 2.198 CiteScore 4.66
ISI indexed (2013): ISI indexed no
Scopus rating (2012): SJR 2.484 SNIP 2.176 CiteScore 4.83
ISI indexed (2012): ISI indexed no
Scopus rating (2011): SJR 2.374 SNIP 2.111 CiteScore 4.86
ISI indexed (2011): ISI indexed no
Scopus rating (2010): SJR 2.656 SNIP 2.197
Scopus rating (2009): SJR 2.504 SNIP 2.167
Scopus rating (2008): SJR 2.193 SNIP 1.789
Scopus rating (2007): SJR 1.982 SNIP 1.673
Scopus rating (2006): SJR 2.12 SNIP 1.747
Scopus rating (2005): SJR 1.613 SNIP 1.612
Scopus rating (2004): SJR 1.364 SNIP 1.81
Scopus rating (2003): SJR 1.108 SNIP 1.434
Scopus rating (2002): SJR 1.191 SNIP 1.424
Scopus rating (2001): SJR 1.275 SNIP 1.514
Scopus rating (2000): SJR 1.278 SNIP 1.711
Scopus rating (1999): SJR 1.155 SNIP 1.716
Original language: English
Autonomic arousals, Heart rate variability, Electrocardiography, Neural networks
DOIs:
10.1093/sleep/zsy006
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, 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
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Source-ID: 2393668039
Publication: Research - peer-review › Book chapter – Annual report year: 2018

Både laks og ørred er vilde med nyt gydestryg

General information

State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Nielsen, J. (Intern), Sivebæk, F. (Intern)
Publication date: 2018

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http://www.fiskepleje.dk/nyheder/2018/02/laks-og-ørred-gyde-paa-samme-stryg?id=7c5cc8f6-ccda-46e6-9361-403ca9b1a3f&utm_source=newsletter&utm_media=mail&utm_campaign=2018_02_09_Nyhedsbrev
Publication: Communication › Internet publication – Annual report year: 2018

Balmorel open source energy system model

As the world progresses towards a cleaner energy future with more variable renewable energy sources, energy system models are required to deal with new challenges. This article describes design, development and applications of the open source energy system model Balmorel, which is a result of a long and fruitful cooperation between public and private institutions within energy system research and analysis. The purpose of the article is to explain the modelling approach, to highlight strengths and challenges of the chosen approach, to create awareness about the possible applications of Balmorel as well as to inspire to new model developments and encourage new users to join the community. Some of the key strengths of the model are the flexible handling of the time and space dimensions and the combination of operation and investment optimisation. Its open source character enables diverse, worldwide applications for exploratory energy scenarios as well as policy analysis as the applications outlined demonstrate. The existing functionality and structural
suitability for extensions make it a useful tool for assessing challenges of the ongoing energy transitions. Numerous model extensions have been developed as different challenges to the energy transition have arisen. One of these includes the option of running the model with unit commitment. To meet new challenges, further development is needed and consequently the article outlines suggestions for future development, such as including transport of local biomass as part of the optimisation and speeding up the model.

**General information**
State: Published
Organisations: Department of Management Engineering, Systems Analysis, Tallinn University of Technology, Norwegian University of Life Sciences, RAM-lose
Authors: Wiese, F. (Intern), Bramstoft, R. (Intern), Koduvere, H. (Ekstern), Pizarro Alonso, A. R. (Intern), Balyk, O. (Intern), Kirkerud, J. G. (Ekstern), Tveten, Å. G. (Ekstern), Bolkesjø, T. F. (Ekstern), Münster, M. (Intern), Ravn, H. V. (Ekstern)
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.9 SJR 0.836 SNIP 0.904
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.374 SNIP 1.103 CiteScore 1.82
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.345 SNIP 0.996 CiteScore 1.85
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.662 SNIP 1.066 CiteScore 1.53
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Electronic versions:
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Source: FindIt
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**General information**
State: Published
Organisations: Department of Chemical and Biochemical Engineering, KT Consortium, Universidad Complutense, Ecole Polytechnique de Montreal, Universidade Técnica de Lisboa, University of Ottawa, Yamaguchi University
Authors: Negro, C. (Ekstern), Garcia-Ochoa, F. (Ekstern), Tanguy, P. (Ekstern), Ferreira, G. (Ekstern), Thibaulte, J. (Ekstern), Yamamoto, S. (Ekstern), Gani, R. (Intern)
Pages: A1-A2
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Chemical Engineering Research and Design
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Web of Science (2018): Indexed yes
Bayesian Integrated Data Analysis of Fast-Ion Measurements by Velocity-Space Tomography

Bayesian integrated data analysis combines measurements from different diagnostics to jointly measure plasma parameters of interest such as temperatures, densities, and drift velocities. Integrated data analysis of fast-ion
measurements has long been hampered by the complexity of the strongly non-Maxwellian fast-ion distribution functions. This has recently been overcome by velocity-space tomography. In this method two-dimensional images of the velocity distribution functions consisting of a few hundreds or thousands of pixels are reconstructed using the available fast-ion measurements. Here we present an overview and current status of this emerging technique at the ASDEX Upgrade tokamak and the JET tokamak based on fast-ion D-alpha spectroscopy, collective Thomson scattering, gamma-ray and neutron emission spectrometry, and neutral particle analyzers. We discuss Tikhonov regularization within the Bayesian framework. The implementation for different types of diagnostics as well as the uncertainties are discussed, and we highlight the importance of integrated data analysis of all available detectors.

**General information**

State: Accepted/In press

**Organisations:** Department of Physics, Plasma Physics and Fusion Energy, University of Milano Bicocca, Max-Planck-Institut fur Plasmaphysik, Upssala University, Rutherford Appleton Laboratory, Culham Science Centre, Aalto University, Consiglio Nazionale delle Ricerche


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**ISSN (Print):** 1536-1055

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Web of Science (2018): Indexed yes

BFI (2017): BFI-level 1

Web of Science (2017): Indexed Yes

BFI (2016): BFI-level 1

Scopus rating (2016): CiteScore 0.57 SJR 0.397 SNIP 0.677

BFI (2015): BFI-level 1

Scopus rating (2015): SJR 0.444 SNIP 0.828 CiteScore 0.65

Web of Science (2015): Indexed yes

BFI (2014): BFI-level 1

Scopus rating (2014): SJR 0.376 SNIP 0.579 CiteScore 0.46

BFI (2013): BFI-level 1

Scopus rating (2013): SJR 0.379 SNIP 0.582 CiteScore 0.56

ISI indexed (2013): ISI indexed yes

BFI (2012): BFI-level 1

Scopus rating (2012): SJR 0.461 SNIP 0.658 CiteScore 0.54

ISI indexed (2012): ISI indexed yes

BFI (2011): BFI-level 1

Scopus rating (2011): SJR 0.612 SNIP 1.161 CiteScore 0.93

ISI indexed (2011): ISI indexed yes

Web of Science (2011): Indexed yes

BFI (2010): BFI-level 1

Scopus rating (2010): SJR 0.366 SNIP 0.543

BFI (2009): BFI-level 1

Scopus rating (2009): SJR 0.589 SNIP 0.861

BFI (2008): BFI-level 1

Scopus rating (2008): SJR 0.578 SNIP 0.76

Web of Science (2008): Indexed yes

Scopus rating (2007): SJR 0.695 SNIP 0.942

Web of Science (2007): Indexed yes

Scopus rating (2006): SJR 0.497 SNIP 0.756
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

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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 5.6 SJR 1.151 SNIP 3.383
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.171 SNIP 3.343 CiteScore 4.79
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.088 SNIP 3.196 CiteScore 4.45
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.929 SNIP 2.963 CiteScore 3.58
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.081 SNIP 3.173 CiteScore 3.87
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.918 SNIP 2.778 CiteScore 3.57
ISI indexed (2011): ISI 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.

General information

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Organisations: Department of Management Engineering, Management Science, Operations Research, Department of Applied Mathematics and Computer Science, MaCom A/S
Authors: Bagger, N. F. (Intern), Sørensen, M. (Ekstern), Stidsen, T. R. (Intern)
Pages: 178-189
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information

Journal: Computers & Operations Research
Volume: 91
ISSN (Print): 0305-0548
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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Web of Science (2017): Indexed Yes
Benefits of spatiotemporal modeling for short-term wind power forecasting at both individual and aggregated levels

The share of wind energy in total installed power capacity has grown rapidly in recent years. Producing accurate and reliable forecasts of wind power production, together with a quantification of the uncertainty, is essential to optimally integrate wind energy into power systems. We build spatiotemporal models for wind power generation and obtain full probabilistic forecasts from 15 min to 5 h ahead. Detailed analyses of forecast performances on individual wind farms and aggregated wind power are provided. The predictions from our models are evaluated on a data set from wind farms in western Denmark using a sliding window approach, for which estimation is performed using only the last available measurements. The case study shows that it is important to have a spatiotemporal model instead of a temporal one to achieve calibrated aggregated forecasts. Furthermore, spatiotemporal models have the advantage of being able to...
produce spatially out-of-sample forecasts. We use a Bayesian hierarchical framework to obtain fast and accurate forecasts of wind power generation not only at wind farms where recent data are available but also at a larger portfolio including wind farms without recent observations of power production. The results and the methodologies are relevant for wind power forecasts across the globe and for spatiotemporal modeling in general.

**General information**
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Department of Electrical Engineering, Center for Electric Power and Energy, Electricity markets and energy analytics, Norwegian University of Science and Technology
Authors: Lenzi, A. (Intern), Steinsland, I. (Ekstern), Pinson, P. (Intern)
Number of pages: 17
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Environmetrics
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BFI (2018): BFI-level 1
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BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.59 SJR 0.944 SNIP 1.045
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.014 SNIP 0.892 CiteScore 1.48
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.061 SNIP 1.178 CiteScore 1.64
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.073 SNIP 1.228 CiteScore 1.65
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.563 SNIP 0.897 CiteScore 1.12
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Web of Science (2012): Indexed yes
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Scopus rating (2011): SJR 0.537 SNIP 1.015 CiteScore 1.3
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.684 SNIP 0.811
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.467 SNIP 0.912
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.625 SNIP 0.888
Scopus rating (2007): SJR 0.586 SNIP 0.849
Scopus rating (2006): SJR 0.567 SNIP 0.749
Scopus rating (2005): SJR 0.425 SNIP 0.731
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.494 SNIP 0.708
Scopus rating (2003): SJR 0.41 SNIP 0.757
Scopus rating (2002): SJR 0.5 SNIP 0.896
Scopus rating (2001): SJR 0.373 SNIP 0.362
Web of Science (2001): Indexed yes
Benefits of spatio-temporal modelling for short term wind power forecasting at both individual and aggregated levels

The share of wind energy in total installed power capacity has grown rapidly in recent years. Producing accurate and reliable forecasts of wind power production, together with a quantification of the uncertainty, is essential to optimally integrate wind energy into power systems. We build spatio-temporal models for wind power generation and obtain full probabilistic forecasts from 15 minutes to 5 hours ahead. Detailed analysis of the forecast performances on the individual wind farms and aggregated wind power are provided. The predictions from our models are evaluated on a data set from wind farms in western Denmark using a sliding window approach, for which estimation is performed using only the last available measurements. The case study shows that it is important to have a spatio-temporal model instead of a temporal one to achieve calibrated aggregated forecasts. Furthermore, spatio-temporal models have the advantage of being able to produce spatially out-of-sample forecasts. We use a Bayesian hierarchical framework to obtain fast and accurate forecasts of wind power generation at wind farms where recent data are available, but also at a larger portfolio including wind farms without recent observations of power production. The results and the methodologies are relevant for wind power forecasts across the globe as well as for spatial-temporal modelling in general.
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:* Published  
*Organisations:* Department of Management Engineering, Technology and Innovation Management, Copenhagen Business School  
*Authors:* Murdock, K. (Intern), Varnes, C. J. (Forskerdatabase)  
*Pages:* 256-272
Bi-functional glycosyltransferases catalyze both extension and termination of pectic galactan oligosaccharides

Pectins are the most complex polysaccharides of the plant cell wall. Based on the number of methylations, acetylations, and glycosidic linkages present in their structures, it is estimated that up to 67 transferase activities are involved in pectin biosynthesis. Pectic galactans constitute a major part of pectin in the form of side chains of rhamnogalacturonan-I. In Arabidopsis, Galactan Synthase 1 (GALS1) catalyzes the addition of galactose units from UDP-Gal to growing β-1,4-galactan chains. However, the mechanisms for obtaining varying degrees of polymerization remain poorly understood. In this study, we show that AtGALS1 is bifunctional, catalyzing both the transfer of galactose from UDP-α-d-Gal and the transfer of an arabinopyranose from UDP-β-l-Arap to galactan chains. The two substrates share a similar structure, but UDP-α-d-Gal is the preferred substrate, with a tenfold higher affinity. Transfer of Ara_ to galactan prevents further addition of galactose residues, resulting in a lower degree of polymerization. We show that this dual activity occurs both in vitro and in vivo. The herein described bi-functionality of AtGALS1 may suggest that plants can produce the incredible structural diversity of polysaccharides without a dedicated glycosyltransferase for each glycosidic linkage. This article is protected by copyright. All rights reserved.
Biochemical mechanisms determine the functional compatibility of heterologous genes

Elucidating the factors governing the functional compatibility of horizontally transferred genes is important to understand bacterial evolution, including the emergence and spread of antibiotic resistance, and to successfully engineer biological systems. In silico efforts and work using single-gene libraries have suggested that sequence composition is a strong barrier for the successful integration of heterologous genes. Here we sample 200 diverse genes, representing >80% of...
sequenced antibiotic resistance genes, to interrogate the factors governing genetic compatibility in new hosts. In contrast to previous work, we find that GC content, codon usage, and mRNA-folding energy are of minor importance for the compatibility of mechanistically diverse gene products at moderate expression. Instead, we identify the phylogenetic origin, and the dependence of a resistance mechanism on host physiology, as major factors governing the functionality and fitness of antibiotic resistance genes. These findings emphasize the importance of biochemical mechanism for heterologous gene compatibility, and suggest physiological constraints as a pivotal feature orienting the evolution of antibiotic resistance.

General information
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Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Synthetic Biology, Research Groups, Department of Biotechnology and Biomedicine, Technical University of Denmark
Authors: Porse, A. (Intern), Schou, T. S. (Ekstern), Munck, C. (Intern), Ellabaan, M. M. H. (Intern), Sommer, M. O. A. (Intern)
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Web of Science (2016): Indexed yes
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Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
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Web of Science (2014): Indexed yes
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Scopus rating (2013): SJR 5.967 SNIP 2.776 CiteScore 9.85
ISI indexed (2013): ISI indexed yes
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Scopus rating (2012): SJR 5.586 SNIP 2.724 CiteScore 8.32
ISI indexed (2012): ISI indexed yes
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ISI indexed (2011): ISI indexed no
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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.

General Information
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Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, Poznan University of Technology, Polish Academy of Sciences, Poznan University Of Life Sciences, Helmholtz Centre for Environmental Research
Authors: Sydow, M. (Ekstern), Owsianiak, M. (Intern), Framski, G. (Ekstern), Woźniak-Karczewska, M. (Ekstern), Piotrowska-Cyplik, A. (Ekstern), Ławniczak, Ł. (Ekstern), Szulc, A. (Ekstern), Zgoła-Grześkowiak, A. (Ekstern), Heipieper, H. J. (Ekstern), Chrzanowski, Ł. (Ekstern)
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Scopus rating (2016): CiteScore 3.99 SJR 1.205 SNIP 1.484
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BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.208 SNIP 1.419 CiteScore 3.46
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.114 SNIP 1.418 CiteScore 2.96
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.135 SNIP 1.316 CiteScore 2.8
ISI indexed (2013): ISI indexed yes
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Scopus rating (2012): SJR 1.063 SNIP 1.377 CiteScore 2.6
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.137 SNIP 1.21 CiteScore 2.71
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.278 SNIP 1.32
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.338 SNIP 1.399
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.289 SNIP 1.499
Web of Science (2008): Indexed yes
Bio-Electro-Fenton process for the degradation of Non-Steroidal Anti-Inflammatory Drugs in wastewater

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) are ubiquitous municipal wastewater pollutants of which several are resistant to degradation in conventional wastewater treatment, and represent a major environmental health concern worldwide. An alternative treatment, the bio-electro-Fenton process, has received increasing attention in past years. In this process the strong oxidant •HO is formed using the electrons derived from bacterial oxidation of organic substrate. In this work, a laboratory scale microbial electrolysis cell based bio-electro-Fenton process was developed for the treatment of four different NSAIDs. The system was demonstrated to remove low concentration NSAIDs from water and wastewater and all tested parameters (cathode pH, cathode air-flow, cathode Fe2+ concentration, applied voltage, NSAIDs concentration and reaction time) were found to affect the apparent first order rate constant and removal efficiency for NSAIDs. Optimum parameter values were found to be pH = 2, Fe+2 = 7.5 mM, air-flow = 8 mL min-1, applied voltage = 0.3 V; the apparent rate constant was higher for higher NSAIDs initial concentration. For reaction times of 5 hours removal efficiencies were 59%-61% for Ketoprofen, 87%-97% for Diclofenac, 80%-86% for Ibuprofen and 75%-81% for Naproxen. Prolonged reaction times lead to substantial increase in removal efficiencies for Ketoprofen and Naproxen. Finally results obtained with real wastewater show lower removal rate constants than with distilled water matrices suggesting interference from wastewater components in the NSAIDs oxidation process. The results offer insight into future developments of an efficient platform for wastewater treatment technology targeting micropollutants.
Bioenergetics modeling of the annual consumption of zooplankton by pelagic fish feeding in the Northeast Atlantic

The present study uses bioenergetics modeling to estimate the annual consumption of the main zooplankton groups by the most commercially important planktivorous fish stocks in the Northeast Atlantic, namely Norwegian spring-spawning (NSS) herring (Clupea harengus), blue whiting (Micromesistius poutassou) and NEA mackerel (Scomber scombrus). The data was obtained from scientific surveys in the main feeding area (Norwegian Sea) in the period 2005–2010. By incorporating novel information about ambient temperature, seasonal growth and changes in the diet from stomach content analyses, annual consumption of the different zooplankton groups by pelagic fish is estimated. The present study estimates higher consumption estimates than previous studies for the three species and suggests that fish might have a greater impact on the zooplankton community as foragers. This way, NEA mackerel, showing the highest daily consumption rates, and NSS herring, annually consume around 10 times their total biomass, whereas blue whiting consume about 6 times their biomass. For NSS herring and NEA mackerel the main prey groups are calanoids and appendicularians, showing a peak in consumption during June and June–July, respectively, and suggesting high potential for inter-specific feeding competition between these species. In contrast, blue whiting maintain a low consumption rate from April to September, consuming mainly larger euphausiids. Our results suggest that the three species can coexist regardless of their high abundance, zooplankton consumption rates and overlapping diet. Accordingly, the species might have niche segregation, as they are species specific, showing annual and inter-annual variability in total consumption of the different prey species. These estimates and their inter-annual and interspecific variation are fundamental for understanding fundamental pelagic predator-prey interactions as well as to inform advanced multispecies ecosystem models.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic, Institute of Marine Research, Greenland Institute of Natural Resources
Authors: Bachiller, E. (Ekstern), Utne, K. R. (Ekstern), Jansen, T. (Intern), Huse, G. (Ekstern)
Biogas upgrading and utilization: Current status and perspectives

Biogas production is an established sustainable process for simultaneous generation of renewable energy and treatment of organic wastes. The increasing interest of utilizing biogas as substitute to natural gas or its exploitation as transport fuel opened new avenues in the development of biogas upgrading techniques. The present work is a critical review that summarizes state-of-the-art technologies for biogas upgrading and enhancement with particular attention to the emerging biological methanation processes. The review includes comprehensive description of the main principles of various biogas upgrading methodologies, scientific and technical outcomes related to their biomethanation efficiency, challenges that have to be addressed for further development and incentives and feasibility of the upgrading concepts.

General information
State: Accepted/In press
Organisations: Department of Environmental Engineering, Residual Resource Engineering, University of Padua, Fudan University, University of Southern Denmark
Authors: Angelidaki, I. (Intern), Treu, L. (Intern), Tsapekos, P. (Intern), Luo, G. (Ekstern), Campanaro, S. (Ekstern), Wenzel, H. (Ekstern), Kougias, P. (Intern)
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Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.919 SNIP 3.432 CiteScore 10.56
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.922 SNIP 3.757 CiteScore 10.24
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.936 SNIP 4.028 CiteScore 10.71
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.552 SNIP 5.178 CiteScore 11.65
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BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.126 SNIP 4.726 CiteScore 10.75
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
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Scopus rating (2010): SJR 2.928 SNIP 3.953
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.248 SNIP 3.162
Scopus rating (2006): SJR 1.727 SNIP 3.036
Scopus rating (2005): SJR 1.607 SNIP 2.949
Web of Science (2005): Indexed yes
Biosynthesis of bioactive diterpenoids in the medicinal plant Vitex agnus-castus

Vitex agnus-castus L. (Lamiaceae) is a medicinal plant historically used throughout the Mediterranean region to treat menstrual cycle disorders and is still used today as a clinically effective treatment for premenstrual syndrome. The pharmaceutical activity of the plant extract is linked to its ability to lower prolactin levels. This feature has been attributed to the presence of dopaminergic diterpenoids that can bind to dopamine receptors in the pituitary gland. Phytochemical analyses of V. agnus-castus show that it contains an enormous array of structurally related diterpenoids and, as such holds potential as a rich source of new dopaminergic drugs. The present work investigated the localisation and biosynthesis of diterpenoids in V. agnus-castus. With the assistance of matrix assisted laser desorption ionization-mass spectrometry imaging (MALDI-MSI), diterpenoids were localised to trichomes on the surface of fruit and leaves. Analysis of a trichome-specific transcriptome database, coupled with expression studies, identified seven candidate genes involved in diterpenoid biosynthesis: three class II diterpene synthases (diTPSs), three class I diTPSs, and a cytochrome P450 (CYP). Combinatorial assays of the diTPSs resulted in the formation of a range of different diterpenes that can account for several of the backbones of bioactive diterpenoids observed in V. agnus-castus. The identified CYP, VacCYP76BK1, was found to catalyse 16-hydroxylation of the diol-diterpene, peregrinol, to labd-13Z-ene-9,15,16-triol when expressed in Saccharomyces cerevisiae. Notably, this product is a potential intermediate in the biosynthetic pathway towards bioactive furan and lactone containing diterpenoids that are present in this species.

General information
State: Accepted/In press
Organisations: Department of Bio and Health Informatics, Metagenomics, University of Copenhagen, University of Melbourne, Evolva Biotech A/S
Authors: Heskes, A. M. (Ekstern), Sundram, T. C. M. (Ekstern), Boughton, B. A. (Ekstern), Jensen, N. B. (Ekstern), Hansen, N. L. (Ekstern), Crocoll, C. (Ekstern), Cozzi, F. (Ekstern), Rasmussen, S. (Intern), Hamberger, B. (Ekstern), Hamberger, B. (Ekstern), Stærk, D. (Ekstern), Møller, B. L. (Ekstern), Pateraki, I. (Ekstern)
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Scopus rating (2016): CiteScore 5.93 SJR 3.351 SNIP 1.508
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Scopus rating (2015): SJR 3.379 SNIP 1.477 CiteScore 5.94
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.858 SNIP 1.666 CiteScore 6.42
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 4.362 SNIP 1.831 CiteScore 7.45
ISI indexed (2013): ISI indexed yes
Bladder wall biomechanics: A comprehensive study on fresh porcine urinary bladder

Regenerative medicine for reconstructive urogenital surgery has been widely studied during the last two decades. One of the key factors affecting the quality of bladder regeneration is the mechanical properties of the bladder scaffold. Insight into the biomechanics of this organ is expected to assist researchers with functional regeneration of the bladder wall. Due to extensive similarities between human bladder and porcine bladder, and with regard to lack of comprehensive biomechanical data from the porcine bladder wall (BW), our main goal here was to provide a thorough evaluation on viscoelastic properties of fresh porcine urinary BW. Three testing modes including Uniaxial tensile, Ball-burst (BB) and Dynamic Mechanical Analyses (DMA) were applied in parallel. Uniaxial tests were applied to study how different circumferential and longitudinal cut-outs of lateral region of BW behave under load. DMA was used to measure the viscoelastic properties of the bladder tissue (storage and loss modulus) tested in a frequency range of 0.1 to 3 Hz. BB was selected as a different technique replicating normal physiological conditions where the BW is studied in whole. According to uniaxial tests, the anisotropic behavior of bladder was evident at strain loads higher than 200%. According to DMA, storage modulus was found to be consistently higher than loss modulus in both directions, revealing the elasticity of the BW. The stress-strain curves of both uniaxial and BB tests showed similar trends. However, the ultimate stress measured from BB was found to be around 5 times of the relevant stress from uniaxial loading. The ultimate strain in BB (389.9 ± 59.8) was interestingly an approximate average of longitudinal (358 ± 21) and circumferential (435 ± 69) rupture strains. Considering that each testing mode applied here reveals distinct information, outcomes from the combination of the three can be considered as a helpful data-base to refer to for researchers aiming to regenerate the bladder.
Blockchain technology offers a sizable promise to rethink the way inter-organizational business processes are managed because of its potential to realize execution without a central party serving as a single point of trust (and failure). To stimulate research on this promise and the limits thereof, in this paper we outline the challenges and opportunities of blockchain for Business Process Management (BPM). We first reflect how blockchains could be used in the context of the established BPM lifecycle and second how they might become relevant beyond. We conclude our discourse with a summary of seven research directions for investigating the application of blockchain technology in the context of BPM.

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Organisations: Department of Applied Mathematics and Computer Science, Software Engineering, Vienna University of Economics and Business, University of New South Wales, Eindhoven University of Technology, University of Liechtenstein, Politecnico di Milano, IT University of Copenhagen, University of Tartu, Technische Universität Wien,
Breakdown of Kasha’s Rule in a Ubiquitous, Naturally Occurring, Wide Bandgap Aluminosilicate (Feldspar)

Excitation-energy-dependent emission (EDE) is well known from photoluminescence (PL) studies of polar solvents and carbon-based nanostructures. In polar solvents, this effect known as the ‘red edge effect’ (REE) is understood to arise from solute-solvent interactions, whereas, in case of carbon-based nanostructures, the origin is highly debated. Understanding this effect has important bearings on the potential applications of these materials. EDE has never been reported from large crystalline materials, except very recently by our group. Here, we make detailed investigations to understand the universality and the mechanism behind the EDE in a wide band gap aluminosilicate (feldspar), which comprises more than half of the Earth’s crust, and is widely used in geophotonics (e.g., optical dating). We observe EDE up to 150 nm at room temperature in our samples, which is unprecedented in rigid macroscopic structures. Based on PL investigations at 295 K and 7 K, we present a novel model that is based on photoionisation of a deep lying defect and subsequent transport/relaxation of free electrons in the sub-conduction band tail states. Our model has important implications for potential photonic applications using feldspar, measurement of band tail width in wide bandgap materials, and understanding the EDE effect in other materials.
Breaking resilience for a sustainable future: Thoughts for the Anthropocene

Strong resilience of a system usually enables the protection of a status quo. Most resilience studies assume that resilience-building is the central objective of sustainability work. Even though transformation has become a central theme in development and social-ecological debates, questions surrounding the weakening resilience of undesired system states are rarely analyzed. We suggest that resilience studies not only serve to protect systems and feedbacks we want to maintain, but may also help to understand and overcome chronic, undesirable,—and thus wicked—resilience. This contribution focuses on reef fisheries in the Spermonde Island Archipelago in Indonesia, based on social and ecological studies between 2004 and 2016. We identify a number of interlocking wickedly resilient vicious cycles as predominant drivers of the impoverishment of fishing households and the overexploited, polluted and degraded state of the coral reefs that fishers’ livelihoods depend on. We argue that, more often than not in the Anthropocene, breaking resilience has a central role in the pursuit of sustainable human-nature relations. Therefore, the link between the resilience and the transformation debates needs to be made more explicitly. Breaking interlocking, wicked resilience at multiple levels is needed to move toward sustainable human-nature relations from the local to the global level. There are lacunae in debate, literature, and research practice as to when, where and how wicked resilience might need to be weakened. A more complete resilience lens is particularly needed under Anthropocene conditions to support the unmaking of chronically resilient, anthropogenic systems.
Bulk and surface morphologies of ABC miktoarm star terpolymers comprised of PDMS, PI and PMMA arms

DIM miktoarm star copolymers, composed of polydimethylsiloxane [D], poly(1,4-isoprene) [I], and poly(methyl methacrylate) [M], were synthesized using a newly developed linking methodology with 4-allyl-1,1-diphenylethylene as a linking agent. The equilibrium bulk morphologies of the DIM stars were found to range from [6.6.6] tiling patterns to alternating lamellar and alternating cylindrical morphologies, as determined experimentally by small-angle X-ray scattering and transmission electron microscopy and confirmed by dissipative particle dynamics and self-consistent field theory based arguments. The thin film morphologies, which differ from those found in the bulk, were identified by scanning electron microscopy, coupled with oxygen plasma etching. Square arrays of the PDMS nanodots and empty core cylinders were formed on silica after oxygen plasma removal of the poly(1,4-isoprene) and poly(methyl methacrylate) which generated nanostructured substrates decorated with these features readily observable.
Caching at the Mobile Edge: a Practical Implementation

Thanks to recent advances in mobile networks, it is becoming increasingly popular to access heterogeneous content from mobile terminals. There are, however, unique challenges in mobile networks that affect the perceived quality of experience (QoE) at the user end. One such challenge is the higher latency that users typically experience in mobile networks compared to wired ones. Cloud-based radio access networks with content caches at the base stations are seen as a key contributor in reducing the latency required to access content and thus improve the QoE at the mobile user terminal. In this paper, a prototype implementation of a mobile edge cache system is presented. The proposal focuses on compliance with existing LTE deployment and content-location solutions. The prototype is designed to perform assessment tests and evaluation of caching solutions. Results are then shown for the QoE improvements for the mobile user obtained by caching content at the base stations. This is quantified with a comparison to non-cached content by means of ping tests (10–11% shorter times), a higher response rate for web traffic (1.73–3.6 times higher), and an improvement in the jitter (6% reduction).

General information
An X-ray-gamma coincidence measurement method for efficiency calibration of a HPGe–HPGe system, using the methodology for activity standardisation of $^{125}$I, has been developed. By taking one list-mode time-stamped measurement of the $^{125}$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 $^{125}$I and fine adjustments of a Monte Carlo model of the coincidence system.
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Web of Science (2015): Indexed yes
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Scopus rating (2014): SJR 0.852 SNIP 1.303 CiteScore 1.24
Web of Science (2014): Indexed yes
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Scopus rating (2013): SJR 0.944 SNIP 1.398 CiteScore 1.48
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Scopus rating (2012): SJR 0.806 SNIP 1.071 CiteScore 1.19
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.918 SNIP 1.424 CiteScore 1.29
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.893 SNIP 1.113
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.75 SNIP 1.386
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.753 SNIP 1.073
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.716 SNIP 1.383
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.818 SNIP 1.108
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.819 SNIP 1.156
Scopus rating (2004): SJR 0.844 SNIP 1.489
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.673 SNIP 1.226
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.628 SNIP 1.108
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.688 SNIP 1.104
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.594 SNIP 0.974
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.754 SNIP 1.006

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Source: FindIt
Source-ID: 2393242610
Publication: Research - peer-review › Journal article – Annual report year: 2018
Can a Clean-Air Heat Pump (CAHP) maintain air purification capability when using polluted air for regeneration?

Clean Air Heat Pump (CAHP) was one type of rotary desiccant cooling system which combined a silica gel rotor with a heat pump to achieve air cleaning, dehumidifying and cooling in buildings. Using exhaust air from the conditioned room for regeneration of the silica gel rotor might have an advantage on reducing the regeneration air temperature and further improving the energy performance of the CAHP. However, the exhaust air carried a lot of indoor air pollutants. Whether using exhaust air for the regeneration of the silica gel rotor had an impact on the air cleaning performance of the CAHP was experimentally studied. The results showed that using the air contained acetone or toluene for regeneration reduced the pollutants removal capability of CAHP with a reduction of approx. 10% in air cleaning efficiency. The energy performance of the CAHP when using exhaust air for regeneration was also evaluated compared with the CAHP with outdoor air for regeneration by means of numerical simulation. The simulated results showed that the energy saving of the CAHP was obvious when using exhaust air for regeneration, regardless of the degradation of indoor air quality. If the same indoor air quality level as that when using outdoor air for regeneration was expected to be maintained, increasing the intake of outdoor air was one possible way but would increase the energy consumption. The increased energy counteracted the reduced energy of using exhaust air for regeneration, and consequently the energy of CAHP was not saved.

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)
Pages: 170-179
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Building and Environment
Volume: 128
ISSN (Print): 0360-1323
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
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
State: Published
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, Aarhus University
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Pages: 127-143
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Science of the Total Environment
Volume: 619-620
ISSN (Print): 0048-9697
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
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Journal: Biomass & Bioenergy
Volume: 108
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Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.793 SNIP 2.283 CiteScore 4.74
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.931 SNIP 2.254
Web of Science (2010): 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.
CD11c-targeted Delivery of DNA to Dendritic Cells Leads to cGAS- and STING-dependent Maturation

Immunotherapeutic activation of tumor-specific T cells has proven to be an interesting approach in anticancer treatment. Particularly, anti-CTLA-4 and anti-PD-1/PD-L1 treatment looks promising, and conceivably, even better clinical results
might be obtained if such treatment could be combined with boosting the existing tumor-specific T-cell response. One way to achieve this could be by increasing the level of maturation of dendritic cells locally and in the draining lymph nodes. When exposed to cancer cells, dendritic cells may spontaneously mature because of danger-associated molecular patterns derived from the tumor cells. Double-stranded DNA play a particularly important role in the activation of the dendritic cells, through engagement of intracellular DNA sensors, and signaling through the adaptor protein STING. In the present study, we have investigated the maturational response of human monocyte-derived dendritic cells (moDC) and human monocytic THP-1 cells to targeted and untargeted DNA. We used an anti-CD11c antibody conjugated with double-stranded DNA to analyze the maturation status of human moDCs, as well as maturation using a cGAS KO and STING KO THP-1 cell maturation model. We found that dendritic cells can mature after exposure to cytoplasmic double-stranded DNA delivered through CD11c-mediated endocytosis. Moreover, we show that THP-1 cells matured using IL-4, GM-CSF, and ionomycin upregulate DC-maturation markers after CD11c-targeted delivery of double-stranded DNA. This upregulation is completely abrogated in cGAS KO and STING KO cells.
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
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Journal: Journal of Food Engineering
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Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
Changes in Greenland’s peripheral glaciers linked to the North Atlantic Oscillation

Glaciers and ice caps peripheral to the main Greenland Ice Sheet contribute markedly to sea-level rise1,2,3. Their changes and variability, however, have been difficult to quantify on multi-decadal timescales due to an absence of long-term data4. Here, using historical aerial surveys, expedition photographs, spy satellite imagery and new remote-sensing products, we map glacier length fluctuations of approximately 350 peripheral glaciers and ice caps in East and West Greenland since 1890. Peripheral glaciers are found to have recently undergone a widespread and significant retreat at rates of 12.2 m per year and 16.6 m per year in East and West Greenland, respectively; these changes are exceeded in severity only by the early twentieth century post-Little-Ice-Age retreat. Regional changes in ice volume, as reflected by glacier length, are further shown to be related to changes in precipitation associated with the North Atlantic Oscillation (NAO), with a distinct east–west asymmetry; positive phases of the NAO increase accumulation, and thereby glacier growth, in the eastern periphery, whereas opposite effects are observed in the western periphery. Thus, with projected trends towards positive NAO in the future5,6, eastern peripheral glaciers may remain relatively stable, while western peripheral glaciers will continue to diminish.

General information

State: Accepted/In press

Organisations: National Space Institute, Geodesy, Aarhus University, Københavns Universitet, Geological Survey of Denmark and Greenland, Danish Meteorological Institute, University of Zurich, University of California at Irvine

Authors: Bjørk, A. A. (Ekstern), Aagaard, S. (Ekstern), Lütt, A. (Ekstern), Khan, S. A. (Intern), Box, J. (Ekstern), Kjeldsen, K. K. (Intern), Larsen, N. K. (Ekstern), Korsgaard, N. J. (Ekstern), Cappelen, J. (Ekstern), Colgan, W. (Ekstern), Machguth, H. (Ekstern), Andresen, C. S. (Ekstern), Peings, Y. (Ekstern), Kjær, K. H. (Ekstern)

Number of pages: 6
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information

Journal: Nature Climate Change
Characterization and reactivity of soot from fast pyrolysis of lignocellulosic compounds and monolignols

This study presents the effect of lignocellulosic compounds and monolignols on the yield, nanostructure and reactivity of soot generated at 1250 °C in a drop tube furnace. The structure of soot was characterized by electron microscopy techniques, Raman spectroscopy and electron spin resonance spectroscopy. The CO2 reactivity of soot was investigated by thermogravimetric analysis. Soot from cellulose was more reactive than soot produced from extractives, lignin and monolignols. Soot reactivity was correlated with the separation distances between adjacent graphene layers, as measured using transmission electron microscopy. Particle size, free radical concentration, differences in a degree of curvature and multi-core structures influenced the soot reactivity less than the interlayer separation distances. Soot yield was correlated with the lignin content of the feedstock. The selection of the extraction solvent had a strong influence on the soot reactivity. The Soxhlet extraction of softwood and wheat straw lignin soot using methanol decreased the soot reactivity, whereas acetone extraction had only a modest effect.

General information
State: Published
Organizations: Center for Electron Nanoscopy, Lulea University of Technology, Umea University, Worcester Polytechnic Institute, University of Copenhagen
Authors: Trubetskaya, A. (Ekstern), Brown, A. (Ekstern), Tompsett, G. (Ekstern), T. Timko, M. (Ekstern), Kling, J. (Intern), Broström, M. (Ekstern), Andersen, M. L. (Ekstern), Umeki, K. (Ekstern)
Pages: 1489-1500
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Applied Energy
Volume: 212
ISSN (Print): 0306-2619
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
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Publication date: 2018
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Publication information
Journal: Ultramicroscopy
Volume: 184
ISSN (Print): 0304-3991
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.121 SNIP 1.428 CiteScore 2.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.638 SNIP 1.661 CiteScore 2.59
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.777 SNIP 1.337 CiteScore 2.66
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.867 SNIP 1.595 CiteScore 2.31
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.624 SNIP 1.338 CiteScore 2.35
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.712 SNIP 1.236
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.763 SNIP 1.552
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.604 SNIP 1.728
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.372 SNIP 1.036
Chemical Approach to Biological Safety: Molecular-Level Control of an Integrated Zinc Finger Nuclease

Application of artificial nucleases (ANs) in genome editing is still hindered by their cytotoxicity related to off-target cleavages. This problem can be targeted by regulation of the nuclease domain. Here, we provide an experimental survey of computationally designed integrated zinc finger nucleases, constructed by linking the inactivated catalytic centre and the allosteric activator sequence of the colicin E7 nuclease domain to the two opposite termini of a zinc finger array. DNA specificity and metal binding were confirmed by electrophoretic mobility shift assays, synchrotron radiation circular dichroism spectroscopy, and nano-electrospray ionisation mass spectrometry. In situ intramolecular activation of the nuclease domain was observed, resulting in specific cleavage of DNA with moderate activity. This study represents a new approach to AN design through integrated nucleases consisting of three (regulator, DNA-binding, and nuclease) units, rather than simple chimera. The optimisation of such ANs could lead to safe gene editing enzymes.

General Information
State: Published
Organisations: Department of Chemistry, Metalloprotein Chemistry and Engineering, Organic Chemistry, University of Tsukuba, University of Szeged, University of Natural Resources and Life Sciences, MTA-SZTE Bioinorganic Chemistry Research Group
Pages: 66-75
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication Information
Journal: Chembiochem
Volume: 19
Issue number: 1
ISSN (Print): 1439-4227
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.64 SJR 1.242 SNIP 0.733
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.255 SNIP 0.748 CiteScore 2.77
Escherichia coli can cause a variety of extra-intestinal infections, such as urinary tract infection, meningitis, peritonitis and septicemia…..

**General information**

State: Accepted/In press

Organisations: Department of Bio and Health Informatics, Genomic Epidemiology, Research Group for Genomic Epidemiology, Statens Serum Institute, University of Washington

Authors: Roer, L. (Ekstern), Johannesen, T. B. (Ekstern), Hansen, F. (Ekstern), Stegger, M. (Ekstern), Tchesnokova, V. (Ekstern), Sokurenko, E. (Ekstern), Garibay, N. (Ekstern), Allesøe, R. L. (Intern), Thomsen, M. C. F. (Intern), Lund, O. (Intern), Hasman, H. (Ekstern), Hammerum, A. M. (Ekstern)

Number of pages: 7

Publication date: 2018

Main Research Area: Technical/natural sciences

**Publication information**
ClusterCAD: a computational platform for type I modular polyketide synthase design

ClusterCAD is a web-based toolkit designed to leverage the collinear structure and deterministic logic of type I modular polyketide synthases (PKSs) for synthetic biology applications. The unique organization of these megasynthases, combined with the diversity of their catalytic domain building blocks, has fueled an interest in harnessing the biosynthetic potential of PKSs for the microbial production of both novel natural product analogs and industrially relevant small molecules. However, a limited theoretical understanding of the determinants of PKS fold and function poses a substantial barrier to the design of active variants, and identifying strategies to reliably construct functional PKS chimeras remains an active area of research. In this work, we formalize a paradigm for the design of PKS chimeras and introduce ClusterCAD as a computational platform to streamline and simplify the process of designing experiments to test strategies for engineering PKS variants. ClusterCAD provides chemical structures with stereochemistry for the intermediates generated by each PKS module, as well as sequence- and structure-based search tools that allow users to identify modules based either on amino acid sequence or on the chemical structure of the cognate polyketide intermediate. ClusterCAD can be accessed at https://clustercad.jbei.org and at http://clustercad.igb.uci.edu.
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, CO₂ partial pressure) of the different process conditions on the mass transfer, whereas the SP model is limited to applications with low CO₂ 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.
Coagulase negative staphylococci distribution in dairy herds with automatic milking system and their crosstalk with Staphylococcus aureus from IMI and teat apex
Cobalt/N-Hydroxyphthalimide (NHPI)-Catalyzed Aerobic Oxidation of Hydrocarbons with Ionic Liquid Additive

A highly efficient and solvent-free system of cobalt/NHPI-catalyzed aerobic oxidation of hydrocarbons was developed using imidazolium-based ionic liquid (IL) as an additive. These amphipathic ILs were found to self-assemble at the interface between the organic hydrocarbons and the aqueous phase of the catalyst combination (Co/NHPI), forming a solution of reversed multilamellar vesicles for catalysis. The initial reaction rate was influenced by both the composition of microdomains and the structure of IL launched. Consequently, a proper water content (\(X_{\text{H}_2\text{O}}\)) of wet IL was requisite to reach the optimum reactivity. Besides, the interfacial boundary between aqueous and organic phase composed by C2-alkylated imidazolium ILs, such as [bdmim]SbF6 and [C12dmim]SbF6, not only has ternary aggregates (hydrocarbons/IL/H2O) of higher stability but renders O2 a faster diffusion rate and higher concentration, thereby offering a high reactivity of the protocol towards hydrocarbon oxidation.

Co-digestion and model simulations of source separated municipal organic waste with cattle manure under batch and continuously stirred tank reactors

This study investigates the co-digestion of source separated municipal organic waste (SSMOW), pretreated using a biopulper, and cattle manure both in batch and continuous stirred tank reactors. The optimum co-digestion feeding mixture was consisted of 90% SSMOW and 10% cattle manure on organic matter basis, yielding 443 mLCH4/gVS. The high performance of the co-digestion was explained by the fact that the efficient pulping pretreatment boosted the methane production from SSMOW and that the added livestock slurry provided the buffer capacity to avoid inhibition occurred by intermediates’ accumulation. Moreover, batch assays focused on the effect of inoculum to substrate ratio (ISR) were performed. Results showed that the reduction of ISR had slight impact on extending the lag phase, without affecting the rest kinetic parameters. The efficiency of the codigestion process in continuously fed reactor was comparable with the results obtained from the batch assay (i.e. <95% of the maximum expected value). Finally, the outputs from an applied mathematical model were in good agreement with the experimental data obtained from the continuous reactor operation, demonstrating that the BioModel can serve as a reliable tool to predict the process performance under real-scale conditions.
Combinatorial selection of a two-dimensional 3d-TM-tetracyanoquinodimethane (TM-TCNQ) monolayer as a high-activity nanocatalyst for CO oxidation

The CO oxidation reaction on single 3d-transition metal catalytic sites in experimentally realized tetracyanoquinodimethane (TM-TCNQ) monolayers (TM = Sc-Zn) is systematically investigated by means of first-principles calculations. Considering the stabilities, adsorption characteristics and thermodynamics of all the ten candidates (Sc-Zn), Sc-TCNQ is found to display the lowest activation energies and yield the highest catalytic activity for room temperature CO oxidation. Exploring the Langmuir-Hinshelwood (LH) and Eley-Rideal (ER) mechanisms, we find that the rate-limiting step of CO oxidation catalyzed by Sc-TCNQ (CO + O$_2^*$ → OOCO$^*$) can follow the LH mechanism with free energy barriers as low as 0.73 eV at 300 K. The second step of CO + O$^*$ → CO$_2$ can occur with rather small energy barriers via either LH or ER mechanisms. The high activity of Sc-TCNQ can be attributed to its unique structural and electronic features by possessing high stability, optimum adsorption energies with adsorbates, and fast reaction kinetics. These results have significant implications for the synthesis of two-dimensional single atom catalysis for CO oxidation with low-cost and high activity at low temperature.

General information
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Organisations: Department of Energy Conversion and Storage, Atomic scale modelling and materials, Huaiyin Normal University
Authors: Deng, Q. (Intern), Wu, T. (Intern), Chen, G. (Ekstern), Hansen, H. A. (Intern), Vegge, T. (Intern)
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BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.06 SJR 1.678 SNIP 1.117
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.771 SNIP 1.244 CiteScore 4.45
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.772 SNIP 1.253 CiteScore 4.29
Web of Science (2014): Indexed yes
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Scopus rating (2013): SJR 1.715 SNIP 1.216 CiteScore 4.05
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.916 SNIP 1.184 CiteScore 3.67
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Combined effects of microplastics and chemical contaminants on the organ toxicity of zebrafish (Danio rerio)

Microplastics contamination of the aquatic environment is considered a growing problem. The ingestion of microplastics has been documented for a variety of aquatic animals. Studies have shown the potential of microplastics to affect the bioavailability and uptake route of sorbed co-contaminants of different nature in living organisms. Persistent organic pollutants and metals have been the co-contaminants majorly investigated in this field. The combined effect of microplastics and sorbed co-contaminants in aquatic organisms still needs to be properly understood. To address this, we have subjected zebrafish to four different feeds: A) untreated feed; B) feed supplemented with microplastics (LD-PE 125–250 µm of diameter); C) feed supplemented with 2% microplastics to which a mixture of PCBs, BFRs, PFCs and methylmercury were sorbed; and D) feed supplemented with the mixture of contaminants only. After 3 weeks of exposure fish were dissected and liver, intestine, muscular tissue and brain were extracted. After visual observation, evaluation of differential gene expression of some selected biomarker genes in liver, intestine and brain were carried out. Additionally, quantification of perfluorinated compounds in liver, brain, muscular tissue and intestine of some selected samples were performed. The feed supplemented with microplastics with sorbed contaminants produced the most evident effects especially on the liver. The results indicate that microplastics alone does not produce relevant effects on zebrafish in the experimental conditions tested; on the contrary, the combined effect of microplastics and sorbed contaminants altered significantly their organs homeostasis in a greater manner than the contaminants alone.

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Organisations: National Institute of Aquatic Resources, Section for Aquaculture, National Food Institute, Research Group for Analytical Food Chemistry, AZTI Technalia
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Pages: 135-143
Community benefits from offshore renewables: The relationship between different understandings of impact, community, and benefit

This paper presents the findings of a research project evaluating community benefit models for offshore renewables. We identify and analyse UK and international case studies of different forms of community benefit, and provide evidence of...
how such benefits are delivered. In particular we consider the key relationship between the identification of communities, perception of impact, and the apportionment of benefits. In doing so, we develop a range of different definitions of ‘community’, ‘benefit’, and ‘impact’ when considering community benefits. We propose that the way in which community, benefit, and impact are understood is crucial in determining whether or how benefits should be apportioned and delivered; and that these definitions are closely connected to each other. We develop a new series of typologies as a way to understand this. Finally, we assess different mechanisms and schemes of community benefits to identify good practice and key points of learning for policy and planning.

**General information**

State: Published
Organisations: Department of Wind Energy, Integration & Planning, University of Edinburgh
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Scopus rating (2013): SJR 0.866 SNIP 1.062 CiteScore 1.58
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Scopus rating (2010): SJR 1.066 SNIP 1.139
Scopus rating (2009): SJR 0.809 SNIP 1.123
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Scopus rating (2007): SJR 0.607 SNIP 0.987
Scopus rating (2006): SJR 0.688 SNIP 0.793
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**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.
Comparison of Freeboard Retrieval and Ice Thickness Calculation From ALS, ASIRAS, and CryoSat-2 in the Norwegian Arctic to Field Measurements Made During the N-ICE2015 Expedition

We present freeboard measurements from airborne laser scanner (ALS), the Airborne Synthetic Aperture and Interferometric Radar Altimeter System (ASIRAS), and CryoSat-2 SIRAL radar altimeter; ice thickness measurements from both helicopter-borne and ground-based electromagnetic-sounding; and point measurements of ice properties. This case study was carried out in April 2015 during the N-ICE2015 expedition in the area of the Arctic Ocean north of Svalbard. The region is represented by deep snow up to 1.12 m and a widespread presence of negative freeboards. The main scattering surfaces from both CryoSat-2 and ASIRAS are shown to be closer to the snow freeboard obtained by ALS than to the ice freeboard measured in situ. This case study documents the complexity of freeboard retrievals from radar altimetry. We show that even under cold (below −15°C) conditions the radar freeboard can be close to the snow freeboard on a regional scale of tens of kilometers. We derived a modal sea-ice thickness for the study region from CryoSat-2 of 3.9 m compared to measured total thickness 1.7 m, resulting in an overestimation of sea-ice thickness on the order of a factor 2. Our results also highlight the importance of year-to-year regional scale information about the depth and density of the snowpack, as this influences the sea-ice freeboard, the radar penetration, and is a key component of the hydrostatic balance equations used to convert radar freeboard to sea-ice thickness.

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Organisations: National Space Institute, Geodynamics, Alfred Wegener Institute, Norwegian Polar Institute, University of Bremen, U.S. Army Cold Regions Research and Engineering Laboratory, Colorado State University
Authors: King, J. (Ekstern), Skourup, H. (Intern), Hvidegaard, S. M. (Intern), Rösel, A. (Ekstern), Gerland, S. (Ekstern), Spreen, G. (Ekstern), Polashenski, C. (Ekstern), Helm, V. (Ekstern), Liston, G. E. (Ekstern)
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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
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Scopus rating (2010): SJR 2.449 SNIP 1.324
Comparison of indoor air distribution and thermal environment for different combinations of radiant heating systems with mechanical ventilation systems

A hybrid system with a radiant heating system and a mechanical ventilation system, which is regarded as an advanced heating, ventilation and air-conditioning (HVAC) system, has been applied in many modern buildings worldwide. To date, almost no studies focused on comparative analysis of the indoor air distribution and the thermal environment for all combinations of radiant heating systems with mechanical ventilation systems. Therefore, in this article, the indoor air distribution and the thermal environment were comparatively analyzed in a room with floor heating (FH) or ceiling heating (CH) and mixing ventilation (MV) or displacement ventilation (DV) when the supply air temperature ranged from 15.0°C to 19.0°C. The results showed that the temperature effectiveness values were 1.05–1.16 and 0.95–1.02 for MV + FH and MV + CH, respectively, and they were 0.78–0.91 and 0.51–0.67 for DV + FH and DV + CH, respectively. The Predicted Mean Vote values were from 0.24 to 0.45 and from 0.11 to 0.43 for MV + FH and MV + CH, respectively, and from 0.01 to 0.23 and from -0.41 to 0.10 for DV + FH and DV + CH, respectively. Hence, MV + FH had the largest temperature effectiveness and Predicted Mean Vote, and DV + CH had the smallest values. In addition, the vertical air temperature differences for MV + FH and MV + CH were all within the comfort zone according to ISO 7730, but exceeded the comfort zone for DV + FH and DV + CH when the supply air temperature was less than 17°C and 19°C, respectively. The air distribution effectiveness values for MV + FH and MV + CH were close to the recommended value for MV in the ASHRAE Standard 62.1, and those for DV + FH and DV + CH were slightly less than the recommended value for displacement ventilation. The results in this article are relevant and useful in the process of selection and design of a hybrid system with a radiant heating system and a mechanical ventilation system in practice.
La3+ and mixed-rare earth magnetic chitosan beads (MCLB and MCLRB) were successfully prepared for fluoride removal, respectively. The adsorbents were characterized by scanning electron microscope and magnetic response. Batch experiments were carried out to investigate the adsorbent performance based on the influence of various factors such as adsorbent dosage, contact time, initial solution pH and co-existing anions on the fluoride adsorption. Results showed that MCLB and MCLRB followed the pseudo-second-order kinetic model with the correlation coefficient value of 0.9925 and
0.9985 respectively. The adsorption process was mainly chemical adsorption. The isotherm data was well fitted both Langmuir model and Freundlich model. The adsorption capacity of the adsorbents were 20.53 and 22.35mg/g respectively. The optimum pH value for fluoride ion removal was 5.0. The effects of co-existing anions on the fluoride sorption followed the decreasing order of CO32->HCO3->SO42->NO3->Cl-. Fluoride adsorption on MCLB and MCLRB could be attributed to ion exchange between fluoride and OH groups with the FeO coordinate bond promotion. Our study revealed that MCLB and MCLRB performed strong adsorption capacity for fluoride ion. In particularly, MCLRB could be a more cost-effective adsorbent to remove fluoride from aqueous solution.

General information
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Organisations: National Food Institute, Fujian Agriculture and Forestry University, Ocean University of China
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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
Scopus rating (2007): SJR 0.627 SNIP 1.001
Scopus rating (2006): SJR 0.51 SNIP 0.806
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.564 SNIP 1.179
Web of Science (2005): Indexed yes
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.
Comparison of serum pools and oral fluid samples for detection of porcine circovirus type 2 by quantitative real-time PCR in finisher pigs

Porcine circovirus type 2 (PCV2) diagnostics in live pigs often involves pooled serum and/or oral fluid samples for group-level determination of viral load by quantitative real-time polymerase chain reaction (qPCR). The purpose of the study was to compare the PCV2 viral load determined by qPCR of paired samples at the pen level of pools of sera (SP) from 4 to 5 pigs and the collective oral fluid (OF) from around 30 pigs corresponding to one rope put in the same pen. Pigs in pens of 2 finishing herds were sampled by cross-sectional (Herd 1) and cross-sectional with follow-up (Herd 2) study designs. In Herd 1, 50 sample pairs consisting of SP from 4 to 5 pigs and OF from around 23 pigs were collected. In Herd 2, 65 sample pairs consisting of 4 (SP) and around 30 (OF) pigs were collected 4 times at 3-week intervals. A higher proportion of PCV2-positive pens (86% vs. 80% and 100% vs. 91%) and higher viral loads (mean difference: 2.10 and 1.83 log(10) PCV2 copies per ml) were found in OF versus SP in both herds. The OF cut-off value corresponding to a positive SP (>3 log(10) PCV2 copies per ml) was estimated to 6.5 and 7.36 log(10) PCV2 copies per ml for Herds 1 and 2, respectively. Significant correlations between SP and OF results were found in Herd 1 (rho = 0.69) and the first sampling in Herd 2 (rho = 0.39), but not for the subsequent consecutive 3 samplings in Herd 2. The proportion and viral loads of PCV2 positive pens were higher in collective OF (including up to 30 pigs) compared to SP (including 4-5 pigs) of the same pens. Also, OF seemed to detect the PCV2 infection earlier with OF values just below 6.5 (Herd 1) and 7.36 (Herd 2) log(10) being associated with a negative SP for the same pen. Nevertheless, a statistically significant correlation between SP and OF could not be found for all sampling time points, probably due to a high within-pen variation in individual pig viral load becoming very evident in SP of only four or five pigs. Consequently, the results imply that OF is well suited for detecting presence of PCV2 but less so for determining the specific viral load of pigs in a pen.
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.
Comparison of vegetable shortening and cocoa butter as vehicles for cortisol manipulation in Salmo trutta
This study demonstrates that vegetable shortening and cocoa butter are two effective vehicles for intraperitoneal cortisol implants in juvenile teleosts, specifically brown trout Salmo trutta, residing in north temperate freshwater environments. Each vehicle showed a different pattern of cortisol elevation. Vegetable shortening was found to be a more suitable vehicle for long-term cortisol elevation [elevated at 3, 6 and 9 days post treatment (dpt)], while cocoa butter may be better suited for short-term cortisol elevation (only elevated at 3 dpt). Additionally, plasma cortisol levels were higher with cortisol–vegetable shortening than with cortisol–cocoa butter implants. Plasma glucose levels were elevated 6 and 9 dpt for fishes injected with cortisol–vegetable shortening, but did not change relative to controls and shams in cortisol–cocoa butter fishes. In conclusion, vegetable shortening and cocoa butter are both viable techniques for cortisol manipulation in fishes in temperate climates, providing researchers with different options depending on study objectives.

General information
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Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, Carleton University, University of Ottawa, Danish Center for Wild Salmon
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Scopus rating (2016): CiteScore 1.57 SJR 0.741 SNIP 0.882
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.951 SNIP 0.935 CiteScore 1.64
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.944 SNIP 0.934 CiteScore 1.76
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Escherichia coli strain WG5 is a widely used host for phage detection, including somatic coliphages employed as standard ISO method 10705-1 (2000). Here, we present the complete genome sequence of a commercial E. coli WG5 strain.

**Complete Genome Sequence of Escherichia coli Strain WG5**

Escherichia coli strain WG5 is a widely used host for phage detection, including somatic coliphages employed as standard ISO method 10705-1 (2000). Here, we present the complete genome sequence of a commercial E. coli WG5 strain.

**General information**

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Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Bacterial Synthetic Biology, Leibniz Institute for Natural Product Research and Infection Biology - Hans Knoll Institute (HKI), J, University of Barcelona

Authors: Imamovic, L. (Intern), Misiakou, M. (Intern), van der Helm, E. (Intern), Panagiotou, G. (Ekstern), Muniesa, M. (Ekstern), Sommer, M. O. A. (Intern)

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Publication date: 2018
Component level study of an actively lubricated LEG Tilting Pad Bearing: Theory and experiment

This article constitutes the second step in a research effort aiming at evaluating the feasibility of introducing active characteristics into standard leading edge groove (LEG) tilting pad journal bearings. The strategy proposed is to control the LEG inlet flow using a servovalve. This work portrays the first experimental study for the "proof of concept" of this configuration, as well as a comparison with theoretical results. A simplified setup, featuring a rigid rotor supported by a single pad arrangement is the subject of study. The obtained results prove the viability of the proposed active bearing design, validate the available simulation tool and exemplify on a conceptual level the operational benefits from introducing this technology into standard LEG Tilting Pad Bearings.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics
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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
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.

**Composite nanofibers/water photosplitting and photocatalytic degradation of dairy effluent**

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**

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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
Compositional analysis of seasonal variation in Danish residual household waste
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.

General information
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Organisations: Department of Environmental Engineering, Residual Resource Engineering
Authors: Edjabou, M. E. (Intern), Boldrin, A. (Intern), Astrup, T. F. (Intern)
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Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.339 SNIP 2.089 CiteScore 3.7
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.432 SNIP 2.184 CiteScore 3.34
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.262 SNIP 1.811 CiteScore 2.91
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.119 SNIP 1.848 CiteScore 2.62
ISI indexed (2011): ISI indexed yes
Comprehensive Power Losses Model for Electronic Power Transformer

The electronic power transformer (EPT) has higher power losses than the conventional transformer. However, the EPT can correct the power factor, compensate the unbalanced current and reduce the line power losses in the distribution network. Therefore, the higher losses of the EPT and the consequent reduced power losses in the distribution network require a comprehensive consideration when comparing the power losses of the EPT and conventional transformer. In this paper, a comprehensive power losses analysis model for the EPT in distribution networks is proposed. By analyzing the EPT self-losses and considering the impact of the non-unity power factor and the three-phase unbalanced current, the overall power losses in the distribution network when using the EPT to replace the conventional transformer is analyzed, and the conditions in which the application of the EPT can cause less power losses are obtained. Based on this, the sensitivity analysis for the EPT comprehensive power losses model is carried out by comparing the value of each parameter variation impact on the EPT losses model. In case study, the validity of the comprehensive power losses model is verified.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, Hunan University
Authors: Yue, Q. (Ekstern), Li, C. (Ekstern), Cao, Y. (Ekstern), He, Y. (Ekstern), Cai, B. (Ekstern), Wu, Q. (Intern), Zhou, B. (Ekstern)
Number of pages: 8
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Access
ISSN (Print): 2169-3536
Ratings:
Web of Science (2018): Indexed yes
Scopus rating (2016): CiteScore 5.13
Scopus rating (2015): CiteScore 4.32
Scopus rating (2014): CiteScore 3.16
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 (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
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

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Volume: 1671
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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
Computing segmentations directly from x-ray projection data via parametric deformable curves: Paper
We describe an efficient algorithm that computes a segmented reconstruction directly from x-ray projection data. Our algorithm uses a parametric curve to define the segmentation. Unlike similar approaches which are based on level-sets, our method avoids a pixel or voxel grid; hence the number of unknowns is reduced to the set of points that define the curve, and attenuation coefficients of the segments. Our current implementation uses a simple closed curve and is capable of separating one object from the background. However, our basic algorithm can be applied to an arbitrary topology and multiple objects corresponding to different attenuation coefficients in the reconstruction. Through systematic tests we demonstrate a high robustness to the noise, and an excellent performance under a small number of projections.

General information
State: Published
Authors: Dahl, V. A. (Intern), Dahl, A. B. (Intern), Hansen, P. C. (Intern)
Number of pages: 16
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Measurement Science and Technology
Volume: 29
Issue number: 1
Article number: 014003
ISSN (Print): 0957-0233
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.75 SJR 0.668 SNIP 1.173
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.687 SNIP 1.303 CiteScore 1.71
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.657 SNIP 1.319 CiteScore 1.58
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.555 SNIP 1.244 CiteScore 1.53
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.716 SNIP 1.529 CiteScore 1.65
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.844 SNIP 1.703 CiteScore 1.77
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.679 SNIP 1.462
Web of Science (2010): Indexed yes
Concentrating and labeling genomic DNA in a nanofluidic array

Nucleotide incorporation by DNA polymerase forms the basis of DNA sequencing-by-synthesis. In current platforms, either the single-stranded DNA or the enzyme is immobilized on a solid surface to locate the incorporation of individual nucleotides in space and/or time. Solid-phase reactions may, however, hinder the polymerase activity. We demonstrate a device and a protocol for the enzymatic labeling of genomic DNA arranged in a dense array of single molecules without attaching the enzyme or the DNA to a surface. DNA molecules accumulate in a dense array of pits embedded within a nanoslit due to entropic trapping. We then perform ϕ29 polymerase extension from single-strand nicks created on the trapped molecules to incorporate fluorescent nucleotides into the DNA. The array of entropic traps can be loaded with λ-DNA molecules to more than 90% of capacity at a flow rate of 10 pL min⁻¹. The final concentration can reach up to 100 μg mL⁻¹, and the DNA is eluted from the array by increasing the flow rate. The device may be an important preparative module for carrying out enzymatic processing on DNA extracted from single-cells in a microfluidic chip.

General information
State: Accepted/In press
Organisations: Department of Micro- and Nanotechnology, Stochastic Systems and Signals, Optofluidics, XGenomes, NIL Technology ApS
Authors: Marie, R. (Intern), Pedersen, J. N. (Intern), Mir, K. U. (Ekstern), Bilenberg, B. (Ekstern), Kristensen, A. (Intern)
Number of pages: 7
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Nanoscale
ISSN (Print): 2040-3364
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
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 (melanoidins 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 (MgCl2.6H2O) 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 MgCl2.6H2O for melanoidins model solution and 3M MgCl2.6H2O 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/m2h. With as-received distillery wastewater, the rejection was similar (85–90%) to the melanoidins solution, but the water flux was lower (2.8 L/m2h). 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
Condition monitoring of spar-type floating wind turbine drivetrain using statistical fault diagnosis

Operation and maintenance costs are significant for large-scale wind turbines, and particularly so for offshore. A well-organized operation and maintenance strategy is vital to ensure the reliability, availability, and cost-effectiveness of a system. The ability to detect, isolate, estimate and perform prognoses on component degradation could become essential to reduce unplanned maintenance and downtime. Failures in gearbox components are in focus since they account for a large share of wind turbine (WT) downtime. This study considers detection and estimation of wear in the downwind main shaft bearing of a 5 MW spar-type floating turbine. Using a high-fidelity gearbox model, we show how the downwind main bearing and nacelle axial accelerations can be used to evaluate the condition of the bearing. The paper shows how relative acceleration can be evaluated using statistical change detection methods to perform a reliable estimation of wear of the bearing. It is shown in the paper that the amplitude distribution of the residual accelerations follows a t-distribution and a change detection test is designed for the specific changes we observe when the main bearing becomes worn. The generalized likelihood ratio (GLR) test is extended to fit the particular distribution encountered in this problem, and closedform expressions are derived for shape and scale parameter estimation, which are indicators for wear and extent of wear in the bearing. The results in this paper show how the proposed approach can detect and estimate wear in the bearing according to desired probabilities of detection and false alarm.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Automation and Control, Norwegian University of Science and Technology
Authors: Ghane, M. (Ekstern), Nejad, A. R. (Ekstern), Blanke, M. (Intern), Gao, Z. (Ekstern), Moan, T. (Ekstern)
Number of pages: 18
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Wind Energy
ISSN (Print): 1095-4244
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Conductance quantization suppression in the quantum Hall regime

Conductance quantization is the quintessential feature of electronic transport in non-interacting mesoscopic systems. This phenomenon is observed in quasi one-dimensional conductors at zero magnetic field $B$, and the formation of edge states at finite magnetic fields results in wider conductance plateaus within the quantum Hall regime. Electrostatic interactions can change this picture qualitatively. At finite $B$, screening mechanisms in narrow, gated ballistic conductors are predicted to give rise to an increase in conductance and a suppression of quantization due to the appearance of additional conduction channels. Despite being a universal effect, this regime has proven experimentally elusive because of difficulties in realizing one-dimensional systems with sufficiently hard-walled, disorder-free confinement. Here, we experimentally demonstrate the suppression of conductance quantization within the quantum Hall regime for graphene nanoconstrictions with low edge roughness. Our findings may have profound impact on fundamental studies of quantum transport in finite-size, two-dimensional crystals with low disorder.

General information

State: Published
Organisations: Department of Micro- and Nanotechnology, Nanocarbon, Center for Nanostructured Graphene, Theoretical Nanotechnology
Authors: Caridad, J. M. (Intern), Power, S. R. (Intern), Lotz, M. R. (Intern), Shylau, A. A. (Intern), Thomsen, J. D. (Intern), Gammelgaard, L. (Intern), Booth, T. J. (Intern), Jauho, A. (Intern), Bøggild, P. (Intern)
Number of pages: 6
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information

Journal: Nature Communications
Volume: 9
Bone tissue engineering is considered an alternative approach for conventional strategies available to treat bone defects. In this study, we have developed bone scaffolds composed of hydroxyapatite (HAp), gelatin and mesoporous silica, all recognized as promising materials in bone tissue engineering due to favorable biocompatibility, osteoconductivity and drug delivery potential, respectively. These materials were coupled with conductive polypyrrole (PPy) polymer to create a novel bone scaffold for regenerative medicine. Conductive and non-conductive scaffolds were made by slurry casting method and loaded with a model antibiotic, vancomycin (VCM). Their properties were compared in different experiments in which scaffolds containing PPy showed good mechanical properties, higher protein adsorption and higher percentage of VCM release over a long duration of time compared to non-conductive scaffolds. Osteoblast cells were perfectly immersed into the gelatin matrix and remained viable for 14 days. Overall, new conductive composite bone scaffolds were created and the obtained results strongly verified the applicability of this conductive scaffold in drug delivery, encouraging its further development in tissue engineering applications.
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Pharmaceutics
Volume: 536
Issue number: 1
ISSN (Print): 0378-5173
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.24 SJR 1.284 SNIP 1.395
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.297 SNIP 1.465 CiteScore 4.2
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.324 SNIP 1.555 CiteScore 4.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.376 SNIP 1.618 CiteScore 4.17
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.542 SNIP 1.655 CiteScore 4.1
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.489 SNIP 1.628 CiteScore 4.01
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.565 SNIP 1.618
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.389 SNIP 1.538
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.216 SNIP 1.583
Scopus rating (2007): SJR 1.182 SNIP 1.542
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.994 SNIP 1.412
Scopus rating (2005): SJR 1.04 SNIP 1.602
Scopus rating (2004): SJR 1.046 SNIP 1.474
Scopus rating (2003): SJR 0.984 SNIP 1.364
Scopus rating (2002): SJR 0.838 SNIP 1.274
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.754 SNIP 1.055
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.582 SNIP 1.043
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.628 SNIP 0.99

Original language: English
Bone tissue engineering, Conductive polymers, Polypyrrole, Drug delivery, Vancomycin

DOIs:
Configuration optimization of series flow double-effect water-lithium bromide absorption refrigeration systems by cost minimization

An optimal process configuration for double-effect water-lithium bromide absorption refrigeration systems with series flow – where the solution is first passed through the high-temperature generator – is obtained by minimization of the total annual cost for a required cooling capacity. To this end, a nonlinear mathematical programming approach is used. Compared to the optimized conventional double-effect configuration, the new optimal configuration obtained in this paper allows reducing the total annual cost, the capital expenditures, and the operating expenditures by around 9.5%, 11.1% and 4.9%, respectively. Most importantly, the obtained optimal solution eliminates the low-temperature solution heat exchanger from the conventional configuration, rendering a new process configuration. The energy integration between the weak and strong lithium bromide solutions (cold and hot streams, respectively) takes place entirely at the high-temperature zone, and the sizes and operating conditions of the other process units change accordingly in order to meet the problem specification with the minimal total annual cost. This new configuration was obtained for wide ranges of the cooling capacity (150–450kW) and the temperature of the cooling water (15–35°C). The results of this work motivate to apply the simultaneous optimization approach to seek for new multi-effect absorption refrigeration system configurations with parallel and reverse flow as well as other series flow arrangements that minimize the total annual cost.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre, CONICET, Technische Universität Berlin
Authors: Mussati, S. F. (Ekstern), Cignitti, S. (Intern), Mansouri, S. S. (Intern), Gernaey, K. V. (Intern), Morosuk, T. (Ekstern), Mussati, M. C. (Ekstern)
Pages: 359-372
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Energy Conversion and Management
Volume: 158
ISSN (Print): 0196-8904
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.09 SNIP 2.092 CiteScore 5.24
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.854 SNIP 2.835 CiteScore 5.35
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.669 SNIP 2.558 CiteScore 4.49
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.732 SNIP 2.277 CiteScore 3.72
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.292 SNIP 1.846 CiteScore 3.03
Confined-interface-directed synthesis of Palladium single-atom catalysts on graphene/amorphous carbon

The maximized atomic efficiency of supported catalysts is highly desired in heterogeneous catalysis. Therefore, the design and development of active, stable, and atomic metal-based catalysts remains a formidable challenge. To tackle these problems, it is necessary to investigate the interaction between single atoms and supports. Theoretical calculations indicate that the Pd binding strength is higher on graphene/amorphous carbon (AC) than that on graphene or AC substrate. Based on these predictions, we present a facile confined-interface-directed synthesis route for the preparation of single-atom catalysts (SACs) in which Pd atoms are well-dispersed on the interface of double-shelled hollow carbon nanospheres with reduced graphene oxide (RGO) as the inner shell and AC as the outer shell. Owing to the synergistic effect of the RGO/AC confined interface and the atomically dispersed Pd, the as-made RGO@AC/Pd SAC achieves the maximum atomic efficiency (catalytic activity) of Pd species and exhibits an excellent stability in chemical catalysis. This confined-interface-directed synthesis method provides a novel direction to maximize the atomic efficiency, improve the activity, and enhance the stability of metal-based catalysts.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Molecular Windows, Huazhong University of Science and Technology, Beijing Computational Science Research Center
Authors: Xi, J. (Ekstern), Sun, H. (Intern), Zhang, Z. (Ekstern), Duan, X. (Ekstern), Xiao, J. (Ekstern), Xiao, F. (Ekstern), Liu, L. (Ekstern), Wang, S. (Ekstern)
Pages: 291-297
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
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Volume: 225
ISSN (Print): 0926-3373
Ratings:
Single-atom catalyst, Graphene, Amorphous carbon, Confined-interface-directed synthesis, Chemical catalysis

DOIs:
10.1016/j.apcatb.2017.11.057
Conjugated Polymers and Oligomers: Structural and Soft Matter Aspects
This book identifies modern topics and current trends of structural and soft matter aspects of conjugated polymers and oligomers. Each chapter recognizes an active research line where structural perspective dominates research and therefore the book covers fundamental aspects of persistent conjugated polymer backbone, water soluble conjugated polyelectrolytes and surfactants, conjugated molecules and biomolecules and DNA and the advanced use of synchrotron radiation and electron microscopy to find out structural details in conjugated molecule films and devices as well as under ambient and extreme conditions.

General information
State: Accepted/In press
Organisations: Department of Physics, Neutrons and X-rays for Materials Physics
Authors: Knaapila, M. (ed.) (Intern)
Publication date: 2018

Publication information
Publisher: World Scientific Publishing Co
ISBN (Print): 978-981-3225-75-6
Original language: English
Series: Materials and Energy
Volume: 9
Main Research Area: Technical/natural sciences
Publication: Research - peer-review › Book – Annual report year: 2018

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 (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.45 SJR 0.705 SNIP 0.984
Constrained Multi-Body Dynamics for Modular Underwater Robots — Theory and Experiments
This paper investigates the problem of modelling a system of interconnected underwater robots with highly coupled dynamics. The objective is to develop a mathematical description of the system that captures its most significant dynamics. The proposed modelling method is based on active constraint enforcement by utilising the Udwadia-Kalaba Formulation for multi-body dynamics. The required description of a rigid constraint is defined, derived and implemented into a system of interconnected sub-models. An exhaustive experimental validation is conducted on a two-vehicle system, including towing tank tests on a BlueROV vehicle to determine the model parameters. The applicability of the modelling approach is assessed by comparing experimental data to simulations of an equivalent model synthesised using the proposed theory.

General information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control, Norwegian University of Science and Technology
Authors: Nielsen, M. C. (Intern), Eidsvik, O. A. (Ekstern), Blanke, M. (Intern), Schjølberg, I. (Ekstern)
Pages: 358-372
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Ocean Engineering
Volume: 149
Constraining genome-scale models to represent the bow tie structure of metabolism for 13C metabolic flux analysis

Determination of internal metabolic fluxes is crucial for fundamental and applied biology because they map how carbon and electrons flow through metabolism to enable cell function. 13C Metabolic Flux Analysis (13C MFA) and Two-Scale 13C Metabolic Flux Analysis (2S-13C MFA) are two techniques used to determine such fluxes. Both operate on the simplifying approximation that metabolic flux from peripheral metabolism into central "core" carbon metabolism is minimal, and can be omitted when modeling isotopic labeling in core metabolism. The validity of this "two-scale" or "bow tie" approximation is supported both by the ability to accurately model experimental isotopic labeling data, and by experimentally verified metabolic engineering predictions using these methods. However, the boundaries of core metabolism that satisfy this approximation can vary across species, and across cell culture conditions. Here, we present a set of algorithms that (1) systematically calculate flux bounds for any specified "core" of a genome-scale model so as to satisfy the bow tie approximation and (2) automatically identify an updated set of core reactions that can satisfy this approximation more efficiently. First, we leverage linear programming to simultaneously identify the lowest fluxes from peripheral metabolism into core metabolism compatible with the observed growth rate and extracellular metabolite exchange fluxes. Second, we use Simulated Annealing to identify an updated set of core reactions that allow for a minimum of fluxes into core metabolism to satisfy these experimental constraints. Together, these methods accelerate and automate the identification of a biologically reasonable set of core reactions for use with 13C MFA or 2S-13C MFA, as well as provide for a substantially lower set of flux bounds for fluxes into the core as compared with previous methods. We provide an open source Python implementation of these algorithms at https://github.com/JBEI/limitfluxtocore

General information

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Organisations: Novo Nordisk Foundation Center for Biosustainability, Synthetic Biology Tools for Yeast, Joint Bioenergy Institute
Authors: Backman, T. W. (Ekstern), Ando, D. (Ekstern), Singh, J. (Ekstern), Keasling, J. D. (Intern), Martín, H. G. (Ekstern)
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Contact parameter identification for vibrational response variability prediction

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.
Continuous Hydrothermal Flow Synthesis of LaCrO3 in Supercritical Water and Its Application in Dual-Phase Oxygen Transport Membranes

The continuous production of LaCrO3 particles (average edge size 639 nm, cube-shaped) by continuous hydrothermal flow synthesis using supercritical water is reported for the first time. By varying the reaction conditions, it was possible to suggest a reaction mechanism for the formation of this perovskite material. Moreover, dual-phase oxygen transport membranes were manufactured from the as-synthesized LaCrO3 particles and (ZrO2)0.89(Y2O3)0.01(Sc2O3)0.10 (10Sc1YSZ), and oxygen permeation fluxes up to 5 × 10^-8 mol cm^-2 s^-1 were measured on a 1 mm thick membrane.

General information
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Organisations: Department of Energy Conversion and Storage, Mixed Conductors, Imaging and Structural Analysis
Authors: Xu, Y. (Intern), Pirou, S. (Intern), Zielke, P. (Intern), Simonsen, S. B. (Intern), Norby, P. (Intern), Hendriksen, P. V. (Intern), Kiebach, R. (Intern)
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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
Contrasting physiological responses to future ocean acidification among Arctic copepod populations

Widespread ocean acidification (OA) is modifying the chemistry of the global ocean, and the Arctic is recognised as the region where the changes will progress at the fastest rate. Moreover, Arctic species show lower capacity for cellular homeostasis and acid-base regulation rendering them particularly vulnerable to OA. In the present study, we found physiological differences in OA response across geographically separated populations of the keystone Arctic copepod Calanus glacialis. In copepodite stage CIV, measured reaction norms of ingestion rate and metabolic rate showed severe reductions in ingestion and increased metabolic expenses in two populations from Svalbard (Kongsfjord and Billefjord) whereas no effects were observed in a population from the Disko Bay, West Greenland. At pH 7.87, which has been predicted for the Svalbard west coast by year 2100, these changes resulted in reductions in scope for growth of 19% in
the Kongsfjord and a staggering 50% in the Billefjord. Interestingly, these effects were not observed in stage CV copepodites from any of the three locations. It seems that CVs may be more tolerant to OA perhaps due to a general physiological reorganisation to meet low intracellular pH during hibernation. Needless to say, the observed changes in the CIV stage will have serious implications for the C. glacialis population health status and growth around Svalbard. However, OA tolerant populations such as the one in the Disko Bay could help to alleviate severe effects in C. glacialis as a species. This article is protected by copyright. All rights reserved.

**General information**

**State:** Published

**Organisations:** National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, Aarhus University, Norwegian Polar Institute, University of Gothenburg, Université de Québec à Rimouski, University Centre in Svalbard, University of Florence, UIt The Arctic University of Norway, Norwegian Institute for Water Research, East China Normal University

**Authors:** Thor, P. (Ekstern), Bailey, A. (Ekstern), Dupont, S. (Ekstern), Calosi, P. (Ekstern), Søreide, J. E. (Ekstern), De Wit, P. (Ekstern), Guscelli, E. (Ekstern), Loubet-Sartrou, L. (Ekstern), Deichmann, I. M. (Ekstern), Candee, M. M. (Intern), Svensen, C. (Ekstern), King, A. L. (Ekstern), Bellerby, R. G. J. (Ekstern)

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**Publication information**

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- BFI (2016): BFI-level 2
- Web of Science (2016): Indexed yes
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- Scopus rating (2015): SJR 5.239 SNIP 2.585 CiteScore 8.48
- Web of Science (2015): Indexed yes
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- ISI indexed (2013): ISI indexed yes
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- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 4.228 SNIP 2.388 CiteScore 7.2
- ISI indexed (2012): ISI indexed yes
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- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 4.385 SNIP 2.23 CiteScore 6.86
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 4.394 SNIP 2.257
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 4.127 SNIP 2.178
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 2
Contrasting responses in the niches of two coral reef herbivores along a gradient of habitat disturbance in the Spermonde Archipelago, Indonesia

Habitat modification of coral reefs is becoming increasingly common due to increases in coastal urban populations. Coral reef fish are highly dependent on benthic habitat; however, information on species-specific responses to habitat change, in particular with regard to trophic strategies, remains scarce. This study identifies variation in the trophic niches of two herbivorous coral reef fishes with contrasting trophic strategies, using Stable Isotopes Bayesian Ellipses in R, along a spatial gradient of changing coral reef habitats. In the parrotfish Chlorurus bleekerii, a roving consumer, the range of δ 15 N and δ 13 C and their niche area displayed significant relationships with the amount of rubble in the habitat. In contrast, the farming damselfish, Dischistodus prosopotaenia, showed a narrow range of both δ 15 N and δ 13 C, displaying little change in niche parameters among sites. This may indicate that parrotfish vary their feeding according to habitat, while the damselfish continue to maintain their turf and invertebrate resources. Assessing isotopic niches may help to better understand the specific trophic responses to change in the environment. Furthermore, the use of isotopic niches underlines the utility of stable isotopes in studying the potential impacts of environmental change on feeding ecology.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Centre for Ocean Life, Leibniz Centre for Tropical Marine Research, University of Bremen, Leibniz Center for Tropical Marine Research, South African Institute of Aquatic Biodiversity, Universitas Hasanuddin
Authors: Plass-Johnson, J. G. (Intern), Bednarz, V. N. (Ekstern), Hill, J. M. (Ekstern), Jompa, J. (Ekstern), Ferse, S. C. A. (Ekstern), Teichberg, M. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences

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BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.53 SJR 0.173 SNIP 0.109
The fastest and most efficient process of gaining sea ice volume is through the mechanical redistribution of mass as a consequence of deformation events. During the ice growth season divergent motion produces leads where new ice grows thermodynamically, while convergent motion fractures the ice and either piles the resultant ice blocks into ridges or rafts one floe under the other. Here we present an exceptionally detailed airborne dataset from a 9km² area of first and second year ice in the Transpolar Drift north of Svalbard that allowed us to estimate the redistribution of mass from an observed deformation event. To achieve this level of detail we analyzed changes in sea ice freeboard acquired from two airborne laser scanner surveys just before and right after a deformation event brought on by a passing low pressure system. A linear regression model based on divergence during this storm can explain 64% of freeboard variability. Over the survey region we estimated that about 1.3% of level sea ice volume was pressed together into deformed ice and the new ice formed in leads in a week after the deformation event would increase the sea ice volume by 0.5%. As the region is impacted by about 15 storms each winter a simple linear extrapolation would result in about 7% volume increase and 20% deformed ice fraction at the end of the season.

General information
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Organisations: National Space Institute, Geodynamics, Norwegian Polar Institute, British Antarctic Survey
Authors: Itkin, P. (Ekstern), Spreen, G. (Ekstern), Hvidegaard, S. M. (Intern), Skourup, H. (Intern), Wilkinson, J. (Ekstern), Gerland, S. (Ekstern), Granskog, M. A. (Ekstern)
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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
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.
Convolutional Neural Networks - Generalizability and Interpretations

Sufficient data is key when training Machine Learning algorithms in order to obtain models that generalize for operational use. Sometimes sufficient data is infeasible to obtain and this prevents the use of Machine Learning in many applications. The goal of this thesis is to gain insights and learn from data despite it being limited in amount or context representation. Within Machine Learning this thesis focuses on Convolutional Neural Networks for Computer Vision. The research aims to answer how to explore a model's generalizability to the whole population of data samples and how to interpret the model's function. The thesis presents three overall approaches to gaining insights on generalizability and interpretation. First, one
can change the main objective of a problem to study expected insufficiencies and based on this make better a choice of model. For this first approach the thesis presents both a study on translational invariance as well as an example of changing the objective of a problem from classification to segmentation to robustly extract lower level information. The second approach is the use of simulated data which can help by inferring knowledge in our model if real data is scarce. The results show clear advantages both when using rendered Synthetic Aperture Radar images, but also when predictions from physical models are used as target variables which are matched with real data to form a large dataset. The third approach is explored and concrete examples of learnings that can be obtained are shown. There is no doubt that large quantities of well representing data is the best foundation for training Machine Learning models. On the other hand, there are many tools and techniques available to interpret and understand properties of our models. With these at hand we can still learn about our models and use this knowledge to e.g. collect better datasets or improve on the modeling.

General information
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Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, National Space Institute, Microwaves and Remote Sensing
Authors: Malmgren-Hansen, D. (Intern), Nielsen, A. A. (Intern), Engholm, R. (Ekstern), Skriver, H. (Intern)
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Coordinated Pitch & Torque Control of Large-Scale Wind Turbine Based on Pareto Efficiency Analysis
For the existing pitch and torque control of the wind turbine generator system (WTGS), further development on coordinated control is necessary to improve effectiveness for practical applications. In this paper, the WTGS is modeled as a coupling combination of two subsystems: the generator torque control subsystem and blade pitch control subsystem. Then, the pole positions in each control subsystem are adjusted coordinately to evaluate the controller participation and used as the objective of optimization. A two-level parameters-controllers coordinated optimization scheme is proposed and applied to optimize the controller coordination based on the Pareto optimization theory. Three solutions are obtained through optimization, which includes the optimal torque solution, optimal power solution, and satisfactory solution. Detailed comparisons evaluate the performance of the three selected solutions and provide the optimized controller coordination suggestions according to different requirements.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, North China Electric Power University, Technical University of Denmark
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Coordinating rule-based and system-wide model predictive control strategies to reduce storage expansion of combined urban drainage systems: The case study of Lundtofte, Denmark

The environmental benefits of combining traditional infrastructure solutions for urban drainage (increasing storage volume) with real time control (RTC) strategies were investigated in the Lundtofte catchment in Denmark, where an expensive traditional infrastructure expansion is planned to comply with environmental requirements. A coordinating, rule-based RTC strategy and a global, system-wide risk-based dynamic optimization strategy (model predictive control), were compared using a detailed hydrodynamic model. RTC allowed a reduction of the planned storage volume by 21% while improving...
the system performance in terms of combined sewer overflow (CSO) volumes, environmental impacts, and utility costs, which were reduced by up to 10%. The risk-based optimization strategy provided slightly better performance in terms of reducing CSO volumes, with evident improvements in environmental impacts and utility costs, due to its ability to prioritize among the environmental sensitivity of different recipients. A method for extrapolating annual statistics from a limited number of events over a time interval was developed and applied to estimate yearly performance, based on the simulation of 46 events over a five-year period. This study illustrates that including RTC during the planning stages reduces the infrastructural costs while offering better environmental protection, and that dynamic risk-based optimisation allows prioritising environmental impact reduction for particularly sensitive locations.

General information
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Organisations: Department of Environmental Engineering, Urban Water Systems, Technical University of Denmark, Krüger A/S
Authors: Meneses, E. J. (Intern), Gaussens, M. (Ekstern), Jakobsen, C. (Ekstern), Mikkelsen, P. S. (Intern), Grum, M. (Ekstern), Vezzaro, L. (Intern)
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Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.05 SJR 0.548 SNIP 1.079
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.522 SNIP 1.043 CiteScore 1.96
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.466 SNIP 0.862 CiteScore 1.45
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.283 SNIP 0.553 CiteScore 1
ISI indexed (2013): ISI indexed yes
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Sewage and Industrial Wastes Treatment, Sewage, Environmental Impact and Protection, Automatic Control Principles and Applications, Cost and Value Engineering; Industrial Economics, Accidents and Accident Prevention, Combined sewer overflow (CSO), Coordinating real time control (RTC), Dynamic Overflow Risk Assessment (DORA), Environmental impact reduction, Sensitivity of receiving waters, Catchments, Combined sewers, Cost reduction, Costs, Model predictive control, Real time control, Risk assessment, Sewers, Combined sewer overflows, Environmental benefits, Environmental requirement, Environmental sensitivities, Optimization strategy, Receiving waters, Urban drainage systems, Environmental impact, combined sewer overflow (CSO), coordinating real time control (RTC), environmental impact reduction, sensitivity of receiving waters, Hydraulic engineering, TC1-978, Water supply for domestic and industrial purposes, TD201-500
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Coping with environments: Vegetation, turbidity and abiotics

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Authors: Jacobsen, L. (Intern), Engström-Öst, J. (Ekstern)
Number of pages: 402
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Corrections to "Intermetallic GaPd2 Nanoparticles on SiO2 for Low-Pressure CO2 Hydrogenation to Methanol: Catalytic Performance and In Situ Characterization"

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Organisations: Center for Electron Nanoscopy, Department of Physics, Experimental Surface and Nanomaterials Physics, Universidade de Sao Paulo, Karlsruhe Institute of Technology KIT
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Web of Science (2018): Indexed yes
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Scopus rating (2016): CiteScore 10.3 SJR 4.299 SNIP 2.071
Web of Science (2016): Indexed yes
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BFI (2014): BFI-level 1
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Scopus rating (2013): SJR 3.271 SNIP 1.859 CiteScore 7.41
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Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 2.684 SNIP 1.61 CiteScore 5.19
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Correction to: Industrial antifoam agents impair ethanol fermentation and induce stress responses in yeast cells

The Brazilian sugarcane industry constitutes one of the biggest and most efficient ethanol production processes in the world. Brazilian ethanol production utilizes a unique process, which includes cell recycling, acid wash, and non-aseptic conditions. Process characteristics, such as extensive CO2 generation, poor quality of raw materials, and frequent contaminations, all lead to excessive foam formation during fermentations, which is treated with antifoam agents (AFA). In this study, we have investigated the impact of industrial AFA treatments on the physiology and transcriptome of the industrial ethanol strain Saccharomyces cerevisiae CAT-1. The investigated AFA included industrially used AFA acquired from Brazilian ethanol plants and commercially available AFA commonly used in the fermentation literature. In batch fermentations, it was shown that industrial AFA compromised growth rates and glucose uptake rates, while commercial AFA had no effect in concentrations relevant for defoaming purposes. Industrial AFA were further tested in laboratory scale simulations of the Brazilian ethanol production process and proved to decrease cell viability compared to the control, and the effects were intensified with increasing AFA concentrations and exposure time. Transcriptome analysis showed that AFA treatments induced additional stress responses in yeast cells compared to the control, shown by an up-regulation of stress-specific genes and a down-regulation of lipid biosynthesis, especially ergosterol. By documenting the detrimental effects associated with chemical AFA, we highlight the importance of developing innocuous systems for foam control in industrial fermentation processes.
Correlation-constrained and sparsity-controlled vector autoregressive model for spatio-temporal wind power forecasting

The ever-increasing number of wind farms has brought both challenges and opportunities in the development of wind power forecasting techniques to take advantage of interdependencies between thousands of spatially distributed wind farms, e.g., over a region. In this paper, a Sparsity-Controlled Vector Autoregressive (SC-VAR) model is introduced to obtain sparse model structures in a spatio-temporal wind power forecasting framework by reformulating the original VAR model into a constrained Mixed Integer Non-Linear Programming (MINLP) problem. It allows controlling the sparsity of the coefficient matrices in a direct manner. However, this original SC-VAR is difficult to implement due to its complicated constraints and the lack of guidelines for setting its parameters. To reduce the complexity of this MINLP and to make it possible to incorporate prior expert knowledge to benefit model building and forecasting, the original SC-VAR is modified and a Correlation-Constrained SC-VAR (CCSC-VAR) is proposed based on spatial correlation information about wind farms. Our approach is evaluated based on a case study of very-short-term forecasting for 25 wind farms in Denmark.
Comparison is performed with a set of traditional local methods and spatio-temporal methods. The results obtained show the proposed CCSC-VAR has better overall performance than both the original SC-VAR and other benchmark methods, taking into account all evaluation indicators, including sparsity control ability, sparsity, accuracy and efficiency.

**General information**
- State: Accepted/In press
- Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electricity markets and energy analytics, China Agricultural University, China Electric Power Research Institute
- Authors: Zhao, Y. (Ekstern), Ye, L. (Ekstern), Pinson, P. (Intern), Tang, Y. (Ekstern)
- Number of pages: 12
- Publication date: 2018
- Main Research Area: Technical/natural sciences

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  - Web of Science (2018): Indexed yes
  - 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
  - BFI (2015): BFI-level 2
  - Scopus rating (2015): SJR 3.602 SNIP 3.486 CiteScore 6.6
  - Web of Science (2015): Indexed yes
  - BFI (2014): BFI-level 2
  - Scopus rating (2014): SJR 2.831 SNIP 3.577 CiteScore 5.31
  - Web of Science (2014): Indexed yes
  - BFI (2013): BFI-level 2
  - Scopus rating (2013): SJR 2.939 SNIP 4.35 CiteScore 6.33
  - ISI indexed (2013): ISI indexed yes
  - Web of Science (2013): Indexed yes
  - BFI (2012): BFI-level 2
  - Scopus rating (2012): SJR 2.177 SNIP 3.516 CiteScore 5.84
  - ISI indexed (2012): ISI indexed yes
  - Web of Science (2012): Indexed yes
  - BFI (2011): BFI-level 2
  - Scopus rating (2011): SJR 1.725 SNIP 3.254 CiteScore 5.34
  - ISI indexed (2011): ISI indexed yes
  - Web of Science (2011): Indexed yes
  - BFI (2010): BFI-level 2
  - Scopus rating (2010): SJR 1.949 SNIP 2.826
  - Web of Science (2010): Indexed yes
  - BFI (2009): BFI-level 2
  - Scopus rating (2009): SJR 1.94 SNIP 2.723
  - Web of Science (2009): Indexed yes
  - BFI (2008): BFI-level 2
  - Scopus rating (2008): SJR 1.537 SNIP 2.448
  - Web of Science (2008): Indexed yes
  - Scopus rating (2007): SJR 1.242 SNIP 2.521
  - Web of Science (2007): Indexed yes
  - Scopus rating (2006): SJR 1.233 SNIP 2.316
  - Web of Science (2006): Indexed yes
  - Scopus rating (2005): SJR 1.582 SNIP 2.547
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.
The Internet of Things (IoT) revolution has not only carried the astonishing promise to interconnect a whole generation of traditionally "dumb" devices, but also brought to the Internet the menace of billions of badly protected and easily hackable objects. Not surprisingly, this sudden flooding of fresh and insecure devices fueled older threats, such as Distributed Denial of Service (DDoS) attacks. In this paper, we first propose an updated and comprehensive taxonomy of DDoS attacks, together with a number of examples on how this classification maps to real-world attacks. Then, we outline the current situation of DDoS-enabled malwares in IoT networks, highlighting how recent data support our concerns about the growing in popularity of these malwares. Finally, we give a detailed analysis of the general framework and the operating principles of Mirai, the most disruptive DDoS-capable IoT malware seen so far.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Embedded Systems Engineering, Orebro University, University of Rome
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Scopus rating (2015): SJR 0.281 SNIP 0.814 CiteScore 1.09
Web of Science (2015): Indexed yes
Scopus rating (2014): SJR 0.297 SNIP 0.908 CiteScore 0.93
Scopus rating (2013): SJR 0.243 SNIP 0.623 CiteScore 0.71
Scopus rating (2012): SJR 0.187 SNIP 0.656 CiteScore 0.67
Scopus rating (2011): SJR 0.236 SNIP 1.087 CiteScore 0.86
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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.

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis
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Deciphering the microbial ecology in bio- gas reactors for optimizing the anaerobic digestion process

Anaerobic digestion (AD) is a microbial mediated process where organic compounds are degraded to biogas (CH4 and CO2). AD occurs in many natural anoxic environments and is an essential step for global carbon circle. Engineered AD systems, i.e. biogas reactors, enhance methanogenic activity by applying empirical operational conditions, in order to accelerate the methane production for energetic purposes. In Denmark, biogas produced from AD has a considerable share in renewable energy with the expectation to expand. Thus, the more effective operation of biogas plants will significantly benefit Denmark’s sustainable development. As AD relies on complex microbial activity, a more comprehensive understanding of the AD microbial consortia and their activity provides the fundamental knowledge for process control and optimization.

In AD, the microbial metabolisms are mostly thermodynamically constrained and the obligatory syntrophy is an essential intermediary step. Thus, the majority of AD microbiota remains uncharacterized since in the past it was mainly investigated using cultivated-based methods. The advent of more powerful sequencing technology (i.e. next generation sequencing, NGS) and newly developed bioinformatic methods enable researchers to perform in-situ analyses on uncharacterized microbial communities. The applications of NGS technology were proved to be effective tools to reveal AD microbial ecology. However, the detailed mechanisms of microbial activity are still far from fully elucidated due to the intricacy of AD process.

This Ph.D. project relied on comprehensive investigations of microbial communities in order to optimize the AD process and elucidate the fundamental metabolisms. Specifically, in the case of process optimization, 16S rRNA amplicon sequencing was used to identify, analyse and solve the operational challenges during the start-up of thermophilic up-flow anaerobic sludge blanket (UASB) reactors. To elucidate the microbial metabolisms, genome-centric metagenomics was applied to characterize methanogenic communities degrading a set of defined substrates. In addition, the Ph.D. study also expands the understanding of AD microbial ecology by proposing and characterizing a novel Candidatus species ubiquitously present in AD systems.

The start-up of thermophilic UASB reactors was investigated in lab-scale reactors inoculated with mesophilic granules. After increasing the operational temperature from mesophilic to thermophilic, volatile fatty acids (VFAs) and alcohols were
Deep learning for automated drivetrain fault detection

A novel data-driven deep-learning system for large-scale wind turbine drivetrain monitoring applications is presented. It uses convolutional neural network processing on complex vibration signal inputs. The system is demonstrated to learn successfully from the actions of human diagnostic experts and provide early and robust fault detection on both rotor bearing, planetary and helical stage gear box bearings from analysis of multisensor vibration patterns using only a high-

Deciphering the microbial ecology in bio-gas reactors for optimizing the anaerobic digestion process

For the investigation of the basic microbial metabolism and ecology, methanogenic microbial communities were enriched in a lab-scale continuous stirred-tank reactor (CSTR) fed with synthetic feedstocks. In the experiment, the substrates used were stepwise simplified (i.e. poly saccharide, monosaccharide, short chain fatty acids, acetate) to mimic the four steps of AD process. During the continuous operation, the microbial community was substantially simplified, because the microbes that could not metabolize the specific compounds were washed out. The overall microbial community consisted of only 35 metagenome assembled genomes (MAGs) (31 bacterial and 4 archaeal). The abundance of these MAGs dramatically varied in the communities adapted to different substrates. The shifts in microbial community composition indicate that MAGs have specific functional roles in AD food chain and their roles cannot always be physiologically defined in accordance with 4 AD steps. Moreover, the explicit degradation pathways were reconstructed from the functional annotation of MAGs. It is notable that, a novel glucose degradation model was proposed with the syntrophic activity of Clostridiaceae sp. and Methanoculleus thermophilus. In this model, acetate is not produced as intermediate compound. The genome-centric metagenomics reveals a considerable number of MAGs that could not be taxonomically assigned to characterized species. A MAG extracted from co-assembly of 8 AD metagenomes was especially emphasized due to its ubiquity in AD system and its high abundance under specific conditions. From the functional annotation and gene expression profile, it is confirmed that this MAG performs hydrogenotrophic methanogenesis in AD system and is found dominant from the reactors where H2 was added. This genome is present in 40 different samples from both full-scale and lab-scale AD reactors. The MAG was found in higher abundance during thermophilic reactor operations with relatively short hydraulic retention times. The phylogenetic assignment was based on 400 conserved genes and on 16S rRNA genes. The two methods concordantly showed that this MAG is closely related to Methanoculleus bourgensis MS2T. However, the average nucleotide identity between M. bourgensis MS2T and the selected MAG was only 89%, which is too low similarity to assign the MAG at the species level. Thus, we propose a novel Candidatus species inside the Methanoculleus genus. According to the metabolic traits, it is named as Candidatus Methanoculleus thermohydrogenotrophicum, sp. nov.

Overall, the results from this Ph.D. study bring new knowledge on the AD process based on NGS technology. Practically, the gained information regarding microbial community composition and dynamics was directly used to solve technical challenges in AD operations. Fundamentally, deeper insights into the microbial metabolisms and ecology substantially expanded the current understanding of AD. The revealed knowledge provides pivotal prerequisites for future AD process control and optimization.
level feature selection. On the basis of data from 251 actual wind turbine bearing failures, we are able to accurately quantify the fleet-wide diagnostic model performance. The analysis also explores the time dependence of the diagnostic performance, providing a detailed view of the timeliness and accuracy of the diagnostic outputs across the different architectures. Deep architectures are shown to outperform the human analyst as well as shallow-learning architectures, and the results demonstrate that when applied in a large-scale monitoring system, machine intelligence is now able to handle some of the most challenging diagnostic tasks related to wind turbines.

General information
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Authors: Bach-Andersen, M. (Intern), Rømer-Odgaard, B. (Ekstern), Winther, O. (Intern)
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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
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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
Design and preliminary operation of a hybrid syngas/solar PV/battery power system for off-grid applications: A case study in Thailand

Due to the irregular nature of solar resource, solar photovoltaic (PV) system alone cannot satisfy load on a 24/7 demand basis, especially with increasing regional population in developing countries such as Thailand. A hybrid solar PV/biomass based along with battery storage system has been drawing more attention to option since it promises great deal of challenges and opportunities for different rural areas. Thailand rich with higher level of agricultural crops and biomass materials, is a prospective candidate for deployment of bio-power to complement such hybrid systems. To this end, in this study a customized hybrid power system integrating solar, biomass (syngas) power and battery storage system is evaluated a pilot scale for micro off-grid application. This paper shows that for a reliability of a hybrid syngas/solar PV system along with rechargeable batteries, the syngas generator can guarantee a continuous 24 hours electricity supply in case of shortage of energy (during on cloudy day and at the nighttime). Two consecutive days of commissioning phase are necessary for the entire system to operate, which is a solid basis for including the syngas generator in the hybrid system. Furthermore, the generator has to be always synchronized during the commissioning time. Battery state of charge (SOC) in percent (%) connecting with syngas is greater than solar PV and the charging time appears significantly shorter than that one. All possible combinations between an innovation and existing systems can serve as a guideline for making similar studies in the context of different off-grid sites and more. Next, optimal scale up and design of hybrid power system for different off grid applications will be performed including comprehensive uncertainty analysis to facilitate robust and renewable electricity generation.

General information
State: Accepted/In press
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Web of Science (2017): Indexed yes
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Scopus rating (2016): CiteScore 2.79 SJR 0.813 SNIP 1.303
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
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 Acetinobacter sp. ADP1 for monitoring accumulation of cis,cis-muconic acid, a bioplast precursor, in yeast by means of flow cytometry.
Design for manufacturability of macro and micro products: a case study of heat exchanger design

In this paper, a novel methodology in designing a micro heat exchanger is proposed by modifying a conventional design methodology for macro products with the considerations of differences between design of a micro and a macro product. The methodology starts with the identification of differences in design considerations for micro scale products compared to the macro scale. These design considerations consist of material selection, manufacturing process, physical phenomena and shape and geometry design. Manufacturability criteria are defined and various potential manufacturing processes for fabricating micro heat exchangers are ranked based on the defined criteria. Following the design methodology, primary design ideas for micro heat exchangers are generated according to the heat transfer principles for macro heat exchangers. Taking micro design considerations into account, the designs from next iteration are created. Finally, the performances of the designs for micro heat exchangers are compared with their macro counterparts. The most appropriate designs for micro heat exchangers are finalized. The micro specific design guidelines obtained by the designer through evaluating the modeling results and the design criteria are formulated in a knowledge-based unit called "Rules To Consider" (RTC). The proposed methodology provides an interactive design process through the RTC unit. The RTC data is used by the designer in the subsequent iterations of the micro-product design as well as can be used by designers/engineers in design of the same category of micro products. Furthermore, through utilization of the proposed methodology by designers/engineers for design of other micro products, the RTC unit can be enriched with micro-oriented design principles and accordingly provide a basic guideline for design of micro products.
Design process robustness: A bi-partite network analysis reveals the central importance of people

Design processes require the joint effort of many people to collaborate and work on multiple activities. Effective techniques to analyse and model design processes are important for understanding organisational dynamics, for improving collaboration, and for planning robust design processes, reducing the risk of rework and delays. Although there has been much progress in modelling and understanding design processes, little is known about the interplay between people and the activities they perform and its influence on design process robustness. To analyse this interplay, we model a large-scale design process of a biomass power plant with people and activities as a bipartite network. Observing that some people act as bridges between activities organised to form nearly independent modules, in order to evaluate process fragility, we simulate random failures and targeted attacks to people and activities. We find that our process is more vulnerable to attacks to people rather than activities. These findings show how the allocation of people to activities can obscure an inherent fragility, making the process highly sensitive and dependent on specific people. More generally, we show that the behaviour of robustness is determined by the degree distributions, the heterogeneity of which can be leveraged to improve robustness and resilience to cascading failures. Overall, we show that it is important to carefully plan the assignment of people to activities.

General information
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Determination of the fibre orientation distribution of a mineral wool network and prediction of its transverse stiffness using X-ray tomography

A method to determine the orientation and diameter distributions of mineral wool fibre networks using X-ray tomography and image analysis is presented. The method is applied to two different types of mineral wool: glass wool and stone wool. The orientation information is obtained from the computation of the structure tensor, and the diameter is estimated by applying a greyscale granulometry. The results of the image analysis indicate the two types of fibres are distributed in a 2D planar arrangement with the glass wool fibres showing a higher degree of planarity than the stone wool fibres. The orientation information is included in an analytical model based on a Euler–Bernoulli beam approximation. The model enables prediction of the transverse stiffness. It is indicated that the glass wool transverse stiffness is lower than the stone wool transverse stiffness. Comparison with experimental results confirms the assumption that the underlying deformation mechanism of mineral wool is the bending of fibre segments between bonds.

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Organisations: Department of Wind Energy, Composites and Materials Mechanics, Department of Physics, Neutrons and X-rays for Materials Physics, Rockwool International, Xnovo Technology ApS
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Determination of Viscosity Versus Pressure by Means of a Clearance Seal

This paper describes the construction and testing of a simple, experimental tool setup that enables determination of the pressure–viscosity relationship for high viscosity oils. Comparing the determined pressure–viscosity relationship with a reference rheometer measuring the viscosity at ambient pressure yields reasonable agreement. The computed viscosity at elevated pressures was well represented by the Chu and Cameron model.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Technical University of Denmark
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Scopus rating (2016): CiteScore 1.76 SJR 0.733 SNIP 1.617
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Web of Science (2015): Indexed yes
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Scopus rating (2014): SJR 0.857 SNIP 1.352 CiteScore 1.34
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.843 SNIP 1.292 CiteScore 1.14
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.897 SNIP 1.419 CiteScore 1.16
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.929 SNIP 1.277 CiteScore 1.08
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.997 SNIP 1.36
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.161 SNIP 1.802
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.25 SNIP 1.673
Deterministic phase measurements exhibiting super-sensitivity and super-resolution

Phase super-sensitivity is obtained when the sensitivity in a phase measurement goes beyond the quantum shot noise limit, whereas super-resolution is obtained when the interference fringes in an interferometer are narrower than half the input wavelength. Here we show experimentally that these two features can be simultaneously achieved using a relatively simple setup based on Gaussian states and homodyne measurement. Using 430 photons shared between a coherent and a squeezed vacuum state, we demonstrate a 22-fold improvement in the phase resolution, while we observe a 1.7-fold improvement in the sensitivity. In contrast to previous demonstrations of super-resolution and super-sensitivity, this approach is fully deterministic.
We report theoretical and experimental work on the development of a Josephson vortex two-state system based on a confocal annular Josephson tunnel junction (CAJTJ). The key ingredient of this geometrical configuration is a periodically variable width that generates a spatial vortex potential with bistable states. This intrinsic vortex potential can be tuned by an externally applied magnetic field and tilted by a bias current. The two-state system is accurately modeled by a one-dimensional sine-Gordon like equation by means of which one can numerically calculate both the magnetic field needed to set the vortex in a given state as well as the vortex-depinning currents. Experimental data taken at on high-quality Nb/Al–AlOx/Nb CAJTJs with an individual trapped fluxon advocate the presence of a robust and finely tunable double-well potential for which reliable manipulation of the vortex state has been classically demonstrated. The vortex is prepared in a given potential by means of an externally applied magnetic field, while the state readout is accomplished by measuring the vortex-depinning current in a small magnetic field. Our proof of principle experiment convincingly demonstrates that the proposed vortex two-state system based on CAJTJs is robust and workable.

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Organisations: Department of Physics, Institute of Applied Sciences and Intelligent Systems 'E. Caianello', Russian Academy of Sciences
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Scopus rating (2015): SJR 0.796 SNIP 1.343 CiteScore 2.08
Dietary Fat Intake and Fecundability in 2 Preconception Cohort Studies

The association between dietary fat and fertility is not well studied. We evaluated intakes of total fat, saturated fatty acids, monounsaturated fatty acids, polyunsaturated fatty acids, trans fatty acids (TFA), ω-3 fatty acids, and ω-6 fatty acids in relation to fecundability in Danish and North American preconception cohort studies. Women who were attempting to become pregnant completed a validated food frequency questionnaire at baseline. Pregnancy status was updated bimonthly for 12 months or until pregnancy. Fecundability ratios (FR) and 95% confidence intervals were estimated using multivariable proportional probabilities regression. Intakes of total fat and saturated, monounsaturated, polyunsaturated,
and ω-6 fatty acids were not appreciably associated with fecundability. TFA intake was associated with reduced fecundability in North American women (for the fourth quartile vs. the first, FR = 0.86, 95% confidence interval (CI): 0.71, 1.04) but not Danish women (for the fourth quartile vs. the first, FR = 1.04, 95% CI: 0.86, 1.25), though intake among Danish women was low. In North America, ω-3 fatty acid intake was associated with higher fecundability, but there was no dose-response relationship (among persons who did not use fish oil supplements: for the fourth quartile vs. the first, FR = 1.40, 95% CI: 1.13, 1.73); no association was found in Danish women, among whom low intake was rare. In the present study, high TFA intake and low ω-3 fatty acid intake were associated with reduced fecundity.

**General information**

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BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.975 SNIP 1.948 CiteScore 4.12
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.033 SNIP 2.09 CiteScore 4.55
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.866 SNIP 2.01 CiteScore 4.56
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
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ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.977 SNIP 2.077
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.014 SNIP 2.171
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.93 SNIP 2.036
Scopus rating (2007): SJR 2.786 SNIP 2.273
Scopus rating (2006): SJR 3.094 SNIP 2.359
Scopus rating (2005): SJR 2.979 SNIP 2.449
Scopus rating (2004): SJR 2.772 SNIP 2.207
Scopus rating (2003): SJR 2.517 SNIP 2.187
Scopus rating (2002): SJR 2.33 SNIP 1.898
Digital archive for strong ground motions recorded in earthquake sequences

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Organisations: Department of Civil Engineering, Section for Structural Engineering, Technical University of Denmark
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Main Research Area: Technical/natural sciences
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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[dbnd]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.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Nanocarbon, Center for Nanostructured Graphene, Department of Photonics Engineering, Structured Electromagnetic Materials, University of Copenhagen
Authors: Liu, Z. (Ekstern), Nørgaard, K. (Ekstern), Overgaard, M. H. (Ekstern), Ceccato, M. (Ekstern), Mackenzie, D. M. (Intern), Stenger, N. (Intern), Stipp, S. L. (Ekstern), Hassenkam, T. (Ekstern)
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BFI (2018): BFI-level 1
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Scopus rating (2016): CiteScore 6.49 SJR 2.077 SNIP 1.666
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.042 SNIP 1.756 CiteScore 6.53
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.145 SNIP 2.014 CiteScore 6.62
Web of Science (2014): Indexed yes
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
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Scopus rating (1999): SJR 1.099 SNIP 1.35
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Disaggregation of SMOS soil moisture over West Africa using the Temperature and Vegetation Dryness Index based on SEVIRI land surface parameters
The overarching objective of this study was to produce a disaggregated SMOS Soil Moisture (SM) product using land surface parameters from a geostationary satellite in a region covering a diverse range of ecosystem types. SEVIRI data at 15 minute temporal resolution were used to derive the Temperature and Vegetation Dryness Index (TVDI) that served as SM proxy within the disaggregation process. West Africa (3 N, 26 W; 28 N, 26 E) was selected as a case study as it presents both an important North-South climate gradient and a diverse range of ecosystem types. The main challenge was to set up a methodology applicable over a large area that overcomes the constraints of SMOS (low spatial resolution) and TVDI (requires similar atmospheric forcing and triangular shape formed when plotting morning rise temperature versus fraction of vegetation cover) in order to produce a 0.05 degree resolution disaggregated SMOS SM product at sub-continental scale. Consistent cloud cover appeared as one of the main constraints for deriving TVDI, especially during the
rainy season and in the southern parts of the region and a large adjustment window (105x105 SEVIRI pixels) was therefore deemed necessary. Both the original and the disaggregated SMOS SM products described well the seasonal dynamics observed at six locations of in situ observations. However, there was an overestimation in both products for sites in the humid southern regions; most likely caused by the presence of forest. Both TVDI and the associated disaggregated SM product was found to be highly sensitive to algorithm input parameters; especially of conditions of high fraction of vegetation cover. Additionally, seasonal dynamics in TVDI did not follow the seasonal patterns of SM. Still, its spatial heterogeneity was found to be a good proxy for disaggregating SMOS SM data; main river networks and spatial patterns of SM extremes (i.e. droughts and floods) not seen in the original SMOS SM product were revealed in the disaggregated SM product for a test case of July-September 2012. The disaggregation methodology thereby successfully increased the spatial resolution of SMOS SM, with potential application for local drought/flood monitoring of importance for the livelihood of the population of West Africa.

General information
State: Published
Organisations: Department of Environmental Engineering, Air, Land & Water Resources, University of Copenhagen, University of Leicester, University of Reading, IRTA
Authors: Tagesson, T. (Ekstern), Horion, S. (Ekstern), Nieto, H. (Ekstern), Zaldo Fornies, V. (Ekstern), Mendiguren Gonzales, G. (Intern), Bulgin, C. E. (Ekstern), Ghent, D. (Ekstern), Fensholt, R. (Ekstern)
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Main Research Area: Technical/natural sciences

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BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.92 SJR 3.073 SNIP 2.943
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.754 SNIP 3.09 CiteScore 7.27
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.918 SNIP 3.541 CiteScore 7.21
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.25 SNIP 3.034 CiteScore 5.6
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.439 SNIP 3.588 CiteScore 5.99
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.477 SNIP 3.145 CiteScore 5.72
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.704 SNIP 2.563
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.305 SNIP 2.549
BFI (2008): BFI-level 2
Disentangling Distance and Country Effects on the Value of Conservation across National Borders

Highlights:

We study trans-national valuation of conservation outcomes in two neighbouring countries Sweden and Denmark.

The experimental design allow us to separate country and distance effects on values.

Respondents prefer conservation in their own country over neighbouring countries.

Value decreases with distance from respondents' home location.

The results are important for the design of trans-national conservation policies.

General information
State: Published
Organisations: Department of Management Engineering, UNEP DTU Partnership, University of Copenhagen, University of the West Indies
Authors: Bakhtiari, F. (Intern), Jacobsen, J. B. (Ekstern), Thorsen, B. J. (Ekstern), Lundhede, T. H. (Ekstern), Strange, N. (Ekstern), Boman, M. (Ekstern)
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Main Research Area: Technical/natural sciences

Publication information
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Ratings:
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Dissecting the genetic and metabolic mechanisms of adaptation to the knockout of a major metabolic enzyme in *Escherichia coli*

Unraveling the mechanisms of microbial adaptive evolution following genetic or environmental challenges is of fundamental interest in biological science and engineering. When the challenge is the loss of a metabolic enzyme, adaptive responses can also shed significant insight into metabolic robustness, regulation, and areas of kinetic limitation. In this study, whole-genome sequencing and high-resolution C-13-metabolic flux analysis were performed on 10 adaptively evolved pgi knockouts of *Escherichia coli*. Pgi catalyzes the first reaction in glycolysis, and its loss results in major physiological and carbon catabolism pathway changes, including an 80% reduction in growth rate. Following adaptive
laboratory evolution (ALE), the knockouts increase their growth rate by up to 3.6-fold. Through combined genomic-fluxomic analysis, we characterized the mutations and resulting metabolic fluxes that enabled this fitness recovery. Large increases in pyridine cofactor transhydrogenase flux, correcting imbalanced production of NADPH and NADH, were enabled by direct mutations to the transhydrogenase genes sthA and pntAB. The phosphotransferase system component crr was also found to be frequently mutated, which corresponded to elevated flux from pyruvate to phosphoenolpyruvate. The overall energy metabolism was found to be strikingly robust, and what have been previously described as latentlly activated Entner-Doudoroff and glyoxylate shunt pathways are shown here to represent no real increases in absolute flux relative to the wild type. These results indicate that the dominant mechanism of adaptation was to relieve the rate-limiting steps in cofactor metabolism and substrate uptake and to modulate global transcriptional regulation from stress response to catabolism.
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 (dianlycyclopentenone) 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, in return 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: Published
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), J
Authors: Tauber, J. P. (Ekstern), Gallegos-Monterrosa, R. (Ekstern), Kovács, Á. T. (Intern), Shelest, E. (Ekstern), Hoffmeister, D. (Ekstern)
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Web of Science (2018): Indexed yes
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Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.56 SJR 0.805 SNIP 0.648
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.136 SNIP 0.834 CiteScore 2.05
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.448 SNIP 0.978 CiteScore 2.69
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.652 SNIP 1.031 CiteScore 3.34
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.596 SNIP 0.974 CiteScore 3.12
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.636 SNIP 1.036 CiteScore 3.18
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.774 SNIP 0.988
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.69 SNIP 0.994
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.709 SNIP 1.009
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.719 SNIP 1.059
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.772 SNIP 1.063
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.731 SNIP 1.027
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.675 SNIP 1.065
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.652 SNIP 1.037
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.507 SNIP 1.01
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.529 SNIP 1.039
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.488 SNIP 1.103
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.592 SNIP 1.091
Distinct Nature of Static and Dynamic Magnetic Stripes in Cuprate Superconductors

We present detailed neutron scattering studies of the static and dynamic stripes in an optimally doped high-Temperature superconductor, La$_2$CuO$_{4+y}$. We observe that the dynamic stripes do not disperse towards the static stripes in the limit of vanishing energy transfer. Therefore, the dynamic stripes observed in neutron scattering experiments are not the Goldstone modes associated with the broken symmetry of the simultaneously observed static stripes, and the signals originate from different domains in the sample. These observations support real-space electronic phase separation in the crystal, where the static stripes in one phase are pinned versions of the dynamic stripes in the other, having slightly different periods. Our results explain earlier observations of unusual dispersions in underdoped La$_{2-x}$Sr$_x$CuO$_4$ ($x=0.07$) and La$_{2-x}$Ba$_x$CuO$_4$ ($x=0.095$).
Precipitation constitutes a major contribution to the flow in urban storm- and wastewater systems. Forecasts of the anticipated runoff flows, created from radar extrapolation and/or numerical weather predictions, can potentially be used to optimize operation in both wet and dry weather periods. However, flow forecasts are inevitably uncertain and their use will ultimately require a trade-off between the value of knowing what will happen in the future and the probability and consequence of being wrong.

In this study we examine how ensemble forecasts from the HIRLAM-DMI-S05 numerical weather prediction (NWP) model subject to three different ensemble post-processing approaches can be used to forecast flow exceedance in a combined sewer for a wide range of ratios between the probability of detection (POD) and the probability of false detection (POFD). We use a hydrological rainfall-runoff model to transform the forecasted rainfall into forecasted flow series and evaluate three different approaches to establishing the relative operating characteristics (ROC) diagram of the forecast, which is a plot of POD against POFD for each fraction of concordant ensemble members and can be used to select the weight of evidence that matches the desired trade-off between POD and POFD. In the first approach, the rainfall input to the model is calculated for each of 25 ensemble members as a weighted average of rainfall from the NWP cells over the catchment where the weights are proportional to the areal intersection between the catchment and the NWP cells. In the second approach, a total of 2825 flow ensembles are generated using rainfall input from the neighbouring NWP cells up to
approximately 6 cells in all directions from the catchment. In the third approach, the first approach is extended spatially by successively increasing the area covered and for each spatial increase and each time step selecting only the cell with the highest intensity resulting in a total of 175 ensemble members. While the first and second approaches have the disadvantage of not covering the full range of the ROC diagram and being computationally heavy, respectively, the third approach leads to both a broad coverage of the ROC diagram range at a relatively low computational cost. A broad coverage of the ROC diagram offers a larger selection of prediction skill to choose from to best match to the prediction purpose.

The study distinguishes itself from earlier research in being the first application to urban hydrology, with fast runoff and small catchments that are highly sensitive to local extremes. Furthermore, no earlier reference has been found on the highly efficient third approach using only neighbouring cells with the highest threat to expand the range of the ROC diagram. This study provides an efficient and robust approach to using ensemble rainfall forecasts affected by bias and misplacement errors for predicting flow threshold exceedance in urban drainage systems.

**General information**

State: Published  
Organisations: Department of Environmental Engineering, Urban Water Systems  
Authors: Courdent, V. A. T. (Intern), Grum, M. (Intern), Mikkelsen, P. S. (Intern)  
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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  
Scopus rating (2011): SJR 1.753 SNIP 1.858 CiteScore 3.16  
ISI indexed (2011): ISI indexed yes  
Web of Science (2011): Indexed yes  
BFI (2010): BFI-level 2  
Scopus rating (2010): SJR 1.784 SNIP 1.714  
Web of Science (2010): Indexed yes  
BFI (2009): BFI-level 2  
Scopus rating (2009): SJR 2.018 SNIP 1.835  
Web of Science (2009): Indexed yes
Urban hydrology, Numerical Weather Prediction (NWP), Ensemble Prediction System (EPS), Probability of Detection (POD), Probability of False Detection (POFD), Relative operating characteristic (ROC)

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Distribution and timing of spawning Faroe Plateau cod in relation to warming spring temperatures

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Authors: Maj Ottosen, K. (Intern), Steingrund, P. (Ekstern), Magnussen, E. (Ekstern), Payne, M. (Intern)
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Web of Science (2018): Indexed yes
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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
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Scopus rating (2014): SJR 1.105 SNIP 1.312 CiteScore 2.17
Web of Science (2014): Indexed yes
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Diverse genetic error modes constrain large-scale bio-based production

A transition toward sustainable bio-based chemical production is important for green growth. However, productivity and yield frequently decrease as large-scale microbial fermentation progresses, commonly ascribed to phenotypic variation. Yet, given the high metabolic burden and toxicities, evolutionary processes may also constrain bio-based production. We experimentally simulate large-scale fermentation with mevalonic acid-producing Escherichia coli. By tracking growth rate and production, we uncover how populations fully sacrifice production to gain fitness within 70 generations. Using ultra-deep (>1000×) time-lapse sequencing of the pathway populations, we identify multiple recurring intra-pathway genetic error modes. This genetic heterogeneity is only detected using deep-sequencing and new population-level bioinformatics, suggesting that the problem is underestimated. A quantitative model explains the population dynamics based on enrichment of spontaneous mutant cells. We validate our model by tuning production load and escape rate of the production host and apply multiple orthogonal strategies for postponing genetically driven production declines.

General information
State: Published
Diversity of Aspergillus section Nigri on the surface of Vitis labrusca and its hybrid grapes

This study investigated the presence of Aspergillus species belonging to Aspergillus section Nigri on Vitis labrusca and its hybrid grapes grown in Brazil. The ability of the fungi isolates to produce ochratoxin A (OTA) and fumonisin B2 (FB2) as well as the presence of these mycotoxins in the grapes were also studied. Eighty-eight samples were collected from the main grape producing states in Brazil: Rio Grande do Sul (n=30), Pernambuco (n=21), São Paulo (n=21) and Paraná (n=16). The highest average contamination level by A. section Nigri occurred on the grapes from Pernambuco (66.3%). A total of 2042 A. section Nigri isolates was analyzed and clustered in three groups according to morphology.
characterization: A. section Nigri uniseriate (79.3%), A. niger "aggregate" (18.3%) and A. carbonarius (2.4%). In order to precisely identify the Aspergillus species, two hundred and forty-eight strains were subjected to DNA sequencing. Among the A. section Nigri uniseriate group, the following species were found: A. japonicus, A. uvarum, A. brunneoviolaceus, A. aculeatus and A. labruscus. Within the A. niger "aggregate", the following species were found: A. niger sensu stricto, A. welwitschiae and A. vadensis. Regarding mycotoxin-production capacity, 3.2% of the total A. section Nigri isolates (2042) were positive for OTA production and from A. niger "aggregate" (373) tested, 42.1% were FB2 producers. However, none of the 88 grape samples were contaminated with these mycotoxins.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Fungal Chemodiversity, Universidade Estadual de Londrina, Instituto de Tecnologia de Alimentos
Authors: Ferranti, L. D. S. (Ekstern), Fungaro, M. H. P. (Ekstern), Massi, F. P. (Ekstern), Silva, J. J. D. (Ekstern), Penha, R. E. S. (Ekstern), Frisvad, J. C. (Intern), Taniwaki, M. H. (Ekstern), Iamanaka, B. T. (Ekstern)
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Web of Science (2016): Indexed yes
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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
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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
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.593 SNIP 1.665
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.458 SNIP 1.52
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.486 SNIP 1.511
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.33 SNIP 1.69
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.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Embedded Systems Engineering, IT University of Copenhagen
Authors: Bardram, J. E. (Intern), Frost, M. (Ekstern)
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Drug-Driven Phenotypic Convergence Supports Rational Treatment Strategies of Chronic Infections

Chronic Pseudomonas aeruginosa infections evade antibiotic therapy and are associated with mortality in cystic fibrosis (CF) patients. We find that in vitro resistance evolution of P. aeruginosa toward clinically relevant antibiotics leads to phenotypic convergence toward distinct states. These states are associated with collateral sensitivity toward several antibiotic classes and encoded by mutations in antibiotic resistance genes, including transcriptional regulator nfxB. Longitudinal analysis of isolates from CF patients reveals similar and defined phenotypic states, which are associated with
extinction of specific sub-lineages in patients. In-depth investigation of chronic P. aeruginosa populations in a CF patient during antibiotic therapy revealed dramatic genotypic and phenotypic convergence. Notably, fluoroquinolone-resistant subpopulations harboring nfxB mutations were eradicated by antibiotic therapy as predicted by our in vitro data. This study supports the hypothesis that antibiotic treatment of chronic infections can be optimized by targeting phenotypic states associated with specific mutations to improve treatment success in chronic infections.

General information
State: Accepted/In press
Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Bacterial Synthetic Biology, Department of Systems Biology, Department of Biotechnology and Biomedicine, Office for Study Programmes and Student Affairs, CHO Core, iLoop, Infection Microbiology, Copenhagen University Hospital
Number of pages: 29
Publication date: 2018
Main Research Area: Technical/natural sciences
Dual Nicotinic Acetylcholine Receptor α4β2 Antagonists/α7 Agonists: Synthesis, Docking Studies, and Pharmacological Evaluation of Tetrahydroisoquinolines and Tetrahydroisoquinolinium Salts

We describe the synthesis of tetrahydroisoquinolines and tetrahydroisoquinolinium salts together with their pharmacological properties at various nicotinic acetylcholine receptors. In general, the compounds were α4β2 nAChR antagonists, with the tetrahydroisoquinolinium salts being more potent than the parent tetrahydroisoquinoline derivatives. The most potent α4β2 antagonist, 6c, exhibited submicromolar binding Ki and functional IC50 values and high selectivity for this receptor over the α4β4 and α3β4 nAChRs. Whereas the (S)-6c enantiomer was essentially inactive at α4β2, (R)-6c was a slightly more potent α4β2 antagonist than the reference β2-nAChR antagonist DHβE. The observation that the α4β2 activity resided exclusively in the (R)-enantiomer was in full agreement with docking studies. Several of tetrahydroisoquinolinium salts also displayed agonist activity at the α7 nAChR. Preliminary in vivo evaluation revealed antidepressant-like effects of both (R)-5c and (R)-6c in the mouse forced swim test, supporting the therapeutic potential of α4β2 nAChR antagonists for this indication.

General information
State: Accepted/In press
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Department of Chemistry, University of Copenhagen, Technical University of Denmark
Authors: Crestey, F. (Ekstern), Jensen, A. A. (Ekstern), Sørensen, C. (Intern), Magnus, C. B. (Intern), Andreasen, J. T. (Ekstern), Peters, G. H. (Intern), Kristensen, J. L. (Ekstern)
Number of pages: 11
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Medicinal Chemistry
ISSN (Print): 0022-2623
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BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.06
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.529 SNIP 1.631 CiteScore 5.66
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.259 SNIP 1.693 CiteScore 5.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.293 SNIP 1.78 CiteScore 5.65
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Dynamic Allocation or Diversification: A Regime-Based Approach to Multiple Assets

This article investigates whether regime-based asset allocation can effectively respond to changes in financial regimes at the portfolio level in an effort to provide better long-term results when compared to a static 60/40 benchmark. The potential benefit from taking large positions in a few assets at a time comes at the cost of reduced diversification. The authors analyze this trade-off in a multi-asset universe with great potential for static diversification. The regime-based approach is centered around a regime-switching model with time-varying parameters that can match financial markets’ behavior and a new, more intuitive way of inferring the hidden market regimes. The empirical results show that regime-based asset allocation is profitable, even when compared to a diversified benchmark portfolio. The results are robust because they are based on available market data with no assumptions about forecasting skills.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems, Sampension, Lund University
Authors: Nystrup, P. (Intern), Hansen, B. W. (Ekstern), Larsen, H. O. (Ekstern), Madsen, H. (Intern), Lindström, E. (Ekstern)
Number of pages: 12
Pages: 62-73
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: The Journal of Portfolio Management
Volume: 44
Issue number: 2
ISSN (Print): 0095-4918
Ratings:
We present a deterministic fully-dynamic data structure for maintaining information about the bridges in a graph. We support updates in $\tilde{O}(\log^2 n)$ amortized time, and can find a bridge in the component of any given vertex, or a bridge separating any two given vertices, in $O(\log^3 n)$ worst case time. Our bounds match the current best for bounds for deterministic fully-dynamic connectivity up to $\log \log n$ factors. The previous best dynamic bridge finding was an $\tilde{O}(\log^3 n)$ amortized time algorithm by Thorup [STOC2000], which was a bittrick-based improvement on the $O(\log^4 n)$ amortized time algorithm by Holm et al. [STOC98, JACM2001]. Our approach is based on a different and purely combinatorial improvement of the algorithm of Holm et al., which by itself gives a new combinatorial $\tilde{O}(\log^3 n)$ amortized time algorithm. Combining it with Thorup’s bittrick, we get down to the claimed $\tilde{O}(\log^2 n)$ amortized time algorithm.

Essentially the same new trick can be applied to the biconnectivity data structure from [STOC98, JACM2001], improving the amortized update time to $\tilde{O}(\log^3 n)$. We also offer improvements in space. We describe a general trick which applies to both of our new algorithms, and to the old ones, to get down to linear space, where the previous best use $O(\log^2 n + \log^2 n + \log \log \log n)$. Our result yields an improved running time for deciding whether a unique perfect matching exists in a static graph.
Dynamic coronary MR angiography in a pig model with hyperpolarized water

To investigate dynamic coronary MR angiography using hyperpolarized water as a positive contrast agent. Hyperpolarization can increase the signal by several orders of magnitude, and has recently been translated to human cardiac application. The aim was to achieve large 1 H signal enhancement to allow high-resolution imaging of the coronary arteries. Protons in D2 O were hyperpolarized by dissolution dynamic nuclear polarization. A total of 18 mL of hyperpolarized water was injected into the coronary arteries of healthy pigs (N=9; 3 injections in 3 animals). The MRI images were acquired with a gradient-echo sequence in an oblique slab covering the main left coronary arteries with 0.55 mm in-plane resolution. The acquisition time was 870 ms per frame. A more than 200-fold signal enhancement compared with thermally polarized water at 3 T was obtained. Coronary angiographic images with a signal-to-noise ratio from the left main stem of 269 ± 169 and coronary sharpness from the proximal left anterior descending coronary artery of 0.31 ± 0.086 mm-1 were obtained. Dynamic images were acquired over a 10 s time window. Hyperpolarized water MR angiography of the coronary arteries in a large animal model with high signal-to-noise ratio and high spatial and temporal resolution was obtained. Magn Reson Med, 2018. © 2018 International Society for Magnetic Resonance in Medicine.
Dynamic Power Tariff for Congestion Management in Distribution Networks

This paper proposes dynamic power tariff (DPT), a new concept for congestion management in distribution networks with high penetration of electric vehicles (EVs), and heat pumps (HPs). The DPT concept is proposed to overcome a drawback of the dynamic tariff (DT) method, i.e., DPT can replace the price sensitivity parameter in the DT method, which is relatively unrealistic in practice. Based on the control theory, a control model with two control loops, i.e., the power flow control and voltage control, is established to analyze the congestion management process by the DPT method. Furthermore, an iterative method based on distributed optimization is proposed to determine the DPT rates, which enables active participation of aggregators in the congestion management. The case studies demonstrate the efficacy of the DPT method for congestion management in distribution networks, and show its ability to save congestion management cost compared to the DT methods.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, Illinois Institute of Technology
**Publication information**

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Article number: 1-10  
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- BFI (2018): BFI-level 2  
- Web of Science (2018): Indexed yes  
- 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  
- ISI indexed (2011): ISI indexed no  
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Original language: English

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**Earth's Magnetic Field: Understanding Geomagnetic Sources from the Earth's Interior and its Environment**

This volume provides a comprehensive view on the different sources of the geomagnetic field both in the Earth’s interior and from the field’s interaction with the terrestrial atmosphere and the solar wind. It combines expertise from various relevant areas of geomagnetic and near Earth space research with the aim to better characterise the state and dynamics of Earth’s magnetic field. Advances in the exploitation of geomagnetic observations hold a huge potential not only for an improved quantitative description of the field source but also for a better understanding of the underlying processes and physics. Key is the separation of the field sources in the observations, especially, but not solely, during times of quiet geomagnetic conditions, when the most subtle geomagnetic effects can be identified and become significant. The collected articles are based on the current constellation of ground and space observations, and on state-of-the-art empirical models and physics-based simulations. Thus, it provides an in-depth overview over recent achievements, current limitations and challenges, and future opportunities in the field of geomagnetism and space sciences.

**General information**

State: Published  
Organisations: National Space Institute, Geomagnetism, Deutsches Geoforschungszentrum, National Center for Atmospheric Research, Uppsala University  
EasyCloneYALI: CRISPR/Cas9-based synthetic toolbox for engineering of the yeast Yarrowia lipolytica

The oleaginous yeast Yarrowia lipolytica is an emerging host for production of fatty acid-derived chemicals. To enable rapid iterative metabolic engineering of this yeast, there is a need for well-characterized genetic parts and convenient and reliable methods for their incorporation into yeast. Here, we present the EasyCloneYALI genetic toolbox, which allows streamlined strain construction with high genome editing efficiencies in Y. lipolytica via the CRISPR/Cas9 technology. The toolbox allows marker-free integration of gene expression vectors into characterized genome sites as well as marker-free deletion of genes with the help of CRISPR/Cas9. Genome editing efficiencies above 80% were achieved with transformation protocols using non-replicating DNA repair fragments (such as DNA oligos). Furthermore, the toolbox includes a set of integrative gene expression vectors with prototrophic markers conferring resistance to hygromycin and nourseothricin.
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

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Title of host publication: Life Cycle Assessment : Theory and Practice
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Main Research Area: Technical/natural sciences
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Source-ID: 2373522907
Publication: Research - peer-review › Book chapter – Annual report year: 2018

EDC IMPACT: Reduced sperm counts in rats exposed to human relevant mixtures of endocrine disrupters

Human semen quality is declining in many parts of the world, but the causes are ill defined. In rodents, impaired sperm production can be seen with early life exposure to certain endocrine-disrupting chemicals, but the effects of combined exposures are not properly investigated. In this study, we examined the effects of early exposure to the painkiller paracetamol and mixtures of human relevant endocrine-disrupting chemicals in rats. One mixture contained four estrogenic compounds; another contained eight anti-androgenic environmental chemicals and a third mixture contained estrogens, anti-androgens and paracetamol. All exposures were administered by oral gavage to time-mated Wistar dams rats (n = 16-20) throughout gestation and lactation. In the postnatal period, testicular histology was affected by the total mixture, and at the end of weaning, male testis weights were significantly increased by paracetamol and the high doses of the total and the anti-androgenic mixture, compared to controls. In all dose groups, epididymal sperm counts were
reduced several months after end of exposure, i.e. at 10 months of age. Interestingly, the same pattern of effects was seen for paracetamol as for mixtures with diverse modes of action. Reduced sperm count was seen at a dose level reflecting human therapeutic exposure to paracetamol. Environmental chemical mixtures affected sperm count at the lowest mixture dose indicating an insufficient margin of safety for the most exposed humans. This causes concern for exposure of pregnant women to paracetamol as well as environmental endocrine disrupters.

**General information**
State: Published
Organisations: National Food Institute, Research Group for Molecular and Reproductive Toxicology, Brunel University
Authors: Axelstad Petersen, M. (Intern), Hass, U. (Intern), Scholze, M. (Ekstern), Christiansen, S. (Intern), Kortenkamp, A. (Ekstern), Boberg, J. (Intern)
Number of pages: 10
Pages: 139-148
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Endocrine Connections
Volume: 7
Issue number: 1
ISSN (Print): 2049-3614
Original language: English

**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

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Journal: European Journal of Operational Research
Volume: 264
Issue number: 3
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Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
Effect of alginate size, mannuronic/guluronic acid content and pH on particle size, thermodynamics and composition of complexes with β-lactoglobulin

Alginates are anionic polysaccharides capable of forming insoluble particles with proteins. Hence, alginate has potential as a protein carrier. However, the role of physical properties of the polysaccharide, such as degree of polymerization (DPn) and mannuronic/guluronic acid ratio, remains to be fully explored. Particle formation of high and low molar mass alginate (ALG) with β-lactoglobulin (BLG) at pH 2-8 depends on the average DPn (HMW-ALG: 1.59·10^3; LMW-ALG: 0.23·10^3) and the mannuronic/guluronic acid ratio (1.0; 0.6) as supported by using ManA6 and GulA6 as models. Dynamic light scattering (DLS) showed that particles of BLG with either of the two ALGs have essentially the same hydrodynamic diameter (D_H) at pH 3 and 2, while at pH 4 particles of LMW-ALG/BLG have larger D_H than of HMW-ALG/BLG. At pH 5-8 no significant particle formation was observed. ManA6 did not form insoluble particles at pH 2-8, while GulA6 formed insoluble particles, albeit only at pH 4. K_d was approximately 10-fold higher for LMW-ALG/BLG than HMW-ALG/BLG and 3 orders of magnitude higher for an alginate trisaccharide/BLG complexation as determined by isothermal titration calorimetry (ITC). The alginate trisaccharide did not form insoluble particles with BLG at pH 3 and 4, though interaction still occurred. δH_app and molar stoichiometry of BLG in the complexes with the two ALGs differed by a factor of 7, as did their
DP$_n$ which thus affected the interaction strength, but not the BLG content. At pH 4 the BLG content doubled in the particle due to BLG dimerization. The findings emphasize the importance of DP$_n$, mannuronic/guluronic acid ratio and pH in formulations containing alginate/whey protein particles.

**General information**

**State:** Published

**Organisations:** Department of Biotechnology and Biomedicine, Enzyme and Protein Chemistry, Protein Glycoscience and Biotechnology, Department of Micro- and Nanotechnology, Amphiphilic Polymers in Biological Sensing, University of Copenhagen, DuPont, Roskilde University

**Authors:** Stender, E. G. (Intern), Khan, S. (Intern), Ipsen, R. (Ekstern), Madsen, F. (Ekstern), Hägglund, P. (Intern), Hachem, M. A. (Intern), Almdal, K. (Intern), Westh, P. (Ekstern), Svensson, B. (Intern)

**Pages:** 157-163

**Publication date:** 2018

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

**Publication information**

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- **Web of Science (2018):** Indexed yes
- **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 (2016):** CiteScore 5.1 SJR 2.043 SNIP 2.041
- **Web of Science (2016):** Indexed yes
- **BFI (2014):** BFI-level 2
- **Scopus rating (2014):** SJR 2.251 SNIP 2.564 CiteScore 5.21
- **Web of Science (2014):** Indexed yes
- **BFI (2013):** BFI-level 2
- **Scopus rating (2013):** SJR 2.1 SNIP 2.292 CiteScore 4.81
- **ISI indexed (2013):** ISI indexed yes
- **Web of Science (2013):** Indexed yes
- **BFI (2012):** BFI-level 2
- **Scopus rating (2012):** SJR 1.866 SNIP 2.086 CiteScore 3.69
- **ISI indexed (2012):** ISI indexed yes
- **Web of Science (2012):** Indexed yes
- **BFI (2011):** BFI-level 2
- **Scopus rating (2011):** SJR 1.615 SNIP 1.921 CiteScore 3.57
- **ISI indexed (2011):** ISI indexed yes
- **Web of Science (2011):** Indexed yes
- **BFI (2010):** BFI-level 2
- **Scopus rating (2010):** SJR 1.743 SNIP 1.513
- **BFI (2009):** BFI-level 1
- **Scopus rating (2009):** SJR 1.728 SNIP 1.781
- **BFI (2008):** BFI-level 2
- **Scopus rating (2008):** SJR 1.484 SNIP 1.654
- **Scopus rating (2007):** SJR 1.563 SNIP 1.726
- **Scopus rating (2006):** SJR 1.267 SNIP 1.634
- **Scopus rating (2005):** SJR 1.007 SNIP 1.381
- **Web of Science (2005):** Indexed yes
- **Scopus rating (2004):** SJR 1.058 SNIP 1.408
- **Scopus rating (2003):** SJR 1.002 SNIP 1.506
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.
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°C) and thermophilic (55°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
Effect of fish length and nutritional condition on the fecundity of distressed Atlantic cod Gadus morhua from the Baltic Sea: Potential fecundity of Baltic G. Morhua

General information
State: Accepted/In press
Organisations: National Institute of Aquatic Resources, Section for Marine Living Resources, Swedish University of Agricultural Sciences, Institute of Marine Research, Swedish University of Agricultural Sciences, GEOMAR Helmholtz Center for Ocean Research Kiel, University of Hamburg
Authors: Mion, M. (Ekstern), Thorsen, A. (Ekstern), Vitale, F. (Ekstern), Dierking, J. (Ekstern), Herrmann, J. P. (Ekstern), Huwer, B. (Intern), von Dewitz, B. (Ekstern), Casini, M. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Journal of Fish Biology
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.57 SJR 0.741 SNIP 0.882
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.951 SNIP 0.935 CiteScore 1.64
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.944 SNIP 0.934 CiteScore 1.76
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.049 SNIP 1.118 CiteScore 1.98
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.93 SNIP 1.035 CiteScore 1.88
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.895 SNIP 0.946 CiteScore 1.66
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.774 SNIP 0.834
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.773 SNIP 0.891
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Effect of Novel Quercetin Titanium Dioxide-Decorated Multi-Walled Carbon Nanotubes Nanocomposite on Bacillus subtilis Biofilm Development

The present work was targeted to design a surface against cell seeding and adhering of bacteria, Bacillus subtilis. A multi-walled carbon nanotube/titanium dioxide nano-power was produced via simple mixing of carbon nanotube and titanium dioxide nanoparticles during the sol-gel process followed by heat treatment. Successfully, quercetin was immobilized on the nanocomposite via physical adsorption to form a quercetin/multi-walled carbon nanotube/titanium dioxide nanocomposite. The adhesion of bacteria on the coated-slides was verified after 24 h using confocal laser-scanning microscopy. Results indicated that the quercetin/multi-walled carbon nanotube/titanium dioxide nanocomposite had more negativity and higher recovery by glass surfaces than its counterpart. Moreover, coating surfaces with the quercetin-modified nanocomposite lowered both hydrophilicity and surface-attached bacteria compared to surfaces coated with the multi-walled carbon nanotubes/titanium dioxide nanocomposite.

General information
State: Published
Organisations: Department of Biotechnology and Biomedicine, Egyptian Petroleum Research Institute, Friedrich Schiller University, Cairo University, Leibniz Institute of Photonic Technology Jena
Number of pages: 14
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Materials
Volume: 11
Issue number: 1
Article number: 157
ISSN (Print): 1996-1944
Ratings:
Web of Science (2018): Indexed yes
Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 3.26 SJR 0.834 SNIP 1.497
Web of Science (2016): Indexed yes
Effect of porosity on the ferroelectric and piezoelectric properties of \((\text{Ba}_{0.85}\text{Ca}_{0.15})(\text{Zr}_{0.85}\text{Ti}_{0.15})\text{O}_3\) piezoelectric ceramics

The ferroelectric and piezoelectric properties of \((\text{Ba}_{0.85}\text{Ca}_{0.15})(\text{Zr}_{0.85}\text{Ti}_{0.15})\text{O}_3\) (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.

General information
State: Published
Organisations: Department of Physics, University of New South Wales
Authors: Yap, E. W. (Ekstern), Glaum, J. (Ekstern), Oddershede, J. (Intern), Daniels, J. E. (Ekstern)
Number of pages: 4
Pages: 122-125
Publication date: 2018
Main Research Area: Technical/natural sciences

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Volume: 145
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Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Effect of process parameters on flow length and flash formation in injection moulding of high aspect ratio polymeric micro features

This paper reports an investigation of the effects of process parameters on the quality characteristics of polymeric parts produced by micro injection moulding (μIM) with two different materials. Four injection moulding process parameters (injection velocity, holding pressure, melt temperature and mould temperature) were investigated using Polypropylene (PP) and Acrylonitrile Butadiene Styrene (ABS). Three key characteristics of the mouldings were evaluated with respect to process settings and the material employed: part mass, flow length and flash formation. The experimentation employs a test part with four micro fingers with different aspect ratios (from 21 up to 150) and was carried out according to the Design...
of Experiments (DOE) statistical technique. The results show that holding pressure and injection velocity are the most influential parameters on part mass with a direct effect for both materials. Both parameters have a similar effect on flow length for both PP and ABS at all aspect ratios and have higher effects as the feature thickness decreased below 300 µm. The study shows that for the investigated materials the injection speed and packing pressure were the most influential parameters for increasing the amount of flash formation, with relative effects consistent for both materials. Higher melt and mould temperatures settings were less influential parameters for increasing the flash amount when moulding with both materials. Of the two investigated materials, PP was the one exhibiting more flash formation as compared with ABS, when corresponding injection moulding parameters settings for both materials were considered.

**General information**

State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Acoustic Technology, Mansoura University
Authors: Eladl, A. (Ekstern), Mostafa, R. (Ekstern), Islam, A. (Intern), Loaldi, D. (Intern), Soltan, H. (Ekstern), Hansen, H. N. (Intern), Tosello, G. (Intern)
Number of pages: 19
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Web of Science (2016): Indexed yes
Scopus rating (2015): SJR 0.438 SNIP 0.931 CiteScore 1.78
Web of Science (2015): Indexed yes
Scopus rating (2014): SJR 0.638 SNIP 1.384 CiteScore 2.1
Scopus rating (2013): SJR 0.479 SNIP 1.151 CiteScore 1.73
ISI indexed (2013): ISI indexed no
Scopus rating (2012): SJR 0.477 SNIP 1.34 CiteScore 1.28
ISI indexed (2012): ISI indexed no
Scopus rating (2011): SJR 0.226 SNIP 0.892
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**Bibliographical note**

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**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 inducing 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.
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.

General information
State: Published
Organisations: National Food Institute, Research Group for Food Production Engineering, Shahid Beheshti University of Medical Sciences
Authors: Nazari, B. (Ekstern), Mohammadifar, M. A. (Intern), Shojaee-Aliabadi, S. (Ekstern), Feizollahi, E. (Ekstern), Mirmoghtadaie, L. (Ekstern)
Pages: 382-388
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Web of Science (2018): Indexed yes
Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 4.7 SJR 1.203 SNIP 1.766
Scopus rating (2015): SJR 1.465 SNIP 2.104 CiteScore 4.77
Scopus rating (2014): SJR 1.562 SNIP 2.129 CiteScore 4.59
Scopus rating (2013): SJR 1.434 SNIP 1.975 CiteScore 4.13
Scopus rating (2012): SJR 1.428 SNIP 1.902 CiteScore 3.63
Scopus rating (2011): SJR 1.631 SNIP 1.857 CiteScore 3.91
Scopus rating (2010): SJR 1.603 SNIP 1.65
Scopus rating (2009): SJR 1.443 SNIP 1.613
Scopus rating (2008): SJR 1.243 SNIP 1.752
Scopus rating (2007): SJR 1.105 SNIP 1.757
Scopus rating (2006): SJR 0.924 SNIP 1.799
Scopus rating (2005): SJR 0.968 SNIP 1.56
Scopus rating (2004): SJR 1.388 SNIP 1.772
Scopus rating (2003): SJR 0.902 SNIP 1.246
Scopus rating (2002): SJR 0.898 SNIP 1.082
Scopus rating (2001): SJR 0.78 SNIP 1.571
Scopus rating (2000): SJR 0.36 SNIP 1.087
Scopus rating (1999): SJR 1.584 SNIP 1.345
Effects of chronic bottom trawling on soft-seafloor macrofauna in the Kattegat

Impact studies of chronic bottom trawling aiming to reveal long-term effects on benthic organisms are often hampered by the lack of comparable untrawled conditions and the difficulty in assessing the spatial distribution of trawling intensity. We sampled soft-seafloor macrofauna over a precise trawling gradient in the Kattegat using hourly vessel monitoring systems and logbooks. The gradient included the establishment of a marine protected area (MPA), where trawling intensity declined sharply to zero. Our results show shifts in the macrofauna assemblage and non-linear responses, with decreases in the number and diversity of species at low to medium trawling intensities. The benthic community was dominated by burrowing brittle stars, of which one species, Amphiura chiajei, increased in abundance from low to medium trawling intensities. We interpret this positive response to increasing trawling intensities as a consequence of reduction in predation by benthivorous flatfish and Norway lobster Nephrops norvegicus, which are significant catches of the fishery. The response was supported by a corresponding trend towards lower abundance of the dominating brittle stars following enforcement of the MPA and presumably an increase in benthivore density and predation pressure within the MPA. We conclude that chronic bottom trawling reduces diversity and may boost the abundances of species resistant to bottom trawling. The results emphasize the need to consider food web effects when assessing the impact of bottom trawling.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Swedish University of Agricultural Sciences, PAG Environmental Research, University of Gothenburg, Bangor University, Hafok AB
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Main Research Area: Technical/natural sciences

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  Scopus rating (2016): CiteScore 2.4
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  Web of Science (2015): Indexed yes
  Scopus rating (2014): CiteScore 2.75
  Web of Science (2014): Indexed yes
  Scopus rating (2013): CiteScore 2.79
  ISI indexed (2013): ISI indexed no
  Web of Science (2013): Indexed yes
  Scopus rating (2012): CiteScore 2.9
  ISI indexed (2012): ISI indexed no
  Web of Science (2012): Indexed yes
  Scopus rating (2011): CiteScore 2.85
  ISI indexed (2011): ISI indexed no
  Web of Science (2011): Indexed yes
  Web of Science (2010): Indexed yes
  Web of Science (2009): Indexed yes
  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
Effects of Lifestyle on Muscle Strength in a Healthy Danish Population

Background: Life style is expected to influence muscle strength. This study aimed at assessing a possible relationship between smoking, alcohol intake and physical activity, and muscle strength in a healthy Danish population aged 20-79 years. Population study based on data collected from The Copenhagen City Heart Study (CCHS) and measurements of Isokinetic muscle strength from a sub-study of randomly selected healthy participants from CCHS.

Methods: 126 women and 63 men were studied. All participants completed a questionnaire regarding their lifestyle, including physical activity, alcohol intake and smoking habits. Isokinetic muscle strength was measured over the upper extremities (UE), trunk, and lower extremities (LE). Multivariate analyses including all of the variables were carried out.

Results: The level of daily physical activity during leisure was positively correlated to muscle strength in the lower extremities (p = 0.03) for women, and lower extremities (p = 0.03) and trunk (p = 0.007) for men. Alcohol Intake was in general not correlated to muscle strength. No clear effect of smoking was seen on muscle strength. Conclusions: Our results show that physical activity during leisure is associated with a positive effect on muscle strength in both sexes. When keeping alcohol intake within the recommended limits, alcohol does not seem to affect muscle strength negatively. No effect of smoking on muscle strength was found in our group of healthy subjects. The findings are of importance when considering recommendation on life style when wishing to keep fit with age to be able to carry out daily activities.

General information
State: Accepted/In press
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Copenhagen University Hospital, University of Copenhagen, Frederiksberg Hospital
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Source-ID: 143856673
Publication: Research - peer-review › Journal article – Annual report year: 2018

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 micro-injection moulding process parameters on accuracy and precision of thermoplastic elastomer micro rings

Micro-injection moulding (μIM) represents the only technology currently capable of enabling the mass production of polymer micro-components. Although this process is mainly utilized to process rigid thermoplastics, the development of new fields of application asks for the extension of the technology potential to novel types of polymeric materials such as soft thermoplastic elastomers (TPEs). In this work, the authors studied the μIM technology of TPE micro suspension rings for sensor applications. An initial benchmark study, based on microscopy inspections and weld line depth measurements, allowed identifying suitable process parameters settings. Then, the effects of the process parameters on the dimensional variation of the outer and inner diameter of the produced micro rings were quantified. A focus variation microscope was employed for the measurements of both parts and mould cavities. The results of this study showed that the outer ring diameter was mostly affected by mould temperature and holding pressure, while the inner one depended mainly on mould and melt temperature. It was also found that the investigated process parameters had an opposite effect on the outer and inner diameter variations, posing great challenges in the achievement of the part geometry specified in the design.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering
Authors: Baruffi, F. (Intern), Calaon, M. (Intern), Tosello, G. (Intern)
Pages: 353-361
Publication date: 2018
Main Research Area: Technical/natural sciences

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BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.77 SJR 1.024 SNIP 2.201
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.054 SNIP 2.103 CiteScore 2.42
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.254 SNIP 2.478 CiteScore 2.39
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.384 SNIP 2.989 CiteScore 2.54
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.387 SNIP 3.26 CiteScore 2.2
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.374 SNIP 2.719 CiteScore 2.03
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.613 SNIP 2.958
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.121 SNIP 2.752
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.917 SNIP 1.767
Scopus rating (2007): SJR 0.991 SNIP 1.557
Scopus rating (2006): SJR 0.828 SNIP 1.663
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

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Volume: 38
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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
Effects of plastic anisotropy and void shape on full 3D void growth
Void growth in an anisotropic ductile solid is studied by numerical analyses for three dimensional unit cells initially containing a void. The effect of plastic anisotropy on void growth is the main focus, but the studies include effects of different void shapes, including oblate, prolate or general ellipsoidal voids. Also other 3D effects such as those of different spacings of voids in different material directions, and effects of different macroscopic principal stresses in three directions are accounted for. It is found that the presence of plastic anisotropy amplifies the differences between predictions obtained for different initial void shapes. Also, differences between principal transverse stresses show a strong interaction with the plastic anisotropy, such that the response is very different for different anisotropies. The studies are carried out for one particular choice of void volume fraction and stress triaxiality.
Effects of Plastic Anisotropy and Void Shape on Full Three-Dimensional Void Growth

Void growth in an anisotropic ductile solid is studied by numerical analyses for three dimensional unit cells initially containing a void. The effect of plastic anisotropy on void growth is the main focus, but the studies include effects of different void shapes, including oblate, prolate or general ellipsoidal voids. Also other 3D effects such as those of different spacings of voids in different material directions, and effects of different macroscopic principal stresses in three directions are accounted for. It is found that the presence of plastic anisotropy amplifies the differences between predictions obtained for different initial void shapes. Also, differences between principal transverse stresses show a strong interaction with the plastic anisotropy, such that the responses are very different for different anisotropies. The studies are carried out for one particular choice of void volume fraction and stress triaxiality.

General information
State: Accepted/In press
Organisations: Department of Mechanical Engineering, Solid Mechanics
Authors: Legarth, B. N. (Intern), Tvergaard, V. (Intern)
Number of pages: 10
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Journal of Applied Mechanics
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Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
Effects of Salinity, Commercial Salts, and Water Type on Cultivation of the Cryptophyte Microalgae Rhodomonas salina and the Calanoid Copepod Acartia tonsa

Marine aquaculture facilities positioned far from the sea need access to seawater (SW); hence, commercial salts are often the chosen solution. In marine hatcheries, most fish larvae require live feed (zooplankton) that are in turn fed with microalgae. The objective of this research was to investigate the applicability of commercial salts and clarify the potential effects on the cultivation of the microalga Rhodomonas salina and the copepod Acartia tonsa. Three commercial salts were tested, Red Sea Salt (RS), Red Sea – Coral Pro Salt (CP), and Blue Treasure Salt. R. salina was cultured at salinities of 10, 20, and 30 psu resulting in equal growth rates at salinities 20 and 30 in SW and RS mixed with deionized (DI) water. The optimum salinity for R. salina was 29 psu. For A. tonsa eggs, we observed highest hatching success in 30 psu with CP or RS mixed with DI water. The egg hatching success was not affected by salinities 15–40 and optimal hatching was obtained at 27 psu. Results confirm it was possible to use commercial salts for rearing of both R. salina and A. tonsa, widening the application of these species for aquaculture facilities without access to SW.

General information
State: Accepted/In press
Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic, Roskilde University, Ecole Polytechnique Universitaire de Montpellier
Authors: Jepsen, P. M. (Ekstern), Thoisen, C. V. (Ekstern), Carron-Cabaret, T. (Ekstern), Pinyol Gallemi, A. (Intern), Nielsen, S. L. (Ekstern), Hansen, B. W. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of the World Aquaculture Society
ISSN (Print): 0893-8849
Ratings:
BFI (2018): BFI-level 1
Effects on metabolic parameters in young rats born with low birth weight after exposure to a mixture of pesticides

Pesticide exposure during fetal life can lead to low birth weight and is commonly observed in reproductive toxicology studies. Associations have also been found in low birth weight babies born from pesticide-exposed gardeners. Since low birth weight is also linked to metabolic disorders, it can be speculated that early life exposure to pesticides could increase the risk of becoming obese or developing diabetes later in life. We have analyzed potential long-term effects of gestational and lactational exposure to a low dose mixture of six pesticides that individually can cause low birth weight: Cyromazine, MCPB, Pirimicarb, Quinoclamine, Thiram, and Ziram. Exposed male offspring, who were smaller than controls, displayed some degree of catch-up growth. Insulin and glucagon regulation was not significantly affected, and analyses of liver and pancreas did not reveal obvious histopathological effects. Efforts towards identifying potential biomarkers of metabolic disease-risk did not result in any strong candidates, albeit leptin levels were altered in exposed animals. In fat tissues, the key genes Lep, Nmb and Nmbr were altered in high dosed offspring, and were differentially expressed between sexes. Our results suggest that early-life exposure to pesticides may contribute to the development of metabolic disorders later in life.
**General information**
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Organisations: National Food Institute, Research Group for Molecular and Reproductive Toxicology, Copenhagen Center for Health Technology
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ISSN (Print): 2045-2322
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Web of Science (2018): Indexed yes
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
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**Effekt af at reducere befolkningens indtag af salt**

**General information**
State: Published
Organisations: National Food Institute, Division of Risk Assessment and Nutrition, Fødevarestyrelsen, Dansk Hypertensionsselskab
Authors: Lassen, A. D. (Intern), Høberg Hansen, H. (Ekstern), Lykke Jeppesen, J. (Ekstern), Toft, U. (Ekstern)
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Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Diætisten
Volume: 151
Issue number: Februar
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-week-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 strain. 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 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
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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), Holmgaard Carlsen, S. (Ekstern), Hjulsager, C. K. (Intern), Heegaard, P. M. H. (Intern), Bøtner, A. (Intern), Stadejek, T. (Ekstern), Haugegaard, S. (Ekstern), Larsen, L. (Intern)
Pages: 227-236
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
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Volume: 36
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BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.33 SJR 1.956 SNIP 1.155
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.068 SNIP 1.259 CiteScore 3.45
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.05 SNIP 1.231 CiteScore 3.57
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
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Scopus rating (2015): SNIP 2.023
Web of Science (2015): Indexed yes
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ISI indexed (2013): ISI indexed no
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Source-ID: 2392914335
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Efficient Oligo nucleotide mediated CRISPR-Cas9 Gene Editing in Aspergilli**

CRISPR-Cas9 technologies are revolutionizing fungal gene editing. Here we show that survival of specific Cas9/sgRNA mediated DNA double strand breaks (DSBs) depends on the non-homologous end-joining, NHEJ, DNA repair pathway and we use this phenomenon to develop a tool to assess protospacer efficiency in Aspergillus nidulans. Moreover, we show that in NHEJ deficient strains, highly efficient marker-free gene targeting can be performed. Indeed, we show that even single-stranded oligo nucleotides efficiently works as repair templates of specific Cas9/sgRNA induced DNA DSBs in A. nidulans, A. niger, and in A. oryzae indicating that this type of repair may be wide spread in filamentous fungi. Importantly, we demonstrate that by using single-stranded oligo nucleotides for CRISPR-Cas9 mediated gene editing it is possible to introduce specific point mutations as well gene deletions at efficiencies approaching 100%. The efficiency of the system invites for multiplexing and we have designed a vector system with the capacity of delivering Cas9 and multiple sgRNAs based on polymerase III promoters and tRNA spacers. We show that it is possible to introduce two point mutations and one gene insertion in one transformation experiment with a very high efficiency. Our system is compatible with future high-throughput gene-editing experiments.

**General information**

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Organisations: Department of Biotechnology and Biomedicine, Eukaryotic Molecular Cell Biology, Novozymes A/S
Number of pages: 31
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Main Research Area: Technical/natural sciences

**Publication information**

Journal: Fungal Genetics and Biology
Efficient One-Step Fusion PCR Based on Dual-Asymmetric Primers and Two-Step Annealing

Gene splicing by fusion PCR is a versatile and widely used methodology, especially in synthetic biology. We here describe a rapid method for splicing two fragments by one-round fusion PCR with a dual-asymmetric primers and two-step annealing (ODT) method. During the process, the asymmetric intermediate fragments were generated in the early stage.
Thereafter, they were hybridized in the subsequent cycles to serve as template for the target full-length product. The process parameters such as primer ratio, elongation temperature and cycle numbers were optimized. In addition, the fusion products produced with this method were successfully applied in seamless genome editing. The fusion of two fragments by this method takes less than 0.5 day. The method is expected to facilitate various kinds of complex genetic engineering projects with enhanced efficiency.

**General information**

State: Published  
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, University of Nebraska, Chinese Academy of Sciences  
Authors: Liu, Y. (Ekstern), Chen, J. (Ekstern), Thygesen, A. (Intern)  
Pages: 92–99  
Publication date: 2018  
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Molecular Biotechnology  
Volume: 60  
Issue number: 2  
ISSN (Print): 1073-6085  
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BFI (2018): BFI-level 1  
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BFI (2017): BFI-level 1  
Web of Science (2017): Indexed Yes  
BFI (2016): BFI-level 1  
Scopus rating (2016): CiteScore 1.88 SJR 0.674 SNIP 0.752  
BFI (2015): BFI-level 1  
Scopus rating (2015): SJR 0.78 SNIP 0.815 CiteScore 1.88  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 1  
Scopus rating (2014): SJR 0.743 SNIP 0.841 CiteScore 1.97  
BFI (2013): BFI-level 1  
Scopus rating (2013): SJR 0.875 SNIP 1.054 CiteScore 2.31  
ISI indexed (2013): ISI indexed yes  
BFI (2012): BFI-level 1  
Scopus rating (2012): SJR 0.865 SNIP 0.972 CiteScore 2.16  
ISI indexed (2012): ISI indexed yes  
BFI (2011): BFI-level 1  
Scopus rating (2011): SJR 0.805 SNIP 0.95 CiteScore 2.24  
ISI indexed (2011): ISI indexed yes  
BFI (2010): BFI-level 1  
Scopus rating (2010): SJR 0.89 SNIP 0.859  
BFI (2009): BFI-level 1  
Scopus rating (2009): SJR 0.851 SNIP 0.874  
BFI (2008): BFI-level 1  
Scopus rating (2008): SJR 0.827 SNIP 0.648  
Scopus rating (2007): SJR 0.879 SNIP 0.696  
Scopus rating (2006): SJR 0.758 SNIP 0.651  
Scopus rating (2005): SJR 0.741 SNIP 0.672  
Scopus rating (2004): SJR 0.596 SNIP 0.663  
Web of Science (2004): Indexed yes  
Scopus rating (2003): SJR 0.692 SNIP 0.66  
Scopus rating (2002): SJR 0.588 SNIP 0.466  
Scopus rating (2001): SJR 0.498 SNIP 0.42  
Scopus rating (2000): SJR 0.503 SNIP 0.482  
Scopus rating (1999): SJR 0.594 SNIP 0.68
Elasticity and electrical resistivity of chalk and greensand during water flooding with selective ions

Water flooding with selective ions has in some cases lead to increased oil recovery. We investigate the physical processes on a pore scale that are responsible for changes in petrophysical and mechanical properties of four oil-bearing chalk and four oil-bearing greensand samples caused by flooding with brines containing varying amounts of dissolved NaCl, Na₂SO₄, MgCl₂, and MgSO₄. Ultrasonic P-wave velocity and AC resistivity measurements were performed prior to, during and after flow through experiments in order to identify and quantify the processes related to water flooding with selective ions. Low field Nuclear Magnetic Resonance (NMR) spectrometry measurements were performed at full water saturation, at irreducible water saturation, after aging and after flooding. CT-scanning, X-ray diffraction (XRD), backscatter electron microscopy images (BSEM), mercury injection capillary pressure (MICP) curves and specific surface analysis (BET) reveal the mineralogy and texture of the rock samples before and after the injection. Low field NMR data indicates changes in the pore fluid distribution and wettability of chalk after aging of one of the samples. NMR data for other samples indicate that chalk is water-wet after flooding. Greensand remained mixed wet throughout the experiments. Electrical resistivity data are in agreement with this interpretation. The electrical resistivity data during flooding revealed that the formation brine is not fully replaced by the injected water in both chalk and greensand. Changes in the elasticity of chalk during flooding illustrate the softening effect of magnesium bearing brines as compared to the sodium bearing brines. The stiffness of greensand was not affected by water flooding with selective ions as determined from the elastic wave measurements. Precipitation of fines during flooding of chalk samples is indicated by an increase in specific surface area and a shift in the MICP to lower values but no fines were detected by NMR. No changes were observed for greensand samples.

General information

State: Published
Organisations: Department of Civil Engineering, Department of Chemical and Biochemical Engineering, CERE – Center for Energy Ressources Engineering, Department of Chemistry, Section for Geotechnics and Geology, University Savoie Mont Blanc, Politecnico di Torino
Pages: 204–218
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information

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Web of Science (2018): Indexed yes
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Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2016): CiteScore 2.56 SJR 0.764 SNIP 1.631
Scopus rating (2015): SJR 0.801 SNIP 1.652 CiteScore 2.38
Scopus rating (2014): SJR 0.692 SNIP 1.751 CiteScore 1.95
Scopus rating (2013): SJR 0.822 SNIP 1.901 CiteScore 1.73
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
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.

Bibliographical note

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10.1016/j.petrol.2017.11.045
Electrochemical profiling of multi-clad aluminium sheets used in automotive heat exchangers

A combination of glow discharge optical emission spectroscopy sputtering and local electrochemical measurements was used to determine electrochemical changes upon brazing in a multi-layered Aluminium sheet (AA4343/AA3xxx/AA4343) with an additional low-Cu (AA3xxx) interlayer. Ecorr values from potentiodynamic polarization, galvanic corrosion behaviour by ZRA, microstructure and composition by SEM and TEM were investigated and compared to those obtained for sheet without the interlayer. Inward diffusion of Si from clad, and outward diffusion of Cu from core are found to degrade the corrosion properties of conventional sheet, whereas presence of interlayer reduced outward diffusion of Cu and hence improved corrosion protection.

General information
State: Published
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, Constellium Technology Center
Authors: Bordo, K. (Intern), C. Gudla, V. (Intern), Peguet, L. (Ekstern), Afseth, A. (Ekstern), Ambat, R. (Intern)
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Publication information
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Web of Science (2018): Indexed yes
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Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 5.19 SJR 1.863 SNIP 2.307
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.904 SNIP 2.788 CiteScore 5.62
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.892 SNIP 3.032 CiteScore 5.08
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.592 SNIP 3.052 CiteScore 4.57
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.508 SNIP 2.812 CiteScore 4.3
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.391 SNIP 2.78 CiteScore 4.26
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.402 SNIP 2.531
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.56 SNIP 2.367
Web of Science (2009): Indexed yes
Electrochemical profiling of multi-clad aluminium sheets used in automotive heat exchangers

A combination of glow discharge optical emission spectroscopy sputtering and local electrochemical measurements was used to determine electrochemical changes upon brazing in a multi-layered Aluminium sheet (AA4343/AA3xxx/AA4343) with an additional low-Cu (AA3xxx) interlayer. Ecorr values from potentiodynamic polarization, galvanic corrosion behaviour by ZRA, microstructure and composition by SEM and TEM were investigated and compared to those obtained for sheet without the interlayer. Inward diffusion of Si from clad, and outward diffusion of Cu from core are found to degrade the corrosion properties of conventional sheet, whereas presence of interlayer reduced outward diffusion of Cu and hence improved corrosion protection.

General information
State: Published
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, Constellium Technology Center
Authors: Bordo, K. (Intern), Gudla, V. C. (Intern), Peguet, L. (Ekstern), Afseth, A. (Ekstern), Ambat, R. (Intern)
Pages: 28-37
Publication date: 2018
Main Research Area: Technical/natural sciences

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Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 5.19 SJR 1.863 SNIP 2.307
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.904 SNIP 2.788 CiteScore 5.62
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.892 SNIP 3.032 CiteScore 5.08
Electrochemistry of single molecules and biomolecules, molecular scale nanostructures, and low-dimensional systems

Electrochemistry at ultra-small scales, where even the single molecule or biomolecule can be characterized and manipulated, is on the way to a consolidated status. At the same time molecular electrochemistry is expanding into other areas of sophisticated nano- and molecular scale systems including molecular scale metal and semiconductor nanoparticles (NPs) and other nanostructures, e.g. nanotubes, “nanoflowers” etc.. The new structures offer both new electronic properties and highly confined novel charge transfer environments.

General information
State: Published
Organisations: Department of Chemistry, NanoChemistry, Organic Chemistry, Kazan National Research Technological University
Authors: Nazmutdinov, R. R. (Ekstern), Zinkicheva, T. T. (Ekstern), Zinkicheva, T. T. (Ekstern), Shermukhamedov , S. A. (Ekstern), Zhang, J. (Intern), Ulstrup, J. (Intern)
Pages: 179–187
Publication date: 2018
Main Research Area: Technical/natural sciences
Electrodialytic extraction of Cr from water-washed MSWI fly ash by changing pH and redox conditions

Electrodialytic process offers a range of possibilities to waste management by electrodialytic separation (EDS) of heavy metals, depending on how the process is designed. Using three EDS cell setups (two two-compartment and one three-compartment) and their combinations, the extraction of Cr from municipal solid waste incineration fly ash by changing pH and redox conditions was investigated in the present work. The experiments were designed into single, two and three steps, based on the number of setups (by changing EDS cells) or effective setups (by shifting working electrode pairs) used. Prior to EDS the ash studied went through pretreatments such as water-washing and dry-sieving with a 50 µm sieve. The results showed that Cr was strongly bound in the ash, and the major fraction remained bound after the different treatments. Two/three-step treatment, which obtained the maximum Cr extraction rate of 27.5%, is an improvement on the single-step that extracted maximum 3.1%. The highest extraction was obtained due to the combined extraction of Cr(III) under low pH (accompanied with high redox) conditions and Cr(VI) under high pH (low redox) conditions subsequently. The Cr leaching from the treated ashes with acidic pH was lower than from those with alkaline pH; after the three-step treatment, Cr leaching was much lower from the coarse fraction (> 50 µm), as compared to the fine (≤ 50 µm) or the unsieved ash. As for the coarse fraction, two/three-step treatment reduced the leaching of Cr compared to the single-step in the same pH range (either acidic or alkaline).

General information
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Organisations: Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
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Publication date: 2018

Main Research Area: Technical/natural sciences
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 isostructural 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.
Ellipsoidal prediction regions for multivariate uncertainty characterization

While substantial advances are observed in probabilistic forecasting for power system operation and electricity market applications, most approaches are still developed in a univariate framework. This prevents from informing about the interdependence structure among locations, lead times and variables of interest. Such dependencies are key in a large share of operational problems involving renewable power generation and electricity prices for instance. The few methods that account for dependencies translate to sampling scenarios based on given marginals and dependence structures. However, for classes of decision-making problems based on robust, interval chance-constrained optimization, necessary inputs take the form of multivariate prediction regions rather than scenarios. The current literature is at very primitive stage of characterizing multivariate prediction regions to be employed in these classes of optimization problems. To address this issue, we introduce a new class of multivariate forecasts which form as multivariate ellipsoids for non-Gaussian variables.

We propose a data-driven systematic framework to readily generate and evaluate ellipsoidal prediction regions, with predefined probability guarantees and minimum conservativeness. A skill score is proposed for quantitative assessment of the quality of prediction ellipsoids. A set of experiments is used to illustrate the discrimination ability of the proposed scoring rule for potential misspecification of ellipsoidal prediction regions. Application results based on three datasets with wind, PV power and electricity prices, allow us to assess the skill of the resulting ellipsoidal prediction regions, in terms of calibration, sharpness and overall skill.

General information
State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electricity markets and energy analytics
Authors: Golestaneh, F. (Ekstern), Pinson, P. (Intern), Azizipanah-Abarghooe , R. (Ekstern), Beng Gooi, H. (Ekstern)
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Main Research Area: Technical/natural sciences

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Journal: IEEE Transactions on Power Systems
ISSN (Print): 0885-8950
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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
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
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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
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Main Research Area: Technical/natural sciences

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Volume: 45
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Web of Science (2018): Indexed yes
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Web of Science (2017): Indexed Yes
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Scopus rating (2016): CiteScore 3.54 SJR 1.412 SNIP 1.381
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.664 SNIP 1.463 CiteScore 3.48
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.621 SNIP 1.688 CiteScore 3.67
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.372 SNIP 1.653 CiteScore 3.16
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.745 SNIP 1.906 CiteScore 3.45
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.699 SNIP 1.865 CiteScore 3.65
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.546 SNIP 1.482
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.228 SNIP 1.095
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.153 SNIP 1.196
Scopus rating (2007): SJR 0.959 SNIP 1.302
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.927 SNIP 1.286
Scopus rating (2005): SJR 0.79 SNIP 1.317
Scopus rating (2004): SJR 0.629 SNIP 0.933
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.701 SNIP 1.05
Scopus rating (2002): SJR 0.436 SNIP 1.084
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.

General information

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Publication date: 2018
Main Research Area: Technical/natural sciences

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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
Energieffektivitet ved udnyttelse af overskudsvarme i industrien

Analyse viser, at der er et stort økonomisk potentiale for at bruge overskudsvarme fra industrien. To eksempler fra fødevareproduktion demonstrerer økonomisk attraktiv udnyttelse af overskudsvarme

General information
State: Published
Organisations: Department of Mechanical Engineering, Thermal Energy, Viegand Maage A/S
Energy vs. density on paths toward exact density functionals

Recently, the progression toward more exact density functional theory has been questioned, implying a need for more formal ways to systematically measure progress, i.e. a “path”. Here I use the Hohenberg-Kohn theorems and the definition of normality by Burke et al. to define a path toward exactness and “straying” from the “path” by separating errors in \( \rho \) and \( E[\rho] \). A consistent path toward exactness involves minimizing both errors. Second, a suitably diverse test set of trial densities \( \rho' \) can be used to estimate the significance of errors in \( \rho \) without knowing the exact densities which are often inaccessible. To illustrate this, the systems previously studied by Medvedev et al., the first ionization energies of atoms with \( Z = 1 \) to 10, the ionization energy of water, and the bond dissociation energies of five diatomic molecules were investigated using CCSD(T)/aug-cc-pV5Z as benchmark at chemical accuracy. Four functionals of distinct designs was used: B3LYP, PBE, M06, and S-VWN. For atomic cations regardless of charge and compactness up to \( Z = 10 \), the energy effects of the different \( \rho \) are \(< 4 \) kJ/mol (chemical accuracy) defined here as “normal”, even though these four functionals ranked very differently in the previous test. Thus, the “off-path” behavior for such cations is energy-wise insignificant. An interesting oscillating behavior in the density sensitivity is observed vs. \( Z \), explained by orbital occupation effects. Finally, it is shown that even large “normal” problems such as the Co-C bond energy of cobalamins can use simpler (e.g. PBE) trial densities to drastically speed up computation by loss of a few kJ/mol in accuracy. The proposed method of using a test set of trial densities to estimate the sensitivity and significance of density errors of functionals may be useful for testing and designing new balanced functionals with more systematic improvement of densities and energies.

General information
State: Accepted/in press
Organisations: Department of Chemistry
Authors: Kepp, K. P. (Intern)
Number of pages: 31
Publication date: 2018
Main Research Area: Technical/natural sciences
Density functional theory, Hohenberg-Kohn Theorem, Accuracy, Exact functional, Trial density, Ionization energy

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Enhanced Voltage Control of VSC-HVDC Connected Offshore Wind Farms Based on Model Predictive Control

This paper proposes an enhanced voltage control strategy (EVCS) based on model predictive control (MPC) for voltage source converter based high voltage direct current (VSC-HVDC) connected offshore wind farms (OWFs). In the proposed MPC based EVCS, all wind turbine generators (WTGs) as well as the wind farm side VSC are optimally coordinated to keep voltages within the feasible range and reduce system power losses. Considering the high ratio of the OWF collector system, the effects of active power outputs of WTGs on voltage control are also taken into consideration. The predictive model of VSC with a typical cascaded control structure is derived in details. The sensitivity coefficients are calculated by an analytical method to improve the computational efficiency. A VSC-HVDC connected OWF with 64 WTGs was used to validate the proposed voltage control strategy.

General information
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Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, Shandong University, Illinois Institute of Technology
Authors: Guo, Y. (Ekstern), Gao, H. (Ekstern), Wu, Q. (Intern), Zhao, H. (Intern), Østergaard, J. (Intern), Shahidehpour, M. (Ekstern)
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Web of Science (2015): Indexed yes
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Scopus rating (2014): SJR 2.972 SNIP 3.954 CiteScore 7.03
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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
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Model predictive control (MPC), Offshore wind farms (OWFs), Power loss, Voltage control, VSC-HVDC

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Bibliographical note
Environmental calcium and variation in yolk sac size influence swimming performance in larval lake sturgeon (Acipenser fulvescens)

In many animal species, performance in the early life stages strongly affects recruitment to the adult population; however, factors that influence early life history stages are often the least understood. This is particularly relevant for lake sturgeon, Acipenser fulvescens, living in areas where environmental calcium concentrations are declining, partly due to anthropogenic activity. As calcium is important for muscle contraction and fatigue resistance, declining calcium levels could constrain swimming performance. Similarly, swimming performance could be influenced by variation in yolk sac volume, because the yolk sac is likely to affect drag forces during swimming. Testing swimming performance of larval A. fulvescens reared in four different calcium treatments spanning the range of 4-132 mg l-1 [Ca2+], this study found no treatment effects on the sprint swimming speed. A novel test of volitional swimming performance, however, revealed reduced swimming performance in the low calcium environment. Specifically, volitionally swimming larvae covered a shorter distance before swimming cessation in the low calcium environment compared to the other treatments. Moreover, sprint swimming speed in larvae with a large yolk sac was significantly slower than in larvae with a small yolk sac, regardless of body length variation. Thus, elevated maternal allocation (i.e., more yolk) was associated with reduced swimming performance. Data suggest that larvae in low calcium environments or with a large yolk sac exhibit reduced swimming performance and could be more susceptible to predation or premature downstream drift. Our study reveals how environmental factors and phenotypic variation influence locomotor performance in a larval fish.

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Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, University of Manitoba, Fisheries and Oceans Canada
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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
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Enzyme activities at different stages of plant biomass decomposition in three species of fungus-growing termites

Fungus-growing termites rely on the mutualistic fungus Termitomyces and gut microbes for plant biomass degradation. Due to a certain degree of symbiont complementarity, this tripartite symbiosis has evolved as a complex bioreactor, enabling decomposition of nearly any plant polymer, likely contributing to the success of the termites as the main plant decomposers in the Old World. Here we evaluate which plant polymers are decomposed and which enzymes are active during the decomposition process in two major genera of fungus-growing termites. We find a diversity of active enzymes at different stages of decomposition and a consistent decrease in plant components during the decomposition process. Furthermore, our findings are consistent with the hypothesis that termites transport enzymes from the older mature parts of the fungus comb through young worker guts to freshly inoculated plant substrate. However, preliminary fungal RNAseq analyses suggest that this likely transport is supplemented with enzymes produced in situ. Our findings support that the maintenance of an external fungus comb, inoculated with an optimal mix of plant material, fungal spores, and enzymes, is likely the key to the extraordinarily efficient plant decomposition in fungus-growing termites. Importantly, Fungus-growing termites have a substantial ecological footprint in the old world (sub)tropics due to their ability to decompose dead plant material. Through the establishment of an elaborate plant biomass inoculation strategy, and fungal and bacterial enzyme contributions, this farming symbiosis has become an efficient and versatile aerobic bioreactor for plant substrate conversion. Since little is known about what enzymes are expressed, and where they are active at different stages of the decomposition process, we used enzyme assays, transcriptomics and plant content measurements to shed light on how this decomposition of plant substrate is effectively accomplished.

General information

State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, University of Copenhagen, Wageningen University, Carlsberg Research Laboratory
Estimation of hysteretic damping of structures by stochastic subspace identification

Output-only system identification techniques can estimate modal parameters of structures represented by linear time-invariant systems. However, the extension of the techniques to structures exhibiting non-linear behavior has not received much attention. This paper presents an output-only system identification method suitable for random response of dynamic systems with hysteretic damping. The method applies the concept of Stochastic Subspace Identification (SSI) to estimate the model parameters of a dynamic system with hysteretic damping. The restoring force is represented by the Bouc-Wen model, for which an equivalent linear relaxation model is derived. Hysteretic properties can be encountered in engineering structures exposed to severe cyclic environmental loads, as well as in vibration mitigation devices, such as Magneto-Rheological (MR) dampers. The identification technique incorporates the equivalent linear damper model in the estimation procedure. Synthetic data, representing the random vibrations of systems with hysteresis, validate the estimated system parameters by the presented identification method at low and high-levels of excitation amplitudes.
Estimation of Physical Properties of Amino Acids by Group-Contribution Method

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 208 values for $K_{ow}$. The input variables used in the regression analysis include molecular weight, number of functional groups, and structural parameters such as hydrophobicity and polarity. The performance of the GC-models was evaluated using correlation coefficients ($R^2$) and root mean square error (RMSE) for the validation set. The GC-models showed good predictive performance with $R^2$ values ranging from 0.85 to 0.95 and RMSE values ranging from 0.1 to 0.2 for the prediction of melting point, aqueous solubility, and octanol/water partition coefficient. The GC-models can be used for the estimation of physical properties of amino acids in various applications such as drug design, material science, and biochemistry.
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)
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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
Scopus rating (2005): SJR 1.445 SNIP 1.801
Evaluation of a Lagrangian Soot Tracking Method for the prediction of primary soot particle size under engine-like conditions

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.

General information
State: Published
Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, Thermal Energy, University of Nottingham, Malaysia Campus
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Scopus rating (2015): SJR 1.072 SNIP 1.318 CiteScore 2.47
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.068 SNIP 1.586 CiteScore 2.72
Evaluation of custom-designed lateral power transistors in a silicon-on-insulator process in a synchronous buck converter

Most of todays power converters are based on power semiconductors, which are built in vertical power semiconductor processes. These devices result in limited packaging possibilities, which lead to physically long galvanic connections and therefore high external electromagnetic fields. These fields compromise power quality significantly. Therefore this paper examines the possibility to use lateral silicon-on-insulator power MOSFETs and uses the custom-made devices in a 48 V to 12 V synchronous buck converter in continuous conduction mode. The converter is designed based on custom made power transistors, implemented and verified by experimental results. The resulting efficiency of the 1 W converter is around 93 % across a wide load range and its temperature rise is less the 10 °C. This leads to the conclusion, that modern lateral silicon-on-insulator power processes allow high integration of power stages and therefore promise lower emissions, leading to higher power quality.

General information
State: Published
Organisations: Department of Electrical Engineering, Electronics, Technical University of Denmark
Authors: Okumus, S. (Ekstern), Fan, L. (Intern), Nour, Y. (Intern), Knott, A. (Intern)
Number of pages: 6
Publication date: 2018
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Main Research Area: Technical/natural sciences

Publication information
Journal: Renewable Energy and Power Quality Journal
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.
Evaluation of direct membrane filtration and direct forward osmosis as concepts for compact and energy-positive municipal wastewater treatment

Municipal wastewater treatment commonly involves mechanical, biological and chemical treatment steps to protect humans and the environment from adverse effects. Membrane technology has gained increasing attention as an alternative to conventional wastewater treatment due to increased urbanization. Among the available membrane technologies, microfiltration (MF) and forward osmosis (FO) have been selected for this study due to their specific characteristics, such as compactness and efficient removal of particles. In this study, two treatment concepts were evaluated with regard to their specific electricity, energy and area demands. Both concepts would fulfil the Swedish discharge demands for small- and medium-sized wastewater treatment plants at full scale: (1) direct MF and (2) direct FO with seawater as the draw solution. The framework of this study is based on a combination of data obtained from bench- and pilot-scale experiments applying direct MF and FO, respectively. Additionally, available complementary data from a Swedish full-scale wastewater treatment plant and the literature were used to evaluate the concepts in depth. The results of this study indicate that both concepts are net positive with respect to electricity and energy, as more biogas can be produced compared to that using conventional wastewater treatment. Furthermore, the specific area demand is significantly reduced. This study demonstrates that municipal wastewater could be treated in a more energy- and area-efficient manner with techniques that are already commercially available and with future membrane technology.

General information
State: Published
Organisations: Department of Environmental Engineering, Water Technologies, Aalborg University, Lund University, Aquaporin A/S
Authors: Hey, T. (Ekstern), Bajraktari, N. (Intern), Davidsson, Á. (Ekstern), Vogel, J. (Ekstern), Madsen, H. T. (Ekstern), Hélix-Nielsen, C. (Intern), La Cour Jansen, J. (Ekstern), Jønsson, K. (Ekstern)
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Scopus rating (2016): CiteScore 1.6 SJR 0.528 SNIP 0.747
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Scopus rating (2015): SJR 0.633 SNIP 0.772 CiteScore 1.63
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.618 SNIP 0.781 CiteScore 1.39
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.488 SNIP 0.672 CiteScore 1.3
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.645 SNIP 0.877 CiteScore 1.47
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.597 SNIP 0.691 CiteScore 1.35
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.491 SNIP 0.473
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.395 SNIP 0.422
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.422 SNIP 0.581
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.419 SNIP 0.596
Web of Science (2007): Indexed yes
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Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.505 SNIP 0.689
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.676 SNIP 0.649
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.538 SNIP 0.641
Scopus rating (2002): SJR 0.673 SNIP 0.734
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Evaluation of ELISA and haemagglutination inhibition as screening tests in serosurveillance for H5/H7 avian influenza in commercial chicken flocks

Avian influenza virus (AIV) subtypes H5 and H7 can infect poultry causing low pathogenicity (LP) AI, but these LPAIVs may mutate to highly pathogenic AIV in chickens or turkeys causing high mortality, hence H5/H7 subtypes demand statutory intervention. Serological surveillance in the European Union provides evidence of H5/H7 AIV exposure in apparently healthy poultry. To identify the most sensitive screening method as the first step in an algorithm to provide evidence of H5/H7 AIV infection, the standard approach of H5/H7 antibody testing by haemagglutination inhibition (HI) was compared with an ELISA, which detects antibodies to all subtypes. Sera (n = 1055) from 74 commercial chicken flocks were tested by both methods. A Bayesian approach served to estimate diagnostic test sensitivities and specificities, without assuming any 'gold standard'. Sensitivity and specificity of the ELISA was 97% and 99.8%, and for H5/H7 HI 43% and 99.8%, respectively, although H5/H7 HI sensitivity varied considerably between infected flocks. ELISA therefore provides superior sensitivity for the screening of chicken flocks as part of an algorithm, which subsequently utilises H5/H7 HI to identify infection by these two subtypes. With the calculated sensitivity and specificity, testing nine sera per flock is sufficient to detect a flock seroprevalence of 30% with 95% probability.

General information
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Organisations: National Veterinary Institute, Virology, Animal and Plant Health Agency, Wageningen Bioveterinary Research, National Veterinary Institute Sweden
Authors: Arnold, M. E. (Ekstern), Slomka, M. J. (Ekstern), Breed, A. C. (Ekstern), Hjulsager, C. K. (Intern), Pritz-Verschuren, S. (Ekstern), Venema-Kemper, S. (Ekstern), Bouwstra, R. J. (Ekstern), Trebbien, R. (Intern), Zohari, S. (Ekstern), Ceeraz, V. (Ekstern), Larsen, L. E. (Intern), Manvell, R. J. (Ekstern), Koch, G. (Ekstern), Brown, I. H. (Ekstern)
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BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.98 SJR 1.134 SNIP 0.865
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.341 SNIP 1.079 CiteScore 2.29
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.288 SNIP 1.026 CiteScore 2.19
Web of Science (2014): Indexed yes
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ISI indexed (2013): ISI indexed yes
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BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.42 SNIP 1.175 CiteScore 2.69
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.327 SNIP 1.223 CiteScore 2.71
Evaluation of freeze-thaw durability of pervious concrete by use of operational modal analysis

It is well-known that laboratory testing of pervious concrete's freeze-thaw performance is too harsh and does not agree well with field observations. The most commonly used laboratory freeze-thaw test method for pervious concrete is similar to that used for conventional concrete even though the void structure of the two materials is completely different. In the present study, a new freeze-thaw test method for pervious concrete is suggested and tested on one baseline mix, with three different contents of entrained air. The evaluation of freeze-thaw damage on pervious concrete beams was evaluated from the decrease in mass and from operational modal analysis which provides an accurate determination of the change in natural frequencies with freeze-thaw exposure. Operational modal analysis was also used to determine the Young's modulus, shear modulus, and Poisson's ratio of the pervious concrete mix.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Building Design, Section for Structural Engineering, Technical University of Denmark
Evaluation of moving-bed biofilm sequencing batch reactor (MBSBR) in operating A2O process with emphasis on biological removal of nutrients existing in wastewater

In this study, the performance of moving-bed biofilm sequencing batch reactor in operating the anaerobic/anoxic/oxic (A2O) process for treatment of wastewaters containing nitrogen and phosphorous was evaluated. For this purpose, a pilot system with two bench-scale sequencing batch reactors with a total volume of 30 L and functional volume of 10 L was used. The installation was elaborated using plexiglass, in which 60% of the functional volume consisted of PVC suspended carriers (Kaldnes K3) with a specific surface area of 560 m²/m³. The independent variables used in this study were hydraulic retention time (HRT) (1.5, 2, 2.5, 3, and 3.5 h) and the initial organic load (300, 500, 800, 1000 mg O2/L). The results showed impressive performance in the case of an initial organic load of 300 mg O2/L and HRT of 3 h with maximum removal of COD and TN, respectively, by 95.1 and 89.8%. In the case of an initial organic load of 1000 mg O2/L and HRT of 3.5 h, the maximum total phosphorus removal was 72.3%. Therefore, according to the analysis of data obtained by different HRTs, it was revealed that the system of A2O has greater efficiency in removing organic matter from wastewater in the shortest possible time.

General information
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Organisations: Department of Environmental Engineering, Water Technologies, Islamic Azad University, Guilan University of Medical Sciences, University of Pablo de Olavide, Ryerson University, Kar Higher Education Institute, Isfahan University of Technology
Authors: Seyedsalehi, M. (Ekstern), Jaafari, J. (Ekstern), Hélix-Nielsen, C. (Intern), Hodaifa, G. (Ekstern), Manshouri, M. (Ekstern), Ghadimi, S. (Ekstern), Hafizi, H. (Ekstern), Barzanouni, H. (Ekstern)
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Scopus rating (2016): CiteScore 2.11 SJR 0.575 SNIP 0.95
Scopus rating (2015): SJR 0.564 SNIP 0.995 CiteScore 1.95
Scopus rating (2014): SJR 0.766 SNIP 1.554 CiteScore 2.2
Web of Science (2014): Indexed yes
Scopus rating (2013): SJR 0.755 SNIP 1.88 CiteScore 2.15
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 0.848 SNIP 1.709 CiteScore 2.13
ISI indexed (2012): ISI indexed yes
Scopus rating (2011): SJR 1.273 SNIP 1.864 CiteScore 4.13
ISI indexed (2011): ISI indexed no
Scopus rating (2010): SJR 0.799 SNIP 1.709
Scopus rating (2009): SJR 0.557 SNIP 1.051
Scopus rating (2008): SJR 0.272 SNIP 0.415
Scopus rating (2007): SJR 0.209 SNIP 0.627
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
Evolution of boldness and life-history in response to selective harvesting

Whether intensive harvesting alters the behavioral repertoire of exploited fishes is currently unknown, but plausible. We extend a fish life-history model to account for boldness as a personality trait that affects foraging intensity, which affects energy intake and risk from predation and fishing gear. We systematically investigate life-history and behavioral trait evolution along the boldness–timidity axis in response to the full range of common selectivity and exploitation patterns in fisheries. In agreement with previous studies, we find that any type of harvesting selects for fast life histories and that merely elevated, yet unselective, fishing mortality favors boldness. We also find that timid-selective fishing (which can be expected in species targeted by active gear types) selects for increased boldness. By contrast, increased timidity is predicted when fishing targets bolder individuals common to passive gears, whether in combination with selection on size or not. Altered behavior caused by intensive harvesting should be commonplace in nature, which can have far-reaching ecological, evolutionary, and managerial impacts. Evolution of timidity is expected to strongly erode catchability, which will negatively affect human well-being and influence the reliability of stock assessments that rely on fishery-dependent data.
Evolution of exploitative interactions during diversification in Bacillus subtilis biofilms

Microbial biofilms are tightly packed, heterogeneous structures that serve as arenas for social interactions. Studies on Gram negative models reveal that during evolution in structured environments like biofilms, isogenic populations commonly diversify into phenotypically and genetically distinct variants. These variants can settle in alternative biofilm niches and develop new types of interactions that greatly influence population productivity. Here, we explore the evolutionary diversification of pellicle biofilms of the Gram positive, spore-forming bacterium Bacillus subtilis. We discover that-similarly to other species-B. subtilis diversifies into distinct colony variants. These variants dramatically differ in biofilm formation abilities and expression of biofilm-related genes. In addition, using a quantitative approach, we reveal striking differences in surface complexity and hydrophobicity of the evolved colony types. Interestingly, one of the morphotypes completely lost the ability of independent biofilm formation and evolved to hitchhike with other morphotypes with improved
biofilm forming abilities. Genome comparison suggests that major phenotypic transformations between the morphotypes can be triggered by subtle genetic differences. Our work demonstrates how positive complementarity effects and exploitative interactions intertwine during evolutionary diversification in biofilms.

**General information**

State: Published

Organisations: Department of Biotechnology and Biomedicine, Friedrich-Schiller-Universität Jena, Seqomics Biotechnology Ltd, Hungarian Academy of Sciences, Technical University of Munich, Technical University of Denmark Authors: Dragos, A. (Ekstern), Lakshmanan, N. (Ekstern), Martin, M. (Ekstern), Horváth, B. (Ekstern), Maróti, G. (Ekstern), García, C. F. (Ekstern), Lieleg, O. (Ekstern), Kovács, Á. T. (Intern)

Number of pages: 32

Publication date: 2018

Main Research Area: Technical/natural sciences

**Publication information**

Journal: Fems Microbiology Ecology

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BFI (2017): BFI-level 2

Web of Science (2017): Indexed Yes

BFI (2016): BFI-level 2

Web of Science (2016): Indexed yes

Scopus rating (2016): CiteScore 3.85

Web of Science (2015): Indexed yes

BFI (2015): BFI-level 2

Scopus rating (2015): CiteScore 3.77

Web of Science (2014): Indexed yes

BFI (2014): BFI-level 2

Scopus rating (2014): CiteScore 3.8

Web of Science (2014): Indexed yes

BFI (2013): BFI-level 2

Scopus rating (2013): CiteScore 4.15

ISI indexed (2013): ISI indexed yes

Web of Science (2013): Indexed yes

BFI (2012): BFI-level 2

Scopus rating (2012): CiteScore 3.78

ISI indexed (2012): ISI indexed yes

Web of Science (2012): Indexed yes

BFI (2011): BFI-level 2

Scopus rating (2011): CiteScore 3.63

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

Web of Science (2008): Indexed yes

Web of Science (2007): 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
Examining the rudimentary steps of the oxygen reduction reaction on single-atomic Pt using Ti-based non-oxide supports

In the attempt to reduce the high-cost and improve the overall durability of Pt-based electrocatalysts for the oxygen reduction reaction (ORR), density-functional theory (DFT) calculations have been performed to study the energetics of the elementary steps that occur during ORR on TiN(100)- and TiC(100)-supported single Pt atoms. The O₂ and OOH* dissociation processes on Pt/TiN(100) are determined to be non-activated (i.e. “barrier-less” dissociation) while an activation energy barrier of 0.19 and 0.51eV is found for these dissociation processes on Pt/TiC(100), respectively. Moreover, the series pathway (which is characterized by the stable OOH* molecular intermediate) on Pt/TiC(100) is predicted to be more favorable than the direct pathway. Our electronic structure analysis supports a strong synergistic cooperative effect by these non-oxide supports (TiN and TiC) on the reduced state of the single-atom Pt catalyst, and directly influences the rudimentary ORR steps on these single-atom platinized supports.

General information
State: Published
Organisations: Department of Physics, Experimental Surface and Nanomaterials Physics, Yonsei University, Korea
Advanced Institute of Science and Technology, Chungbuk National University
Authors: Tak, Y. J. (Ekstern), Yang, S. (Intern), Lee, H. (Ekstern), Lim, D. H. (Ekstern), Soon, A. (Ekstern)
Pages: 208-215
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Industrial and Engineering Chemistry
Volume: 58
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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Scopus rating (2016): CiteScore 4.3 SJR 1.119 SNIP 1.442
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.945 SNIP 1.423 CiteScore 3.74
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.871 SNIP 1.458 CiteScore 3.25
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.695 SNIP 1.136 CiteScore 2.19
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.809 SNIP 1.324 CiteScore 2.31
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.85 SNIP 1.183 CiteScore 2.25
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.84 SNIP 1.026
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.722 SNIP 1.055
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.493 SNIP 0.783
Scopus rating (2007): SJR 0.466 SNIP 0.989
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 MoS$_2$ 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

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Volume: 194
ISSN (Print): 1383-5866
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Experimental and numerical comparison of multi-layered La(Fe, Si, Mn)$_{13}$H$_y$ active magnetic regenerators

We present an experimental and numerical comparison of epoxy bonded multi-layered La(Fe, Si, Mn)$_{13}$H$_y$ active magnetic regenerators. First, no-load tests were performed on four regenerators with two layers of material and varying amounts of epoxy (from 1 wt. % to 4 wt. %) in order to find the amount of epoxy necessary to maintain the mechanical integrity of the regenerators. As the second part of the study, experimental results of two regenerators with five and nine layers are compared to predictions from the one-dimensional numerical model. A maximum temperature span, $\Delta T_{\text{span}}$, over 20 K was measured and it is effectively equal for both regenerators. The numerical modelling was generally in good agreement with experimental results.

General information

State: Published
Organisations: Department of Energy Conversion and Storage, Electrofunctional materials, Iowa State University, Vacuumschmelze GmbH & Co. KG
Authors: Navickaitė, K. (Intern), Bez, H. N. (Ekstern), Lei, T. (Intern), Barcza, A. (Ekstern), Vieyra, H. (Ekstern), Bahl, C. (Intern), Engelbrecht, K. (Intern)
Pages: 322-330
Publication date: 2018
Main Research Area: Technical/natural sciences
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

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Journal: Tribology International
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  - BFI (2018): BFI-level 1
  - Web of Science (2018): Indexed yes
  - 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
  - ISI indexed (2013): ISI indexed yes
  - Web of Science (2013): Indexed yes
  - BFI (2012): BFI-level 1
  - Scopus rating (2012): SJR 1.406 SNIP 2.331 CiteScore 1.96
  - ISI indexed (2012): ISI indexed yes
  - Web of Science (2012): Indexed yes
  - BFI (2011): BFI-level 1
  - Scopus rating (2011): SJR 1.247 SNIP 2.209 CiteScore 1.89
  - ISI indexed (2011): ISI indexed yes
  - Web of Science (2011): Indexed yes
  - BFI (2010): BFI-level 1
  - Scopus rating (2010): SJR 1.394 SNIP 2.159
  - Web of Science (2010): Indexed yes
  - BFI (2009): BFI-level 1
  - Scopus rating (2009): SJR 1.294 SNIP 2.09
  - Web of Science (2009): Indexed yes
Experimental study of the aqueous CO₂-NH₃ rate of reaction for temperatures from 15°C to 35°C, NH₃ concentrations from 5% to 15% and CO₂ loadings from 0.2 to 0.6

The absorption reaction between aqueous NH₃ and CO₂ was studied using the Wetted Wall Column. A total of 27 different cases are investigated in the region defined by temperatures from 15°C to 35°C, NH₃ concentrations from 5% to 15%, which are the typical solvent conditions in absorption columns, and lastly CO₂ loadings from 0.2 to 0.6. The resulting overall mass transfer coefficient of absorption measured follows the trends described by the modelling of the reactor and the equations used to describe the rate of the absorption reactions. Moreover, the overall mass transfer coefficient of absorption is in agreement with data available in the literature, valid in smaller portions of the investigated region. From the data analysis, the kinetics of the absorption reactions in the liquid phase is characterized. The equation proposed to fit the data is a power law equation which reproduces the experimental results measured at different CO₂ loadings. This represents a novelty because in literature the kinetic model of the reaction is usually fitted only to data for unloaded solutions (CO₂ loading equal to zero). Hence, in this case there is an experimental evidence that the kinetic model holds true in every loading conditions. The kinetic model intercept the values found in literature in every range of concentration. Consequently, the model is valid in every conditions and the rate of the reaction between NH₃ and CO₂ in liquid phase is described with an Arrhenius constant with a pre-exponential factor of 1.41·10⁸ [mol/(m³s)] and an activation energy of 60,680 [J/mol], a linear dependence on the CO₂ concentration and a dependence on the NH₃ with an exponent γ = 1.89. The proposed equation is found to be appropriate for implementation into process simulation software.

General information
State: Published
Organisations: Center for Energy Resources Engineering, Department of Chemical and Biochemical Engineering, CERE – Center for Energy Resources Engineering, Politecnico di Milano
Authors: Lillia, S. (Ekstern), Bonalumi, D. (Ekstern), Fosbøl, P. L. (Intern), Thomsen, K. (Intern), Valenti, G. (Ekstern)
Pages: 117-127
Publication date: 2018
Main Research Area: Technical/natural sciences

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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): 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.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Building Design, Technical University of Denmark
Authors: Lucherini, A. (Ekstern), Giuliani, L. (Intern), Jomaas, G. (Intern)
Pages: 42-50
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Fire Safety Journal
Volume: 95
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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 over saturate 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

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Journal: Applied Thermal Engineering
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- Web of Science (2018): Indexed yes
- 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
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 1
- Scopus rating (2008): SJR 1.194 SNIP 1.66
- Scopus rating (2007): SJR 0.892 SNIP 1.479
- Scopus rating (2006): SJR 1.221 SNIP 1.582
- Web of Science (2006): Indexed yes
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, 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
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Web of Science (2018): Indexed yes
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 (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
Exploring Uncertainty Perception as a Driver of Design Activity
This paper investigates uncertainty perception as a general driver of individual design activity. An observation based protocol study is used to explore the interaction between uncertainty perception and three core actions connected in design activity: information action, knowledge sharing action, and representation action. We bring together prior works on uncertainty perception in the design and management literatures to derive three contributions. First, we describe how uncertainty perception is associated with activity progression, linking all three core actions. Second, we identify characteristic patterns of interaction between uncertainty perception and activity. Third, we decompose uncertainty perception to further explain its role in driving design activity. This extends prior research on design activity, and supports a number of theoretical and empirical implications.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Engineering Systems
Authors: Cash, P. (Intern), Kreye, M. (Intern)
Pages: 50-79
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Design Studies
Volume: 54
ISSN (Print): 0142-694X
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
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.
Expression of cocoa genes in Saccharomyces cerevisiae improves cocoa butter production

Background: Cocoa butter (CB) extracted from cocoa beans (Theobroma cacao) is the main raw material for chocolate production, but CB supply is insufficient due to the increased chocolate demand and limited CB production. CB is mainly composed of three different kinds of triacylglycerols (TAGs), 1,3-dipalmitoyl-2-oleoyl-glycerol (POP, C16:0-C18:1-C16:0), 1-palmitoyl-3-stearoyl-2-oleoyl-glycerol (POS, C16:0-C18:1-C18:0) and 1,3-distearoyl-2-oleoyl-glycerol (SOS, C18:0-C18:1-C18:0). In general, Saccharomyces cerevisiae produces TAGs as storage lipids, which consist of C16 and C18 fatty acids. However, cocoa butter-like lipids (CBL, which are composed of POP, POS and SOS) are not among the major TAG forms in yeast. TAG biosynthesis is mainly catalyzed by three enzymes: glycerol-3-phosphate acyltransferase (GPAT), lysophospholipid acyltransferase (LPAT) and diacylglycerol acyltransferase (DGAT), and it is essential to modulate the yeast TAG biosynthetic pathway for higher CBL production.

Results: We cloned seven GPAT genes and three LPAT genes from cocoa cDNA, in order to screen for CBL biosynthetic gene candidates. By expressing these cloned cocoa genes and two synthesized cocoa DGAT genes in S. cerevisiae, we successfully increased total fatty acid production, TAG production and CBL production in some of the strains. In the best producer, the potential CBL content was eightfold higher than the control strain, suggesting the cocoa genes expressed in this strain were functional and might be responsible for CB biosynthesis. Moreover, the potential CBL content increased 134-fold over the control Y29-TcD1 (IMX581 sct1 triangle ale1 triangle lro1 triangle dga1 triangle with TcDGAT1 expression) in strain Y29-441 (IMX581 sct1 triangle ale1 triangle lro1 triangle dga1 triangle with TcGPAT4, TcLPAT4 and TcDGAT1 expression) further suggesting cocoa GPAT and LPAT genes functioned in yeast.

Conclusions: We demonstrated that cocoa TAG biosynthetic genes functioned in S. cerevisiae and identified cocoa genes that may be involved in CBL production. Moreover, we found that expression of some cocoa CBL biosynthetic genes improved potential CBL production in S. cerevisiae, showing that metabolic engineering of yeast for cocoa butter production can be realized by manipulating the key enzymes GPAT, LPAT and DGAT in the TAG biosynthetic pathway.
Abstract We investigate the influence of controlled uniaxial extension on various flow induced phenomena in semidilute solutions of ultra high molecular weight polyethylene (UHMwPE). Concentrations range from 9 w% to 29 w% and the choice of solvent is paraffin oil (PO). The start-up extensional behavior is measured at various Hencky strain rates $\varepsilon$ \dot{} and at two different temperatures (150 °C and 170 °C) well above the melting point. At $\varepsilon > 0.9$ the qualitative behavior of the samples differ significantly depending on the imposed conditions and the concentration of the samples. Overall we propose two flow scenarios: Scenario 1 - flow induced phase separation resulting in an unstable bulky filament and Scenario 2 - flow induced phase separation and crystallization resulting in a stable deformation and a smooth strongly
strain hardening filament. Scenario 2 is observed only at 150 °C at high $\varepsilon$ and high concentrations. Scenario 1, observed at both temperatures, is most pronounced at low rates and/or high concentrations.

**General information**

**State:** Published

**Organisations:** Department of Chemical and Biochemical Engineering, The Danish Polymer Centre, Materials Science Center

**Authors:** Wingstrand, S. L. (Intern), Imperiali, L. (Ekstern), Stepanyan, R. (Ekstern), Hassager, O. (Intern)

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- Web of Science (2017): Indexed Yes
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- Scopus rating (2016): CiteScore 3.77 SJR 1.191 SNIP 1.252
  - Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
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- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 1.415 SNIP 1.666 CiteScore 4.07
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- BFI (2012): BFI-level 1
- Scopus rating (2012): SJR 1.591 SNIP 1.8 CiteScore 3.74
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- BFI (2011): BFI-level 1
- Scopus rating (2011): SJR 1.623 SNIP 1.82 CiteScore 4.04
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- BFI (2008): BFI-level 1
- Scopus rating (2008): SJR 1.891 SNIP 1.629
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- Scopus rating (2007): SJR 1.889 SNIP 1.707
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- Scopus rating (2006): SJR 1.819 SNIP 1.627
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- Scopus rating (2005): SJR 1.626 SNIP 1.576
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- Scopus rating (2004): SJR 1.737 SNIP 1.731
  - Web of Science (2004): Indexed yes
Fabrication of 3D Air-core MEMS Inductors for High Frequency Power Electronic Applications

We report a fabrication technology for 3D air-core inductors for small footprint and very-high-frequency power conversions. Our process is scalable and highly generic for fabricating inductors with a wide range of geometries and core shapes. We demonstrate spiral, solenoid, and toroidal inductors, a toroidal transformer and inductor with advanced geometries that cannot be produced by wire winding technology. The inductors are embedded in a silicon substrate and consist of through-silicon vias and suspended windings. The inductors fabricated with 20 and 25 turns and 280-350 μm heights on 4-16 mm² footprints have an inductance from 34.2 to 44.6 nH and a quality factor from 10 to 13 at frequencies ranging from 30 to 72 MHz. The air-core inductors show threefold lower parasitic capacitance and up to a 140% higher-quality factor and a 230% higher-operation frequency than silicon-core inductors. A 33 MHz boost converter mounted with an air-core toroidal inductor achieves an efficiency of 68.2%, which is better than converters mounted with a Si-core inductor (64.1%). Our inductors show good thermal cycling stability, and they are mechanically stable after vibration and 2-m-drop tests.

General information
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Organisations: DTU Danchip, Department of Electrical Engineering, Electronics, Institute for Product Development
Authors: Lê Thanh, H. (Intern), Mizushima, I. (Ekstern), Nour, Y. (Intern), Tang, P. T. (Ekstern), Knott, A. (Intern), Ouyang, Z. (Intern), Jensen, F. (Intern), Han, A. (Intern)
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Face Recognition using Approximate Arithmetic

Face recognition is image processing technique which aims to identify human faces and found its use in various different fields for example in security. Throughout the years this field evolved and there are many approaches and many different algorithms which aim to make the face recognition as effective as possible. The use of different approaches such as neural networks and machine learning can lead to fast and efficient solutions however, these solutions are expensive in terms of hardware resources and power consumption. A possible solution to this problem can be use of approximate arithmetic. In many image processing applications the results do not need to be completely precise and use of the approximate arithmetic can lead to reduction in terms of delay, space and power consumption. In this paper we examine possible use of approximate arithmetic in face recognition using Eigenfaces algorithm.
Factors of electric vehicle adoption: A comparison of conventional and electric car users based on an extended theory of planned behavior

Increasing the share of battery electric vehicles (BEV) in the total car fleet is regarded as a promising way to reduce local car emissions. Based on online surveys in Denmark and Sweden, this study compares BEV users' (n = 673) and conventional vehicle (CV) users' (n = 1794) socio-demographic profiles, attitudinal profiles, and mobility patterns. In line with previous research, BEV users are typically male, highly educated, have high incomes, and often more than one car in their household. Additionally, BEV users perceive less functional barriers toward BEV use and have more positive attitudes and norms than CV users. The different profiles of these user groups suggest a separate analysis of potential factors of BEV adoption in both groups. In regression analyses, CV and BEV users' intention to use/purchase a BEV is modeled based on factors of the Theory of Planned Behavior extended by personal norm, perceived mobility necessities, and BEV experience. For CV users, symbolic attitudes related to BEVs are the most important factor of intention, while perceived functional barriers in terms of driving range are most relevant for BEV users' intention. How BEV users cope with trips of longer distance seems of particular relevance. In multiple car households, we found the percentage of actual BEV usage related to the type of other cars in the household, perceived functional barriers of BEVs as well as (successful) behavioral adaption to longer trips by BEVs. Based on the results, we discuss ways to increase BEV adoption for current users and non-users.
False-positive result when a diphenylcarbazide spot test is used on trivalent chromium-passivated zinc surfaces

A colorimetric 1,5-diphenylcarbazide (DPC)-based spot test can be used to identify hexavalent chromium on various metallic and leather surfaces. DPC testing on trivalent chromium-passivated zinc surfaces has unexpectedly given positive results in some cases, apparently indicating the presence of hexavalent chromium; however, the presence of hexavalent chromium has never been confirmed with more sensitive and accurate test methods.

Objectives
To examine the presence of hexavalent chromium on trivalent chromium-passivated zinc surfaces with a DPC-based spot test.

Methods
A colorimetric DPC spot test was used for the initial detection of hexavalent chromium on new and 1-year-aged trivalent chromium-passivated zinc surfaces. Then, X-ray photoelectron spectroscopy (XPS) was performed for all samples.

Results
The DPC spot test indicated the presence of hexavalent chromium in aged, but not new, trivalent chromium passivation on zinc; however, subsequent analysis by XPS could not confirm the presence of chromium in a hexavalent state.

Conclusions
Unintended oxidation of DPC induced by atmospheric corrosion is suggested as a possible reason for the false-positive reaction of the DPC test on a trivalent chromium-passivated zinc surface. Further validation of the use of the DPC test for chromium-containing metallic surfaces is required.
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Scopus rating (2016): CiteScore 2.47 SJR 0.829 SNIP 1.59
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Scopus rating (2015): SJR 1 SNIP 1.468 CiteScore 2.85
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
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Scopus rating (2012): SJR 0.87 SNIP 1.361 CiteScore 1.98
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Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
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ISI indexed (2011): ISI indexed yes
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BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.811 SNIP 1.173
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.782 SNIP 1.185
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Scopus rating (2007): SJR 0.664 SNIP 1.336
Scopus rating (2006): SJR 0.559 SNIP 1.094
Scopus rating (2005): SJR 0.545 SNIP 1.005
Scopus rating (2004): SJR 0.536 SNIP 0.851
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Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Skov, C. (Intern)
Publication date: 2018

Publication information
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.

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Organisations: Department of Electrical Engineering, Automation and Control, Norwegian University of Science and Technology
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BFI (2013): BFI-level 1
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BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.206 SNIP 2.445 CiteScore 1.71
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.055 SNIP 2.528 CiteScore 1.85
Web of Science (2011): Indexed yes
Filling the Gaps in the Kirromycin Biosynthesis: Deciphering the Role of Genes Involved in Ethylmalonyl-CoA Supply and Tailoring Reactions

Kirromycin is the main product of the soil-dwelling Streptomyces collinus Tü 365. The elucidation of the biosynthetic pathway revealed that the antibiotic is synthesised via a unique combination of trans-/cis-AT type I polyketide synthases and non-ribosomal peptide synthetases (PKS I/NRPS). This was the first example of an assembly line integrating the three biosynthetic principles in one pathway. However, information about other enzymes involved in kirromycin biosynthesis remained scarce. In this study, genes encoding tailoring enzymes KirM, KirHVI, KirOI, and KirOII, and the putative crotonyl-CoA reductase/carboxylase KirN were deleted, complemented, and the emerged products analysed by HPLC-HRMS and MS/MS. Derivatives were identified in mutants ΔkirM, ΔkirHVI, ΔkirOI, and ΔkirOII. The products of ΔkirOI, ΔkirOII, and kirHVI were subjected to 2D-NMR for structure elucidation. Our results enabled functional assignment of those enzymes, demonstrating their involvement in kirromycin tailoring. In the ΔkirN mutant, the production of kirromycin was significantly decreased. The obtained data enabled us to clarify the putative roles of the studied enzymes, ultimately allowing us to fill many of the missing gaps in the biosynthesis of the complex antibiotic. Furthermore, this collection of mutants can serve as a toolbox for generation of new kirromycins.

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Organisations: Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds, Department of Biotechnology and Biomedicine, Natural Product Discovery, Eberhard-Karls-Universität Tübingen
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Fire-induced reradiation underneath photovoltaic arrays on flat roofs

The impact of the reflection of fire-induced heat from a gas burner was studied experimentally to gain knowledge on the interaction between photovoltaic (PV) panels and a fire on flat roofs. The heat flux was measured in a total of eight points at the same level as the top of the gas burner. The gas burner was placed underneath the center of a PV panel, installed in a geometry similar to a commercial east-west orientated mounting system, and the eight points were symmetrical pairs of two at four different distances from the burner. Measurements were compared with tests with no PV panel, and thereby without the reflection from the PV panel. A significant increase of the received heat flux was recorded, with ascending percentage-wise difference for increased heat release rates. This indicates that PV panels can have a significant contribution in roof fires, primarily because they stimulate fire spread over the roof on which they have been mounted. The received heat flux is higher underneath the most elevated part of the PV panel, due to two important, flame-related reasons: 1) the flame deflection toward the most elevated part of the panel and 2) a nonhomogeneous temperature distribution on the PV panel surface, due to the deflected flame, and thereby a nonhomogeneous emission from the heated PV panel. Finally, the results were very similar for a brand new PV panel and a PV panel tested for the fourth time, except during the period when the thin combustible film underneath the new PV panel is burning, supporting that it is the fire dynamics and not the fire load associated with the PV panels that is promoting fire spread associated with PV panels on flat roofs. With this in mind, the current results are relevant not only for PV panels but also for any inclined roof covering panel with limited combustibility.
First genetic quantification of sex- and stage-specific feeding in the ubiquitous copepod Acartia tonsa

Marine copepods provide the major food-web link between primary producers and higher trophic levels, and their feeding ecology is of acute interest in light of global change impacts on food-web functioning. Recently, quantitative polymerase chain reaction (qPCR) protocols have been developed, which can complement classic diet quantification methods, such as stable isotope or fatty acid analyses tools. Here, we present first results of feeding experiments assessing sex- and stage-specific food intake by the ubiquitous calanoid copepod Acartia tonsa by 18S targeted qPCR and microscopic...
grazing assessment. In triplicated mixed-diet feeding treatments, three suitable A. tonsa diets, the cryptophyte Rhodomonas balthica, the haptophyte Isochrysis galbana, and the diatom Thalassiosira weissflogii, were offered in equal biomass proportions under constant conditions. Prey uptake substantially varied between different algal species, as did the extent of sex- and stage-specificity of prey uptake. Male adult copepods had higher R. balthica gut contents than females, and nauplii contained more of this prey source than copepodites or adult copepods in mixed treatments. A trend towards higher amounts of ingested T. weissflogii in adult females than in males and in nauplii than in other stages was detected. Genetic gut content quantifications indicated low feeding on I. galbana, and no consistent sex- or stage-specific differences of I. galbana content in A. tonsa. Our results highlight diet-specific feeding differences between Acartia life stages and sexes, which can have implications on food-web dynamics and specific nutrient transfer to higher trophic levels in copepod populations of varying age composition under changing environmental parameters, such as rising temperatures and increasing ocean acidification.

**General information**
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Organisations: National Institute of Aquatic Resources, Section for Marine Living Resources, Technical University of Denmark, GEOMAR Helmholtz Center for Ocean Research Kiel
Authors: Ismar, S. M. (Ekstern), Kottmann, J. S. (Intern), Sommer, U. (Ekstern)
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Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.315 SNIP 0.932 CiteScore 2.21
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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.204 SNIP 1.041 CiteScore 2.32
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.272 SNIP 1.064 CiteScore 2.4
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.306 SNIP 1.107 CiteScore 2.43
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.145 SNIP 1.073 CiteScore 2.22
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.235 SNIP 1.069
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BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.178 SNIP 1.052
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
First report of Taenia ovis infection in Danish sheep (Ovis aries)

We report Taenia ovis infection in Danish sheep for the first time. In spring 2016, the metocestode stage of T. ovis was at slaughter observed in heart muscles, diaphragm and skeletal muscles from approx. a third of all sheep from one specific farm localised in South Jutland. The diagnosis was confirmed by molecular typing of the mitochondrial cytochrome c oxidase I (cox1) gene. Three newly imported dogs were suspected but the definitive host was unidentifiable. The finding is not regulated in the meat control procedures. However, infected meat is usually condemned due to aesthetic reasons causing economic losses. Thus, finding of T. ovis is of concern to sheep meat producers in the area, as the infection could have spread further on to other farms.

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Web of Science (2017): Indexed Yes
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Scopus rating (2016): CiteScore 2.49 SJR 1.173 SNIP 1.228
Web of Science (2016): Indexed yes
Fishmeal with different levels of biogenic amines in Aquafeed: Comparison of feed protein quality, fish growth performance, and metabolism

The current study investigated the effects of fishmeal quality (low (LB) and high (HB) levels of endogenous biogenic amines) and feed extrusion temperatures (100 and 130 °C) on protein oxidation indicators and amino acids racemization (AAR) in extruded fish feed. Furthermore, the study investigated the accompanying effects on feeding the diets to juvenile rainbow trout (Oncorhynchus mykiss) on fish growth performance, in vivo amino acids (AAs) digestibility, and liver and plasma metabolites following an 8-week feeding trial. A principal component analysis (PCA) showed that better growth performance, secondary oxidation products, and racemized methionine correlated positively with a low content of biogenic amines, whereas the primary oxidation product, protein hydroperoxides, and in vivo AAs digestibility correlated positively with high content of biogenic amines. At
an extrusion temperature of 100 °C, the growth performance of the fish decreased when the content of biogenic amines increased. In contrast, at an extrusion temperature of 130 °C, the growth performance was unaffected by the level of biogenic amines. The latter could be a consequence of the higher level of protein oxidation of LB fishmeal compared to HB fishmeal at this temperature. Higher levels of liver pyruvate and plasma lactate together with high level of betaine and AAs in both liver and plasma were associated with the LB fishmeal diets. The lower concentration of AAs especially in liver of fish fed with HB fishmeal demonstrated that these AAs might not be supplied sufficiently for the tricarboxylic acid cycle to generate energy and therefore a decreased growth was found in fish fed this diet. Furthermore, the results indicated that biogenic amines and feed attractants such as betaine are more decisive for evaluating the quality of fishmeal than protein quality parameters.
Flabellum alabastrum deep sea cup coral meadows from West Greenland: Density, catchability and habitat suitability modelling

General information
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Organisations: Arctic Section, National Institute of Aquatic Resources, Section for Marine Living Resources, Natural History Museum of Denmark, Aarhus University
Authors: Jørgensbye, H. (Intern), Tendal, O. S. (Ekstern), Wegeberg, S. (Ekstern), Mosegaard, H. (Intern)
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Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.557 SNIP 1.279 CiteScore 2.67
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Scopus rating (2013): SJR 2.077 SNIP 1.314 CiteScore 3.11
ISI indexed (2013): ISI indexed yes
Web of Science (2013): 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**

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**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. (Eksternal), Jokisalo, J. (Ekstern), Koskela, H. (Ekstern), Melikov, A. K. (Intern)

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- 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
Flow characterization of aerated bubble column reactor using electrical resistance tomography and computational fluid dynamic methods

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre, Ryerson University
Authors: Bach, C. (Intern), Albæk, M. O. (Intern), Krühne, U. (Intern), Gernaey, K. V. (Intern), Ein-Mozaffari, F. (Ekstern)
Number of pages: 1
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Event: Abstract from 10th World Congress of Chemical Engineering (WCCE10), Barcelona, Spain.
Main Research Area: Technical/natural sciences
Publication: Research - peer-review › Journal article – Annual report year: 2018

FluoRAS Sensor - Online organic matter for optimising recirculating aquaculture systems
FluoRAS will develop a sensor that can save recycled fish farms 30% per year in water and energy consumption for water treatment, as well as optimize nitrogen removal. The sensor will be developed in a partnership between engineers (Krüger A / S) and researchers (DTU), and the product will be made available to the entire sector through Danish Aquaculture. Global aquaculture production is expected to double within the next 15 years. Recycling technology has a great potential for supporting environmentally and economically sustainable production. However, the technology has some challenges in balancing both the maintenance of necessary water quality and water treatment costs. Loss of production due to poor water quality is expensive and can be avoided with correct sensor systems. Accumulation of dissolved organic matter and nutrients in the water reduce the effectiveness of UV treatment, is a source of nutrition for opportunistic pathogens, and reduces the effectiveness of the biofilter's removing ammonia. Modern recycling systems are therefore dependent on a network of online sensors that monitor and respond to changes in water quality, but currently there is a need for a sensor to monitor the accumulation of organic matter. FluoRAS aims to fill this gap in technology by developing an online fluorescence sensor. The sensor is based on non-destructive, online optical technology that does not require chemicals and can run continuously.

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Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic
Authors: Hambly, A. (Intern), Stedmon, C. (Intern)
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Foraging response and acclimation of ambush feeding and feeding-current feeding copepods to toxic dinoflagellates

Copepods exposed to toxic algae in "black box" incubation experiments show highly varied responses, but the mechanisms cannot be revealed from such experiments and the implications to copepod and phytoplankton population dynamics consequently not evaluated. Here, we use direct video observations to examine the response and temporal acclimation (5 d) of two copepods with different foraging behaviors to toxic dinoflagellates. Feeding-current feeding Temora longicornis and ambush feeding Acartia tonsa were offered three strains of toxic Alexandrium tamarense and a nontoxic control Protoceratium reticulatum. We hypothesize (1) that ambush feeders are less affected by toxic algae than feeding-current feeders, (2) that copepods acclimate to the toxic algae, and (3) that phytoplankton cells previously exposed to copepod cues elicit stronger responses. Both copepod species consumed the toxic algae at a reduced rate and there was no difference in their net-response, but the mechanisms differed. T. longicornis responded in strain-specific ways by reducing its feeding activity, by rejecting captured algae, or by regurgitating consumed cells. A. tonsa reduced its consumption rate, jump frequency, and jump distance on all strains of the toxic dinoflagellate, and most so on copepod-cue induced cells. There was limited acclimation to algal toxins, although some behavioral responses relaxed or intensified during the first one to several days. Mortality rates were low and the various responses, thus, all allow the copepods to survive harmful algal blooms. However, the implications to algal population dynamics are species/strains specific, with only prey selection providing the toxic algae with a competitive advantage

General information
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Organisations: National Institute of Aquatic Resources, Centre for Ocean Life, East China Sea Fisheries Research Institute, Chinese Academy of Fisheries Sciences
Authors: Xu, J. (Intern), Nielsen, L. T. (Intern), Kiørboe, T. (Intern)
Publication date: 2018
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Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.112 SNIP 1.584 CiteScore 3.73
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Scopus rating (2013): SJR 2.256 SNIP 1.587 CiteScore 3.98
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Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.456 SNIP 1.5 CiteScore 3.81
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BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.374 SNIP 1.445 CiteScore 3.59
ISI indexed (2011): ISI indexed yes
Forbavsende få søørreder fra Mossø

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Jepsen, N. (Intern), Ravn, H. D. (Intern), Nielsen, J. (Intern)
Publication date: 2018

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Publication: Communication › Internet publication – Annual report year: 2018

Foreningspuljen til vandløbsrestaurering - genskab gydeområder

General information
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Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Sivebæk, F. (Intern)
Publication date: 2018
Fractal Characteristics Analysis of Blackouts in Interconnected Power Grid

The power failure models are a key to understand the mechanism of large scale blackouts. In this letter, the similarity of blackouts in interconnected power grids (IPGs) and their sub-grids is discovered by the fractal characteristics analysis to simplify the failure models of the IPG. The distribution characteristics of blackouts in various sub-grids are demonstrated based on the Kolmogorov-Smirnov (KS) test. The fractal dimensions (FDs) of the IPG and its sub-grids are then obtained by using the KS test and the maximum likelihood estimation (MLE). The blackouts data in China were used to demonstrate the similarity of distribution characteristics and FDs of the IPG and its sub-grids. The results are consistent with the development of the power grids (PGs).

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, Hunan University
Authors: Wang, F. (Ekstern), Li, L. (Ekstern), Li, C. (Ekstern), Wu, Q. (Intern), Cao, Y. (Ekstern), Zhou, B. (Ekstern), Fang, B. (Ekstern)
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Fracture Mechanics Analysis of Reinforced DCB Sandwich Debond Specimen Loaded by Moments

Analytical expressions for the energy release rate and mode-mixity phase angle are derived for a sandwich composite double-cantilever beam fracture specimen with the face sheets reinforced by stiff plates. The sandwich beam is considered symmetric, with identical top and bottom facesheets. Only a pure moment loading is considered. The J-integral coupled with laminate beam theory is employed to derive closed-form expression for the energy releaserate in terms of the applied moments, geometry, and material properties. A scalar quantity ω is obtained to express the mode-mixity phase angle. It is shown that ω is independent of the applied loading conditions. The value of ω is found to be moderately influenced by reinforcement thicknesses.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, Florida Atlantic University
Authors: Saseendran, V. (Intern), Berggreen, C. (Intern), Carlsson, L. A. (Ekstern)
Pages: 413-422
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: A I A A Journal
Volume: 56
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Fracture mechanics approach to optimize inspection planning of offshore welds for wind turbines
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.

**General information**

State: Published
Organisations: Department of Wind Energy, Integration & Planning, Universidad de Castilla-La Mancha, HTW Berlin - University of Applied Sciences
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  - BFI (2010): BFI-level 1
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  - 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
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  - Scopus rating (2003): SJR 0.813 SNIP 2.492
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Genome Sequence of Enterococcus mundtii EM01, Isolated from Bombyx mori Midgut and Responsible for Flacherie Disease in Silkworms Reared on an Artificial Diet

The whole genome sequence of Enterococcus mundtii strain EM01 is reported here. The isolate proved to be the cause of flacherie in Bombyx mori To date, the genomes of 11 other E. mundtii strains have been sequenced. EM01 is the only strain that displayed active pathological effects on its associated animal species.

Genomic investigation of Danish Staphylococcus aureus isolates from bulk tank milk and dairy cows with clinical mastitis

Staphylococcus aureus is one of the most common pathogens that cause mastitis in dairy cows. Various subtypes, virulence genes and pathogenicity islands have been associated with isolates from bulk tank milk and clinical mastitis. So far, no Danish cattle associated S. aureus isolates have been whole-genome sequenced and further analyzed. Thus, the main objective was to investigate the population structure and genomic content of isolates from bulk tank milk and clinical mastitis, using whole-genome sequencing. This may reveal the origin of strains that cause clinical mastitis. S. aureus isolates from bulk tank milk (n=94) and clinical mastitis (n=63) were collected from 91 and 24 different farms, respectively and whole-genome sequenced. The genomic content was analyzed and a phylogenetic tree based on single nucleotide polymorphisms was constructed. In general, the isolates from both bulk tank milk and clinical mastitis were of similar genetic background. This suggests that dairy cows are natural carriers of the S. aureus subtypes that cause clinical mastitis if the right conditions are present and that a broad range of subtypes cause mastitis. A phylogenetic cluster that mostly consisted of ST151 isolates carried three pathogenicity islands that were primarily found in this group. The prevalence of resistance genes was generally low. However, the first ST398 methicillin resistant S. aureus isolate from a Danish dairy cow with clinical mastitis was detected.
Geometric singular perturbation analysis of systems with friction

This thesis is concerned with the application of geometric singular perturbation theory to mechanical systems with friction. The mathematical background on geometric singular perturbation theory, on the blow-up method, on non-smooth dynamical systems and on regularization is presented. Thereafter, two mechanical problems with two different formulations of the friction force are introduced and analysed. The first mechanical problem is a one-dimensional spring-block model describing earthquake faulting. The dynamics of earthquakes is naturally a multiple timescale problem: the timescale of earthquake ruptures is very short, when compared to the time interval between two consecutive ruptures. We identify a small parameter \( \varepsilon \) that describes the separation between the timescales, so that \( \varepsilon = 0 \) idealises the complete timescale separation. Earthquake faulting problems also have multiple spatial scales. The action of friction is generally explained as the loss and restoration of linkages between the surface asperities at the molecular scale. However, the consequences of friction are noticeable at much larger scales, like hundreds of kilometers. By using geometric singular perturbation theory and the blow-up method, we provide a detailed description of the periodicity of the earthquake episodes. In particular, we show that attracting limit cycles arise from a degenerate Hopf bifurcation, whose degeneracy is due to an underlying Hamiltonian structure that leads to large amplitude oscillations. We use a Poincaré compactification to study the system near infinity. At infinity, the critical manifold loses hyperbolicity with an exponential rate. We use an adaptation of the blow-up method to recover the hyperbolicity. This enables the identification of a new attracting manifold, that organises the dynamics at infinity for \( \varepsilon = 0 \). We illustrate our findings with numerics, and outline the proof of the conjecture. We also discuss how our results can be used to study a similar class of problems. The second mechanical problem is a friction oscillator subject to stiction. The vector field of this discontinuous model does not follow the Filippov convention, and the concept of Filippov solutions cannot be used. Furthermore, some Carathéodory solutions are unphysical. Therefore, we introduce the concept of stiction solutions: these are the Carathéodory solutions that are physically relevant, i.e. the ones that follow the stiction law. However, we find that some of the stiction solutions are forward non-unique in subregions of the slip onset. We call these solutions singular, in contrast to the regular stiction solutions that are forward unique. In order to further the understanding of the non-unique dynamics, we introduce a regularization of the model. This gives a singularly perturbed problem that captures the main features of the original discontinuous problem. We identify a repelling slow manifold that separates the forward slipping to forward sticking solutions, leading to a high sensitivity to the initial conditions. On this slow manifold we find canard trajectories, that have the physical interpretation of delaying the slip onset. We show numerically that the regularized problem has a family of periodic orbits interacting with the canards. We observe that this family is unstable of saddle type and that it connects, in the rigid body limit, the two regular, slip-stick branches of the discontinuous problem, that were otherwise disconnected.
Global biogeochemical provinces of the mesopelagic zone

Aim: Following the biogeographical approach implemented by Longhurst for the epipelagic layer, we propose here to identify a biogeochemical 3-D partition for the mesopelagic layer. The resulting partition characterizes the main deep environmental biotopes and their vertical boundaries on a global scale, which can be used as a geographical and ecological framework for conservation biology, ecosystem-based management and for the design of oceanographic investigations. Location: The global ocean. Methods: Based on the most comprehensive environmental climatology available to date, which is both spatially and vertically resolved (seven environmental parameters), we applied a combination of clustering algorithms (c-means, k-means, partition around medoids and agglomerative with Ward's linkage) associated with a nonparametric environmental model to identify the vertical and spatial delineation of the mesopelagic layer. Results: First, we show via numerical interpretation that the vertical division of the pelagic zone varies and, hence, is not constant throughout the global ocean. Indeed, a latitudinal gradient is found between the epipelagic-mesopelagic and mesopelagic-bathypelagic vertical limits. Second, the mesopelagic layer is shown here to be composed of 13 distinguishable Biogeochemical Provinces. Each province shows a distinct range of environmental conditions and characteristic 3-D distributions. Main conclusions: The historical definition of the mesopelagic zone is here revisited to define a 3-D geographical framework and characterize all the deep environmental biotopes of the deep global ocean. According to the numerical interpretation of mesopelagic boundaries, we reveal that the vertical division of the zone is not constant over the global ocean (200-1,000 m) but varies between ocean basin and with latitude. We also provide evidence of biogeochemical division of the mesopelagic zone that is spatially structured in a similar way than the epipelagic in the shallow waters but varies in the deep owing to a change of the environmental driving factors.
Global Sensitivity Analysis as Good Modelling Practices tool for the identification of the most influential process parameters of the primary drying step during freeze-drying

Pharmaceutical batch freeze-drying is commonly used to improve the stability of biological therapeutics. The primary drying step is regulated by the dynamic settings of the adaptable process variables, shelf temperature $T_s$ and chamber pressure $P_c$. Mechanistic modelling of the primary drying step leads to the optimal dynamic combination of these adaptable process variables in function of time. According to Good Modelling Practices, a Global Sensitivity Analysis (GSA) is essential for appropriate model building. In this study, both a regression-based and variance-based GSA were conducted on a validated mechanistic primary drying model to estimate the impact of several model input parameters on two output variables, the product temperature at the sublimation front $T_i$ and the sublimation rate $V_{subl}$. $T_s$ was identified as most influential parameter on both $T_i$ and $V_{subl}$, followed by $P_c$ and the dried product mass transfer resistance $\alpha_{RP}$ for $T_i$ and $V_{subl}$, respectively. The GSA findings were experimentally validated for $V_{subl}$ via a Design of Experiments (DoE) approach. The results indicated that GSA is a very useful tool for the evaluation of the impact of different process variables on the model outcome, leading to essential process knowledge, without the need for time-consuming experiments (e.g., DoE).

General information

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Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre, Ghent University
Authors: Van Bockstal, P. (Ekstern), Mortier, S. T. F. (Ekstern), Corver, J. (Ekstern), Nopens, I. (Ekstern), Gernaey, K. V. (Intern), De Beer, T. (Ekstern)
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  BFI (2014): BFI-level 2
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  Web of Science (2013): Indexed yes
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Glycoengineering in CHO cells: Advances in systems biology

For several decades, glycoprotein biologics have been successfully produced from Chinese hamster ovary (CHO) cells. The therapeutic efficacy and potency of glycoprotein biologics are often dictated by their post translational modifications, particularly glycosylation, which unlike protein synthesis, is a non-templated process. Consequently, both native and recombinant glycoprotein production generate heterogeneous mixtures containing variable amounts of different glycoforms. Stability, potency, plasma half-life, and immunogenicity of the glycoprotein biologic are directly influenced by the glycoforms. Recently, CHO cells have also been explored for production of therapeutic glycosaminoglycans (e.g. heparin), which presents similar challenges as producing glycoproteins biologics. Approaches to controlling heterogeneity in CHO cells and directing the biosynthetic process toward desired glycoforms are not well understood. A systems biology approach combining different technologies is needed for complete understanding of the molecular processes accounting for this variability and to open up new venues in cell line development. In this review, we describe several advances in genetic manipulation, modeling, and glycan and glycoprotein analysis that together will provide new strategies for glycoengineering of CHO cells with desired or enhanced glycosylation capabilities.

General information
State: Accepted/In press
Organisations: Department of Biotechnology and Biomedicine, Network Engineering of Eukaryotic Cell factories, SUNY Polytechnic Institute, Export-Import Bank of Korea
Authors: Tejwani, V. (Ekstern), Andersen, M. R. (Intern), Nam, J. H. (Ekstern), Sharfstein, S. T. (Ekstern)
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Gold Nanoparticles Sliding on Recyclable Nanohoodoos-Engineered for Surface-Enhanced Raman Spectroscopy

Robust, macroscopically uniform, and highly sensitive substrates for surface-enhanced Raman spectroscopy (SERS) are fabricated using wafer-scale block copolymer lithography. The substrate consists of gold nanoparticles that can slide and aggregate on dense and recyclable alumina/silicon nanohoodoos. Hot-spot engineering is conducted to maximize the SERS performance of the substrate. The substrate demonstrates remarkably large surface-averaged SERS enhancements, greater than $10^7$ ($>10^8$ in hot spots), with unrivaled macroscopic signal uniformity as characterized by a coefficient of variation of only 6% across 4 cm. After SERS analyses, the nanohoodoos can be recycled by complete removal of gold via a one-step, simple, and robust wet etching process without compromising performance. After eight times of recycling, the substrate still exhibits identical SERS performance in comparison to a new substrate. The macroscopic uniformity combined with recyclability at conserved high performance is expected to contribute significantly on the overall competitiveness of the substrates. These findings show that the gold nanoparticles sliding on recyclable nanohoodoo substrate is a very strong candidate for obtaining cost-effective, high-quality, and reliable SERS spectra, facilitating a wide and simple use of SERS for both laboratorial and commercial applications.

General information
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Organisations: Department of Micro- and Nanotechnology, Nanoprobes, Self-Organized Nanoporous Materials
Authors: Wu, K. (Intern), Li, T. (Intern), Schmidt, M. S. (Intern), Rindzevicius, T. (Intern), Boisen, A. (Intern), Ndoni, S. (Intern)
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Gram-Scale Synthesis of Highly Active and Durable Octahedral PtNi Nanoparticle Catalysts for Proton Exchange Membrane Fuel Cell

Proton exchange membrane fuel cells (PEMFC) are regarded as a promising renewable energy source for a future hydrogen energy society. However, highly active and durable catalysts are required for the PEMFCs because of their intrinsic high overpotential at the cathode and operation under the acidic condition for oxygen reduction reaction (ORR). Since the discovery of the exceptionally high surface activity of Pt₃Ni(111), the octahedral PtNi nanoparticles have been synthesized and tested. Nonetheless, their milligram-scale synthesis method and poor durability make them unsuitable for the commercialization of PEMFCs. In this study, we focus on gram-scale synthesis of octahedral PtNi nanoparticles with Pt overlayers (PtNi@Pt) supported on the carbon, resulting in enhanced catalytic activity and durability. Such PtNi@Pt catalysts show high mass activity (1.24 A mgPt⁻¹) at 0.9 V (vs RHE) for the ORR, compared to commercial Pt/C (0.22 A mgPt⁻¹). Single-cell performance and electrochemical impedance spectroscopy (EIS) were also tested. The PtNi@Pt catalysts showed enhanced current density of 3.1 A cm⁻² at 0.6 V in O₂ flow while the commercial Pt/C had the value of 2.5 A cm⁻². After 30,000 cycles of the accelerated degradation test (ADT), the PtNi@Pt still showed better performance than the commercial Pt/C in a single-cell system. The Pt layers deposition could enhance the catalytic performance and durability of octahedral PtNi nanoparticles.
Greenhouse gas emissions from wastewater treatment plants: measurements and carbon footprint assessment

The anthropogenic emissions of greenhouse gases (GHGs) into the atmosphere are of great concern, due to their effect on climate change. To curb the increased accumulation of GHGs in the atmosphere, the United Nations Framework Convention on Climate Change promotes the reporting of national anthropogenic GHG emissions. Wastewater treatment plants (WWTPs) emit two potent GHGs, namely methane (CH4) and nitrous oxide (N2O), but also carbon dioxide (CO2), which is not accounted as a GHG, due to its biogenic origin (IPCC, 2006). Currently, CH4 and N2O emissions from WWTPs are estimated according to national and international guidelines. However, it is unknown how well these estimated emissions resemble actual plant-specific CH4 and N2O emissions; therefore, CH4 and N2O emission quantifications are needed to assure the reliable accounting of GHG emissions on the plant scale. Quantifying GHG emissions from WWTPs is a challenging undertaking, since emissions are fugitive, and are occurring across a large area consisting of several smaller sources at different emission heights and physical shapes. In the last two decades, this challenge has been addressed mainly by using on-site point measurements, namely measuring directly on individual emitting sources identified inside the facility. Usually, a single source is either completely encapsulated or partially covered, in order to measure GHG concentration in a known air volume or through a known air flow, i.e. the flux chamber technique. Complete encapsulation of a single emitting source usually occurs when measuring leakages from biogas bearing process units, while partial coverage usually is used when measuring emissions from surfaces such as open basins surface. In the last few years, plant-integrated measurements have also been performed at WWTPs, using the mobile tracer gas dispersion method (MTDM). This method uses a ground-based remote sensing approach combining the controlled release of tracer gas from the WWTP with atmospheric plume concentration measurements. Since facilities having different plant layouts, and using different process units and technologies could require different applications of the method, further investigations are needed to identify how MTDM can be best applied at WWTPs. In addition to fugitive emissions of CH4 and N2O, WWTPs indirectly emit GHGs, mainly CO2, due to the consumption of chemicals and energy. The carbon footprint assessment allows the quantification of the overall contribution of a WWTP to climate change. The principal aim of this PhD thesis was to implement the MTDM application at WWTPs, in order to quantify plant-integrated CH4 and N2O emissions. Additionally, the influence of analytical instrument characteristics and tracer gas release on MTDM results was investigated. GHG emissions were quantified at six WWTPs, using the MTDM. At two facilities, plant-integrated and on-site point measurement approaches were compared. Finally, the PhD thesis assesses the importance of fugitive emissions in the carbon footprint evaluation of WWTPs. Fair agreement of the plant-integrated CH4 emission rates was obtained when three analytical instruments, with different detection frequencies and precisions, were used in a simultaneous MTDM application at a WWTP. Emission rates differed between 1 and 18% from the mean emission rate quantified by all instruments. In the same campaign, the importance of a high plume signal within a plume traverse was shown, as this resulted in more reliable plant-integrated emission quantifications. An estimation of the MTDM detection limit was introduced by using inverse Gaussian plume modelling. Estimating the lowest detectable emission rate by MTDM was useful when little GHG was emitted from a large area, forcing measurements at a distance so far away that the analytical instrument, due to high atmospheric dilution, could not distinguish the plume from background concentrations within the plume traverse. The introduction of an indicator called “Underestimation due to Tracer Height release” (UTH) was useful in documenting that a potential vertical misplacement of the tracer gas had little influence on the final emission rate quantification. Information provided by UTH is relevant when the plume is traversed relatively close to a facility with emissions occurring from elevated heights, which incurs risk of underestimating the CH4 emission, because tracer gas released from the ground does not mix completely with CH4 potentially emitted from the top of a CH4-bearing process unit. The relevance of correct target gas simulation using proper tracer gas placement was demonstrated by applying MTDM for plant-integrated CH4 quantification. A minor emission rate overestimation was caused by a sideward misplacement of 150 m upwind of the correct position. This large error in emission rate quantification was caused by the different travel distances of the target and the tracer gases. Plant-integrated CH4 emission rates were between 1.1 and 39.5 kg CH4 h-1, and corresponding CH4 emission factors were between 1.1% and 21.3% as kg CH4 (kg CH4 production)-1 and between 0.2% and 3.2% as kg CH4 (kg COD influent)-1. Plant-integrated N2O emission rates were between < 0.1 and 6.4 kg N2O h-1, and corresponding N2O emission factors were between < 0.1% and 5.2% as kg N2O-N (kg TN influent)-1. A comparison of plant-integrated and on-site measurements at two facilities showed that plant-integrated measurements generally provided more comprehensive emission quantifications – most likely because on-site methods may not quantify all emission sources. Plant-integrated methods are thus useful for carbon footprint evaluations of an entire facility – and thus for emission reporting. On-site approaches provided information about emissions occurring from specific sources identified inside the facility, which is important in the daily operation of the plant in optimising treatment technologies and reducing emissions. The carbon footprint was assessed at seven WWTPs. None of the utilities could be considered carbon-neutral, due to their positive net carbon footprint. The assessment revealed that fugitive GHG emissions were very important when evaluating the impact of wastewater utilities on climate change, because they could contribute up to 71% of the total burden. The importance of accurate GHG emission factors was highlighted by the performed sensitivity and scenario analysis. GHG emission factors were found to be sensitive model parameters, small changes to which led to large changes in carbon footprint results. GHG emission factors were also largely responsible for the uncertainty of the net carbon footprint evaluation. Additionally, using default values provided in emission reporting guidelines gave a net carbon footprint up to four times smaller or seven times larger compared to when measured plant-
integrated GHG emission rates were used. Finally, when the carbon footprint was evaluated by comparing fugitive CH4 emissions measured during normal operational conditions and digester malfunctioning, the results were up to 320 times higher when problems at digesters occurred, suggesting a careful monitoring strategy that includes emission variations in the inventory year.

General information
State: Published
Organisations: Department of Environmental Engineering, Air, Land & Water Resources
Authors: Delre, A. (Intern), Scheutz, C. (Intern), Mønster, J. (Intern)
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Handwritten Digit Classification using 8-bit Floating Point based Convolutional Neural Networks
Training of deep neural networks is often constrained by the available memory and computational power. This often causes it to run for weeks even when the underlying platform is employed with multiple GPUs. In order to speed up the training and reduce space complexity the paper presents an approach of using reduced precision (8-bit) floating points for training hand-written characters classifier LeNeT-5 which allows for achieving 97.10% (Top-1 and Top-5) accuracy while reducing the overall space complexity by 75% in comparison to a model using single precision floating points.

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Organisations: Department of Applied Mathematics and Computer Science, Technical University of Denmark
Authors: Gallus, M. (Ekstern), Nannarelli, A. (Intern)
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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
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Hardware-in-the-loop Tests on Distance Protection Considering VSC Fault-ride-through Control Strategies

General information
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Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, Siemens A/S
Authors: Jia, J. (Intern), Yang, G. (Intern), Nielsen, A. H. (Intern), Rønne-Hansen, P. (Ekstern)
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H∞ Current Damping Control of DFIG based Wind Farm for Sub-Synchronous Control Interaction Mitigation

This paper proposes an H∞ damping controller for the doubly-fed induction generator (DFIG) based wind farm (WF) to mitigate sub-synchronous control interactions (SSCI) with series capacitor compensated lines. A multi-input multi-output (MIMO) uncertain state-space model is developed to reflect the main SSCI characteristics considering the uncertainties of wind speed, series compensation (SC) levels and system parameters. The SSCI is analyzed using the eigenvalue analysis of the uncertain system model. In order to damp the SSCI between the WF and series capacitor compensated lines under uncertainties, an H∞ damping controller is designed for the rotor side converter (RSC). The weighting functions are designed to meet the mitigation requirements of sub-synchronous oscillation currents and output power. The robust stability (RS) and robust performance (RP) of the system are validated by the µ analysis. The performance of the H∞ damping controller is demonstrated by time domain simulations of a 90 MW wind farm model with different wind speed, and SC levels. The case study with 6 m/s wind speed and 70% SC level shows superior performance of the H∞ damping controller.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, Shenzhen University
Authors: Wang, Y. (Ekstern), Wu, Q. (Intern), Yang, R. (Ekstern), Tao, G. (Ekstern), Liu, Z. (Intern)
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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
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 ≤2.5m 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 prioritization of restoration and conservation efforts in different types of ecosystems where the biota can be significantly linked to separate and quantifiable environmental characteristics.

General information

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Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, Aarhus University
Authors: Baattrup-Pedersen, A. (Ekstern), Larsen, S. E. (Ekstern), Andersen, D. K. (Forskerdatabase), Jepsen, N. (Intern) , Nielsen, J. (Intern), Rasmussen, J. (Ekstern)
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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
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.407 SNIP 1.491
Web of Science (2007): Indexed yes
Background: Excessive summer heat is a serious environmental health problem in several European cities. Heat-related mortality and morbidity is likely to increase under climate change scenarios without adequate prevention based on locally relevant evidence. Methods: We modelled the urban climate of Antwerp for the summer season during the period 1986–2015, and projected summer daily temperatures for two periods, one in the near (2026–2045) and one in the far future (2081–2100), under the Representative Concentration Pathway (RCP) 8.5. We then analysed the relationship between temperature and mortality, as well as with hospital admissions for the period 2009–2013, and estimated the projected mortality in the near future and far future periods under changing climate and population, assuming alternatively no acclimatization and acclimatization based on a constant threshold percentile temperature. Results: During the sample period 2009–2013 we observed an increase in daily mortality from a maximum daily temperature of 26 °C, or the 89th percentile of the maximum daily temperature series. The annual average heat-related mortality in this period was 13.4 persons (95% CI: 3.8–23.4). No effect of heat was observed in the case of hospital admissions due to cardiorespiratory causes. Under a no acclimatization scenario, annual average heat-related mortality is multiplied by a factor of 1.7 in the near future (24.1 deaths/year CI 95%: 6.78–41.94) and by a factor of 4.5 in the far future (60.38 deaths/year CI 95%: 17.00–105.11). Under a heat acclimatization scenario, mortality does not increase significantly in the near or in the far future. Conclusion: These results highlight the importance of a long-term perspective in the public health prevention of heat exposure, particularly in the context of a changing climate, and the calibration of existing prevention activities in light of locally relevant evidence.
Heat Recovery from Multiple-Fracture Enhanced Geothermal Systems: The Effect of Thermoelastic Fracture Interactions

This study investigates the effect of thermoelastic interactions between multiple parallel fractures on energy production from a multiple-fracture enhanced geothermal system. A coupled thermo-hydro-mechanical finite element model has been
developed that accounts for non-isothermal fluid flow within the fractures, conductive heat transfer in the rock matrix, and the mechanical deformation of the matrix. The model results show that the matrix deformation significantly increases the interactions between the two adjacent fractures. Matrix contraction due to the cooling of the matrix increases the fracture aperture in the adjacent fracture, and facilitates the creation of favourable flow pathways between the injection and production wells. These flow paths reduce the energy production from the system. The effects of fracture spacing, reservoir temperature gradient and mechanical properties of the rock matrix on the production temperature and the net production energy are investigated. It is shown that the spacing calculated based on the assumption of rigid matrix (constant uniform aperture) are too small, and in order to account for the thermoelastic interactions, the spacing between fractures should be further increased to maximise the net energy production from the system. Otherwise, the multiple-fracture system fails to improve the energy recovery from the geothermal reservoir, as initially intended.

General information
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Organisations: Centre for oil and gas – DTU, Technical University of Denmark
Authors: Vik, H. S. (Ekstern), Salimzadeh, S. (Intern), Nick, H. (Intern)
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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
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.305 SNIP 1.945
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.449 SNIP 1.867
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.214 SNIP 1.65
Highly Durable Platinum Single-Atom Alloy Catalyst for Electrochemical Reactions

Single atomic Pt catalyst can offer efficient utilization of the expensive platinum and provide unique selectivity because it lacks ensemble sites. However, designing such a catalyst with high Pt loading and good durability is very challenging. Here, single atomic Pt catalyst supported on antimony-doped tin oxide (Pt1/ATO) is synthesized by conventional incipient wetness impregnation, with up to 8 wt% Pt. The single atomic Pt structure is confirmed by high-angle annular dark field scanning tunneling electron microscopy images and extended X-ray absorption fine structure analysis results. Density functional theory calculations show that replacing Sb sites with Pt atoms in the bulk phase or at the surface of SbSn or ATO is energetically favorable. The Pt1/ATO shows superior activity and durability for formic acid oxidation reaction, compared to a commercial Pt/C catalyst. The single atomic Pt structure is retained even after a harsh durability test, which is performed by repeating cyclic voltammetry in the range of 0.05–1.4 V for 1800 cycles. A full cell is fabricated for direct formic acid fuel cell using the Pt1/ATO as an anode catalyst, and an order of magnitude higher cell power is obtained compared to the Pt/C.
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. (Ekstern)
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Volume: 109
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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
High-pressure pyrolysis and oxidation of ethanol

The pyrolysis and oxidation of ethanol has been investigated at temperatures of 600–900K, a pressure of 50bar and residence times of 4.3–6.8s in a laminar flow reactor. The experiments, conducted with mixtures highly diluted in nitrogen, covered fuel-air equivalence ratios (Φ) of 0.1, 1.0, 43, and ∞. Ethanol pyrolysis was observed at temperatures above 850K. The onset temperature of ethanol oxidation occurred at 700–725K over a wide range of stoichiometries. A considerable yield of aldehydes was detected at intermediate temperatures. A detailed chemical kinetic model was developed and evaluated against the present data as well as ignition delay times and flame speed measurements from literature. The model predicted the onset of fuel conversion and the composition of products from the flow reactor experiments fairly well. It also predicted well ignition delays above 900K whereas it overpredicted reported flame speeds slightly. The results of sensitivity analyses revealed the importance of the reaction between ethanol and the hydroperoxyl radical for ignition at high pressure and intermediate temperatures. An accurate determination of the rate coefficients for this reaction is important to improve the reliability of modeling predictions.

General information

State: Published
Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre
Authors: Hashemi, H. (Intern), Christensen, J. M. (Intern), Glarborg, P. (Intern)
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Main Research Area: Technical/natural sciences
High pressure structural studies of conjugated molecules
This chapter highlights high pressure GPa level structural studies of conjugated polymers and their analogues: conjugated oligomers and molecules, and rigid rod polymers. Attention is placed on our recent studies of polyfluorenes.

General information
State: Accepted/In press
Organisations: Department of Physics, Neutrons and X-rays for Materials Physics, Bergische Universität Wuppertal, University of Missouri
Authors: Knaapila, M. (Intern), Torkkeli, M. (Intern), Scherf, U. (Ekstern), Guha, S. (Ekstern)
Number of pages: 13
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Publication date: 2018

High-quality graphene flakes exfoliated on a flat hydrophobic polymer
We show that graphene supported on a hydrophobic and flat polymer surface results in flakes with extremely low doping and strain as assessed by their Raman spectroscopic characteristics. We exemplify this technique by micromechanical exfoliation of graphene on flat poly(methylmethacrylate) layers and demonstrate Raman peak intensity ratios I(2D)/I(G) approaching 10, similar to pristine freestanding graphene. We verify that these features are not an artifact of optical interference effects occurring at the substrate: they are similarly observed when varying the substrate thickness and are maintained when the environment of the graphene flake is completely changed, by encapsulating preselected flakes between hexagonal boron nitride layers. The exfoliation of clean, pristine graphene layers directly on flat polymer substrates enables high performance, supported, and non-encapsulated graphene devices for flexible and transparent optoelectronic studies. We additionally show that the access to a clean and supported graphene source leads to high-quality van der Waals heterostructures and devices with reproducible carrier mobilities exceeding 50 000 cm² V⁻¹ s⁻¹ at room temperature.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Nanocarbon, Center for Nanostructured Graphene, Technical University of Denmark, Politecnico di Milano
Authors: Pedrinazzi, P. (Ekstern), Caridad, J. M. (Intern), Mackenzie, D. M. A. (Intern), Pizzocchero, F. (Intern), Gammelgaard, L. (Intern), Jessen, B. S. (Intern), Sordan, R. (Ekstern), Booth, T. J. (Intern), Bøggild, P. (Intern)
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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
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 3.765 SNIP 2.27
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 3.917 SNIP 2.365
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 4.111 SNIP 2.212
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 4.277 SNIP 2.013
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 4.35 SNIP 2.11

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High stability of benzotriazole and benzodithiophene 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.

General information
State: Published
Organisations: Department of Photonics Engineering, Diode Lasers and LED Systems, Organic Energy Materials, Department of Energy Conversion and Storage, Middle East Technical University, Yildiz Technical University, TUBITAK
Pages: 433-444
Publication date: 2018
Main Research Area: Technical/natural sciences
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.
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.37 SJR 0.951 SNIP 1.225
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.914 SNIP 1.3 CiteScore 3.13
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.958 SNIP 1.477 CiteScore 2.96
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.965 SNIP 1.488 CiteScore 2.78
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.918 SNIP 1.373 CiteScore 2.26
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.908 SNIP 1.402 CiteScore 2.27
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.924 SNIP 1.141
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.842 SNIP 1.023
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.899 SNIP 1.087
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.795 SNIP 0.945
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.852 SNIP 1.052
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.679 SNIP 0.946
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.964 SNIP 1.126
Scopus rating (2003): SJR 0.988 SNIP 1.027
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.921 SNIP 0.954
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.841 SNIP 0.796
Scopus rating (2000): SJR 0.866 SNIP 0.772
Scopus rating (1999): SJR 1.064 SNIP 0.907
Original language: English
Corrosion, Crevice corrosion, Expanded austenite, High nitrogen steel, High-temperature solution nitriding, Low-temperature nitriding, Pitting
DOIs:
10.1016/j.apsusc.2017.06.094
Source: FindIt
Source-ID: 2371331057
Publication: Research - peer-review › Journal article – Annual report year: 2018
Hijacking CRISPR-Cas for high-throughput bacterial metabolic engineering: advances and prospects

High engineering efficiencies are required for industrial strain development. Due to its user-friendliness and its stringency, CRISPR-Cas-based technologies have strongly increased genome engineering efficiencies in bacteria. This has enabled more rapid metabolic engineering of both the model host Escherichia coli and non-model organisms like Clostridia, Bacilli, Streptomycetes and cyanobacteria, opening new possibilities to use these organisms as improved cell factories. The discovery of novel Cas9-like systems from diverse microbial environments will extend the repertoire of applications and broaden the range of organisms in which it can be used to create novel production hosts. This review analyses the current status of prokaryotic metabolic engineering towards the production of biotechnologically relevant products, based on the exploitation of different CRISPR-related DNA/RNA endonuclease variants.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization, Wageningen University & Research, Corbion
Authors: Mougiakos, I. (Ekstern), Bosma, E. F. (Intern), Ganguly, J. (Ekstern), van der Oost, J. (Ekstern), van Kranenburg, R. (Ekstern)
Pages: 146-157
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Main Research Area: Technical/natural sciences

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Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Scopus rating (2003): SJR 2.731 SNIP 1.983
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 2.531 SNIP 2.056
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 2.483 SNIP 1.829
Scopus rating (2000): SJR 2.122 SNIP 1.525
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.972 SNIP 1.411
Original language: English
Electronic versions:
DOIs:
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Source: PublicationPreSubmission
Source-ID: 143240261
Publication: Research - peer-review › Journal article – Annual report year: 2018

Hjælp fiskene og sæt Danmark på verdenskortet

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Nielsen, J. (Intern), Sivebæk, F. (Intern)
Publication date: 2018

Publication information
Source/Publisher: Fiskepleje.dk
Main Research Area: Technical/natural sciences
Links:
http://www.fiskepleje.dk/nyheder/2018/01/world-migration-day-2018?id=857d5f28-0c30-45e2-915e-db03b9a4922&utm_source=newsletter&utm_media=mail&utm_campaign=
Publication: Communication › Internet publication – Annual report year: 2018

Holographic Resonant Laser Printing of Metasurfaces Using Plasmonic Template

Laser printing with a spatial light modulator (SLM) has several advantages over conventional raster-writing and dot-matrix display (DMD) writing: multiple pixel exposure, high power endurance and existing software for computer generated holograms (CGH). We present a technique for the design and manufacturing of plasmonic metasurfaces based on ultrafast laser printing with a SLM. As a proof of principle we have used this technique to laser print a plasmonic metalens as well as high resolution plasmonic color decoration. The high throughput holographic laser printing approach enables on-demand mass-production of customized metasurfaces.

General information
State: Accepted/In press
Organisations: Department of Photonics Engineering, Optofluidics, Department of Micro- and Nanotechnology, University of Southern Denmark
Authors: Carstensen, M. S. (Intern), Zhu, X. (Intern), Iyore, O. E. (Intern), Mortensen, N. A. (Ekstern), Levy, U. (Intern), Kristensen, A. (Intern)
Number of pages: 6
Publication date: 2018
Main Research Area: Technical/natural sciences
Hospital Epidemiology of Methicillin-Resistant Staphylococcus aureus in a Tertiary Care Hospital in Moshi, Tanzania, as Determined by Whole Genome Sequencing

Objective. To determine molecular epidemiology of methicillin-resistant S. aureus in Tanzania using whole genome sequencing. Methods. DNA from 33 Staphylococcus species was recovered from subcultured archived Staphylococcus isolates. Whole genome sequencing was performed on IlluminaMiseq using paired-end 2x250 bp protocol. Raw sequence data were analyzed using online tools. Results. Full susceptibility to vancomycin and chloramphenicol was observed. Thirteen isolates (43.3%) resisted cefoxitin and other antimicrobials tested. Multilocus sequence typing revealed 13 different sequence types among the 30 S. aureus isolates, with ST-8 (n = seven, 23%) being the most common. Gene detection in S. aureus stains were as follows: mecA, 10 (33.3%); pvl, 5 (16.7%); tst, 2 (6.7%). The SNP difference among the six Tanzanian ST-8MRSA isolates ranged from 24 to 196 SNPs and from 16 to 446 SNPs when using the USA300_FPR3757 or the USA500 2395 as a reference, respectively. The mutation rate was 1.38 x 10(-11) SNPs/site/year or 1.4 x 10(-6) SNPs/site/year as estimated by USA300 FPR3757 or the USA500 2395, respectively. Conclusion. S. aureus isolates causing infections in hospitalized patients in Moshi are highly diverse and epidemiologically unrelated. Temporal phylogenetic analysis provided better resolution on transmission and introduction of MRSA and it may be important to include this in future routines.

General information
State: Published
Organisations: National Food Institute, Research Group for Genomic Epidemiology, Department of Bio and Health Informatics, Genomic Epidemiology, KCRI Kilimanjaro Clinical Research Institute, University of Copenhagen
Authors: Kumburu, H. H. (Ekstern), Sonda, T. (Ekstern), Leekitcharoenphon, P. (Intern), van Zwetselaar, M. (Ekstern), Lukjancenko, O. (Intern), Alfrangis, M. (Ekstern), Lund, O. (Intern), Mmbaga, B. T. (Ekstern), Kibiki, G. (Ekstern), Aarestrup, F. M. (Intern)
Number of pages: 13
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Biomedicine and Biotechnology
Volume: 2018
Article number: 2087693
ISSN (Print): 1110-7243
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
Household electricity consumers' incentive to choose dynamic pricing under different taxation schemes: Electricity consumers' incentive to choose dynamic pricing

Dynamic pricing of retail electricity, as opposed to the widely applied average pricing, has often been proposed to enhance economic efficiency through demand response. The development of variable production from renewable energies and expectations about the installation of heat pumps and electric vehicles has now reinforced interest in flexible demand and dynamic pricing. With a roll-out of smart metering one important technical hurdle is going to be cleared, and dynamic retail pricing may soon become an eligible option for many households. We quantify the potential incentives to adopt new pricing schemes using exemplary Danish data. Until now, limited activity of household consumers on retail markets indicates that switching supplier or contract is perceived costly. We apply the concept of switching costs to explain this hesitant behavior, and use it to estimate a threshold level based on recent observations in the Danish market. We calculate potential savings from dynamic pricing and show how the choice of electricity taxation technique may hamper or
enhance potential benefits. In the light of switching costs, our results suggest that the combination of smart meter roll-out and dynamic pricing offerings might be insufficient to convince the majority of households to switch contracts and become active in response to prices, unless they hold a substantial flexibility potential. Dynamic taxation, even if applied to parts of the levies, could contribute significantly to inducing flexible consumption.

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis, Transport DTU, Dansk Energi
Authors: Katz, J. (Intern), Kitzing, L. (Intern), Schröder, S. T. (Intern), Møller Andersen, F. (Intern), Morthorst, P. E. (Intern), Stryg, M. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Wiley Interdisciplinary Reviews: Energy and Environment
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Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.32 SJR 0.886 SNIP 1.263
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.668 SNIP 1.041 CiteScore 2.46
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.424 SNIP 0.686 CiteScore 1.53
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.216 SNIP 0.644 CiteScore 0.45
ISI indexed (2013): ISI indexed no
Web of Science (2012): Indexed yes
Original language: English
DOI: 10.1002/wene.270
Source: FindIt
Source-ID: 2392204807
Publication: Research - peer-review › Journal article – Annual report year: 2018

How the reverse supply chain impacts the firm's financial performance: A manufacturer's perspective
Purpose – Although manufacturers have traditionally viewed reverse supply chain (RSC) activities as a costly nuisance, more recent research has found that the RSC can contribute to the firm's financial performance. This paper identifies how the RSC can contribute to the firm's financial performance and examines the exogenous contingency factors decisive for the contribution's size. Because the exogenous factors are outside the control of the firm's operations and supply chain management, the factors influence the RSC's financial contribution irrespective of managerial policies and design decisions.

Design/Methodology/Approach – The paper applies a systematic literature review using the sequence of planning the review, searching and screening literature, extracting information from the selected literature, and synthesizing and analyzing findings. 112 papers were included.

Findings – The study has identified 15 distinct opportunities for RSC-contribution to the firm's financial performance. The study has identified 56 contingency factors. These are related to market segmentation, customer behavior, product design, and the firm's distributor network. The study includes an interrelationship network between factors and the RSC's contribution.

Practical implications – For managers, the paper shows how the RSC can increase the firm's financial performance and which contingency factors determine whether operating a RSC will be financially viable if implemented.

Originality/Value – While extant literature includes several reviews about RSC-related managerial policies and design decisions, this paper contains the very first collection of RSC-contribution opportunities available to manufacturers as well...
as the first review of exogenous contingency factors.

**General information**

State: Accepted/In press

Organisations: Center for Bachelor of Engineering Studies, Afdelingen for Produktionsudvikling, Operations Management, Department of Management Engineering, Management Science, Transport DTU, University of Warwick

Authors: Larsen, S. B. (Intern), Masi, D. (Ekstern), Feibert, D. C. (Intern), Jacobsen, P. (Intern)

Number of pages: 26

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- BFI (2018): BFI-level 1
- Web of Science (2018): Indexed yes
- BFI (2017): BFI-level 1
- Web of Science (2017): Indexed Yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 3.33 SJR 1.521 SNIP 1.782
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): SJR 1.481 SNIP 1.432 CiteScore 3.17
- BFI (2014): BFI-level 1
- Scopus rating (2014): SJR 1.809 SNIP 1.539 CiteScore 3.4
- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 1.299 SNIP 1.84 CiteScore 3.13
- BFI (2012): BFI-level 1
- Scopus rating (2012): SJR 1.121 SNIP 1.404 CiteScore 2.58
- BFI (2011): BFI-level 1
- Scopus rating (2011): SJR 0.966 SNIP 1.404 CiteScore 2.61
- BFI (2010): BFI-level 1
- Scopus rating (2010): SJR 0.423 SNIP 1.249
- BFI (2009): BFI-level 1
- Scopus rating (2009): SJR 0.89 SNIP 1.265
- BFI (2008): BFI-level 1
- Scopus rating (2008): SJR 0.817 SNIP 1.149
- Scopus rating (2007): SJR 0.915 SNIP 1.077
- Scopus rating (2006): SJR 0.866 SNIP 1.218
- Scopus rating (2005): SJR 0.433 SNIP 1.091
- Scopus rating (2004): SJR 0.731 SNIP 1.146
- Scopus rating (2003): SJR 0.776 SNIP 1.101
- Scopus rating (2002): SJR 0.305 SNIP 0.585
- Scopus rating (2001): SJR 0.21 SNIP 0.439
- Scopus rating (2000): SJR 0.115 SNIP 0.206
- Scopus rating (1999): SJR 0.233 SNIP 0.357

Original language: English

Source: PublicationPreSubmission

Source-ID: 142466169

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

**Human MHC-II with Shared Epitope Motifs Are Optimal Epstein-Barr Virus Glycoprotein 42 Ligands—Relation to Rheumatoid Arthritis**

Rheumatoid arthritis (RA) is a chronic systemic autoimmune disorder of unknown etiology, which is characterized by inflammation in the synovium and joint damage. Although the pathogenesis of RA remains to be determined, a combination of environmental (e.g., viral infections) and genetic factors influence disease onset. Especially genetic factors play a vital role in the onset of disease, as the heritability of RA is 50–60%, with the human leukocyte antigen (HLA) alleles accounting for at least 30% of the overall genetic risk. Some HLA-DR alleles encode a conserved sequence of amino
acids, referred to as the shared epitope (SE) structure. By analyzing the structure of a HLA-DR molecule in complex with Epstein-Barr virus (EBV), the SE motif is suggested to play a vital role in the interaction of MHC II with the viral glycoprotein (gp) 42, an essential entry factor for EBV. EBV has been repeatedly linked to RA by several lines of evidence and, based on several findings, we suggest that EBV is able to induce the onset of RA in predisposed SE-positive individuals, by promoting entry of B-cells through direct contact between SE and gp42 in the entry complex.
Hybrid metallic nanocomposites for extra wear-resistant diamond machining tools

The applicability of metallic nanocomposites as binder for diamond machining tools is demonstrated. The various nanoreinforcements (carbon nanotubes, boron nitride hBN, nanoparticles of tungsten carbide/WC) and their combinations are embedded into metallic matrices and their mechanical properties are determined in experiments. The wear resistance of diamond tools with metallic binders modified by various nanoreinforcements was estimated. 3D hierarchical computational finite element model of the tool binder with hybrid nanoscale reinforcements is developed, and applied for the structure-properties analysis of the binder. It is shown that the metallic nanocomposites with hybrid reinforcements ensure the highest mechanical properties and also the highest wear-resistance of the machining tools, with the nanocomposites used as binder.
Scopus rating (2008): SJR 1.04 SNIP 1.703
Scopus rating (2007): SJR 0.882 SNIP 1.191
Scopus rating (2006): SJR 0.609 SNIP 0.947
Scopus rating (2005): SJR 0.741 SNIP 1.237
Scopus rating (2004): SJR 0.693 SNIP 1.2
Scopus rating (2003): SJR 0.566 SNIP 0.908
Scopus rating (2002): SJR 0.658 SNIP 0.844
Scopus rating (2001): SJR 0.864 SNIP 1.162
Scopus rating (2000): SJR 0.748 SNIP 1.049
Scopus rating (1999): SJR 0.607 SNIP 1.031
Original language: English
DOIs:
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Publication: Research - peer-review › Journal article – Annual report year: 2018

Hydrate thermal dissociation behavior and dissociation enthalpies in methane-carbon dioxide swapping process
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) gas mixture, 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 (HP 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)
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Journal: Journal of Chemical Thermodynamics
Volume: 117
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Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Scopus rating (2015): SJR 1.075 SNIP 1.091 CiteScore 2.29
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Ibuprofen alters human testicular physiology to produce a state of compensated hypogonadism

Concern has been raised over increased male reproductive disorders in the Western world, and the disruption of male endocrinology has been suggested to play a central role. Several studies have shown that mild analgesics exposure during fetal life is associated with antiandrogenic effects and congenital malformations, but the effects on the adult man remain largely unknown. Through a clinical trial with young men exposed to ibuprofen, we show that the analgesic resulted in the clinical condition named "compensated hypogonadism," a condition prevalent among elderly men and associated with reproductive and physical disorders. In the men, luteinizing hormone (LH) and ibuprofen plasma levels were positively correlated, and the testosterone/LH ratio decreased. Using adult testis explants exposed or not exposed to ibuprofen, we demonstrate that the endocrine capabilities from testicular Leydig and Sertoli cells, including testosterone production, were suppressed through transcriptional repression. This effect was also observed in a human steroidogenic cell line. Our data demonstrate that ibuprofen alters the endocrine system via selective transcriptional repression in the human testes, thereby inducing compensated hypogonadism.
Identification of the cognate peptide-MHC target of T cell receptors using molecular modeling and force field scoring

Interactions of T cell receptors (TCR) to peptides in complex with MHC (p:MHC) are key features that mediate cellular immune responses. While MHC binding is required for a peptide to be presented to T cells, not all MHC binders are immunogenic. The interaction of a TCR to the p:MHC complex holds a key, but currently poorly comprehended, component for our understanding of this variation in the immunogenicity of MHC binding peptides. Here, we demonstrate that identification of the cognate target of a TCR from a set of p:MHC complexes to a high degree is achievable using simple force-field energy terms. Building a benchmark of TCR:p:MHC complexes where epitopes and non-epitopes are modelled using state-of-the-art molecular modelling tools, scoring p:MHC to a given TCR using force-fields, optimized in a cross-validation setup to evaluate TCR inter atomic interactions involved with each p:MHC, we demonstrate that this approach can successfully be used to distinguish between epitopes and non-epitopes. A detailed analysis of the performance of this force-field-based approach demonstrate that its predictive performance depend on the ability to both accurately predict the binding of the peptide to the MHC and model the TCR:p:MHC complex structure. In summary, we conclude that it is possible to identify the TCR cognate target among different candidate peptides by using a force-field based model, and believe this works could lay the foundation for future work within prediction of TCR:p:MHC interactions.
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

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Antigens/Peptides/Epitopes, MHC, Modelling, Pipeline, T cell receptor

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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

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Journal: Marine Policy
Volume: 87
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Impact of CHO Metabolism on Cell Growth and Protein Production: An Overview of Toxic and Inhibiting Metabolites and Nutrients

For over three decades, Chinese hamster ovary (CHO) cells have been the chosen expression platform for the production of therapeutic proteins with complex post-translational modifications. However, the metabolism of these cells is far from perfect and optimized, and requires substantial knowhow and process optimization and monitoring to perform efficiently. One of the main reasons for this is the production and accumulation of toxic and growth-inhibiting metabolites during culture. Lactate and ammonium are the most known, but many more have been identified. In this review, we present an overview of metabolites that deplete and accumulate throughout the course of cultivations with toxic and growth inhibitory effects to the cells. We further provide an overview of the CHO metabolism with emphasis to metabolic pathways of amino acids, glutathione (GSH), and related compounds which have growth-inhibiting and/or toxic effect on the cells. Additionally, we survey relevant publications which describe the applications of metabolomics as a powerful tool for revealing which reactions occur in the cell under certain conditions and identify growth-inhibiting and toxic metabolite. We also present a number of resources that describe the cellular mechanisms of CHO and are available on-line. Finally, we discuss the application of this knowledge for bioprocess and medium development and cell line engineering.

Impact of different improvement measures on the thermal performance of a solar collector field for district heating

The paper describes the impact of different measures to improve the thermal performance of a solar heating plant for district heating applications. The impact of the different measures was evaluated through a validated TRNSYS-Matlab model. The model included details such as effect of the flow regime in the absorber pipes on the collector efficiency, flow distribution in the collector field, thermal capacity of the pipes and shadows from row to row. The improvement measures included variation of the operating temperatures, accurate input to the control strategy, feedback control on the outlet temperature of the collector field, control strategy based on weather forecast and use of different heat transfer fluids. The results showed that accurate input to the control strategy improved the yearly energy output of the plant by about 3%. If accurate input is not technically or economically feasible, a feedback control on the field outlet temperature seemed to be a valid alternative. The integration of weather forecast in the control strategy did not give relevant improvements. Higher glycol concentrations in the solar collector fluid gave better results than lower concentrations, as the higher frost protection...
guaranteed by the former outweighed the better thermophysical properties of the latter.

**General information**
State: Published
Organisations: Department of Civil Engineering, Section for Building Energy, PlanEnergi
Authors: Bava, F. (Ekstern), Furbo, S. (Intern)
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Journal: Energy
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Web of Science (2018): Indexed yes
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
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.729 SNIP 2.313
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.106 SNIP 1.444
Scopus rating (2007): SJR 0.913 SNIP 1.481
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.875 SNIP 1.306
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.965 SNIP 1.203
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.711 SNIP 1.115
Impact of Diversity of Morphological Characteristics and Reynolds number on Local Hemodynamics in Basilar Aneurysms

Morphological and hemodynamic parameters have been suggested to affect the rupture of cerebral aneurysms, but detailed mechanisms of rupture are poorly understood. The purpose of our study is to determine criteria for predicting the risk of aneurysm rupture, which is critical for improved patient management. Existing aneurysm hemodynamics studies generally evaluate limited geometries or Reynolds numbers (Re), which are difficult to apply to a wide range of patient-specific cases. We focused on the association between hemodynamic characteristics and morphology. We assessed several two-dimensional (2D) and three-dimensional (3D) idealized and physiological geometries to characterize the hemodynamic landscape between flow patterns. The impact of morphology on velocity and wall shear stress (WSS) profiles were evaluated. We found that slight changes in aneurysm geometry or Re result in significant changes in the hemodynamic and WSS profiles. Our systematic mapping and non-dimensional analysis qualitatively identify hemodynamic conditions that may predispose aneurysms to rupture. This article is protected by copyright. All rights reserved.

General information
State: Accepted/In press
Organisations: Department of Micro- and Nanotechnology, Harvard University, Duke University, Massachusetts General Hospital
Authors: Rafat, M. (Ekstern), Dabagh, M. (Ekstern), Heller, M. (Intern), Rabinov, J. D. (Ekstern), Stone, H. A. (Ekstern), Randles, A. (Ekstern), Auguste, D. T. (Ekstern)
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Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.11 SJR 1.034 SNIP 1.268
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.085 SNIP 1.417 CiteScore 3.03
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.07 SNIP 1.332 CiteScore 2.86
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.05 SNIP 1.364 CiteScore 2.59
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Implementing Resource-aware Multicast Forwarding in Software Defined Networks

Using multicast data transmissions, data can be efficiently distributed to a high number of network users. However, in order to efficiently stream multimedia using multicast communication, multicast routing protocols must have knowledge of all network links and their available bandwidth. In Software Defined Networks (SDN), all this information is available in a centralized entity - SDN network. This work proposes to utilize the SDN paradigm to perform network-resources aware multicast data routing in the SDN controller. In a prototype implementation, multicast data is routed using a modified Edmonds-Karp algorithm, by taking into account network topology and links load information. This paper presents the algorithm, implementation details, and an analysis of the testing results.

General information

State: Accepted/In press
Organisations: Department of Photonics Engineering, Networks Technology and Service Platforms, Technical University of Denmark
Authors: Poderys, J. (Intern), Sunny, A. (Ekstern), Soler, J. (Intern)
Number of pages: 10
Publication date: 2018
Implications of late-in-life density-dependent growth for fishery size-at-entry leading to maximum sustainable yield

Currently applied fisheries models and stock assessments rely on the assumption that density-dependent regulation only affects processes early in life, as described by stock–recruitment relationships. However, many fish stocks also experience density-dependent processes late in life, such as density-dependent adult growth. Theoretical studies have found that, for stocks which experience strong late-in-life density dependence, maximum sustainable yield (MSY) is obtained with a small fishery size-at-entry that also targets juveniles. This goes against common fisheries advice, which dictates that primarily adults should be fished. This study aims to examine whether the strength of density-dependent growth in actual fish stocks is sufficiently strong to reduce optimal fishery size-at-entry to below size-at-maturity. A size-structured model is fitted to three stocks that have shown indications of late-in-life density-dependent growth: North Sea plaice (Pleuronectes platessa), Northeast Atlantic (NEA) mackerel (Scomber scombrus), and Baltic sprat (Sprattus sprattus balticus). For all stocks, the model predicts exploitation at MSY with a large size-at-entry into the fishery, indicating that late-in-life density dependence in fish stocks is generally not strong enough to warrant the targeting of juveniles. This result lends credibility to the practise of predominantly targeting adults in spite of the presence of late-in-life density-dependent growth.
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 2^{52} chosen plaintexts, 2^{67.44} encryptions, and 2^{64.91} 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 2^{52} chosen plaintexts, 2^{126.63} encryptions, and 2^{125.29} 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.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Cyber Security, University of Shanghai for Science and Technology, Shanghai Jiao Tong University, Donghua University
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Number of pages: 13
Publication date: 2018
Main Research Area: Technical/natural sciences

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Improved methods for predicting peptide binding affinity to MHC class II molecules

Major histocompatibility complex class II (MHC-II) molecules are expressed on the surface of professional antigen presenting cells where they display peptides to T helper cells, which orchestrate the onset and outcome of many host immune responses. Understanding which peptides will be presented by the MHC-II molecule is therefore important for understanding the activation of T helper cells and can be used to identify T-cell epitopes. We here present updated versions of two MHC class II peptide binding affinity prediction methods, NetMHCII and NetMHCIIpan. These were constructed using an extended data set of quantitative MHC-peptide binding affinity data obtained from the Immune Epitope Database covering HLA-DR, HLA-DQ, HLA-DP and H-2 mouse molecules. We show that training with this extended data set improved the performance for peptide binding predictions for both methods. Both methods are publicly available at www.cbs.dtu.dk/services/NetMHCII-2.3 and www.cbs.dtu.dk/services/NetMHCIIpan-3.2. This article is protected by copyright. All rights reserved.

General information
State: Accepted/In press
Organisations: Department of Bio and Health Informatics, Immunoinformatics and Machine Learning, Universidad Nacional de San Martin, University of Copenhagen, La Jolla Institute for Allergy & Immunology
Authors: Jensen, K. K. (Intern), Andreatta, M. (Ekstern), Marcatili, P. (Intern), Buus, S. (Ekstern), Greenbaum, J. A. (Ekstern), Yan, Z. (Ekstern), Sette, A. (Ekstern), Peters, B. (Ekstern), Nielsen, M. (Intern)
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.74 SJR 1.888 SNIP 0.937
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.079 SNIP 0.975 CiteScore 3.83
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.029 SNIP 1.05 CiteScore 3.61
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.038 SNIP 1.083 CiteScore 3.97
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Peptide binding to MHC class I molecules is the single most selective step in antigen presentation and the strongest single correlate to peptide cellular immunogenicity. The cost of experimentally characterizing the rules of peptide presentation for a given MHC-I molecule is extensive, and predictors of peptide-MHC interactions constitute an attractive alternative. Recently, an increasing amount of MHC presented peptides identified by mass spectrometry (MS ligands) has been published. Handling and interpretation of MS ligand data is, in general, challenging due to the polyspecificity nature of the data. We here outline a general pipeline for dealing with this challenge and accurately annotate ligands to the relevant MHC-I molecule they were eluted from by use of GibbsClustering and binding motif information inferred from in silico models. We illustrate the approach here in the context of MHC-I molecules (BoLA) of cattle. Next, we demonstrate how such annotated BoLA MS ligand data can readily be integrated with in vitro binding affinity data in a prediction model with very high and unprecedented performance for identification of BoLA-I restricted T-cell epitopes. The prediction model is freely available at http://www.cbs.dtu.dk/services/NetMHCpan/NetBoLApan. The approach has here been applied to the BoLA-I system, but the pipeline is readily applicable to MHC systems in other species.

**General information**

**State:** Published

**Organisations:** Department of Bio and Health Informatics, Immunoinformatics and Machine Learning, The Roslin Institute, Target Discovery Institute Mass Spectrometry Laboratory

**Authors:** Nielsen, M. (Intern), Connelley, T. (Ekstern), Ternette, N. (Ekstern)

**Pages:** 559-567

**Publication date:** 2018
Improving the representation of modal choice into bottom-up optimization energy system models - The MoCho-TIMES model

This study presents MoCho-TIMES, an original methodology for incorporating modal choice into energy-economy-environment-engineering (E4) system models. MoCho-TIMES addresses the scarce ability of E4 models to realistically depict behaviour in transport and allows for modal shift towards transit and non-motorized modes as a new dimension for decarbonising the transportation sector. The novel methodology determines endogenous modal shares by incorporating variables related to the level-of-service (LoS) of modes and consumers’ modal perception within the E4 modeling framework. Heterogeneity of transport users is introduced to differentiate modal perception and preferences across different consumer groups, while modal preferences are quantified via monetization of intangible costs. A support transport simulation model consistent with the geographical scope of the E4 model provides the data and mathematical expressions required to develop the approach. This study develops MoCho-TIMES in the standalone transportation sector of TIMES-DK, the integrated energy system model for Denmark. The model is tested for the Business as Usual scenario and for four alternative scenarios that imply diverse assumptions for the new attributes introduced. The results show that different assumptions for the new attributes affect modal shares and CO2 emissions. MoCho-TIMES inaugurates the possibility to perform innovative policy analyses involving new parameters to the E4 modeling framework. The results find that authority’s commitment to sustainability is crucial for a paradigmatic change in the transportation sector.

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis, University of California, E4SMA, University College Cork, Chalmers University of Technology
Authors: Tattini, J. (Intern), Ramea, K. (Ekstern), Gargiulo, M. (Ekstern), Yang, C. (Ekstern), Mulholland, E. (Ekstern), Yeh, S. (Ekstern), Karlsson, K. B. (Intern)
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Improving thermal performance of an existing UK district heat network: a case for temperature optimization

This paper presents results of a research study into improving energy performance of small-scale district heat network through water supply and return temperature optimization technique. The case study involves establishing the baseline heat demand of the estate’s buildings, benchmarking the existing heat network operating parameters, and defining the optimum supply and return temperature. A stepwise temperature optimization technique of plate radiators heat emitters was applied to control the buildings indoor thermal comfort using night set back temperature strategy of 21/18 °C. It was established that the heat network return temperature could be lowered from the current measured average of 55 °C to 35.6 °C, resulting in overall reduction of heat distribution losses and fuel consumption of 10% and 9% respectively. Hence, the study demonstrates the potential of operating existing heat networks at optimum performance and achieving lower return temperature. It was also pointed out that optimal operation of future low temperature district heat networks will require close engagement between the operator and the end user through incentives of mutual benefit.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Building Energy, Loughborough University, University of Nottingham, Nottingham Trent University
Authors: Tunzi, M. (Ekstern), Boukhanouf, R. (Ekstern), Li, H. (Intern), Svendsen, S. (Intern), Ianakiev, A. (Ekstern)
Pages: 1576-1585
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Journal: Energy and Buildings
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Web of Science (2017): Indexed yes
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. Analysis of joint effects shows that CI mainly interacted with the radiation intercepted in the canopy (PAR, net radiation and leaf area index) to influence GPP, ET 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.

General information
State: Published
Organisations: Department of Environmental Engineering, Water Resources Engineering, Atmospheric Environment
Authors: Wang, S. (Intern), Ibrom, A. (Intern), Bauer-Gottwein, P. (Intern), Garcia, M. (Intern)
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Volume: 248
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.62 SJR 1.976 SNIP 1.889
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.169 SNIP 1.987 CiteScore 4.63
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.048 SNIP 1.907 CiteScore 4.31
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.832 SNIP 2.061 CiteScore 4.07
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.91 SNIP 2.083 CiteScore 3.71
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Increased variability of watershed areas in patients with high-grade carotid stenosis

Purpose: Watershed areas (WSAs) of the brain are most susceptible to acute hypoperfusion due to their peripheral location between vascular territories. Additionally, chronic WSA-related vascular processes underlie cognitive decline especially in patients with cerebral hemodynamic compromise. Despite of high relevance for both clinical diagnostics and research, individual in vivo WSA definition is fairly limited to date. Thus, this study proposes a standardized segmentation approach to delineate individual WSAs by use of time-to-peak (TTP) maps and investigates spatial variability of individual WSAs.

Methods: We defined individual watershed masks based on relative TTP increases in 30 healthy elderly persons and 28 patients with unilateral, high-grade carotid stenosis, being at risk for watershed-related hemodynamic impairment. Determined WSA location was confirmed by an arterial transit time atlas and individual super-selective arterial spin labeling. We compared spatial variability of WSA probability maps between groups and assessed TTP differences between hemispheres in individual and group-average watershed locations. Results: Patients showed significantly higher spatial variability of WSAs than healthy controls. Perfusion on the side of the stenosis was delayed within individual watershed masks as compared to a watershed template derived from controls, being independent from the grade of the stenosis and collateralization status of the circle of Willis. Conclusion: Results demonstrate feasibility of individual WSA delineation by TTP maps in healthy elderly and carotid stenosis patients. Data indicate necessity of individual segmentation approaches especially in patients with hemodynamic compromise to detect critical regions of impaired hemodynamics.
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)
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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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
Infill Optimization for Additive Manufacturing - Approaching Bone-like Porous Structures

Porous structures such as trabecular bone are widely seen in nature. These structures exhibit superior mechanical properties whilst being lightweight. In this paper, we present a method to generate bone-like porous structures as lightweight infill for additive manufacturing. Our method builds upon and extends voxel-wise topology optimization. In particular, for the purpose of generating sparse yet stable structures distributed in the interior of a given shape, we propose upper bounds on the localized material volume in the proximity of each voxel in the design domain. We then aggregate the local per-voxel constraints by their p-norm into an equivalent global constraint, in order to facilitate an efficient optimization process. Implemented on a high-resolution topology optimization framework, our results demonstrate mechanically optimized, detailed porous structures which mimic those found in nature. We further show variants of the optimized structures subject to different design specifications, and analyze the optimality and robustness of the obtained structures.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, Acoustic Technology, Technische Universität München
Authors: Wu, J. (Intern), Aage, N. (Intern), Westermann, R. (Ekstern), Sigmund, O. (Intern)
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BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.94 SJR 1.365 SNIP 2.356
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.82 SNIP 2.08 CiteScore 2.91
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.208 SNIP 2.591 CiteScore 3.37
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.166 SNIP 2.605 CiteScore 3.39
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.853 SNIP 2.505 CiteScore 2.96
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.115 SNIP 2.774 CiteScore 3.39

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
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Inflow measurements from blade-mounted flow sensors: Flow analysis, application and aeroelastic response

General information

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Organisations: Department of Wind Energy, Wind turbine loads & control, Aerodynamic design
Authors: Pedersen, M. M. (Intern), Larsen, T. J. (Intern), Aagaard Madsen, H. (Intern), Larsen, G. C. (Intern), Schmidt Paulsen, U. (Intern)
Publication date: 2018

Publication information

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Main Research Area: Technical/natural sciences
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Influence of Adsorption and Capillary Pressure on Phase Equilibria Inside Shale Reservoirs

Due to the small pore sizes and organic content of shale, capillary pressure and adsorption are two effects that should be taken into account in the study of phase equilibrium inside shale. The inclusion of both effects in the phase equilibrium modeling can shed light on how bulk phase composition inside the porous media changes with temperature and pressure, and how the phase equilibrium changes accordingly. In the long run, such a model can be used in reservoir simulation for more complicated analysis. In this study, we present a calculation method that can effectively include adsorption and capillarity. We propose to introduce an excess adsorbed phase and treat the remaining substance inside the pores as a bulk phase (gas, liquid, or both) in order to make the mass balance formulation simpler. The adsorbed phase is modeled by the Multicomponent Langmuir (ML) equation for its simplicity and computational efficiency. A more theoretical adsorption model, the multicomponent potential theory of adsorption (MPTA), is used to determine the parameters of the simpler ML equation. The liquid and gas phases are described by the Peng-Robinson equation of state and the capillary pressure across their interface is taken into account. A flash algorithm by alternately updating the adsorbed phase amount and the fugacities in the bulk phases has been developed. The flash algorithm is used to analyze some representative systems (from binary, ternary to low-GOR and high-GOR model reservoir fluid systems) for the phase equilibrium inside the pore media.
porous media. The results show that adsorption and capillary pressure can significantly change the bulk phase composition and thus its corresponding phase envelope. Since the adsorption varies at different temperature and pressure conditions, the extent of change in the phase envelope is different. In general, a much shrunk phase envelope with a shifted critical point is observed. The heavier components are preferentially adsorbed in the whole pressure and temperature range studied here. At high pressure and low temperature, the selectivity towards heavier components is moderate in comparison to the that at low pressure and high temperature. The adsorption effects are stronger for the gas bulk phase region, leading to bigger changes in the gas phase composition and the shift of the dew point curve. PVT simulations of two model reservoir fluid systems show significant change in the results when capillary pressure and adsorption are included.

General information
State: Accepted/In press
Organisations: Department of Chemistry, Department of Chemical and Biochemical Engineering, CERE – Center for Energy Resources Engineering, Center for Energy Resources Engineering
Authors: Sandoval, D. R. (Intern), Yan, W. (Intern), Michelsen, M. L. (Intern), Stenby, E. H. (Intern)
Number of pages: 43
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Web of Science (2018): Indexed yes
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Web of Science (2017): Indexed yes
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Scopus rating (2016): CiteScore 3.49
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 3.34
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 3.3
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 3.52
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 3.25
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 3.05
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
Influence of H2O and H2S on the Composition, Activity, and Stability of Sulfided Mo, CoMo, and NiMo Supported on MgAl2O4 for Hydrodeoxygenation of Ethylene Glycol

In this work, density functional theory (DFT), catalytic activity tests, and in-situ X-ray absorption spectroscopy (XAS) was performed to gain detailed insights into the activity and stability of MoS2, Ni-MoS2, and Co-MoS2 catalysts used for hydrodeoxygenation (HDO) of ethylene glycol upon variation of the partial pressures of H2O and H2S. The results show high water tolerance of the catalysts and highlight the importance of promotion and H2S level during HDO.

DFT calculations unraveled that the active edge of MoS2 could be stabilized against S-O exchanges by increasing the partial pressure of H2S or by promotion with either Ni or Co. The Mo, NiMo, and CoMo catalysts of the present study were all active and fairly selective for ethylene glycol HDO at 400 °C, 27 bar H2, and 550-2200 ppm H2S, and conversions of ≈ 50-100 %. The unpromoted Mo/MgAl2O4 catalyst had a lower stability and activity per gram catalyst than the promoted analogues. The NiMo and CoMo catalysts produced ethane, ethylene, and C1 cracking products with a C2/C1 ratio of 1.5-2.0 at 550 ppm H2S. This ratio of HDO to cracking could be increased to ≈ 2 at 2200 ppm H2S which also stabilized the activity. Removing H2S from the feed caused severe catalyst deactivation. Both DFT and catalytic activity tests indicated that increasing the H2S concentration increased the concentration of SH groups on the catalyst, which correspondingly activated and stabilized the catalytic HDO performance. In-situ XAS further supported that the catalysts were tolerant towards water when exposed to increasing water concentration with H2O/H2S ratios up to 300 at 400-450 °C.

Raman spectroscopy and XAS showed that MoS2 was present in the prepared catalysts as small and highly dispersed particles, probably owing to a strong interaction with the support. Linear combination fitting (LCF) analysis of the X-ray absorption near edge structure (XANES) spectra obtained during in-situ sulfidation showed that Ni was sulfided faster than Mo and CoMo, and that Mo was sulfided faster when promoted with Ni. Extended X-ray absorption fine structure (EXAFS) results showed the presence of MoS2 in all sulfided catalysts. Sulfided CoMo was present as a mixture of CoMoS and Co9S8, whereas sulfided NiMo was present as NiMoS.

General information
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Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre, PILOT PLANT, Center for Electron Nanoscopy, Karlsruhe Institute of Technology KIT, SLAC National Accelerator Laboratory, Haldor Topsoe AS
Authors: Dabros, T. M. H. (Intern), Gaur, A. (Ekstern), Pintos, D. G. (Ekstern), Sprenger, P. (Ekstern), Høj, M. (Intern), Hansen, T. W. (Intern), Studt, F. (Ekstern), Gabrielsen, J. (Ekstern), Grunwaldt, J. (Ekstern), Jensen, A. D. (Intern)
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Web of Science (2018): Indexed yes
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Scopus rating (2016): CiteScore 4.26 SJR 1.178 SNIP 1.311
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.203 SNIP 1.394 CiteScore 4.08
Web of Science (2015): Indexed yes
Influence of iridium doping in MgB2 superconducting wires

MgB2 wires with iridium doping were manufactured using the in-situ technique in a composite Cu-Nb sheath. Reaction was performed at 700°C, 800°C or 900°C for 1h in argon atmosphere. A maximum of about 1.5 at.% Ir replaces Mg in MgB2. The superconducting transition temperature is slightly lowered by Ir doping. The formation of IrMg3 and IrMg4 secondary phase particles is evidenced, especially for a nominal stoichiometry with 2.0 at.% Ir doping. The critical current density and accommodation field of the wires are strongly dependent on the Ir content and are generally weakened in the presence of Ir, although the effect is less pronounced at lower temperatures.
Influence of Preoxidation on High-Temperature Corrosion of a FeCrAl Alloy Under Conditions Relevant to Biomass Firing

Preoxidation of a commercial FeCrAl alloy (Kanthal APM) was evaluated as a surface modification approach to reduce alkali chloride-induced corrosion during biomass firing in power plants. Samples of the alloy preoxidized at 900 °C in O₂ or O₂ + 10 vol% H₂O, and at 1100 °C in O₂, were coated with KCl and exposed at 560 °C to a gas mixture comprising of 12 vol% CO₂, 6 vol% O₂, 3 vol% H₂O, 400 ppmv HCl and 60 ppmv SO₂. The oxide formed at 1100 °C showed no reactivity with the corrosive species. By contrast, all samples preoxidized at 900 °C suffered severe attack, resulting in formation of Fe-, Cr- and Al-containing corrosion products in a heterogeneous morphology, similar to non-preoxidized samples. The observed differences with respect to the degree of corrosion attack on the preoxidized samples are discussed in terms of the composition and thickness of the different types of Al₂O₃ layers obtained by the preoxidation treatment.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, Department of Mechanical Engineering, Materials and Surface Engineering, CHEC Research Centre
Authors: Okoro, S. C. (Intern), Montgomery, M. (Intern), Jappe Frandsen, F. (Intern), Pantleon, K. (Intern)
Pages: 99–122
Publication date: 2018
Main Research Area: Technical/natural sciences
Influence of swimming behavior of copepod nauplii on feeding of larval turbot (Scophthalmus maximus)

Feeding in larval fish is influenced by a range of factors and among these are the morphological and behavioral characteristics of their prey. We investigated the influence of the swimming behavior of two species of calanoid copepods, Acartia tonsa and Temora longicornis, on larval turbot feeding. The nauplii of these species represent two contrasting swimming behaviors: A. tonsa is a jump-sink type swimmer, while T. longicornis is a cruise swimming type. Three replicates of ten larvae aged 7 and 9 days post hatch (DPH) were observed feeding on one of the two copepod species using a 2-dimensional video setup. The results showed that the duration of aiming postures by turbot larvae was 2.3 times higher when turbot larvae approached T. longicornis as compared to A. tonsa nauplii, indicating that larvae can more easily position themselves, preparing for attack, when the prey is of the jump-sink type. The attack speed of turbot larvae feeding on A. tonsa nauplii decreased slightly from DPH 7 to DPH 9, whereas it increased when attacking T. longicornis nauplii. Capture success rate by turbot larvae feeding on A. tonsa was 58% and slightly higher, but not significantly different to capture success rate when feeding on T. longicornis (54%). We conclude that the differences between behavior and other characteristics of these prey species have only minor effect on larval fish feeding, suggesting that copepods species for live feed should be selected according to their ease to culture more than to their species-specific characteristics.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Ecology and Oceanography, Section for Oceans and Arctic, Roskilde University
Authors: Bruno, E. (Intern), Højgaard, J. K. (Ekstern), Hansen, B. W. (Ekstern), Munk, P. (Intern), Støttrup, J. G. (Intern)
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Web of Science (2017): Indexed Yes
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Scopus rating (2016): CiteScore 1.34 SJR 0.563 SNIP 1.014
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Initiatives for the energy renovation of single-family houses in Denmark evaluated on the basis of barriers and motivators

The renovation of single-family houses in Denmark is progressing only slowly. Changes in current policy are needed if the political goal of a fossil-free building sector as part of a fossil-free society is to be achieved. Known barriers and motivators for energy renovation are identified, and arranged in a framework with three main fields (Information, Finance and Process), with a total of 14 sub-areas. With this framework, current Danish policy is analyzed to identify shortcomings, found to mainly exist in connection with financing and decision support. Using experience from other countries, suggestions are made for improvement in four areas: (1) focus on non-energy benefits rather than investment, (2) enhancement of subsidy system, (3) including relevant renovation plans in the energy performance certificate (EPC), and (4) long-term regulation on the maximum allowed energy consumption of houses.

General information

State: Accepted/In press
Organisations: Section for Building Energy, Department of Civil Engineering
Authors: Grøn Bjørneboe, M. (Intern), Svendsen, S. (Intern), Heller, A. (Intern)
Number of pages: 12
Publication date: 2018
Injectable iodine-125 labeled tissue marker for radioactive localization of non-palpable breast lesions

We have developed a $^{125}$I-radiolabeled injectable fiducial tissue marker with the potential to replace current methods used for surgical guidance of non-palpable breast tumors. Methods in routine clinical use today such as radioactive seed localization, radio-guided occult lesion localization and wire-guided localization suffers from limitations that this injectable fiducial tissue marker offers solutions to. The developed $^{125}$I-radiolabeled injectable fiducial tissue marker is based on highly viscous sucrose acetate isobutyrate. The marker was readily inserted in NMRI mice and proved to be spatially well-defined and stable over a seven day period with excellent CT contrast (>1500 HU), enabling fluoroscopic visualization of markers during placement. The radioactivity remains strongly associated with the marker during the implantation period, which limits exposure to healthy tissue. Biodistribution studies show that there is negligible radioactivity in all non-tumor tissues sampled, with the exception of the thyroid gland, where limited accumulation was observed (0.06% of injected dose after 7 days). Based on the excellent performance of the marker and the fact that it can be delivered through thin hypodermic needles (≥27G), the marker holds great promise for clinical application, since patient discomfort is reduced significantly compared to current methods. Statement of Significance. A new type of tissue marker for local administration to non-palpable breast tumors has been developed. The surgical guidance marker is based on derivatives of the biomaterial sucrose acetate isobutyrate and unlike currently used markers it is injectable in the tissue using thin needles, reducing the discomfort to the patients significantly. The marker confers CT contrast and has radioactive properties, meaning it also could find use in brachytherapy. The design of the iodine-125 labeled fiducial tissue marker enables control of dosimetry as well as a choice of iodine isotope used. The marker is anticipated to be clinical applicable due to its contrast performance in mice and its potential for enhanced flexibility in surgical procedures, compared to current methods.
Injection molded lab-on-a-disc platform for screening of genetically modified E. coli using liquid-liquid extraction and surface enhanced Raman scattering

We present the development of an automated centrifugal microfluidic platform with integrated sample pre-treatment (filtration and liquid-liquid extraction) and detection (SERS-based sensing). The platform consists of eight calibration and four assay modules, fabricated with polypropylene using injection molding and bonded with ultrasonic welding. The platform was used for detection of a secondary bacterial metabolite (p-coumaric acid) from bacterial supernatant. The obtained extraction efficiency was comparable to values obtained in batch experiments and the SERS-based sensing showed a good correlation with HPLC analysis.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Nanoprobes, Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization, Research Groups, Politecnico di Torino
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Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 5.98 SJR 2.147 SNIP 1.611
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.26 SNIP 1.764 CiteScore 5.74
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.534 SNIP 1.801 CiteScore 5.6
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.374 SNIP 1.703 CiteScore 5.9
Insect temperature-body size trends common to laboratory, latitudinal and seasonal gradients are not found across altitudes

Body size affects rates of most biological and ecological processes, from individual performance to ecosystem function, and is fundamentally linked to organism fitness. Within species, size at maturity can vary systematically with environmental temperature in the laboratory and across seasons, as well as over latitudinal gradients. Recent meta-analyses have revealed a close match in the magnitude and direction of these size gradients in various arthropod orders, suggesting that these size responses share common drivers. As with increasing latitude, temperature also decreases with increasing altitude. Although the general direction of body size clines along altitudinal gradients has been examined previously, to our knowledge altitude-body size (A-S) clines have never been synthesised quantitatively, nor compared with temperature-size (T-S) responses measured under controlled laboratory conditions. Here we quantitatively examine variation in intraspecific A-S clines among 121 insect species from 50 different global locations, representing 12 taxonomic orders. While some taxa were better represented in the literature than others, our analysis reveals extensive variation in the magnitude and direction of A-S clines. Following the assumption that temperature on average declines by 1°C per 150 m increase in altitude, order-specific A-S clines in the field appear to deviate from laboratory T-S responses. Specifically, the magnitude of A-S clines and T-S responses are more closely matched in some taxonomic orders (e.g. Diptera) than others (e.g. Orthoptera). These findings contrast with the strong co-variation observed between latitude-size clines and T-S responses, and between laboratory and seasonal T-S responses. The lack of clear size relationships with elevation, and hence temperature, is likely due to the counteracting effects of other major drivers with altitude, including season length and oxygen partial pressure. Switches in voltinism within species across altitude, and the dispersal of individuals across different elevations, may also obscure trends.
In Situ Investigation of the Evolution of Lattice Strain and Stresses in Austenite and Martensite During Quenching and Tempering of Steel

Energy dispersive synchrotron X-ray diffraction was applied to investigate in situ the evolution of lattice strains and stresses in austenite and martensite during quenching and tempering of a soft martensitic stainless steel. In one experiment, lattice strains in austenite and martensite were measured in situ in the direction perpendicular to the sample surface during an austenitization, quenching, and tempering cycle. In a second experiment, the sin²ψ method was applied in situ during the austenite-to-martensite transformation to distinguish between macro- and phase-specific micro-stresses and to follow the evolution of these stresses during transformation. Martensite formation evokes compressive stress in austenite that is balanced by tensile stress in martensite. Tempering to 748 K (475 °C) leads to partial relaxation of these stresses. Additionally, data reveal that (elastic) lattice strain in austenite is not hydrostatic but hkl dependent, which is ascribed to plastic deformation of this phase during martensite formation and is considered responsible for anomalous behavior of the 200γ reflection.

General information
State: Published
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, Centre for oil and gas – DTU
Authors: Villa, M. (Intern), Niessen, F. (Intern), Somers, M. A. J. (Intern)
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Scopus rating (2016): CiteScore 1.91 SJR 1.179 SNIP 1.179
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.231 SNIP 1.332 CiteScore 1.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.671 SNIP 1.877 CiteScore 2.06
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.481 SNIP 1.63 CiteScore 1.9
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.419 SNIP 1.706 CiteScore 1.76
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.508 SNIP 1.703 CiteScore 1.78
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.688 SNIP 1.802
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.608 SNIP 1.53
In situ study of electric field controlled ion transport in the Fe/BaTiO$_3$ interface

Electric field controlled ion transport and interface formation of iron thin films on a BaTiO$_3$ substrate have been investigated by in situ nuclear resonance scattering and x-ray reflectometry techniques. At early stage of deposition, an iron-II oxide interface layer was observed. The hyperfine parameters of the interface layer were found insensitive to the evaporated layer thickness. When an electric field was applied during growth, a 10 angstrom increase of the nonmagnetic/magnetic thickness threshold and an extended magnetic transition region was measured compared to the case where no field was applied. The interface layer was found stable under this threshold when further evaporation occurred, contrary to the magnetic layer where the magnitude and orientation of the hyperfine magnetic field vary continuously. The obtained results of the growth mechanism and of the electric field effect of the Fe/BTO system will allow the design of novel applications by creating custom oxide/metallic nanopatterns using laterally inhomogeneous electric fields during sample preparation.

General information
State: Published
Organisations: National Space Institute, Astrophysics and Atmospheric Physics, Hungarian Academy of Sciences, Delft University of Technology, European Synchrotron Radiation Facility
Authors: Merkel, D. G. (Ekstern), Bessas, D. (Ekstern), Bazso, G. (Ekstern), Jafari, A. (Intern), Ruffer, R. (Ekstern), Chumakov, A. I. (Ekstern), Khanh, N. Q. (Ekstern), Sajti, S. (Ekstern), Celse, J. (Ekstern), Nagy, D. L. (Ekstern)
Number of pages: 7
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Journal: Materials Research Express
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Web of Science (2018): Indexed yes
Web of Science (2017): Indexed Yes
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In-situ TEM studies of nanostructured thermoelectric materials: An application to Mg-doped Zn4Sb3 alloy

We demonstrate an advanced approach using advanced in-situ transmission electron microscopy (TEM) to understand the interplay between nanostructures and thermoelectric (TE) properties of high-performance Mg-doped Zn4Sb3 TE system. With the technique, microstructure and crystal evolutions of TE material have been dynamically captured as a function of temperature from 300 K to 573 K. On heating, we have observed clearly precipitation and growth of a Zn-rich secondary phase as nanoinclusions in the matrix of primary Zn4Sb3 phase. Elemental mapping by STEM-EDX spectroscopy reveals enrichment of Zn in the secondary Zn6Sb5 nanoinclusions during the thermal processing without decomposition observed. Such nanostructure strongly enhances the phonon scattering resulting in the decrease in the thermal conductivity leading to a zT value of 1.4 at 718 K.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Electrofunctional materials, Ceramic Engineering & Science, University of Manchester
Authors: Ngo, D. (Intern), Le, H. T. (Intern), Ngo, N. V. (Intern)
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Scopus rating (2016): CiteScore 2.81 SJR 1.264 SNIP 0.771
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.334 SNIP 0.912 CiteScore 3.21
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.362 SNIP 0.905 CiteScore 3.12
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.442 SNIP 0.948 CiteScore 3.22
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.763 SNIP 0.955 CiteScore 3.24
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.719 SNIP 1.05 CiteScore 3.37
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
INTEGRAL results on the electromagnetic counterparts of gravitational waves

Thanks to its high orbit and a set of complementary detectors providing continuous coverage of the whole sky, the INTEGRAL satellite has unique capabilities for the identification and study of the electromagnetic radiation associated to gravitational waves signals and, more generally, for multi-messenger astrophysics. Here we briefly review the results obtained during the first two observing runs of the advanced LIGO/Virgo interferometers.
Marine ecosystems evolve under many interconnected and area-specific pressures. In order to fulfill society’s intensifying and diversifying needs whilst ensuring ecologically sustainable development, more effective marine spatial planning and broader-scope management of marine resources is necessary. Integrated ecological–socioeconomic fisheries models (IESFM) of marine systems are needed to evaluate impacts and sustainability of potential management actions and understand, and anticipate ecological, economic, and social dynamics at a range of scales from local to national and regional. To make these models most effective, it is important to determine how model characteristics and methods of communicating results influence the model implementation, the nature of the advice that can be provided and the impact on decisions taken by managers. This paper presents a global review and comparative evaluation of 35 IESFM’s applied to marine fisheries and marine ecosystem resources to identify the characteristics that determine their usefulness, effectiveness and implementation. The focus is on fully integrated models that allow for feedbacks between ecological and human processes though not all the models reviewed achieve that.

General information
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Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Living Resources, Section for Oceans and Arctic, National Oceanographic and Atmospheric Administration, Christian-Albrechts-Universität zu Kiel, CSIRO, University of Washington, Plymouth Marine Laboratory, IFREMER, Thünen Institute of Sea Fisheries, New Economics Foundation, University of British Columbia, University of Vigo, AZTI-Tecnalia, Université Bretagne Loire, Institut de Ciències del Mar-CSIC, Wageningen University, National Marine Fisheries Research Institute, Scottish Pelagic Fishermen’s Association, AZTI Technalia, University of Southern Denmark, Swiss Federal Institute of Aquatic Science and Technology, Wageningen IMARES, Commonwealth Scientific and Industrial Research Organisation, University of Copenhagen, Swedish Agency for Marine and Water Management, Stockholm University, Lund University


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Web of Science (2018): Indexed yes
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
Integration of fisheries into marine spatial planning: Quo vadis?

The relationship between fisheries and marine spatial planning (MSP) is still widely unsettled. While several scientific studies highlight the strong relation between fisheries and MSP, as well as ways in which fisheries could be included in MSP, the actual integration of fisheries into MSP often fails. In this article, we review the state of the art and latest progress in research on various challenges in the integration of fisheries into MSP. The reviewed studies address a wide range of integration challenges, starting with techniques to analyse where fishermen actually fish, assessing the drivers for fishermen’s behaviour, seasonal dynamics and long-term spatial changes of commercial fish species under various anthropogenic pressures along their successive life stages, the effects of spatial competition on fisheries and projections on those spaces that might become important fishing areas in the future, and finally, examining how fisheries could benefit from MSP. This paper gives an overview of the latest developments on concepts, tools, and methods. It becomes apparent that the spatial and temporal dynamics of fish and fisheries, as well as the definition of spatial preferences, remain major challenges, but that an integration of fisheries is already possible today.

General information

State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, GEOMAR - Helmholtz Centre for Ocean Research Kiel, Agrocampus Ouest, LEI Wageningen, Thünen Institute of Sea Fisheries, Leibniz-Institute for Baltic Sea Research, IFREMER, Wageningen IMARES, Cefas
Authors: Janssen, H. (Ekstern), Bastardie, F. (Intern), Eero, M. (Intern), Hamon, K. (Ekstern), Hinrichsen, H. H. (Ekstern), Marchal, P. (Ekstern), Nielsen, J. R. (Intern), Pape, O. L. (Ekstern), Schulze, T. (Ekstern), Simons, S. (Ekstern), Teal, L. R. (Ekstern), Tidd, A. (Ekstern)
Pages: 105-113
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information

Journal: Estuarine, Coastal and Shelf Science
Volume: 201
ISSN (Print): 0272-7714
Integrative network analysis highlights biological processes underlying GLP-1 stimulated insulin secretion: A DIRECT study

Glucagon-like peptide 1 (GLP-1) stimulated insulin secretion has a considerable heritable component as estimated from twin studies, yet few genetic variants influencing this phenotype have been identified. We performed the first genome-wide association study (GWAS) of GLP-1 stimulated insulin secretion in non-diabetic individuals from the Netherlands Twin register (n = 126). This GWAS was enhanced using a tissue-specific protein-protein interaction network approach. We identified a beta-cell protein-protein interaction module that was significantly enriched for low gene scores based on the GWAS P-values and found support at the network level in an independent cohort from Tübingen, Germany (n = 100). Additionally, a polygenic risk score based on SNPs prioritized from the network was associated (P <0.05) with glucose-stimulated insulin secretion phenotypes in up to 5,318 individuals in MAGIC cohorts. The network contains both known and novel genes in the context of insulin secretion and is enriched for members of the focal adhesion, extracellular-matrix receptor interaction, actin cytoskeleton regulation, Rap1 and PI3K-Akt signaling pathways. Adipose tissue is, like the beta-cell, one of the target tissues of GLP-1 and we thus hypothesized that similar networks might be functional in both tissues. In order to verify peripheral effects of GLP-1 stimulation, we compared the transcriptome profiling of ob/ob mice treated with liraglutide, a clinically used GLP-1 receptor agonist, versus baseline controls. Some of the upstream regulators of differentially expressed genes in the white adipose tissue of ob/ob mice were also detected in the human beta-cell network of genes associated with GLP-1 stimulated insulin secretion. The findings provide biological insight into the mechanisms through which the effects of GLP-1 may be modulated and highlight a potential role of the beta-cell expressed genes RYR2, GDI2, KIAA0232, COL4A1 and COL4A2 in GLP-1 stimulated insulin secretion.

General information

State: Published
Organisations: Department of Bio and Health Informatics, Integrative Systems Biology, Disease Intelligence and Molecular Evolution, Vrije Universiteit Amsterdam, Sanofi Aventis Deutschland GmbH, University of Copenhagen, NIHR Oxford Biomedical Research Centre, University of Oxford, University of Dundee, Eberhard-Karls-Universität Tübingen, VU University Medical Centre, Leiden University Medical Centre, Vrije Universiteit, Imperial College London
Number of pages: 12
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: P L o S One
Volume: 13
Issue number: 1
Article number: e0189886
ISSN (Print): 1932-6203
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
Intensive versus conventional blood pressure monitoring in a general practice population. The Blood Pressure Reduction in Danish General Practice trial: a randomized controlled parallel group trial

To compare the effect of a conventional to an intensive blood pressure monitoring regimen on blood pressure in hypertensive patients in the general practice setting. Randomized controlled parallel group trial with 12-month follow-up. One hundred and ten general practices in all regions of Denmark. One thousand forty-eight patients with essential hypertension. Conventional blood pressure monitoring ('usual group') continued usual ad hoc blood pressure monitoring by office blood pressure measurements, while intensive blood pressure monitoring ('intensive group') supplemented this with frequent home blood pressure monitoring and 24-hour ambulatory blood pressure monitoring. Mean day- and night-time systolic and diastolic 24-hour ambulatory blood pressure. Change in systolic and diastolic office blood pressure and change in cardiovascular risk profile. Of the patients, 515 (49%) were allocated to the usual group, and 533 (51%) to the intensive group. The reductions in day- and night-time 24-hour ambulatory blood pressure were similar (usual group: 4.6 ± 13.5/2.8 ± 8.2 mmHg; intensive group: 5.6 ± 13.0/3.5 ± 8.2 mmHg; P = 0.27/P = 0.20). Cardiovascular risk scores were reduced in both groups at follow-up, but more so in the intensive than in the usual group (P = 0.02). An intensive blood pressure monitoring strategy led to a similar blood pressure reduction to conventional monitoring. However, the intensive strategy appeared to improve patients' cardiovascular risk profile through other effects than a reduction of blood pressure. Clinical Trials NCT00244660.

General Information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, General Practice, Pharmacy Svalen, University of Copenhagen
Pages: 1-7
Publication date: 2018
Main Research Area: Technical/natural sciences
Interaction between structurally different heteroexopolysaccharides and β-lactoglobulin studied by solution scattering and analytical ultracentrifugation

Despite a very large number of bacterial exopolysaccharides have been reported, detailed knowledge on their molecular structures and associative interactions with proteins is lacking. Small-angle X-ray scattering, dynamic light scattering and analytical ultracentrifugation (AUC) were used to characterize the interactions of six lactic acid bacterial heteroexopolysaccharides (HePS-1-HePS-6) with β-lactoglobulin (BLG). Compared to free HePSs, a large increase in the X-ray radius of gyration $R_G$, maximum length $L$ and hydrodynamic diameter $d_H$ of HePS-1-HePS-4 mixed with BLG revealed strong aggregation, the extent of which depended on the compact conformation and degree of branching of these HePSs. No significant effects were observed with HePS-5 and HePS-6. Turbidity and AUC analyses showed that both soluble and insoluble BLG-HePS complexes were formed. The findings provide new insights into the role of molecular structures in associative interactions between HePSs and BLG which has relevance for various industrial applications.

General information
State: Accepted/In press
Organisations: Department of Biotechnology and Biomedicine, Enzyme and Protein Chemistry, Department of Micro- and Nanotechnology, Enzyme and Protein Chemistry, Department of Chemistry, X-ray Crystallography, Amphiphilic Polymers in Biological Sensing, Agriculture and Agri-Food Canada, University of Copenhagen
Authors: Khan, S. (Intern), Birch, J. (Intern), Van Calsteren, M. (Ekstern), Ipsen, R. (Ekstern), Peters, G. H. (Intern), Svensson, B. (Intern), Harris, P. (Intern), Almdal, K. (Intern)
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Biological Macromolecules
ISSN (Print): 0141-8130
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
Interactions Between Indirect DC-Voltage Estimation and Circulating Current Controllers of MMC-Based HVDC Transmission Systems

Estimation-based indirect dc-voltage control in MMCs interacts with circulating current control methods. This paper proposes an estimation-based indirect dc-voltage control method for MMC-HVDC systems and analyzes its performance compared to alternative estimations. The interactions between estimation-based indirect dc-voltage control and circulating current control methods, active/reactive power regulation are also investigated. The proposed method delivers similar performance to measurement-based direct dc-voltage control, regardless of the circulating current control method. Steady-state and transient performance is demonstrated using a benchmark MMC-HVDC transmission system, implemented in a real-time digital simulator. The results verify the theoretical evaluations and illustrate the operation and performance of the proposed indirect dc-voltage control method.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric equipment technologies, Nanyang Technological University, University of New South Wales
Authors: Wickramasinghe, H. R. (Ekstern), Konstantinou, G. (Ekstern), Pou, J. (Ekstern), Agelidis, V. (Intern)
Number of pages: 10
Pages: 829-838
Publication date: 2018
Dc-voltage estimation, Dc-voltage control, High voltage direct current, Modular multilevel converter, Real-time digital simulator
Interior insulation—Characterisation of the historic, solid masonry building segment and analysis of the heat saving potential by 1d, 2d, and 3d simulation

When considering interior insulation of historic, multi-storey buildings with solid masonry walls, it is important to focus on two important factors: How big is the building segment to which it can be applied, and what is the significance of how the multi-dimensional geometry of these facades, i.e., walls, is considered in the assessment of the heat saving potential. The findings show that a large proportion of Danish multi-storey dwellings with solid masonry walls, high energy consumption, and uniform characteristics were found to originate from the period 1851–1930. This segment accounts for 25% of all multi-storey apartments in Denmark. It was investigated which relative reduction of the average thermal transmittance could be obtained by interior insulation when simulated in different dimensions, degrees of insulation and thickness. The analysis showed that partial insulation of the spandrels below windows on the 2nd/3rd highest storeys accounted for up to 40% of the average thermal transmittance reduction achievable by fully insulating inside walls, while covering 17% of the space needed in the full insulation strategy. Furthermore, the analysis showed an underestimation of average thermal transmittance by 2-dimensional compared to 3-dimensional simulation by up to 57%, indicating that 3-dimensional analysis is needed to obtain realistic results.
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.
Interlaboratory Comparison of a physical and a virtual assembly measured by CT

In a comparison including 20 laboratories, a physical as well as a virtual assembly provided as two data sets were used to investigate measuring and post-processing approaches in Computed Tomography, CT. Different procedures were used in the comparison including one simulating in-line measurement. The comparison demonstrated that: (i) a tangible improvement in the use of CT compared to previous comparisons; (ii) most of the participants were able to reduce their scanning time by more than 70% without increasing the length measurement errors; and (iii) most of the participants can further reduce their uncertainties, thereby reducing the tolerance size that can be inspected using CT in industry.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering
Authors: Stolfi, A. (Intern), De Chiffre, L. (Intern)
Pages: 263-270
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Precision Engineering
Volume: 51
ISSN (Print): 0141-6359
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.77 SJR 1.024 SNIP 2.201
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.054 SNIP 2.103 CiteScore 2.42
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.254 SNIP 2.478 CiteScore 2.39
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.384 SNIP 2.989 CiteScore 2.54
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.387 SNIP 3.26 CiteScore 2.2
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.374 SNIP 2.719 CiteScore 2.03
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.613 SNIP 2.958
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.121 SNIP 2.752
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.917 SNIP 1.767
Scopus rating (2007): SJR 0.991 SNIP 1.557
Scopus rating (2006): SJR 0.828 SNIP 1.663
Scopus rating (2005): SJR 0.931 SNIP 1.954
Web of Science (2005): Indexed yes
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 (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
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.

Original language: English
Aquaculture, Circadian rhythm, Fish, Immunity, Stress-coping style
DOIs:
10.1016/j.fsi.2017.11.025
Source: FindIt
Source-ID: 2393019017
Publication: Research - peer-review › Journal article – Annual report year: 2018

State: Published
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment
Inverse analyses of effective diffusion parameters relevant for a two-phase moisture model of cementitious materials

Here we present an inverse analyses approach to determining the two-phase moisture transport properties relevant to concrete durability modeling. The proposed moisture transport model was based on a continuum approach with two truly separate equations for the liquid and gas phase being connected by the sorption kinetics. The moisture properties of ten binder-systems containing fly ash, calcined clay, burnt shale and gray micro-filler, were investigated experimentally. The experiments used were, (i) sorption test (moisture fixation), (ii) cup test in two different relative humidity intervals, (iii) drying test, and, (iv) capillary suction test. Mass change over time, as obtained from the drying test, the two different cup test intervals and the capillary suction test, was used to obtain the effective diffusion parameters using the proposed inverse analyses approach. The moisture properties obtained with the proposed inverse analyses method provide a good description of the test period for the ten different binder-systems.
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 (2018): BFI-level 2
Iridium Catalysis: Reductive Conversion of Glucan to Xylan

By using iridium catalysed dehydrogenative decarbonylation, we converted a partly protected celllobioside into a fully protected xylobioside. We demonstrate good yields with two different aromatic ester protecting groups. The resulting xylobioside was directly used as glycosyl donor in further synthesis of a xylooctaose.
Isoenergetic modification of whey protein structure by denaturation and crosslinking using transglutaminase

Transglutaminase (TG) catalyzes formation of covalent bonds between lysine and glutamine side chains and has applications in manipulation of food structure. Physical properties of a whey protein mixture (SPC) denatured either at elevated pH or by heat-treatment and followed by TG catalyzed crosslinking, have been characterised using dynamic light scattering, size exclusion chromatography, florescence spectroscopy and atomic force microscopy. The degree of enzymatic crosslinking appeared higher for pH- than for heat-denatured SPC. The hydrophobic surface properties depended on the treatment, thus heating caused the largest exposure of the hydrophobic core of SPC proteins, which was decreased by crosslinking. The particle size of the treated SPC samples increased upon crosslinking by TG. Moreover, the particle morphology depended on the type of denaturing treatment, thus heat-treated SPC contained fibrillar structures, while pH-denatured SPC remained globular as documented by using atomic force microscopy. Finally, the in vitro digestability of the different SPC samples was assessed under simulated gastric and intestinal conditions. Notably heat-treatment was found to lower the gastric digestion rate and enzymatic crosslinking reduced both the gastric and the intestinal rate of digestion. These characteristics of the various SPC samples provide a useful basis for design of isoenergetic model foods applicable in animal and human studies on how food structure affects satiety.

General information
State: Accepted/In press
Organisations: Department of Biotechnology and Biomedicine, Enzyme and Protein Chemistry, Department of Micro- and Nanotechnology, Amphiphilic Polymers in Biological Sensing, University of Leeds, University of Copenhagen
Authors: Stender, E. G. P. (Intern), Koutina, G. (Ekstern), Almdal, K. (Intern), Hassenkam, T. (Ekstern), Mackie, A. (Ekstern), Ipsen, R. (Ekstern), Svensson, B. (Intern)
Number of pages: 9
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Food & Function
ISSN (Print): 2042-6496
Web of Science (2018): Indexed yes
Ratings:
Web of Science (2017): Indexed Yes
Scopus rating (2016): CiteScore 3.38 SJR 1.109 SNIP 1.027
Scopus rating (2015): SJR 1.021 SNIP 1.02 CiteScore 3.15
Web of Science (2015): Indexed yes
Scopus rating (2014): SJR 1.024 SNIP 1.092 CiteScore 3.04
Scopus rating (2013): SJR 1.129 SNIP 1.063 CiteScore 3.29
ISI indexed (2013): ISI indexed yes
Scopus rating (2012): SJR 0.984 SNIP 1.078 CiteScore 2.79
ISI indexed (2012): ISI indexed no
Scopus rating (2011): SJR 0.347 SNIP 0.379 CiteScore 1.14
ISI indexed (2011): ISI indexed no
Original language: English
DOIs:
10.1039/c7fo01451a
Source: FindIt
Source-ID: 2395199018
Publication: Research - peer-review › Journal article – Annual report year: 2018
Isolation and characterization of bacteriophages with therapeutic potential

The concerning spread of antibiotic resistant bacteria has directed the spotlight upon bacteriophages, in short phages, as potential candidates for therapeutic purposes. Far for being a novelty, phage therapy has been widely used in the 20s and 30s in western countries until the discovery of antibiotics, which, coupled with a lack of knowledge of phage biology at that time, let to the replacement of phage therapy by antibiotics. On the other side of the planet, the Georgian Eliava Institute has been using phages for treating bacterial diseases since short after phage discovery a century ago. Georgian pharmacies commonly sell phage cocktails from the Institute without the need of a doctor’s prescription. A thorough characterisation of the cocktail is though required for it to be accepted as pharmaceutical in the European Union. The potential to investigate the genetic material of microbial communities directly from the environment through metagenomics, allows for genomic characterisation of these cocktails. Furthermore, metagenomics analyses may lead to the discovery of novel phages with therapeutic potential, opening up a promising horizon for phage therapy.

This thesis is divided into five parts, each assigned a chapter. Chapter 1 provides the reader with an introduction to phage biology, history and metagenomics. Here, the main bioinformatics methods used throughout the studies of the following chapters are also presented and briefly described. Chapter 2 presents the paper “HostPhinder: A Phage Host Prediction Tool” published in May 2016. The tool predicts the bacterial host of a given phage based on co-occurrent k-mers between a query sequence and reference phage genomes with known host. HostPhinder’s accuracy in predicting the host species and genus of an evaluation set was higher than 74% and 81%, respectively. The tool can be applied to identify the host of phage sequences found for instance in metagenomes allowing for a first step characterisation. Chapter 3 presents the paper “Metagenomic analysis of therapeutic PYO phage cocktails from 1997 to 2014” submitted in October 2017 and currently under peer-revision. In this study, the compositions of 3 batches of a Georgian cocktail from 1997 to 2014 was compared by means of Next Generation Sequencing (NGS) and metagenomic analysis. Thirty and 29 phage draft genomes were found in the cocktails from 1997 and 2014, respectively. One of them was present in both sample and did not resemble any known phage genomes, strongly suggesting its novelty. Phage representatives of all bacterial targets supposedly targeted by the cocktail’s were found, as predicted using HostPhinder. A comparison between cocktails from 1997, 2000, and 2014 showed a closer composition between the first two cocktails. Chapter 4 presents the characterisation of historical S. aureus phages, once used for phage typing. Finally, the conclusive Chapter 5, recapitulates the main findings of this thesis and frame them into the perspective of potential future investigations.

General information
State: Published
Organisations: Department of Bio and Health Informatics, Immunoinformatics and Machine Learning, Center for Biological Sequence Analysis, Department of Biotechnology and Biomedicine, Metabolic Signaling and Regulation
Authors: Villarroel, J. (Intern), Nielsen, M. (Intern), Larsen, M. V. (Intern), Kilstup, M. (Intern)
Number of pages: 98
Publication date: 2018

Publication information
Publisher: Technical University of Denmark (DTU)
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
Julia_Villarroel_Phd_Thesis_18October2017.pdf
Publication: Research › Ph.D. thesis – Annual report year: 2018

Isolation and characterization of novel mutations in the pSC101 origin that increase copy number
pSC101 is a narrow host range, low-copy plasmid commonly used for genetically manipulating Escherichia coli. As a byproduct of a genetic screen for a more sensitive lactam biosensor, we identified multiple novel mutations that increase the copy number of plasmids with the pSC101 origin. All mutations identified in this study occurred on plasmids which also contained at least one mutation localized to the RepA protein encoded within the origin. Homology modelling predicts that many of these mutations occur within the dimerization interface of RepA. Mutant RepA resulted in plasmid copy numbers between ~31 and ~113 copies/cell, relative to ~5 copies/cell in wild-type pSC101 plasmids. Combining the mutations that were predicted to disrupt multiple contacts on the dimerization interface resulted in copy numbers of ~500 copies/cell, while also attenuating growth in host strains. Fluorescent protein production expressed from an arabinose-inducible promoter on mutant origin derived plasmids did correlate with copy number. Plasmids harboring RepA with one of two mutations, E83K and N99D, resulted in fluorescent protein production similar to that from p15a- (~20 copies/cell) and CoE1 (~31 copies/cell) based plasmids, respectively. The mutant copy number variants retained compatibility with p15a, pBBR, and CoE1 origins of replication. These pSC101 variants may be useful in future metabolic engineering efforts that require medium or high-copy vectors compatible with p15a- and CoE1-based plasmids.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Synthetic Biology Tools for Yeast, Joint Bioenergy Institute, Lawrence Berkeley National Laboratory
Escherichia coli can commonly be found, either as a commensal, probiotic or a pathogen, in the human gastrointestinal (GI) tract. Biofilm formation and its regulation is surprisingly variable, although distinct regulatory pattern of red, dry and rough (rdar) biofilm formation arise in certain pathovars and even clones. In the GI tract, environmental conditions, signals from the host and from commensal bacteria contribute to shape E. coli biofilms have been recognized, these processes have mainly been characterized in vitro and in the context of interaction of E. coli strains with intestinal epithelial cells. However, direct observation of E. coli cells in situ, and the vast number of genes encoding surface appendages on the core or accessory...
genome of E. coli suggests the complexity of the biofilm process to be far from being fully understood. In this review, we summarize biofilm formation mechanisms of commensal, probiotic and pathogenic E. coli in the context of the gastrointestinal tract. [GRAPHICS].

**General information**

**State:** Published  
**Organisations:** Novo Nordisk Foundation Center for Biosustainability, Karolinska Institutet, University of Milan  
**Authors:** Rossi, E. (Intern), Cimdins, A. (Ekstern), Luthje, P. (Ekstern), Brauner, A. (Ekstern), Sjoling, A. (Ekstern), Landini, P. (Ekstern), Romling, U. (Ekstern)  
**Number of pages:** 30  
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**Scopus rating (2016):** CiteScore 4.78 SJR 1.681 SNIP 1.778  
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**Scopus rating (2014):** SJR 1.802 SNIP 1.803 CiteScore 4.99  
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**ISI indexed (2012):** ISI indexed yes  
**BFI (2011):** BFI-level 1  
**Scopus rating (2011):** SJR 1.942 SNIP 2.164 CiteScore 6.65  
**ISI indexed (2011):** ISI indexed yes  
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**Scopus rating (2010):** SJR 1.811 SNIP 1.816  
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**Scopus rating (2009):** SJR 1.108 SNIP 1.831  
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**Scopus rating (2008):** SJR 1.291 SNIP 1.3  
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**Scopus rating (2005):** SJR 0.943 SNIP 1.528  
**Scopus rating (2004):** SJR 1.027 SNIP 1.067  
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Joining of Half-Heusler and Bismuth Tellurides for Segmented Thermoelectric Generators

Segmented generators where the p- or n-type legs are formed by joining materials in series enables each material to operate in their most efficient temperature range. Here, we have fabricated and characterized segmented thermoelectric p- and n-type legs based on bismuth tellurides and half-Heusler alloys p-type Hf0.5Zr0.5CoSn0.2Sb0.8 and n-type Ti0.6Hf0.4NiSn. A two-step process was introduced to join the half-Heusler to the bismuth tellurides to form a segmented structure which was then characterized for its thermoelectric and structural properties. The output power generation was characterized under various hot side temperatures up to 873 K with the cold side fixed at 323 K. The stability of the joints was also investigated under heat treatment and thermal cycling. Under working temperatures from 323 K to 873 K, the obtained p-type segmented legs could deliver a power density of 0.3 W cm⁻² and maximum voltage of 115 mV. With the same condition, the power density and the maximum voltage generated by n-type segmented leg were 0.25 W cm⁻² and 102 mV. The area-specific contact resistances of the p- and n-type legs were 50 μΩ cm² and 35 μΩ cm², respectively. The output performance of each leg was ∼95% after 6 cycles from 323 K to 873 K.

General information

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Organisations: Department of Energy Conversion and Storage, Mixed Conductors, Electrofunctional materials
Authors: Ngan, P. H. (Intern), Han, L. (Intern), Christensen, D. V. (Intern)
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Web of Science (2015): Indexed yes
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BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.841 SNIP 1.157 CiteScore 1.66
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Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
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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.

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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)
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Large scale simulations of Trichoderma reesei fermentation using computational fluid dynamics: Approach and early successes

General information
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-Course Genome-wide Association Study Meta-analysis of Total Body BMD and Assessment of Age-Specific Effects

Bone mineral density (BMD) assessed by DXA is used to evaluate bone health. In children, total body (TB) measurements are commonly used; in older individuals, BMD at the lumbar spine (LS) and femoral neck (FN) is used to diagnose osteoporosis. To date, genetic variants in more than 60 loci have been identified as associated with BMD. To investigate the genetic determinants of TB-BMD variation along the life course and test for age-specific effects, we performed a meta-analysis of 30 genome-wide association studies (GWASs) of TB-BMD including 66,628 individuals overall and divided across five age strata, each spanning 15 years. We identified variants associated with TB-BMD at 80 loci, of which 36 have not been previously identified; overall, they explain approximately 10% of the TB-BMD variance when combining all age groups and influence the risk of fracture. Pathway and enrichment analysis of the association signals showed clustering within gene sets implicated in the regulation of cell growth and SMAD proteins, overexpressed in the musculoskeletal system, and enriched in enhancer and promoter regions. These findings reveal TB-BMD as a relevant trait for genetic studies of osteoporosis, enabling the identification of variants and pathways influencing different bone compartments. Only variants in ESR1 and close proximity to RANKL showed a clear effect dependency on age. This most likely indicates that the majority of genetic variants identified influence BMD early in life and that their effect can be captured throughout the life course.
Life cycle assessment of nanoadsorbents at early stage technological development

Increasing pressure to the environment due to human activities manifests the necessity of applying new approaches to determine the environmental impact of a new product before scale-up. Nanoadsorbents as an emerging product and a special application of nanomaterial play an important role in the control and removal of environmental pollutants. This
application is still an emerging technology at the early stages of development. Hence, the heart of this study enables an environmental assessment of nanoadsorbents as an emerging product. In addition, the environmental impacts of synthesized adsorbents including cumulative energy demand, climate change, water use, human toxicity, and ecotoxicity are investigated by a stepwise procedure during their synthesis processes, regarding their potential to remove mercury from polluted water. Accordingly, characterization results showed that although the process of the functionalization of nanoadsorbents leads to the increase of the adsorption capacity of nanoadsorbents, it is also paired with a significant enhancement of negative environmental impacts. The results of t-test comparing the cradle-to-use life cycle impacts of studied impact categories for 1 kg Hg removal between MGO-NH-SH and Fe3O4@SiO-NH-SH estimated approximately 37, 34, 40, 31, and 26% more for climate change, water use, cumulative energy demand, human toxicity, and ecotoxicity, respectively for the latter. Hence, according to the results, Fe3O4@SiO-NH-SH revealed the larger environmental impacts from the same functional unit, 1 kg Hg removal, compared with MGO-NH-SH. Finally, not only does this study represents the LCA of two different kinds of mercury adsorbents, but it also provides a guideline for determining the environmental impacts of similar nanoadsorbents.

General information
State: Published
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, Tarbiat Modares University
Authors: Kazemi, A. (Ekstern), Bahramifar, N. (Ekstern), Heydari, A. (Ekstern), Olsen, S. I. (Intern)
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ISI indexed (2011): ISI indexed yes
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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
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 landfillied. 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.
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

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.

General information
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Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, University of Bordeaux, European Commission - Joint Research Center, KU Leuven, Plateforme, World Resources Forum
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Light Robotics – a brand new interdisciplinary R&D area
Scientific disciplines constantly evolve and create new offspring or subdisciplines that combine the favorable characteristics from its forerunners. The merger of biology and photonics has within the last decade produced one such off-spring, Biophotonics, which harnesses light to study biological materials. More recently we have seen the exciting merger of biophotonics with contemporary nanophotonics into so-called NanoBiophotonics culminating with the recent Chemistry Nobel Prize for super-resolution microscopy. After years of working on light-driven trapping and manipulation, we can see that a confluence of developments is now ripe for the emergence of a new area that can contribute to nanobiophotonics – Light Robotics– which combines advances in microfabrication and optical micromanipulation together with intelligent control ideas from robotics, wavefront engineering and Fourier optics. In the Summer 2017 we published a 482 pages edited Elsevier book volume covering the fundamental aspects needed for Light Robotics including optical trapping systems, microfabrication and microassembly as well as underlying theoretical principles and experimental illustrations for optimizing optical forces and torques for Light Robotics. The Elsevier volume is presenting various new functionalities that are enabled by these new designed light-driven micro-robots in addition to various nano-biophotonics applications demonstrating the unique use of biophysical tools based on light robotic concepts. We have endeavored to make this new discipline accessible to a broad audience from advanced undergraduates and graduate students to practitioners and researchers not only in nanobiophotonics and micro- and nanotechnology but also to other areas in optics, mechanical engineering, control and instrumentation engineering and related fields.

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Authors: Glückstad, J. (Intern)
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Liposome accumulation in irradiated tumors display important tumor and dose dependent differences
Radiation therapy may affect several important parameters in the tumor microenvironment and thereby influence the accumulation of liposomes by the enhanced permeability and retention (EPR)-effect. Here we investigate the effect of single dose radiation therapy on liposome tumor accumulation by PET/CT imaging using radiolabeled liposomes. Head and neck cancer xenografts (FaDu) and syngenic colorectal (CT26) cancer models were investigated. Radiotherapy displayed opposite effects in the two models. FaDu tumors displayed increased mean accumulation of liposomes for radiation doses up to 10 Gy, whereas CT26 tumors displayed a tendency for decreased accumulation. Tumor hypoxia was found negatively correlated to microregional distribution of liposomes. However, liposome distribution in relation to hypoxia was improved at lower radiation doses. The study reveals that the heterogeneity in liposome tumor accumulation between tumors and different radiation protocols are important factors that need to be taken into consideration to achieve optimal effect of liposome based radio-sensitizer therapy.

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Organisations: Department of Micro- and Nanotechnology, Colloids and Biological Interfaces, Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Technical University of Denmark, University of Copenhagen
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Scopus rating (2016): CiteScore 6.22 SJR 1.647 SNIP 1.354
Local analytical sensitivity analysis for design of continua with optimized 3D buckling behavior

The localized analytical sensitivity for eigenfrequency is extended to the non-linear problem of 3D continuum buckling analysis. Implemented in a finite element approach the inherent complexity of mode switching and multiple eigenvalues is found not to be a practical problem. The number of necessary redesigns is of the order 10-20 as illustrated by a specific example, where also different cases of stiffness interpolation are exemplified.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics
Authors: Pedersen, N. L. (Intern), Pedersen, P. (Intern)
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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
Localization and characterization of CYP76AE2 part of thapsigargin biosynthesis in Thapsia garganica

The Mediterranean plant Thapsia garganica (dicot, Apiaceae), also known as Deadly carrot, produces the highly toxic compound thapsigargin. This compound is a potent inhibitor of the SERCA calcium pump in mammals, and is of industrial importance as the active moiety of the anticancer drug Mipsagargin, currently in clinical trials. Knowledge of thapsigargin in planta storage and biosynthesis has so far been limited. Here we present the putative second step in thapsigargin biosynthesis, by showing that the cytochrome P450 TgCYP76AE2, transiently expressed in Nicotiana benthamiana, converts epikunzeaol into epidihydrocostunolide. Furthermore, we show that thapsigargin is likely to be stored in secretory ducts in the roots. Transcripts from TgTPS2 (epikunzeaol synthase) and TgCYP76AE2 in roots were only found in the epithelial cells lining these secretory ducts. This emphasizes the involvement of these cells in the biosynthesis of thapsigargin. This study paves the way for the further studies of thapsigargin biosynthesis.

General information
State: Accepted/In press
Organisations: Department of Biotechnology and Biomedicine, Natural Product Discovery, Photosynthetic Cell Factories, University of Copenhagen, University of Melbourne, Københavns Universitet, Aarhus University
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Low energy recycling of ionic liquids via freeze crystallization during cellulose spinning

A new method for recycling ionic liquids (ILs) from a cellulose spinning process is suggested. The method involves the combination of freeze crystallization and evaporation of H$_2$O from IL + H$_2$O mixtures to recycle the ILs. Processes with EmimAc and EmimDep were used as references to develop this IL recycling method. EmimAc + 12.5 wt% H$_2$O and EmimDep + 4 wt% H$_2$O were selected for a quantitative mass and energy analysis of the cellulose spinning and IL recycling process (the maximal initial H$_2$O levels in the ILs + H$_2$O mixtures for cellulose dissolution were determined experimentally). The energy requirements for the freeze crystallization + evaporation method was compared to evaporation only for recycling of EmimAc and EmimDep. To produce 1 kg dry cellulose fiber, 45.4 MJ and 62.6 MJ are required for recycling EmimAc and EmimDep respectively by the freeze crystallization + evaporation recycling method. Using evaporation only, 66.9 MJ is required for EmimAc recycling and 99.9 MJ for EmimDep recycling per kg cellulose fiber produced. Thus, to fabricate 1 kg dry cellulose fiber using freeze crystallization + evaporation rather than evaporation, 21.5 MJ can be saved for EmimAc and 37.3 MJ for EmimDep recycling. We also show that compared to a classical Lyocell fiber production method using N-methylmorpholine-N-oxide (NMMO) as solvent, use of ILs is energy saving in itself. Hence, significantly less H$_2$O is required in the cellulose spinning process with ILs than with NMMO, and in turn less H$_2$O has to be evaporated for the solvent recycling.

General information
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Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, CERE – Center for Energy Ressources Engineering, Chinese Academy of Sciences
Authors: Liu, Y. (Intern), Meyer, A. S. (Intern), Nie, Y. (Ekstern), Zhang, S. (Ekstern), Thomsen, K. (Intern)
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Scopus rating (2016): CiteScore 8.86 SJR 2.564 SNIP 2.019
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.477 SNIP 1.901 CiteScore 8.21
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.398 SNIP 2.007 CiteScore 8.05
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.266 SNIP 1.815 CiteScore 7.44
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.439 SNIP 1.709 CiteScore 6.64
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.363 SNIP 1.697 CiteScore 6.46
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.152 SNIP 1.655
Low temperature bonding of heterogeneous materials using Al₂O₃ as an intermediate layer
Integration of heterogeneous materials is crucial for many nanophotonic devices. The integration is often achieved by bonding using polymer adhesives or metals. A much better and cleaner option is direct wafer bonding, but the high annealing temperatures required make it a much less attractive option. Direct wafer bonding relies on a high density of hydroxyl groups on the surfaces, which may be difficult to achieve depending on the materials. Thus, it is a challenge to design a universal wafer bonding process. However, using an intermediate layer between the bonding surfaces reduces the dependence on the bonding materials, and thus, the bonding mechanism essentially remains the same. The authors present a systematic study on the use of Al₂O₃ as an intermediate layer for bonding of heterogeneous materials. The ability to achieve high hydroxyl group density and well-controlled films makes atomic layer deposited Al₂O₃ an excellent choice for the intermediate layer. The authors have optimized the bonding process to achieve a high interface energy of 1.7 J/m² for a low temperature annealing of 300 °C. The authors also demonstrate wafer bonding of InP to SiO₂ on Si and GaAs to sapphire using the Al₂O₃ interlayer. Published by the AVS.

General information
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Organisations: Department of Photonics Engineering, Nanophotonic Devices, Diode Lasers and LED Systems, Department of Micro- and Nanotechnology, Silicon Microtechnology, Centre of Excellence for Silicon Photonics for Optical Communications
Authors: Sahoo, H. K. (Intern), Ottaviano, L. (Intern), Zheng, Y. (Intern), Hansen, O. (Intern), Yvind, K. (Intern)
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Scopus rating (2016): CiteScore 1.08 SJR 0.444 SNIP 0.499
Macro and trace elements in Paracentrotus lividus gonads from South West Atlantic areas

Sea urchin represents one of the most valuable seafood product being harvested and explored for their edible part, the gonads or roe. This species is generally considered a sentinel organism for ecotoxicological studies being widely used in monitoring programs to assess coastal aquatic environments quality, because is directly exposed to anthropogenic contaminants in their habitat. In this context, the aim of this study is to evaluate the concentrations of macro (Cl, K, P, Ca, S) and trace (Zn, Br, Fe, Sr, I, Se, Rb, Cu, Cr, Ni, As, iAs, Cd, Pb, Hg) elements in Paracentrotus lividus gonads from three South West Atlantic production areas subjected to distinct environmental and anthropogenic pressures. In all studied areas, the elements profile in sea urchin gonads was Cl > K > P > Ca > S > Zn > Br > Fe > Sr > I > Rb > Cu > Se > Cr > Ni, suggesting an element guide profile with special interest for sea urchin farming development. Concerning toxic
elements, the profile was the following: As > Cd > Pb > Hg > iAs. The results evidenced higher levels of Pb and Hg in open areas. Distinct area characteristics and anthropogenic pressures of production areas evidence the importance of biomonitoring contaminants, particularly toxic elements. In general, the levels of these elements were below maximum levels in foodstuffs (MLs) which pose a minimal health risk to consumers.

**General information**

State: Published
Organisations: National Food Institute, Research Group for Nano-Bio Science, New University of Lisbon, University of Porto, Portuguese Institute for the Sea and Atmosphere
Authors: Camacho, C. (Ekstern), Rocha, A. C. (Ekstern), Barbosa, V. L. (Ekstern), Anacleto, P. (Ekstern), Carvalho, M. L. (Ekstern), Rasmussen, R. R. (Intern), Sloth, J. J. (Intern), Almeida, M. (Ekstern), Nunes, N. L. (Ekstern)
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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
Scopus rating (2008): SJR 1.368 SNIP 1.414
Scopus rating (2007): SJR 1.304 SNIP 1.614
Scopus rating (2006): SJR 1.189 SNIP 1.507
Scopus rating (2005): SJR 1.08 SNIP 1.334
Scopus rating (2004): SJR 0.811 SNIP 0.97
Scopus rating (2003): SJR 0.76 SNIP 1.183
Scopus rating (2002): SJR 0.943 SNIP 1.264
Scopus rating (2001): SJR 0.941 SNIP 1.261
Scopus rating (2000): SJR 0.904 SNIP 1.149
Scopus rating (1999): SJR 0.706 SNIP 1.371
Marine copepods in the Baltic Sea – physiological responses and adaptation to low salinity

General information
State: Accepted/In press
Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic
Authors: Christensen, A. M. (Intern)
Publication date: 2018

Marine fisheries in the North East Atlantic: Case Study 4

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic
Authors: Payne, M. (Intern)
Publication date: 2018

Mathieu's Equation and Its Generalizations: Overview of Stability Charts and their Features
This work is concerned with Mathieu's equation - a classical differential equation, which has the form of a linear second-order ordinary differential equation with Cosine-type periodic forcing of the stiffness coefficient, and its different generalizations/extensions. These extensions include: the effects of linear viscous damping, geometric nonlinearity, damping nonlinearity, fractional derivative terms, delay terms, quasiperiodic excitation or elliptic-type excitation. The aim is to provide a systematic overview of the methods to determine the corresponding stability chart, its structure and features, and how it differs from that of the classical Mathieu's equation.

General information
State: Accepted/In press
Organisations: Department of Mechanical Engineering, Solid Mechanics, University of Novi Sad, Cornell University
Authors: Kovacic, I. (Ekstern), Rand, R. H. (Ekstern), Sah, S. M. (Intern)
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BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.71 SJR 1.733 SNIP 3.1
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.077 SNIP 2.876 CiteScore 2.76
Web of Science (2015): Indexed yes
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 µm) failing at fewer strain cycles than the substrate used in the silver-nanowire-based modules (~190 µm). Taken together, the results suggest ways in which the lifetimes of devices can be extended by the layouts of modules and choices of materials.

General information

State: Published
Organisations: Department of Energy Conversion and Storage, Organic Energy Materials, University of California
Authors: Finn, M. (Ekstern), Martens, C. J. (Ekstern), Zaretski, A. V. (Ekstern), Roth, B. (Intern), Søndergaard, R. R. (Intern), Krebs, F. C. (Intern), Lipomi, D. J. (Ekstern)
Pages: 7-15
Publication date: 2018
Main Research Area: Technical/natural sciences
Mechanistic modeling of cyclic voltammetry: A helpful tool for understanding biosensor principles and supporting design optimization

Abstract Design, optimization and integration of biosensors hold a great potential for the development of cost-effective screening and point-of-care technologies. However, significant progress in this field can still be obtained on condition that sufficiently accurate mathematical models will be developed. Herein, we present a novel approach for the improvement of mechanistic models which do not only combine the fundamental principles but readily incorporate the results of electrochemical and morphological studies. The first generation glucose biosensors were chosen as a case study for model development and to perform cyclic voltammetry (CV) measurements. As initial step in the model development we proposed the interpretation of experimental voltammograms obtained in the absence of substrate (glucose). The model equations describe dynamic diffusion and reaction of the involved species (oxygen, oxidized/reduced forms of the mediator - Prussian Blue/Prussian White). Furthermore, the developed model was applied under various operating conditions as a crucial tool for biosensor design optimization. The obtained qualitative and quantitative dependencies towards amperometric biosensors design optimization were independently supported by results of cyclic voltammetry and multi-analytical studies, such as scanning electron microscopy (SEM), energy dispersive X-ray spectroscopy (EDX) and liquid chromatography-electrospray ionization-tandem mass spectrometry (LC-ESI-MS/MS). Remarkably, a linear response of the optimized biosensors tested at the applied voltage (~0.14V) in the presence of the glucose was obtained from 10⁻³ to 10⁻⁵M (relative standard deviation (RSD) <7% per electrode). We believe that the presented model can be used to determine the exact mechanism driving the electrochemical reactions and to identify critical system parameters affecting the biosensor response that would significantly contribute to the knowledge on biosensing, devices design and bioengineering strategies in the future.

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Scopus rating (2016): CiteScore 5.07 SJR 1.333 SNIP 1.463
Web of Science (2016): Indexed yes
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Scopus rating (2015): SJR 1.25 SNIP 1.509 CiteScore 4.84
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.229 SNIP 1.679 CiteScore 4.37
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.242 SNIP 1.622 CiteScore 4.25
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Web of Science (2013): Indexed yes
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
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Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering
Meta-Analysis of Fish Early Life Stage Tests - Association of Toxic Ratios and Acute-To-Chronic Ratios with Modes of Action

Fish early life stage (FELS) tests (OECD test guideline 210) are widely conducted to estimate chronic fish toxicity. In these tests, fish are exposed from the embryonic to the juvenile life stage. In order to analyse whether certain modes of action are related to high toxic ratios (TR, i.e., ratios between experimental effect and baseline toxicity) and/or acute-to-chronic ratios (ACR) in the FELS test effect concentrations for 183 compounds were extracted from the US EPA ecotoxicity database. Analysis of effect concentration of narcotic compounds indicated that baseline toxicity could be observed in the FELS test at similar concentrations as in acute fish toxicity test. All non-narcotic modes of action were associated with higher TRs with median values ranging from 4 to 9.3*10^4 (uncoupling < reactivity < neuromuscular toxicity < methemoglobin formation < endocrine disruption < extracellular matrix formation inhibition). Four modes of action were also found to be associated with high ACRs: (1) lysyl oxidase inhibition leading to notochord distortion, (2) putative methemoglobin formation or haemolytic anemia, (3) endocrine disruption, and (4) compounds with neuromuscular toxicity. It was discussed that for the prediction of effect concentrations in the FELS test with alternative test systems, endpoints targeted to the modes of action of compounds with enhanced TR or ACR could be used to trigger FELS tests or even replace these tests.

General information
State: Accepted/In press
Organisations: Department of Environmental Engineering, Environmental Chemistry, Helmholtz Center for Environmental Research (UFZ), University of Toronto, L'Oreal
Authors: Scholz, S. (Ekstern), Schreiber, R. (Ekstern), Armitage, J. (Ekstern), Mayer, P. (Intern), Escher, B. I. (Ekstern), Lidzba, A. (Ekstern), Léonard, M. (Ekstern), Altenburger, R. (Ekstern)
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Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.446 SNIP 1.055 CiteScore 3
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.506 SNIP 1.129 CiteScore 2.89
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.653 SNIP 1.092 CiteScore 2.88
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.642 SNIP 1.107 CiteScore 2.81
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.937 SNIP 1.168 CiteScore 3.05
The present study introduces a novel triple-phase (liquids, solids and gases) approach, which employed uniformly labelled [U-13C] polydextrose (PDX) for the selective profiling of metabolites generated from dietary fiber fermentation in an in vitro colon simulator using human fecal inocula. Employing 13C NMR spectroscopy, [U-13C] PDX metabolism was observed from colonic digest samples. The major 13C-labelled metabolites generated were acetate, butyrate, propionate, and valerate. In addition to these short-chain fatty acids (SCFAs), 13C-labelled lactate, formate, succinate, and ethanol were detected in the colon simulator samples. Metabolite formation and PDX substrate degradation were examined comprehensively over time (24 and 48 hours). Correlation analysis between 13C NMR spectra and gas production confirmed the anaerobic fermentation of PDX to SCFAs. In addition, 16S rRNA gene analysis showed that the level of Erysipelotrichaceae was influenced by PDX supplementation and Erysipelotrichaceae level were statistically correlated with SCFA’s formation. Overall, our study demonstrates a novel approach to link substrate fermentation and microbial function directly in a simulated colonic environment.

**General information**

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Authors: Lamichhane, S. (Ekstern), Yde, C. C. (Ekstern), Max Jensen, H. (Ekstern), Morovic, W. (Ekstern), Hibberd, A. A. (Ekstern), Ouwehand, A. C. (Ekstern), Saarinen, M. T. (Ekstern), Forsten, S. D. (Ekstern), Wiebe, L. (Ekstern), Marcussen, J. (Ekstern), Bertelsen, K. (Ekstern), Meier, S. (Intern), Young, J. F. (Ekstern), Bertram, H. C. (Ekstern)
Number of pages: 37
Metabolic mechanisms behind the type 2 diabetes susceptible phenotype in low birth weight individuals

Background and aims: Low birth weight (LBW) individuals have an increased risk of developing insulin resistance and type 2 diabetes compared with normal birth weight (NBW) individuals. Accordingly, young, healthy, LBW men of the study population examined in the present plasma metabolome studies show impaired hepatic insulin sensitivity and, in contrast...
to NBW men, develop impaired peripheral insulin sensitivity in response to a 5-day high-fat overfeeding. However, the metabolic mechanisms behind the type 2 diabetes susceptible phenotype in LBW individuals are not clear. Our primary aim of the present studies was to get novel insights into such mechanisms. LBW men of the present study population have lower pre-adipocyte mRNA expression levels of several differentiation markers, which may potentially lead to an impaired fatty acid storage capacity of these cells and a resulting increased fatty acid load to non-adipose tissue. Also, the LBW men display an increased fatty acid oxidation and a decreased glucose oxidation during both the isocaloric control diet and 5-day high-fat, high-calorie (HFHC) diet. Our specific aims of the present studies were to test the hypotheses that LBW men could have 1) an increased, incomplete fatty acid beta-oxidation in mitochondria, 2) an altered amino acid metabolism to ensure an adequate supply of tricarboxylic acid (TCA) cycle intermediates and thereby enable an efficient acetyl-CoA oxidation, and 3) an increased fatty acid flux into lipogenesis, including de novo ceramide synthesis, in non-adipose tissue.

Methods: Fasting plasma levels of 45 acylcarnitines, 15 amino acids, and 27 ceramides were measured in the young, healthy, LBW (≤ 10th percentile) and NBW (50-90th percentile) men of the above mentioned study population after the isocaloric control diet and 5-day HFHC (60 E % from fat, 50 % extra calories) diet intervention.

Results and interpretations: LBW men had higher plasma C2 and C4-OH acylcarnitine levels after the control diet, compared with NBW men, indicating an increased, incomplete fatty acid beta-oxidation in mitochondria with the limiting step at the acetyl-CoA oxidation via the TCA cycle and an increased ketogenesis, respectively. Furthermore, LBW men had higher plasma C6-DC, C10-OH/C8-DC, and total hydroxyl-/dicarboxyl-acylcarnitine levels after the control diet, compared with NBW men, suggesting an increased fatty acid omega-oxidation in the endoplasmic reticulum of mainly the liver. Interestingly, the total hydroxyl-/dicarboxyl-acylcarnitine level was negatively associated with the fasting serum insulin level and hepatic insulin resistance after this diet. An increased omega-oxidation rate may therefore limit the amount of fatty acid substrates available for lipogenesis, including the synthesis of lipotoxic lipids such as ceramides and diacylglycerols that impair insulin signalling. In the second study, we demonstrated that LBW men had higher plasma alanine, proline, methionine, citrulline, and total amino acid levels after the HFHC diet compared with NBW men. The alanine level was negatively associated with the plasma C2 acylcarnitine level after this diet. A higher alanine level in the LBW men after the HFHC diet could therefore be accompanied by an increased anaplerotic formation of oxaloacetate to enable an efficient acetyl-CoA oxidation via the TCA cycle. Furthermore, the alanine and total amino acid levels tended to be negatively associated with the insulin-stimulated glucose uptake rate after the HFHC diet. Higher alanine and total amino acid levels in the LBW men after this diet could therefore be a consequence of their reduction in skeletal muscle insulin sensitivity due to high-fat overfeeding with a following increased skeletal muscle proteolysis and/or may potentially contribute to the impaired insulin sensitivity. Moreover, the alanine level was positively associated with the hepatic glucose production after the HFHC diet. A higher alanine level in the LBW men could therefore also be accompanied by an increased gluconeogenesis in the liver. In the third study, we found that LBW men did not show altered plasma ceramide levels after the control or HFHC diet compared with NBW men. An increased fatty acid oxidation rate in the LBW men during both diets may limit the amount of fatty acids available for de novo ceramide synthesis and thereby compensate for a likely increased fatty acid load to non-adipose tissue in these individuals.

Conclusions: LBW men showed alterations in fasting plasma acylcarnitine and amino acid levels after the isocaloric control diet and 5-day HFHC diet, respectively, that have been described to be associated with insulin resistance and type 2 diabetes. Additional plasma and tissue metabolome studies in LBW and NBW individuals, as well as supplementary functional studies, are needed to further explain the metabolic events leading to the altered plasma metabolite profiles in LBW men, and moreover to determine the extent to which these events may be part of the type 2 diabetes susceptible phenotype in LBW individuals.
Metabolite production by species of Stemphylium

Morphology and phylogeny has been used to distinguish members of the plant pathogenic fungal genus Stemphylium. A third method for distinguishing species is by chemotaxonomy. The main goal of the present study was to investigate the chemical potential of Stemphylium via HPLC-UV-MS analysis, while also exploring the potential of chemotaxonomy as a robust identification method for Stemphylium. Several species were found to have species-specific metabolites, while other species were distinguishable by a broader metabolic profile rather than specific metabolites. Many previously described metabolites were found to be important for distinguishing species, while some unknown metabolites were also found to have important roles in distinguishing species of Stemphylium. This study is the first of its kind to investigate the chemical potential of Stemphylium across the whole genus.

General information
State: Accepted/In press
Organisations: Department of Biotechnology and Biomedicine, Natural Product Discovery, Fungal Degradation, Oregon State University
Authors: Olsen, K. J. K. (Intern), Rossman, A. (Ekstern), Andersen, B. (Intern)
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Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.46 SJR 0.853 SNIP 1.028
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.968 SNIP 0.977 CiteScore 2.36
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.07 SNIP 1.109 CiteScore 2.56
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.939 SNIP 1.112 CiteScore 2.32
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.971 SNIP 1.312 CiteScore 2.18
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.957 SNIP 1.303 CiteScore 1.42
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.08 SNIP 1.591
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.127 SNIP 1.509
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.122 SNIP 1.415
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.909 SNIP 1.285
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 188 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 = 5.4 × 10−3 and prevalent type 2 diabetes (ORVal_PC ae C32:2 2.64 [β 0.97 ± 0.09], 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 2.157 [β 0.45 ± 0.06]; 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

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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 DELBRUCK CENTER FOR MOLECULAR MEDICINE, University of Oxford, University of Dundee, Københavns Universitet
Pages: 117-129
Metagenomic insights into zooplankton-associated bacterial communities

Zooplankton and microbes play a key role in the ocean's biological cycles by releasing and consuming copious amounts of particulate and dissolved organic matter. Additionally, zooplankton provide a complex microhabitat rich in organic and inorganic nutrients in which bacteria thrive. In this study, we assessed the phylogenetic composition and metabolic potential of microbial communities associated with crustacean zooplankton species collected in the North Atlantic. Using Illumina sequencing of the 16S rRNA gene we found significant differences between the microbial communities associated with zooplankton and those inhabiting the surrounding seawater. Metagenomic analysis of the zooplankton-associated microbial community revealed a highly specialized bacterial community able to exploit zooplankton as microhabitat and thus, mediating biogeochemical processes generally underrepresented in the open ocean. The zooplankton-associated bacterial community is able to colonize the zooplankton's internal and external surfaces by using a large set of adhesion mechanisms and to metabolize complex organic compounds released or exuded by the zooplankton such as chitin, taurine and other complex molecules. Moreover, the high number of genes involved in iron and phosphorus metabolisms in the zooplankton-associated microbiome suggests that this zooplankton-associated bacterial community mediates specific biogeochemical processes (through the proliferation of specific taxa) that are generally underrepresented in the ambient waters. This article is protected by copyright. All rights reserved.
Methanation of CO₂ over Zeolite-Encapsulated Nickel Nanoparticles

Efficient methanation of CO₂ relies on the development of more selective and stable heterogeneous catalysts. Here we present a simple and effective method to encapsulate Ni nanoparticles in zeolite silicalite-1. In this method, the zeolite is modified by selective desilication, which creates intra-particle voids and mesopores that facilitate the formation of small and well-dispersed nanoparticles upon impregnation and reduction. TEM and XPS analysis confirm that a significant part of the Ni nanoparticles are situated inside the zeolite rather than on the outer surface. The encapsulation results in an increased metal dispersion and, consequently, a high catalytic activity for CO₂ methanation. With a gas hourly space velocity of 60000 ml/g catalyst h⁻¹ and H₂/CO₂=4, the zeolite-encapsulated Ni nanoparticles result in 60% conversion at 450°C, which corresponds to a site-time yield of around 304 mol CH₄/mol Ni h⁻¹. The encapsulated Ni nanoparticles show no change in activity or selectivity after 50 h of operation, although post-catalysis characterisation reveals some particle...
Methodology for Developing a Diesel Exhaust After Treatment Simulation Tool

A methodology for the development of catalyst models is presented. Also, a methodology of the implementation of such models into a modular simulation tool, which simulates the units in succession, is presented. A case study is presented illustrating how suitable models can be found and used for simulations. Such simulations illustrate the behavior of the individual units and the overall system. It is shown how, by simulating the units in succession, the entire after treatment system can be tested and optimized, because the integration makes it possible to observe the effect of the modules on one another.
Microbeam evolution: From single cell irradiation to preclinical studies

Purpose: This review follows the development of microbeam technology from the early days of single cell irradiations, to investigations of specific cellular mechanisms and to the development of new treatment modalities in vivo. A number of microbeam applications are discussed with a focus on preclinical modalities and translation towards clinical application.

Conclusions: The development of radiation microbeams has been a valuable tool for the exploration of fundamental radiobiological response mechanisms. The strength of micro-irradiation techniques lies in their ability to deliver precise doses of radiation to selected individual cells in vitro or even to target subcellular organelles. These abilities have led to the development of a range of microbeam facilities around the world allowing the delivery of precisely defined beams of charged particles, X-rays, or electrons.

In addition, microbeams have acted as mechanistic probes to dissect the underlying molecular events of the DNA damage response following highly localised dose deposition. Further advances in very precise beam delivery have also enabled the transition towards new and exciting therapeutic modalities developed at synchrotrons to deliver radiotherapy using plane parallel microbeams, in Microbeam Radiotherapy (MRT).

General information
State: Accepted/In press
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Queen's University Belfast, University of Bern, National Physical Laboratory, European Synchrotron Radiation Facility
Authors: Ghita, M. (Ekstern), Fernandez-Palomo, C. (Ekstern), Fukunaga, H. (Ekstern), Fredericia, P. M. (Intern), Schettino, G. (Ekstern), Bräuer-Krisch, E. (Ekstern), Butterworth, K. T. (Ekstern), McMahon, S. J. (Ekstern), Prise, K. M. (Ekstern)
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BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.84 SJR 0.702 SNIP 0.75
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.727 SNIP 0.785 CiteScore 1.89
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.579 SNIP 0.816 CiteScore 1.78
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.699 SNIP 0.723 CiteScore 1.91
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.853 SNIP 0.887 CiteScore 2.12
Microbial degradation of pesticides in rapid sand filters used for drinking water treatment

Groundwater is used as drinking water source all over the world. However, large parts are contaminated by pesticides at low concentrations (sub µg/L), due to anthropogenic activities. These pesticides can adversely impact human health, and have legal implications. Thus, it is important to identify sustainable methods to remove pesticides from polluted water sources. Aeration of anaerobic groundwater, followed by biological rapid sand filtration is a widespread technology in drinking water treatment. Even though these systems are not designed for removal of trace contaminants, they have shown potential for microbial degradation of pesticides and their degradation products. If pesticides can be removed in rapid sand filters, it is of large commercial interest due to the importance in maintaining a simple, sustainable water treatment. To take advantage of the microbial pesticide degradation and identify associated risks, it is necessary to understand the extent of pesticide degradation and the governing microbial processes in the water treatment.

The objective of this PhD thesis was to investigate the potential for microbial pesticide degradation at waterworks treating groundwater and to investigate, which microbial processes govern the degradation, in order to suggest how pesticide degradation can be stimulated in water treatment systems.

In a full-scale waterworks the rapid sand filters removed a phenoxy acid (herbicide) contamination from drinking water and investigations showed a potential for removing several pesticides in filter sand from different waterworks. The largest biological pesticide removal was observed in filter sand from a waterworks characterised by methane-rich groundwater. Thus, it was investigated for a connection between pesticide degradation and methane oxidation.

In an enrichment culture, methanotrophs contributed to the degradation of phenoxy acids. However, a phenoxy acid was degraded in filter sand from 10 different waterworks receiving groundwater with varying concentrations and absence of methane. The omnipresent phenoxy acid degradation demonstrated, that degradation in rapid sand filters was not associated with methane oxidation. Based on the present investigations and literature, it was suggested that phenoxy acid degradation in rapid sand filters is due to primary metabolism, and that degradation might be stimulated by enriching naturally occurring specific degraders in the sand filters upon exposure to phenoxy acid contaminated groundwater. A suite of evidence showed that the herbicide bentazone was co-metabolically transformed to hydroxy-bentazone by the methanotrophic enrichment culture. Subsequently, it was investigated whether bentazone degradation was also connected with methane oxidation in drinking water treatment systems.

In waterworks wells in Denmark, bentazone was detected significantly less frequently in wells with methane than in wells without methane. Similarly, the biological bentazone removal in filter sand from 14 waterworks correlated significantly with the maximum methane concentration in the raw water and did not correlate with other water quality parameters, such as the ammonium concentration. Furthermore, the connection between bentazone degradation and methane oxidation in filter sand was demonstrated by inhibition experiments, in which acetylene inhibited both the methane oxidation and the bentazone removal. The main biotransformation pathways clearly showed the importance of initial hydroxylation reactions during bentazone degradation in filter sand. However, bentazone was further degraded in filter sand and showed that not only methanotrophs, but also other heterotrophs contributed to the degradation. Methanotrophic biomass from the aeration tanks clearly demonstrated a bentazone degradation, which depended on the presence of methane.

Transformation yields describing the bentazone removal versus the methane oxidation were in same order of magnitude
for all investigated media: methanotrophic enrichment cultures, filter sand and biomass from aeration tanks, which strongly indicated that the same degradation process governed bentazone removal in the different media. It was suggested that full-scale waterworks operates like a sequential reactor system, where methanotrophs are grown in the aeration tanks and transported to the rapid sand filters where they can perform co-metabolic pesticide biodegradation. It was suggested that bentazone removal can be stimulated at waterworks, by stimulating growth of methanotrophs. Overall, this PhD demonstrated a substantial potential for biological pesticide degradation in drinking water treatment systems. While the omnipresent phenoxy acid degradation potential was probably due to specific degraders, bentazone degradation was connected with the methane oxidation. Based on the present investigations and literature, it was suggested that phenoxy acid degradation can be stimulated by enrichment of naturally occurring degraders in filter sand, and that bentazone degradation can be stimulated by stimulating growth of methanotrophs in the water treatment.

**General information**

State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems, Krüger A/S
Authors: Hedegaard, M. J. (Intern), Albrechtsen, H. (Intern), Boe-Hansen, R. (Ekstern)
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**Relations**

Projects:

**Microbial degradation of pesticides in rapid sand filters used for drinking water treatment**
Publication: Research › Ph.D. thesis – Annual report year: 2018

**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.

**General information**

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Organisations: Department of Environmental Engineering, Water Technologies, Residual Resource Engineering
Authors: Kokkoli, A. (Intern), Zhang, Y. (Intern), Angelidaki, I. (Intern)
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Main Research Area: Technical/natural sciences

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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
Microfabricated Air-core Toroidal Inductor In Very High Frequency Power Converters

Miniaturization of power supplies is required for future intelligent electronic systems e.g. internet of things devices. Inductors play an essential role, and they are by far the most bulky and expensive components in power supplies. This paper presents a miniaturized microelectromechanical systems (MEMS) inductor and its performance in a very high frequency (VHF) power converter. The MEMS inductor is a silicon-embedded air-core toroidal inductor, and it is constructed with through-silicon vias, suspended copper windings, silicon fixtures, and a silicon support die. The air-core inductors outperform the silicon-core inductors with higher quality factor at higher frequency. This is verified by small-signal measurements. A 20-turn air-core inductor achieved an inductance of 44.6 nH and a quality factor of 13.3 at 33 MHz, while a silicon-core inductor with the same geometry has a quality factor of 9 at 20 MHz. A DC-DC class-E boost converter is designed and implemented using the fabricated MEMS air-core inductor and a high-performance 65 V gallium nitride field effect transistor. The VHF converter achieved a peak efficiency of 78 % at the input voltage of 6.5 VDC. The
MEMS inductor can carry 1 A RMS AC current at 33 MHz and delivers 10.5 W to the output.

**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.
Mid-infrared multispectral tissue imaging using a chalcogenide fiber supercontinuum source

We present the first demonstration of mid-infrared supercontinuum tissue imaging at wavelengths beyond 5 μm using a fiber-coupled supercontinuum source spanning 2-7.5 μm. The supercontinuum was generated in a tapered large mode area chalcogenide photonic crystal fiber in order to obtain broad bandwidth, high average power, and single-mode output for diffraction-limited imaging performance. Tissue imaging was demonstrated in transmission at selected wavelengths between 5.7 μm (1754 cm⁻¹) and 7.3 μm (1370 cm⁻¹) by point scanning over a sub-mm region of colon tissue, and the results were compared to images obtained from a commercial instrument.
miRandola 2017: a curated knowledge base of non-invasive biomarkers

miRandola (http://mirandola.iit.cnr.it/) is a database of extracellular non-coding RNAs (ncRNAs) that was initially published in 2012, foreseeing the relevance of ncRNAs as non-invasive biomarkers. An increasing amount of experimental evidence shows that ncRNAs are frequently dysregulated in diseases. Further, ncRNAs have been discovered in different extracellular forms, such as exosomes, which circulate in human body fluids. Thus, miRandola 2017 is an effort to update and collect the accumulating information on extracellular ncRNAs that is spread across scientific publications and different databases. Data are manually curated from 314 articles that describe miRNAs, long non-coding RNAs and circular RNAs. Fourteen organisms are now included in the database, and associations of ncRNAs with 25 drugs, 47 sample types and 197 diseases. miRandola also classifies extracellular RNAs based on their extracellular form: Argonaute2 protein, exosome, microvesicle, microparticle, membrane vesicle, high density lipoprotein and circulating. We also implemented a new web interface to improve the user experience.

General information
State: Published
Organisations: Department of Bio and Health Informatics, Integrative Systems Biology, Department of Systems Biology, Center for Biological Sequence Analysis, Integrative Systems Biology, Department of Biotechnology, University of Copenhagen, Nerviano Medical Sciences, Scuola Superiore Sant'Anna, University of Eastern Finland, The Ohio State University, University of Verona, Mount Sinai School of Medicine, National Research Council of Italy, University of Catania
Authors: Russo, F. (Ekstern), Di Bella, S. (Ekstern), Vannini, F. (Ekstern), Berti, G. (Ekstern), Scoyni, F. (Ekstern), Cook, H. V. (Ekstern), Santos, A. (Ekstern), Nigita, G. (Ekstern), Bonnici, V. (Ekstern), Laganà, A. (Ekstern), Geraci, F. (Ekstern), Pulvirenti, A. (Ekstern), Giugno, R. (Ekstern), De Masì, F. (Intern), Belling, K. G. (Intern), Jensen, L. J. (Intern), Brunak, S. (Intern), Pellegrini, M. (Ekstern), Ferro, A. (Ekstern)
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Web of Science (2015): Indexed yes
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Scopus rating (2014): SJR 6.576 SNIP 2.568 CiteScore 8.74
Web of Science (2014): Indexed yes
Modeling ecotoxicity impacts in vineyard production: Addressing spatial differentiation for copper fungicides

Application of plant protection products (PPP) is a fundamental practice for viticulture. Life Cycle Assessment (LCA) has proved to be a useful tool to assess the environmental performance of agricultural production, where including toxicity-related impacts for PPP use is still associated with methodological limitations, especially for inorganic (i.e. metal-based) pesticides. Downy mildew is one of the most severe diseases for vineyard production. For disease control, copper-based fungicides are the most effective and used PPP in both conventional and organic viticulture. This study aims to improve the toxicity-related characterization of copper-based fungicides (Cu) for LCA studies. Potential freshwater ecotoxicity...
impacts of 12 active ingredients used to control downy mildew in European vineyards were quantified and compared. Soil ecotoxicity impacts were calculated for specific soil chemistries and textures. To introduce spatial differentiation for Cu in freshwater and soil ecotoxicity characterization, we used 7 European water archetypes and a set of 15,034 non-calcareous vineyard soils for 4 agricultural scenarios. Cu ranked as the most impacting substance for potential freshwater ecotoxicity among the 12 studied active ingredients. With the inclusion of spatial differentiation, Cu toxicity potentials vary 3 orders of magnitude, making variation according to water archetypes potentially relevant. In the case of non-calcareous soils ecotoxicity characterization, the variability of Cu impacts in different receiving environments is about 2 orders of magnitude. Our results show that Cu potential toxicity depends mainly on its capacity to interact with the emission site, and the dynamics of this interaction (speciation). These results represent a better approximation to understand Cu potential toxicity impact profiles, assisting decision makers to better understand copper behavior concerning the receiving environment and therefore how restrictions on the use of copper-based fungicides should be considered in relation to the emission site.

General information
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Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, Universitat Autonoma de Barcelona, IRTA - Institute of Agrifood Research and Technology
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Journal: Science of the Total Environment
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Modeling the adsorption of sulfur containing molecules and their hydrodesulfurization intermediates on the Co-promoted MoS2 catalyst by DFT

Achieving ultra-deep hydrodesulfurization means enabling removal of the last fractions of sulfur, contained in refractory molecules, from oil. Improving the state-of-the-art Co-promoted MoS2 (CoMoS) catalyst or the development of novel catalysts is crucial for this. Improving CoMoS requires more insight in the way sulfur containing molecules interact with it. Herein, we model the adsorption of sulfur containing molecules on the S-edge, M-edge, corner and basal plane of CoMoS using density functional theory. The obtained adsorption configurations and energies point to a preference towards physisorption at the S-edge and chemisorption in vacancies at the M-edge and corner. Smaller molecules, such as thiophene and methylthiol, were found to prefer vacancies when adsorbing while larger, sterically hindered molecules as 4,6-dimethyldibenzothiophene prefer physisorption on the brim of the edges or the basal plane through van der Waals interactions. Hydrogenation generally leads to a preference towards adsorption at vacancies for thiophene and dibenzothiophene while for 4,6-dimethyldibenzothiophene hydrogenation leads to preferential adsorption on the S-edge brim, possibly explaining why 4,6-dimethyldibenzothiophene does not get desulfurized directly but follows a hydrogenation route. Thiolate formation energies were also calculated for the different molecules and used to predict which sites are most likely to be involved in breaking carbon-sulfur bonds. The thiolate formation energies show the inert nature of the basal plane towards breaking carbon-sulfur and sulfur-hydrogen bonds. Additionally, activation energies for thiophene and dibenzothiophene carbon-sulfur bond scission indicate that both molecules follow the direct desulfurization route on under-coordinated sites or vacancies.

General information
State: Published
Organisations: Department of Physics, University of Copenhagen, Haldor Topsoe AS
Authors: Šarić, M. (Intern), Rossmeisl, J. (Ekstern), Moses, P. G. (Ekstern)
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Modeling the multi-scale mechanisms of macromolecular resource allocation

As microbes face changing environments, they dynamically allocate macromolecular resources to produce a particular phenotypic state. Broad ‘omics’ data sets have revealed several interesting phenomena regarding how the proteome is allocated under differing conditions, but the functional consequences of these states and how they are achieved remain open questions. Various types of multi-scale mathematical models have been used to elucidate the genetic basis for systems-level adaptations. In this review, we outline several different strategies by which microbes accomplish resource allocation and detail how mathematical models have aided in our understanding of these processes. Ultimately, such modeling efforts have helped elucidate the principles of proteome allocation and hold promise for further discovery.

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Organisations: Novo Nordisk Foundation Center for Biosustainability, Big Data 2 Knowledge, Network Reconstruction in Silico Biology, University of California, San Diego
Authors: Yang, L. (Ekstern), Yurkovich, J. T. (Ekstern), King, Z. A. (Ekstern), Palsson, B. O. (Intern)
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BFI (2016): BFI-level 2
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BFI (2015): BFI-level 2
Scopus rating (2015): SJR 4.153 SNIP 1.552 CiteScore 5.95
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 5.018 SNIP 1.924 CiteScore 7.34
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 5.081 SNIP 2.187 CiteScore 7.91
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 4.936 SNIP 1.997 CiteScore 7.56
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 5.347 SNIP 1.846
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 5.548 SNIP 2.05
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 4.61 SNIP 1.908
Web of Science (2008): Indexed yes
Modelling of adequate and safe vitamin D intake in Danish women using different fortification and supplementation scenarios to inform fortification policies

Fortification of foods with vitamin D may be a population-based solution to low vitamin D intake. We performed modelling of vitamin D from diet, fortified foods and supplements in a population of Danish women 18–50 years, a risk group of vitamin D deficiency, to inform fortification policies on safe and adequate levels. Based on individual habitual dietary vitamin D intake of female participants from the Danish National Survey of Dietary Habits and Physical Activity (DANSDA) (n=855), we performed graded intake modelling to predict the intake in six scenarios increasing the vitamin D intake from a habitual diet without fish to habitual diet including fish, fortified foods and supplements (40/80 µg). Four different foods were used as potential foods to fortify with vitamin D. The vitamin D intake was below the Average Requirement (AR) of 7.5 µg/day for 88% of the assessed women. Safe levels of intake (General information)

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Organisations: National Food Institute, Research Group for Risk-Benefit, Division of Risk Assessment and Nutrition, Department of Applied Mathematics and Computer Science, University of Copenhagen
Authors: Grønborg, I. M. (Intern), Tetens, I. (Ekstern), Ege, M. (Intern), Christensen, T. (Intern), Andersen, E. W. (Intern), Andersen, R. (Intern)
Number of pages: 6
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Scopus rating (2016): CiteScore 3.22 SJR 1.267 SNIP 1.153
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.319 SNIP 1.169 CiteScore 3.13
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.273 SNIP 1.227 CiteScore 3.28
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.021 SNIP 1.135 CiteScore 3.2
Modelling the influence of metabolite diffusion on non-starter lactic acid bacteria growth in ripening Cheddar cheese

The influence of metabolite diffusion within the cheese matrix on growth of non-starter lactic acid bacteria (NSLAB) during Cheddar cheese ripening was mathematically modelled. The model was calibrated at a realistic range of diffusion of metabolites and the decay and growth parameters of immobilised starter LAB (SLAB) and NSLAB colonies, respectively. Metabolite diffusion is the limiting factor for NSLAB growth only if essential metabolite molecules are extremely large or otherwise immobilised in the matrix. For relatively small molecules diffusion cannot be a limiting factor; the diffusive replenishment of small molecule nutrients around the NSLAB colonies consuming them is generally faster than the release rate from all possible sources within the curd. Assuming that the only nutrient source limiting NSLAB growth is the release of metabolites from lysed SLAB colonies, the decay rate of SLAB, rather than metabolite diffusion, most probably determines the rate of NSLAB growth during Cheddar cheese ripening.
Modifications to the foot-and-mouth disease virus 2A peptide; influence on polyprotein processing and virus replication

Foot-and-mouth disease virus (FMDV) has a positive-sense ssRNA genome that includes a single, large, open reading frame encoding a polyprotein. The co-translational "cleavage" of this polyprotein at the 2A/2B junction is mediated by the 2A peptide (18 residues in length) using a non-proteolytic mechanism termed "ribosome skipping" or "StopGo". Multiple variants of the 2A polypeptide with this property among the picornaviruses share a conserved C-terminal motif (D(V/I)E(S/T)NPG↓P). The impact of 2A modifications within this motif on FMDV protein synthesis, polyprotein processing and virus viability were investigated. Amino acid substitutions are tolerated at residues E\textsuperscript{14}, S\textsuperscript{15} and N\textsuperscript{16} within the 2A sequence of infectious FMDVs despite their reported "cleavage" efficiencies at the 2A/2B junction of only ca. 30-50% compared to wt. In contrast, no viruses were rescued containing substitutions at residues P\textsuperscript{17}, G\textsuperscript{18} or P\textsuperscript{19} that displayed...
little or no "cleavage" activity in vitro, but wt revertants were obtained. The 2A substitutions impaired the replication of a FMDV replicon. Using transient expression assays, it was shown that certain amino acid substitutions at residues E\textsuperscript{14}, S\textsuperscript{15}, N\textsuperscript{16} and P\textsuperscript{19} resulted in partial "cleavage" of a protease-free polyprotein indicating that these specific residues are not essential for co-translational "cleavage". Immunofluorescence studies, using full-length FMDV RNA transcripts encoding mutant 2A peptides, indicated that the 2A peptide remained attached to adjacent proteins, presumably 2B. These results show that efficient "cleavage" at the 2A/2B junction is required for optimal virus replication. However, maximal StopGo activity does not appear to be essential for the viability of FMDV.

General information

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Organisations: National Veterinary Institute, Virology
Authors: Kjær, J. (Intern), Belsham, G. J. (Intern)
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- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 4.42 SJR 3.052 SNIP 1.131
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 3.286 SNIP 1.138 CiteScore 4.42
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 3.168 SNIP 1.219 CiteScore 4.4
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 2
- Scopus rating (2013): SJR 3.468 SNIP 1.26 CiteScore 4.92
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 3.154 SNIP 1.227 CiteScore 5.2
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 3.399 SNIP 1.288 CiteScore 5.37
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 3.532 SNIP 1.278
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 3.595 SNIP 1.307
- Web of Science (2009): Indexed yes
Moiré phase-shifted fiber Bragg gratings in polymer optical fibers

We demonstrate a simple way to fabricate phase-shifted fiber Bragg grating in polymer optical fibers as a narrowband transmission filter for a variety of applications at telecom wavelengths. The filters have been fabricated by overlapping two uniform fiber Bragg gratings with slightly different periods to create a Moiré grating with only two pulses (one pulse is 15 ns) of UV power. Experimental characterization of the filter is provided under different conditions where the strain and temperature sensitivities were measured.

General information
State: Published
Organisations: Department of Photonics Engineering, Fiber Sensors and Supercontinuum Generation, Universidad Politecnica de Valencia, Universidade de Aveiro
Authors: Min, R. (Ekstern), Marques, C. (Ekstern), Bang, O. (Intern), Ortega, B. (Ekstern)
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Web of Science (2017): Indexed Yes
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Scopus rating (2016): CiteScore 1.89 SJR 0.649 SNIP 1.129
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Scopus rating (2015): SJR 0.841 SNIP 1.21 CiteScore 1.86
Molecular epidemiology, evolution and phylogeny of foot-and-mouth disease virus

Foot-and-mouth disease virus (FMDV) is responsible for one of the most economically important infectious diseases of livestock. The virus spreads very easily and continues to affect many countries (mainly in Africa and Asia). The risks associated with the introduction of FMDV result in major barriers to trade in animals and their products. Seven antigenically distinct forms of the virus are known, called serotypes, but serotype C has not been detected anywhere for many years and may now be extinct. The serotypes have been further divided into topotypes (except for serotype Asia-1 viruses, which comprise a single topotype), genotypes, lineages and sub-lineages, which are usually restricted to specific geographical regions. However, sometimes, trans-regional spread of some strains occurs. Due to the error-prone replication of the RNA genome, the virus continuously evolves and new strains frequently arise (e.g. with modified antigenicity). Using nucleotide sequencing technologies, this rapid evolution of the viral genome can be followed. This
allows the tracing of virus transmission pathways within an outbreak of disease if (near) full-length genome sequences can be generated. Furthermore, the movement of distinct virus lineages, from one country to another can be analyzed. Some important examples of the spread of new strains of FMD virus are described.
Molecular profiling of short-term and long-term surviving patients identifies CD34 mRNA level as prognostic for glioblastoma survival

Despite extensive treatment, overall survival (OS) for glioblastoma (GBM) remains poor. A small proportion of patients present long survival over 3 years, but the underlying molecular background separating these long-term survivors (LTS) from short-term survivors (STS) are insufficiently understood. Accordingly, study aim was to identify independent prognostic biomarkers for survival. Study cohort consisted of 93 primary GBM patients treated with radiation-, chemo- and bevacizumab therapy, among which 14 STS (OS ≤ 12 months) and 6 LTS (OS ≥ 36 months) were identified, all confirmed being IDH wild-type. RNA expression levels in diagnostic tumor specimen for 792 genes were analyzed by NanoString technology. While no differences were found with regard to GBM subtype between LTS versus STS, comparative analysis of individual genes identified 14 significantly differently expressed candidate genes. Univariate analysis in the whole patient cohort found that 12 of these were significantly associated with OS, of which increased IFNG, CXCL9, LGALS4, CD34 and decreased MGMT levels remained significant associated with prolonged OS in multivariate analysis correcting for known prognostic variables. Validation analyses in an independent dataset from the AVAglio study confirmed CD34 as significant in comparative analysis between STS and LTS patients and as an independent prognostic factor. Analysis of this dataset further supported CD34 expression to be associated with improved bevacizumab efficacy, while CD34 immunohistochemistry indicated variation in CD34 expression to result primarily from varying tumor vascularization. Collectively, CD34 expression candidates as a prognostic biomarker in GBM able to identify survival outliers and could also be predictive for efficacy of bevacizumab.
Molecular scale structure and dynamics at an ionic liquid/electrode interface
After a century of research, the potential-dependent ion distribution at electrode/electrolyte interfaces is still under debate. In particular for solvent-free electrolytes such as room-temperature ionic liquids, classical theories for the electrical double layer are not applicable. Using a combination of in situ high-energy X-ray reflectivity and impedance spectroscopy measurements, we determined this distribution with sub-molecular resolution. We find oscillatory charge density profiles consisting of alternating anion- and cation-enriched layers at both cathodic and anodic potentials. This structure is shown to arise from the same ion-ion correlations dominating the liquid bulk structure. The relaxation dynamics of the interfacial structure upon charging/discharging were studied by impedance spectroscopy and time resolved X-ray reflectivity experiments with sub-millisecond resolution. The analysis revealed three relaxation processes of vastly different characteristic time scales: a 2 ms scale interface-normal ion transport, a 100 ms scale molecular reorientation, and a minute scale lateral ordering within the first layer.

General information
State: Published
Organisations: Department of Physics, Neutrons and X-rays for Materials Physics, Max Planck Institute for Polymer Research, Bar-Ilan University, European Synchrotron Radiation Facility
Authors: Reichert, P. (Ekstern), Kjær, K. S. (Intern), Brandt van Driel, T. (Intern), Mars, J. (Ekstern), Ochsmann, J. W. (Ekstern), Pontoni, D. (Ekstern), Deutsch, M. (Ekstern), Nielsen, M. M. (Intern), Mezger, M. (Ekstern)
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Scopus rating (2014): SJR 1.7 SNIP 1.278 CiteScore 3.79
Web of Science (2014): Indexed yes
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Scopus rating (2013): SJR 1.618 SNIP 1.12 CiteScore 3.65
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BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.732 SNIP 0.948 CiteScore 3.24
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.893 SNIP 1.239 CiteScore 3.92
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.719 SNIP 1.22
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.799 SNIP 1.157
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.792 SNIP 1.293
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.898 SNIP 1.316
Scopus rating (2006): SJR 1.39 SNIP 1.148
Monge surfaces and planar geodesic foliations

A Monge surface is a surface obtained by sweeping a generating plane curve along a trajectory that is orthogonal to the moving plane containing the curve. Locally, they are characterized as being foliated by a family of planar geodesic lines of curvature. We call surfaces with the latter property PGF surfaces, and investigate the global properties of these two naturally defined objects. The only compact orientable PGF surfaces are tori; these are globally Monge surfaces, and they have a simple characterization in terms of the directrix. We show how to produce many examples of Monge tori and Klein bottles, as well as tori that do not have a closed directrix.

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Monitoring and modeling of nitrogen conversions in membrane-aerated biofilm reactors: Effects of intermittent aeration

Nitrogen can be removed from sewage by a variety of physicochemical and biological processes. Due to the high removal efficiency and relatively low costs, biological processes have been widely adopted for treating nitrogen-rich wastewaters. Among the biological technologies, biofilm processes show great advantages as compared to suspended growth processes, allowing for biomass accumulation and retention without the need of external solid separation devices. The decoupling of solids retention from hydraulic retention is especially useful for slow-growing microorganisms, such as ammonium-oxidizing bacteria (AOB) and nitrite-oxidizing bacteria (NOB), and anaerobic ammonium-oxidizing bacteria (AnAOB), which are involved in ammonium (NH₄⁺) removal process.

Stability of engineered biological processes requires an appropriate balance between activities of the main microbial groups involved in the system. However, finding proper operational conditions is especially challenging in biofilms. On the one hand, the existence of strong spatial chemical gradients within biofilms increases the difficulty to prescribe environmental conditions that favor any desired biological process. On the other hand, the presence of multiple simultaneous chemical gradients complicates the performance optimization. Mathematical modeling offers a way to describe and analyze multiple processes that occur simultaneously in time and space in biofilm systems.

This PhD project investigated NH₄⁺ removal process in membrane-aerated biofilm reactors (MABRs), focusing on aeration control, especially the application of intermittent aeration. Compared to conventional biofilms which are characterized by co-diffusion, MABRs display counter-diffusion fluxes of substrates: oxygen is supplied through the membrane, whilst NH₄⁺ is provided from the bulk liquid phase. The counter substrate supply not only offers flexible aeration control, but also supports the development of a unique microbial community and spatial structure inside the biofilm. In this study, lab-scale MABRs were operated under two types of aeration control: continuous versus intermittent aeration. Long-term reactor performance was monitored. Based on bulk measurements of NH₄⁺, nitrite (NO₂⁻) and nitrate (NO₃⁻), microbial activities of individual functional guilds were evaluated. I found that NOB suppression occurred under intermittent aeration, but not under continuous aeration. Relative aeration duration and aeration intermittency were two effective operational factors in regulating MABR performance under intermittent aeration. Besides daily bulk monitoring, in situ microprofiles of dissolved oxygen (DO), pH and nitrous oxide (N₂O) were performed. The significant temporal fluctuations in local biofilm pH (not DO) during aeration control suggested that pH-related effects drive the changing microbial activities under intermittent aeration, as compared to continuous aeration. Total N₂O emissions were dramatically reduced at the onset of intermittent aeration, due to the development of an anoxic N₂O reduction zone by hetero-trophic bacteria (HB).

To further investigate the causal link between NOB suppression and aeration regime change, a 1-dimensional (1-D) multispecies nitrifying biofilm model was developed in Aquasim software, incorporating a pH calculation. Kinetic parameters to be estimated were chosen based on a local sensitivity analysis, and were estimated from in situ microprofiles. With the calibrated model, I identified that the periodically varying free ammonia inhibition, which was associated with transient pH variations, was the likely key factor causing NOB suppression in intermittently-aerated nitrifying MABRs.

To further investigate the mechanisms of N₂O mitigation under aeration control, the 1-D biofilm model was extended to a partial nitritation-anammox (PNA) biofilm model, including description of all relevant biological N₂O production pathways. Sensitive kinetic parameters were estimated with long-term bulk performance data. With the calibrated model, roles of HB
and AnAOB were discussed and evaluated in mitigating N2O emissions in auto-trophic nitrogen removal MABRs. Moreover, I developed a 1-D biofilm model in Matlab software describing the counter-diffusion PNA process, aiming at an improved model calibration/evaluation for the highly variable N2O emissions. Overall, a combination of experimental and modeling efforts were implemented to study nitrogen conversions in MABRs. The results showed that intermittent aeration was an efficient strategy to regulate microbial activities in counter-diffusion biofilms, achieving an energy-efficient NH4+ removal process with low N2O emissions.

General information
State: Published
Organisations: Department of Environmental Engineering, Water Technologies
Authors: Ma, Y. (Intern), Smets, B. F. (Intern)
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Original language: English
Main Research Area: Technical/natural sciences

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Monitoring and modeling of nitrogen conversions in membrane-aerated biofilm reactors: Effects of intermittent aeration
Publication: Research › Ph.D. thesis – Annual report year: 2018

Morphological, mechanical and antioxidant properties of Portuguese almond cultivars
The aim of this study was to evaluate morphological (of fruit and kernel), mechanical (namely shell rupture force) and antioxidant properties (including phenolics and flavonoid content) of five Portuguese almond cultivars, comparing them with two commercial cultivars (Glorieta and Ferragnês). Of the analyzed traits, nut and kernel dimensions varied substantially and were used to describe cultivars. However, some traditional cultivars recorded similar (Pegarinhos), or even higher (Amendoão, Casanova and Refêgo) nut and kernel weight than commercial cultivars. Furthermore, shelling percentage of traditional cultivar (Bonita) was higher than commercial cultivars. Rupture force necessary to break fruits of all traditional cultivars was higher than commercial ones, and was correlated to nut weight cultivars. The phenolics, flavonoids content and antioxidants were higher for Casanova. Parameters like high kernel weight, low percentages of double kernels or losses during shelling and considerable higher phenolics and flavonoids content may be considered by industry during selection of almond.

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. S. (Intern), Afonso, S. (Ekstern), Ribeiro, C. (Ekstern), Gonçalves, B. (Ekstern)
Pages: 467–478
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Main Research Area: Technical/natural sciences

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Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.544 SNIP 0.916
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.433 SNIP 0.914 CiteScore 1.08
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.506 SNIP 1.385 CiteScore 1.34
Multi-Agent Programming Contest 2016 – The Python-DTU Team
We provide a detailed description of the Python-DTU system, including the overall system design and the tools used in the agent contest.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic, Technical University of Denmark
Authors: Villadsen, J. (Intern), Halkjær From, A. (Ekstern), Jacobi, S. (Ekstern), Larsen, N. N. (Ekstern)
Pages: 86-100
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BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
Multi-Beam Focal Plane Arrays with Digital Beamforming for High Precision Space-Borne Ocean Remote Sensing

The present-day ocean remote sensing instruments that operate at low microwave frequencies are limited in spatial resolution and do not allow for monitoring of the coastal waters. This is due the difficulties of employing a large reflector antenna on a satellite platform, and generating high-quality pencil beams at multiple frequencies. Recent advances in digital beamforming focal-plane-arrays (FPAs) have been exploited in the current work to overcome the above problems.

A holistic design procedure for such novel multi-beam radiometers has been developed, where (i) the antenna system specifications are derived directly from the requirements to oceanographic surveys for future satellite missions; and (ii) the numbers of FPA elements/receivers are determined through a dedicated optimum beamforming procedure minimizing the distance to coast. This approach has been applied to synthesize FPAs for two alternative radiometer systems: a conical scanner with an off-set parabolic reflector, and stationary wide-scan torus reflector system; each operating at C, X and Ku bands. Numerical results predict excellent beam performance for both systems with as low as 0.14 % total received power over the land.
Multiplexed CRISPR/Cas9 Genome Editing and Gene Regulation Using Csy4 in Saccharomyces cerevisiae

Clustered regularly interspaced short palindromic repeats (CRISPR) technology has greatly accelerated the field of strain engineering. However, insufficient efforts have been made toward developing robust multiplexing tools in Saccharomyces cerevisiae. Here, we exploit the RNA processing capacity of the bacterial endoribonuclease Csy4 from Pseudomonas aeruginosa, to generate multiple gRNAs from a single transcript for genome editing and gene interference applications in S. cerevisiae. In regards to genome editing, we performed a quadruple deletion of FAA1, FAA4, POX1 and TES1 reaching 96% efficiency out of 24 colonies tested. Then, we used this system to efficiently transcriptionally regulate the three genes, OLE1, HMG1 and ACS1. Thus, we demonstrate that multiplexed genome editing and gene regulation can be performed in a fast and effective manner using Csy4.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Yeast Cell Factories, Chalmers University of Technology
Authors: Ferreira, R. (Ekstern), Skrekas, C. (Ekstern), Nielsen, J. (Intern), David, F. (Ekstern)
Pages: 10-15
Publication date: 2018
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
Authors: Ingemann Jensen, S. (Intern), Nielsen, A. T. (Intern)
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Multiscale Modeling of Poly(Lactic acid) Production: From Reaction Conditions to Rheology of Polymer Melt
Abstract Poly(L-lactic acid) (PLLA) is a fully biodegradable bioplastic with promising market potential. The paper deals with systematic development and analysis of the modeling framework allowing direct mapping between PLLA production process conditions and rheological properties of the polymer melt. To achieve this, the framework builds upon three
distinct elements that approach the production process from different scales: (i) macroscopic deterministic model of \( \text{L,L-} \) lactide ring opening polymerization taken from the literature, (ii) microscopic stochastic simulation of the polymerization process based on hybrid Monte Carlo approach, and (iii) mesoscopic public domain model of polymer chain reptation dynamics. Based on the input reaction conditions, the macro-scale model predicts \( \text{L,L-} \) lactide conversion and averaged molar mass of PLLA, while the micro-scale and meso-scale simulations allow prediction of full molar mass distribution and melt viscosity of the product. The developed predictive tool is validated by literature data, i.e. experimentally measured rheological characteristics of three commercial PLLA samples with different molecular architecture. Moreover, comprehensive global sensitivity analysis has been carried out to support exploration of the process conditions space in relation to target polymer melt properties. Computational efficiency of the developed model achieved so far foreshadows its potential use as soft sensor for molar mass distribution and melt viscosity in the optimization and control of PLLA production.

**General information**

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Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre
Authors: Zubov, A. (Intern), Sin, G. (Intern)
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- Web of Science (2018): Indexed yes
- 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
- BFI (2013): BFI-level 1
- Scopus rating (2013): CiteScore 3.03
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): CiteScore 3.15
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): CiteScore 2.95
- 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 1
- Web of Science (2008): Indexed yes
- Web of Science (2007): Indexed yes
Mussel-inspired co-deposition to enhance bisphenol A removal in a bifacial enzymatic membrane reactor

Abstract

In this study, the biocatalytic membranes were prepared by 'reverse filtration' of laccase and subsequently various mussel-inspired coating strategies: single dopamine (DA) deposition, DA/polyethyleneimine (PEI) co-deposition, and DA/Cu2+ co-deposition, where nanofiltration (NF) membranes were used as the matrix to further exploit the potential of the biocatalytic membranes. Such prepared biocatalytic membranes were enzymatically active on both sides, making it possible to construct a bifacial enzymatic membrane reactor (EMR) for highly efficient micro-pollutants removal (taking bisphenol A (BPA) as an example). Compared with the single polydopamine (PDA) coated membrane, the biocatalytic membranes prepared by DA/PEI and DA/Cu2+ co-depositions exhibited much better performances in terms of enzyme loading, activity and permeability as well as the stability of immobilized enzyme. The BPA removal efficiency was highest for the EMR with the PDA/Cu2+ coated membrane attributed to copper-enhanced electron transfer, while it was lowest for the EMR with the PDA/PEI coated membrane due to the high diffusional resistance of the dense PDA/PEI layer. Meanwhile, the mechanism for performance deterioration of biocatalytic membrane during BPA treatment was revealed, and it was found that the trade-off between BPA removal efficiency and long-term stability could be broken by applying the bifacial EMR with PDA/Cu2+ coated membrane in flow-through mode, since the pressure-induced convective mass transfer improved the substrate accessibility to enzyme together with products removal.
N-acetylcysteine manipulation fails to elicit an increase in glutathione in a teleost model

Levels of oxidative stress can be affected by a range of compounds including toxins and pharmaceuticals. Antioxidants are important protective compounds which counteract the damaging effects of oxidative stress. Glutathione (GSH) is one of the main antioxidants for many organisms and can be synthesized from administered N-acetylcysteine (NAC). NAC has therefore often been used in a wide range of taxa to manipulate levels of GSH. Our objective was to validate this approach in a wild temperate teleost fish model, the brown trout (Salmo trutta). We used intracoelomic injections of NAC in saline and vegetable shortening, at two different concentrations (100 and 400 mg/kg), with the appropriate controls and shams, under controlled laboratory settings. We found that NAC failed to elicit an increase in GSH over three time periods and concluded that NAC is not an effective method to enhance GSH levels in teleost fish using the concentrations and vehicles tested here. We emphasize the importance of validation studies across all new species/taxa when possible and suggest that more investigation is required with regard to NAC manipulation in fish if this approach is to be used.
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.

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
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Organisations: Department of Mechanical Engineering, Scientific Computing, Fluid Mechanics, Coastal and Maritime Engineering, Department of Chemistry, CERE – Center for Energy Resources 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)

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Scopus rating (2016): CiteScore 2.56 SJR 0.764 SNIP 1.631
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.801 SNIP 1.652 CiteScore 2.38
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.692 SNIP 1.751 CiteScore 1.95
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.822 SNIP 1.901 CiteScore 1.73
ISI indexed (2013): ISI indexed yes
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BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.774 SNIP 1.666 CiteScore 1.42
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.648 SNIP 1.41 CiteScore 1.29
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.746 SNIP 1.724
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.072 SNIP 1.852
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.841 SNIP 1.435
Scopus rating (2007): SJR 0.732 SNIP 1.386
Scopus rating (2006): SJR 0.92 SNIP 1.387
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.784 SNIP 1.052
Scopus rating (2004): SJR 0.823 SNIP 1.302
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.617 SNIP 1.077
Scopus rating (2002): SJR 0.849 SNIP 0.788
Scopus rating (2001): SJR 0.481 SNIP 0.705
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.295 SNIP 0.659
Scopus rating (1999): SJR 0.281 SNIP 0.587
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Horizontal well productivity, Near-wellbore model, Inflow performance, Reduced order model, Numerical model, Computational Fluid Dynamics
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-H₂O, while new 4C parameters provide the best results for the MEG-H₂O (vapour phase) and MEG-nC₇ LLE. For the limited ternary (MEG-H₂O-CH₄) data and MEG-nC₆ 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.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, CERE – Center for Energy Ressources Engineering, KT Consortium
Authors: Kruger, F. (Intern), Kontogeorgis, G. M. (Intern), von Solms, N. (Intern)
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Scopus rating (2016): CiteScore 2.33 SJR 0.869 SNIP 1.155
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.874 SNIP 0.998 CiteScore 1.99
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.982 SNIP 1.248 CiteScore 2.28
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.007 SNIP 1.274 CiteScore 2.31
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.152 SNIP 1.286 CiteScore 2.31
Nitrogen-vacancy ensemble magnetometry based on pump absorption

We demonstrate magnetic-field sensing using an ensemble of nitrogen-vacancy centers by recording the variation in the pump-light absorption due to the spin-polarization dependence of the total ground-state population. Using a 532 nm pump laser, we measure the absorption of native nitrogen-vacancy centers in a chemical-vapor-deposited diamond placed in a resonant optical cavity. For a laser pump power of 0.4 W and a cavity finesse of 45, we obtain a noise floor of \( \sim 100 \text{ nT}/\sqrt{\text{Hz}} \) spanning a bandwidth up to 125 Hz. We project a photon shot-noise-limited sensitivity of \( \sim 1 \text{ pT}/\sqrt{\text{Hz}} \) by optimizing the nitrogen-vacancy concentration and the detection method.
Nitrous oxide production in intermittently aerated Partial Nitritation-Anammox reactor: oxic N₂O 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 ± 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 ± 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
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Main Research Area: Technical/natural sciences

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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.03
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.15
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
No increase in marine microplastic concentration over the last three decades - A case study from the Baltic Sea

Microplastic is considered a potential threat to marine life as it is ingested by a wide variety of species. Most studies on microplastic ingestion are short-term investigations and little is currently known about how this potential threat has developed over the last decades where global plastic production has increased exponentially. Here we present the first long-term study on microplastic in the marine environment, covering three decades from 1987 to 2015, based on a unique sample set originally collected and conserved for food web studies. We investigated the microplastic concentration in plankton samples and in digestive tracts of two economically and ecologically important planktivorous forage fish species, Atlantic herring (Clupea harengus) and European sprat (Sprattus sprattus), in the Baltic Sea, an ecosystem which is under high anthropogenic pressure and has undergone considerable changes over the past decades. Surprisingly, neither the concentration of microplastic in the plankton samples nor in the digestive tracts changed significantly over the investigated time period. Average microplastic concentration in the plankton samples was $0.21 \pm 0.15 \text{ particles m}^{-3}$. Of 814 fish examined, 20% contained plastic particles, of which 95% were characterized as microplastic.

General information
State: Published
Organisations: Section for Marine Ecology and Oceanography, National Institute of Aquatic Resources, Section for Marine Living Resources, Section for Oceans and Arctic, University of Copenhagen, GEOMAR - Helmholtz Centre for Ocean Research Kiel
Authors: Beer, S. (Ekstern), Garm, A. (Ekstern), Huwer, B. (Intern), Dierking, J. (Ekstern), Nielsen, T. G. (Intern)
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.407 SNIP 1.491
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.515 SNIP 1.605
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.442 SNIP 1.508
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.123 SNIP 1.305
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.164 SNIP 1.369
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.168 SNIP 1.352
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.063 SNIP 1.081
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.98 SNIP 1.071
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.925 SNIP 0.937
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Source-ID: 2392254034
Publication: Research - peer-review › Journal article – Annual report year: 2018

Non-invasive Estimation of Pressure Changes using 2-D Vector Velocity Ultrasound: An Experimental Study with In-Vivo Examples
A non-invasive method for estimating intravascular pressure changes using 2-D vector velocity is presented. The method was first validated on computational fluid dynamics (CFD) data, and with catheter measurements on phantoms. Hereafter, the method was tested in-vivo at the carotid bifurcation and at the aortic valve of two healthy volunteers. Ultrasound measurements were performed using the experimental scanner SARUS, in combination with an 8MHz linear array transducer for experimental scans and a carotid scan, whereas a 3.5MHz phased array probe was employed for a scan of an aortic valve. Measured 2-D fields of angle-independent vector velocities were obtained using synthetic aperture imaging. Pressure drops from simulated steady flow through six vessel geometries spanning different degrees of diameter narrowing, running from 20% – 70 %, showed relative biases from 0.35% to 12.06 %, depending on the degree of constriction. Phantom measurements were performed on a vessel with the same geometry as the 70% constricted CFD model. The derived pressure drops were compared to pressure drops measured by a clinically used 4F catheter and to a finite element model. The proposed method showed peak systolic pressure drops of -3.0kPa±57 Pa, while the catheter and the simulation model showed -5.4kPa±52 Pa and -2.9 kPa, respectively. An in-vivo acquisition of 10 s was made at the carotid bifurcation. This produced eight cardiac cycles from where pressure gradients of -227Pa±15 Pa were found. Lastly, the aortic valve measurement showed a peak pressure drop of -2.1 kPa over one cardiac cycle. In conclusion, pressure gradients from convective flow changes are detectable using 2-D vector velocity ultrasound.

General information

State: Accepted/In press
Organisations: Department of Electrical Engineering, Biomedical Engineering, Center for Fast Ultrasound Imaging, Technical University of Denmark, Copenhagen University Hospital
Authors: Olesen, J. B. (Intern), Villagómez Hoyos, C. A. (Intern), Møller, N. D. (Ekstern), Ewertsen, C. (Ekstern), Hansen, K. L. (Ekstern), Nielsen, M. B. (Ekstern), Bech, B. (Forskerdatabase), Lönn, L. (Ekstern), Traberg, M. S. (Intern), Jensen, J. A. (Intern)
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BFI (2018): BFI-level 2
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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
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.935 SNIP 1.611
Web of Science (2010): Indexed yes
No Reference Prediction of Quality Metrics for H.264 Compressed Infrared Image Sequences for UAV Applications

The framework for this research work is the acquisition of Infrared (IR) images from Unmanned Aerial Vehicles (UAV). In this paper we consider the No-Reference (NR) prediction of Full Reference Quality Metrics for Infrared (IR) video sequences which are compressed and thus distorted by an H.264 codec. The proposed method works as a Bitstream Based (BB) approach and it may thus be applied on-ground. Three different types of features are first computed: codec features (based on information extracted from the bitstream), image quality features (based on BRISQUE evaluations) and Spatial and temporal perceptual information. Those features are then mapped, using a machine learning (ML) algorithm, the Support Vector Regression (SVR), to the quality scores of Full Reference (FR) quality metrics. The novelty of this work is to design a NR framework for the prediction of quality metrics by applying ML algorithm in the IR domain. A set of 5 drone energy leakage image sequences and 3 ground IR image sequences are used for evaluating the performance of the proposed method. Each of the image sequences are encoded at 4 different bitrates and the prediction of the proposed method is compared with the true FR quality metrics scores of four images metrics: PSNR, NQM, SSIM and UQI and one video metric: VQM. Results show that our technique achieves a fairly reasonable performance. The improved performance obtained in SROCC and LCC is up to 0.99 and the RMSE is reduced to as little as 0.01 between the actual FR and the estimated quality scores for the H.264 coded IR sequences.

General information
State: Published
Organisations: Department of Photonics Engineering, Coding and Visual Communication
Authors: Hossain, K. (Intern), Mantel, C. (Intern), Forchhammer, S. (Intern)
Number of pages: 6
Publication date: 2018
Novel method reveals a narrow phylogenetic distribution of bacterial dispersers in environmental communities exposed to low hydration conditions

In this study, we developed a method that provides community-level surface dispersal profiles under controlled hydration conditions from environmental samples and enables us to isolate and uncover the diversity of the fastest bacterial dispersers. The method expands on the Porous Surface Model (PSM), previously used to monitor dispersal of individual bacterial strains in liquid films at the surface of a porous ceramic disc. The novel procedure targets complex communities and captures the dispersed bacteria on a solid medium for growth and detection. The method was first validated by distinguishing motile Pseudomonas putida and Flavobacterium johnsoniae strains from their non-motile mutants. Applying the method to soil and lake water bacterial communities showed that community-scale dispersal declined as conditions became drier. However, for both communities, dispersal was detected even under low hydration conditions (matric potential: -3.1 kPa), previously proven too dry for P. putida KT2440 motility. We were then able to specifically recover and characterize the fastest dispersers from the inoculated communities. For both soil and lake samples, 16S rRNA gene amplicon sequencing revealed that the fastest dispersers were substantially less diverse than the total communities. The dispersing fraction of the soil microbial community was dominated by Pseudomonas which increased in abundance at low hydration conditions, while the dispersing fraction of the lake community was dominated by Aeromonas and, under wet conditions (-0.5 kPa), also by Exiguobacterium The results gained in this study bring us a step closer to assessing the dispersal ability within complex communities under environmentally relevant conditions. IMPORTANCE Dispersal is a key process of bacterial community assembly. Yet, very few attempts have been made at assessing bacterial dispersal at the community level as focus has previously been on pure culture studies. A crucial factor for dispersal in habitats where hydration conditions vary, such as soils, is the thickness of the liquid films surrounding solid surfaces, but little is known on how the ability to disperse in such films varies within bacterial communities. Therefore, we developed a method to profile community dispersal and identify fast dispersers on a rough surface resembling soil surfaces. Our results suggest that within the motile fraction of a bacterial community only a minority of the bacterial types are able to disperse in the thinnest liquid films. During dry periods, these efficient dispersers can gain a significant fitness advantage through their ability to colonize new habitats ahead of the rest of the community.

General information
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Organisations: Department of Environmental Engineering, Water Technologies, University of Copenhagen, Geological Survey of Denmark and Greenland
Authors: Krüger, U. S. (Ekstern), Bak, F. (Ekstern), Aamand, J. (Ekstern), Nybroe, O. (Ekstern), Badawi, N. (Ekstern), Smets, B. F. (Intern), Dechesne, A. (Intern)
Publication date: 2018
Main Research Area: Technical/natural sciences

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Scopus rating (2016): CiteScore 4.08
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Scopus rating (2013): CiteScore 4.25
Scopus rating (2012): CiteScore 4.29
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Nucleation front instability in two-dimensional (2D) nanosheet gadolinium-doped cerium oxide (CGO) formation
Herein we report for the first time the synthesis of ceramic–organic three-dimensional (3D) layered gadolinium-doped cerium oxide (Ce$_{1-x}$Gd$_x$O$_{2-x}$ CGO) and its exfoliation into two-dimensional (2D) nanosheets. We adopt a water-based synthetic route via a homogenous precipitation approach at low temperatures (10–80 °C). The reaction conditions are tuned to investigate the effects of thermal energy on the final morphology. A low temperature (40 °C) morphological transition from nanoparticles (1D) to two-dimensional (2D) nanosheets is observed and associated with a low thermal
energy transition of ca. 2.6 kJ mol⁻¹. For the 3D-layered material, exfoliation experiments are conducted in water/ethanol solutions. Systems at volume fractions ranging from 0.15 to 0.35 are demonstrated to promote under ultrasonic treatment the delamination into 2D nanosheets.
Numerical modeling of the strand deposition flow in extrusion-based additive manufacturing

Abstract We propose a numerical model to simulate the extrusion of a strand of semi-molten material on a moving substrate, within the computation fluid dynamics paradigm. According to the literature, the deposition flow of the strands has an impact on the inter-layer bond formation in extrusion-based additive manufacturing, as well as the surface roughness of the fabricated part. Under the assumptions of an isothermal Newtonian fluid and a creeping laminar flow, the deposition flow is controlled by two parameters: the gap distance between the extrusion nozzle and the substrate, and the velocity ratio of the substrate to the average velocity of the flow inside the nozzle. The numerical simulation fully resolves the deposition flow and provides the cross-section of the printed strand. For the first time, we have quantified the effect of the gap distance and the velocity ratio on the size and the shape of the strand. The cross-section of the strand ranges from being almost cylindrical (for a fast printing and with a large gap) to a flat cuboid with rounded edges (for a slow printing and with a small gap), which substantially differs from the idealized cross-section typically assumed in the literature. Finally, we found that the printing force applied by the extruded material on the substrate has a negative linear relationship with the velocity ratio, for a constant gap.

Numerical simulation of condensation of sulfuric acid and water in a large two-stroke marine diesel engine

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.

**General information**

State: Published
Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, Thermal Energy, MAN B&W Diesel A/S
Authors: Karvounis, N. (Intern), Pang, K. M. (Intern), Mayer, S. (Ekstern), Walther, J. H. (Intern)
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- Web of Science (2018): Indexed yes
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- 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
Numerical simulation of kinetic demixing and decomposition in a LaCoO$_{3-\delta}$ oxygen membrane under an oxygen potential gradient

A composition- and temperature-dependent mobility database of all ionic species in the LaCoO$_{3-\delta}$ phase was developed and combined with a La-Co-O thermodynamic database to simulate kinetic demixing and partial decomposition in LaCoO$_{3-\delta}$ oxygen membranes operated under a 0.0001/0.21 bar oxygen partial pressure difference at 1073 K for 1 year. Formation of La$_2$O$_3$, Co$_3$O$_4$, and CoO phases across the membrane is predicted. The kinetic demixing process can be divided into two stages, namely, establishment of the oxygen potential gradient (fast) and demixing of the cations (slow); the former is controlled by the mobility of oxygen ions, and the latter is determined by the higher mobility of Co ions as compared to the La ion in the ABO$_3$-type perovskite. A drift motion of both oxide surfaces towards the high PO$_2$ side occurs with the movement of cations.

General information

State: Published
Organisations: Department of Energy Conversion and Storage, Mixed Conductors, Central South University
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Main Research Area: Technical/natural sciences

Publication information

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BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.13 SJR 2.062 SNIP 1.72
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2 SNIP 1.771 CiteScore 5.89
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.433 SNIP 1.935 CiteScore 5.42
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.452 SNIP 2.001 CiteScore 5.38
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.201 SNIP 1.968 CiteScore 4.37
ISI indexed (2012): ISI indexed yes
Numerical simulation of the planar extrudate swell of pseudoplastic and viscoelastic fluids with the streamfunction and the VOF methods

Abstract We present an Eulerian free-surface flow solver for incompressible pseudoplastic and viscoelastic non-Newtonian fluids. The free-surface flow solver is based on the streamfunction flow formulation and the volume-of-fluid method. The streamfunction solver computes the vector potential of a solenoidal velocity field, which ensures by construction the mass conservation of the solution, and removes the pressure unknown. Pseudoplastic liquids are modelled with a Carreau model. The viscoelastic fluids are governed by differential constitutive models reformulated with the log-conformation approach, in order to preserve the positive-definiteness of the conformation tensor, and to circumvent the high Weissenberg number problem. The volume fraction of the fluid is advected with a geometric conservative unsplit scheme that preserves a sharp interface representation. For the sake of comparison, we also implemented an algebraic advection scheme for the liquid volume fraction. The proposed numerical method is tested by simulating the planar extrudate swell with the Carreau, Oldroyd-B and Giesekus constitutive models. The swell ratio of the extrudates are compared with the data available in the literature, as well as with numerical simulations performed with the open-source rheoTool toolbox in OpenFOAM®. While the simulations of the generalized Newtonian fluids achieved mesh independence for all the methods tested, the flow simulations of the viscoelastic fluids are more sensitive to mesh refinement and the choice of numerical scheme. Moreover, the simulations of Oldroyd-B fluid flows above a critical Weissenberg number are prone to artificial surface instabilities. These numerical artifacts are due to discretization errors within the Eulerian surface-capturing method. However, the numerical issues arise from the stress singularity at the die exit corner, and the unphysical predictions of the Oldroyd-B model in the skin layer of the extrudate after the die exit, where large extensional deformations occur.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, University of Porto
Nye blodsugere krydser grænsen


General information

State: Published
Organisations: National Veterinary Institute, Epidemiology, Bacteriology & Parasitology
Authors: Bødker, R. (Intern), Klitgaard, K. (Intern)
Pages: 34-37
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Main Research Area: Technical/natural sciences

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ISI indexed (2012): ISI indexed no
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Original language: English
Source: PublicationPreSubmission
Source-ID: 143861783
Publication: Communication › Journal article – Annual report year: 2018

Occultations from an Active Accretion Disk in a 72-day Detached Post-Algol System Detected by K2

Disks in binary systems can cause exotic eclipsing events. MWC 882 (BD -22 4376, EPIC 225300403) is such a disk-eclipsing system identified from observations during Campaign 11 of the K2 mission. We propose that MWC 882 is a post-Algol system with a B7 donor star of mass in a 72-day orbit around an A0 accreting star of mass . The disk around the accreting star occults the donor star once every orbit, inducing 19-day long, 7% deep eclipses identified by K2 and subsequently found in pre-discovery All-Sky Automated Survey and All Sky Automated Survey for Supernovae observations. We coordinated a campaign of photometric and spectroscopic observations for MWC 882 to measure the dynamical masses of the components and to monitor the system during eclipse. We found the photometric eclipse to be gray to ≈1%. We found that the primary star exhibits spectroscopic signatures of active accretion, and we observed gas absorption features from the disk during eclipse. We suggest that MWC 882 initially consisted of a ≈3.6 M⊙ donor star transferring mass via Roche lobe overflow to a ≈2.1 M⊙ accretor in a ≈7-day initial orbit. Through angular momentum conservation, the donor star is pushed outward during mass transfer to its current orbit of 72 days. The observed state of the system corresponds with the donor star having left the red giant branch ∼0.3 Myr ago, terminating active mass transfer. The present disk is expected to be short-lived (10^2 yr) without an active feeding mechanism, presenting a challenge to this model.

General information

State: Published
Organisations: National Space Institute, Harvard-Smithsonian Center for Astrophysics, Massachusetts Institute of Technology, Bishop's University, Hereford Arizona Observatory, Perth Exoplanet Survey Telescope, The Ohio State University, Unknown, planethunters.org, Australian National University, University of Texas, Isaac Newton Group of Telescopes, University of California at Santa Cruz, Carnegie Institution for Science, Thüringer Landessternwarte
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)
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Main Research Area: Technical/natural sciences
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Source-ID: 2392581119
Publication: Research - peer-review › Book chapter – Annual report year: 2018

Occurrence of Aspergillus section Flavi and aflatoxins in Brazilian rice: From field to market

The guarantee of the high quality of rice is of utmost importance because any toxic contaminant may affect consumer health, especially in countries such as Brazil where rice is part of the daily diet. A total of 187 rice samples, from field, processing and market from two different production systems, wetland from the state of Rio Grande do Sul, dryland, from the state of Maranhão and market samples from the state of São Paulo, were analyzed for fungi belonging to Aspergillus section Flavi and the presence of aflatoxins. Twenty-three soil samples from wetland and dryland were also analyzed. A total of 383 Aspergillus section Flavi strains were isolated from rice and soil samples. Using a polyphasic approach, with phenotypic (morphology and extrolite profiles) and molecular data (beta-tubulin gene sequences), five species were identified: A. flavus, A. caelatus, A. novoparasiticus, A. arachidicola and A. pseudocaelatus. This is the first report of these last three species from rice and rice plantation soil. Only seven (17%) of the A. flavus isolates produced type B aflatoxins, but 95% produced kojic acid and 69% cyclopiazonic acid. Less than 14% of the rice samples were contaminated with aflatoxins, but two of the market samples were well above the maximum tolerable limit (5 μg/kg), established by the Brazilian National Health Surveillance Agency.

General information
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Organisations: Department of Biotechnology and Biomedicine, Fungal Chemodiversity, Instituto de Tecnologia de Alimentos, Universidade Estadual de Londrina, Commonwealth Scientific and Industrial Research Organisation
Online bipartite matching with amortized $O(\log^2 n)$ replacements

In the online bipartite matching problem with replacements, all the vertices on one side of the bipartition are given, and the vertices on the other side arrive one by one with all their incident edges. The goal is to maintain a maximum matching while minimizing the number of changes (replacements) to the matching. We show that the greedy algorithm that always takes the shortest augmenting path from the newly inserted vertex (denoted the SAP protocol) uses at most amortized $<i>O</i>(<i>\log</i> <i>sup</i> 2 <i>n</i>/ <i>sup</i>) replacements per insertion, where $<i>n</i>$ is the total number of vertices inserted. This is the first analysis to achieve a polylogarithmic number of replacements for any replacement strategy, almost matching the $\Omega(\log n)$ lower bound. The previous best strategy known achieved amortized $EQUATION$ replacements [Bosek, Leniowski, Sankowski, Zych, FOCS 2014]. For the SAP protocol in particular, nothing better than the trivial $<i>O</i>(<i>n</i>/ <i>sup</i> 2 <i>n</i>/ <i>sup</i>) bound was known except in special cases. Our analysis immediately implies the same upper bound of $<i>O</i>(<i>log</i> <i>sup</i> 2 <i>n</i>/ <i>sup</i>) reassignments for the capacitated assignment problem, where each vertex on the static side of the bipartition is initialized with the capacity to serve a number of vertices. We also analyze the problem of minimizing the maximum server load. We show that if the final graph has maximum server load $<i>L</i>$, then the SAP protocol makes amortized $<i>O</i>(<i>min</i>(<i>L</i>/ <i>sup</i> 2 <i>n</i>/ <i>sup</i>) $<i>r</i>$ <i>n</i>/ <i>sup</i>) reassignments. We also show that this is close to tight because $\Omega(<i>min</i>(<i>L</i>/ <i>sup</i> 2 <i>n</i>/ <i>sup</i>) $<i>r</i>$ <i>n</i>/ <i>sup</i>) [EQUATION] reassignments can be necessary.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science , Algorithms and Logic , Technical University of Berlin, University of Copenhagen
Authors: Bernstein, A. (Ekstern), Holm, J. (Ekstern), Rotenberg, E. (Intern)
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Online Measurement of Oxygen-Dependent Enzyme Reaction Kinetics
As the application of biocatalysis to complement conventional chemical and catalytic approaches continues to expand, an increasing number of reactions involve poorly-water soluble substrates. At required industrial concentrations necessary for industrial implementation, this frequently leads to heterogeneous reaction mixtures composed of multiple phases. Such systems are challenging to sample and therefore it is problematic to measure representative component concentrations. In this work we demonstrate and validate an online method for following the progress of oxygen-dependent reactions through accurate measurement of the oxygen mass balance in the gas-phase of a reactor. The method was successfully validated and demonstrated using two model reactions: firstly the oxidation of glucose by glucose oxidase and secondly the Baeyer-Villiger oxidation of macrocyclic ketones to lactones. Initial reaction rate constants and time-course progressions calculated from the oxygen mass balance were validated against conventional online methods of dissolved oxygen tension and pH titration measurements. A feasible operating window as well as the sensitivity to dynamic changes of
reaction rates was established by controlling oxygen transfer via the operating parameters of the reactor. Such kinetic data forms the basis for reaction characterisation, from which bottlenecks may be made evident and directed improvement strategies can be identified and implemented.
On-Particle Rolling Circle Amplification-Based Core-Satellite Magnetic Superstructures for MicroRNA Detection

Benefiting from the specially tailored properties of the building blocks as well as of the scaffolds, DNA-assembled core-satellite superstructures have gained increasing interest in drug delivery, imaging, and biosensing. The load of satellites plays a vital role in core-satellite superstructures, and it determines the signal intensity in response to a biological/physical stimulation/actuation. Herein, for the first time, we utilize on-particle rolling circle amplification (RCA) to prepare rapidly responsive core-satellite magnetic superstructures with a high load of magnetic nanoparticle (MNP) satellites. Combined with duplex-specific nuclease-assisted target recycling, the proposed magnetic superstructures hold great promise in sensitive and rapid microRNA detection. The long single-stranded DNA produced by RCA serving as the scaffold of the core-satellite superstructure can be hydrolyzed by duplex-specific nuclease in the presence of target microRNA, resulting in a release of MNPs that can be quantified in an optomagnetic sensor. The proposed biosensor has a simple mix-separate-measure strategy. For let-7b detection, the proposed biosensor offers a wide linear detection range of approximately 5 orders of magnitude with a detection sensitivity of 1 fM. Moreover, it has the capability to discriminate single-nucleotide mismatches and to detect let-7b in cell extracts and serum, thus showing considerable potential for clinical applications.
On the application of ICP-MS techniques for measuring uranium and plutonium: a Nordic inter-laboratory comparison exercise

Inductively coupled plasma mass spectrometry (ICP-MS) techniques are widely used for determination of long-lived radionuclides and their isotopic ratios in the nuclear fields. Uranium (U) and Pu (Pu) isotopes have been determined by many researchers with ICP-MS due to its relatively high sensitivity and short measurement time. In this work, an inter-laboratory comparison exercise among the Nordic countries was performed, focusing on the measurement of U and Pu isotopes in certified reference materials by ICP-MS. The performance and characters of different ICP-MS instruments are evaluated and discussed in this paper.

General information
State: Accepted/In press
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Swedish Defence Research Agency, ALS Scandinavia, University of Helsinki, Norwegian University of Science and Technology, Norwegian University of Life Sciences, Geological Survey of Finland
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Scopus rating (2016): CiteScore 1.24 SJR 0.524 SNIP 0.824
Web of Science (2016): Indexed yes
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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.456 SNIP 0.831 CiteScore 1.09
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BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.503 SNIP 1.146 CiteScore 1.44
ISI indexed (2013): ISI indexed yes
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On the contribution of reclaimed wastewater irrigation to the potential exposure of humans to antibiotics, antibiotic resistant bacteria and antibiotic resistance genes - NEREUS COST Action ES1403 position paper

Antibiotic resistance (AR) is becoming a worldwide threat due to the increasing occurrence of antibiotic-resistant pathogenic bacterial strains. There is a general consensus about the potential implications of the use of antibiotics in livestock on the onset of antibiotic resistant bacteria (ARB), mainly through meat consumption. However, the ever-increasing use of reclaimed wastewater (RWW) in agriculture may also contribute significantly to the non-accounted exposure to antibiotics, ARB, and antibiotic resistance genes (ARGs). This position paper aims at evaluating the current knowledge concerning the occurrence of antibiotics, ARBs, and ARGs in edible parts of different common crops irrigated with RWW. We will discuss which regulations on the use of RWW may contribute to the minimization of the prevalence of these contaminants in crops, and provide recommendations on how to minimize the impact of these practices.

General information
State: Accepted/In press
Organisations: Department of Environmental Engineering, Environmental Chemistry, CSIC, Ministry of Agriculture and Natural Resources Cyprus, University of Cyprus, Universite de Reims Champagne-Ardenne, Aristotle University of Thessaloniki
Authors: Piña, B. (Ekstern), Bayona, J. M. (Ekstern), Christou, A. (Ekstern), Fatta-Kassinos, D. (Ekstern), Guillon, E. (Ekstern), Lambropoulou, D. (Ekstern), Michael, C. (Ekstern), Polesel, F. (Intern), Sayen, S. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences
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.
On the non-optimality of tree structures for heat conduction

This paper revisits topology optimization of heat conduction structures for minimum thermal compliance and minimum maximum temperature, respectively. For both optimization problems, volume-to-line and volume-to-point structures are optimized based on three material interpolation models describing different design spaces regarding the relation between material density and effective conductivity. The numerical results are backed up by analytical studies. Comparisons of results show that lamellar needle structures, rather than commonly seen tree structures, constitute the optimal topologies for heat conduction. This contradicts the usual hypothesis drawn from the observation of natural transferring systems and designs from numerous related studies. The conclusion still holds when a minimum length scale is imposed for both high and low conductive phases. Finally, the minimum thermal compliance problem and the min-max temperature problem are compared in terms of optimal microstructures. Lamellar microstructures with the normal to the material layers bisecting the gradients of direct and adjoint solutions are optimal for both types of problems. The variable thickness sheet model is optimal only for the self-adjoint minimum thermal compliance problem.
Heat conduction, Volume-to-point problem, Tree structures, Lamellar needle structures, Topology optimization
On the origin of brittle fracture of entangled polymer solutions and melts

A novel criterion for brittle fracture of entangled polymer liquids is presented: Crack initiation follows from rupture of primary C-C bonds, when the strain energy of an entanglement segment reaches the energy of the covalent bond. Thermal fluctuations lead to a short-time concentration of the strain energy on one C-C bond of the entanglement segment, and the chain ruptures. This limits the maximum achievable stretch of entanglement segments to a critical stretch of $f(c)$

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, The Danish Polymer Centre, Berlin Institute of Technology
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BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.1 SJR 1.414 SNIP 1.553
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.413 SNIP 1.573 CiteScore 2.67
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.692 SNIP 1.584 CiteScore 3.29
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.297 SNIP 1.583 CiteScore 2.96
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.347 SNIP 1.62 CiteScore 2.72
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.974 SNIP 1.824 CiteScore 3.34
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.821 SNIP 1.504
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.762 SNIP 1.526
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.909 SNIP 2.504
Web of Science (2008): Indexed yes
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)
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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
This article introduces an approach and framework for the quantification of the value of structural health monitoring (SHM) in the context of the structural risk and integrity management for systems. The quantification of the value of SHM builds upon the Bayesian decision and utility theory, which facilitates the assessment of the value of information associated with SHM. The principal approach for the quantification of the value of SHM is formulated by modeling the fundamental decision of performing SHM or not in conjunction with their expected utilities. The expected utilities are calculated accounting for the probabilistic performance of a system in conjunction with the associated structural integrity and risk management actions throughout the life cycle, the associated benefits, structural risks, and costs and when performing SHM, the SHM information, their probabilistic outcomes, and costs. The calculation of the expected utilities necessitates a comprehensive and rigorous modeling, which is introduced close to the original formulations and for which analysis characteristics and simplifications are described and derived. The framework provides the basis for the optimization of the structural risk and integrity management based on utility gains including or excluding SHM and inspection information. Studies of fatigue deteriorating structural systems and their characteristics (1) provide decision support for the performance of SHM, (2) explicate the influence of the structural component and system characteristics on the value of SHM, and (3) demonstrate how an integral optimization of SHM and inspection strategies for an efficient structural risk and integrity management can be performed.
Ontogenetic development of attack behaviour by turbot larvae when exposed to copepod prey

Identification of fish larval behavioural traits permitting capture of specific live prey sizes is an important part of optimizing production of marine larvae. We investigated the capture success of turbot larvae (Scophthalmus maximus) at two development stages, 8 and 10 days post-hatch (DPH), when offered small nauplii (129–202 μm), large nauplii (222–278 μm) and copepodites (342–542 μm), of the calanoid copepod Acartia tonsa. At 8 DPH, turbot larvae had the highest capture success (67%) when offered small nauplii, with a lower capture success of large nauplii (27%) but totally...
lacked the capabilities to capture copepodites. At DPH 10, the larvae increased the capture success of large nauplii (47%) and achieved a few successful attacks on copepodites. Energetically, large nauplii were the most beneficial at both larval development stages. The swimming kinematics of the period prior to a strike by the larva on the copepod was examined, and the approach pattern of the larva was identified as a controlling mechanism for their strike distance, with the initial approach speed of larva at DPH 10 being significantly less than at DPH 8. In all successful attacks, the strike distance was less than 1.17 mm and was significantly lower than unsuccessful attacks. Since the approach pattern of the larva is linked to its capture success, it could be used as the basis for a feeding scheme based on the swimming performance of individual batches of turbot larvae.

**General information**
State: Accepted/In press
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Roskilde University, National Taiwan Ocean University
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Publication date: 2018
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Scopus rating (2016): CiteScore 1.23 SJR 0.555 SNIP 0.926
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.79 SNIP 1.1 CiteScore 1.37
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.674 SNIP 0.943 CiteScore 1.23
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.815 SNIP 0.984 CiteScore 1.43
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.77 SNIP 0.958 CiteScore 1.29
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.725 SNIP 0.964 CiteScore 1.37
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.645 SNIP 0.936
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.637 SNIP 0.904
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.64 SNIP 0.792
Scopus rating (2007): SJR 0.664 SNIP 0.9
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.648 SNIP 0.976
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.536 SNIP 0.802
Opening the black box of energy modelling: Strategies and lessons learned

The global energy system is undergoing a major transition, and in energy planning and decision-making across governments, industry and academia, models play a crucial role. Because of their policy relevance and contested nature, the transparency and open availability of energy models and data are of particular importance. Here we provide a practical how-to guide based on the collective experience of members of the Open Energy Modelling Initiative (Openmod). We discuss key steps to consider when opening code and data, including determining intellectual property ownership, choosing a licence and appropriate modelling languages, distributing code and data, and providing support and building communities. After illustrating these decisions with examples and lessons learned from the community, we conclude that even though individual researchers' choices are important, institutional changes are still also necessary for more openness and transparency in energy research.

General information
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Organisations: Department of Management Engineering, Systems Analysis, International Institute for Applied Systems Analysis, Forschungs Zentrum Jülich GmbH, Imperial College London, Energy Consultant, German Aerospace Center, KTH - Royal Institute of Technology, ETH Zurich, University of Basel, Mercator Research Institute on Global Commons and Climate Change (MCC), University of Cambridge, Frankfurt University, University of Groningen, University of Flensburg, Reiner-Lemoine-Institut gGmbH, German Institute for Economic Research, Potsdam Institute for Climate Impact Research, DLR Institute of Networked Energy Systems, Wuppertal Institute for Climate, Environment and Energy
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Scopus rating (2016): CiteScore 1.9 SJR 0.836 SNIP 0.904
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Operationelle udlederkrav for regnbetingede overløb fra fællessystemer til vandløb

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Authors: Vezzaro, L. (Intern), Brudler, S. (Intern), McKnight, U. S. (Intern), Rasmussen, J. J. (Ekstern), Mikkelsen, P. S. (Intern), Arnbjerg-Nielsen, K. (Intern)
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Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Jepsen, N. (Intern), Koed, A. (Intern), Sivebæk, F. (Intern)
Publication date: 2018

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Links:
http://www.fiskepleje.dk/nyheder/2018/01/laksebestanden-i-ribe-aa-2017?id=f46ab177-9c54-4484-a74e-fae4981581d2&utm_source=newletter&utm_media@mail&utm_campaign=2018_02_01_Nyhedsbrev
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Authors: Jepsen, N. (Intern), Koed, A. (Intern), Sivebæk, F. (Intern)
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Publication information
Optical technologies applied alongside on-site and remote approaches for climate gas emission quantification at a wastewater treatment plant

Plant-integrated and on-site gas emissions were quantified from a Swedish wastewater treatment plant by applying several optical analytical techniques and measurement methods. Plant-integrated CH4 emission rates, measured using mobile ground-based remote sensing methods, varied between 28.5 and 33.5 kg CH4 h⁻¹, corresponding to an average emission factor of 5.9% as kg CH4 (kg CH4production)⁻¹, whereas N2O emissions varied between 4.0 and 6.4 kg h⁻¹, corresponding to an average emission factor of 1.5% as kg N2O-N (kg TN influent)⁻¹. Plant-integrated NH3 emissions were around 0.4 kg h⁻¹, corresponding to an average emission factor of 0.11% as kg NH3-N (kg TN removed)⁻¹. On-site emission measurements showed that the largest proportions of CH4 (70%) and NH3 (66%) were emitted from the sludge treatment line (mainly biosolid stockpiles and the thickening and dewatering units), while most of the N2O (82%) was emitted from nitrifying trickling filters. In addition to being the most important CH4 source, stockpiles of biosolids exhibited different emissions when the sludge digesters were operated in series compared to in parallel, thus slightly increasing substrate retention time in the digesters. Lower CH4 emissions and generally higher N2O and NH3 emissions were observed when the digesters were operated in series. Loading biosolids onto trucks for off-site treatment generally resulted in higher CH4, N2O, and NH3 emissions from the biosolid stockpiles. On-site CH4 and N2O emission quantifications were approximately two-thirds of the plant-integrated emission quantifications, which may be explained by the different timeframes of the approaches and that not all emission sources were identified during on-site investigation. Off-site gas emission quantifications, using ground-based remote sensing methods, thus seem to provide more comprehensive total plant emissions rates, whereas on-site measurements provide insights into emissions from individual sources.
Optimal design of robust piezoelectric microgrippers undergoing large displacements

Topology optimization combined with optimal design of electrodes is used to design piezoelectric microgrippers. Fabrication at micro-scale presents an important challenge: due to non-symmetrical lamination of the structures, out-of-plane bending spoils the behaviour of the grippers. Suppression of this out-of-plane deformation is the main novelty introduced in this work. In addition, a robust approach is used to control length scale in the whole domain and to reduce sensitivity of the design to small fabrication errors. Geometrically non-linear modelling is used for the in-plane deformations whereas out-of-plane motions are modelled by a linear, un-coupled plate model to save computational time. Model and resulting designs are validated by subsequent 3D geometrically non-linear modelling.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, Universidad de Castilla-La Mancha
Authors: Ruiz, D. (Ekstern), Sigmund, O. (Intern)
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Scopus rating (2016): CiteScore 3.14
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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
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.

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Web of Science (2016): Indexed yes
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Scopus rating (2015): SJR 1.212 SNIP 1.697 CiteScore 2.67
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.
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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
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Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.643 SNIP 0.839
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.778 SNIP 0.797
Scopus rating (2002): SJR 0.577 SNIP 0.775
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.376 SNIP 0.578
Scopus rating (2000): SJR 0.352 SNIP 0.515
Scopus rating (1999): SJR 0.182 SNIP 0.45
Optimizing targeted vaccination across cyber-physical networks: an empirically based mathematical simulation study

Targeted vaccination, whether to minimize the forward transmission of infectious diseases or their clinical impact, is one of the 'holy grails' of modern infectious disease outbreak response, yet it is difficult to achieve in practice due to the challenge of identifying optimal targets in real time. If interruption of disease transmission is the goal, targeting requires knowledge of underlying person-to-person contact networks. Digital communication networks may reflect not only virtual but also physical interactions that could result in disease transmission, but the precise overlap between these cyber and physical networks has never been empirically explored in real-life settings. Here, we study the digital communication activity of more than 500 individuals along with their person-to-person contacts at a 5-min temporal resolution. We then simulate different disease transmission scenarios on the person-to-person physical contact network to determine whether cyber communication networks can be harnessed to advance the goal of targeted vaccination for a disease spreading on the network of physical proximity. We show that individuals selected on the basis of their closeness centrality within cyber networks (what we call 'cyber-directed vaccination') can enhance vaccination campaigns against diseases with short-range (but not full-range) modes of transmission.
Organic carbon recovery modeling for a rotating belt filter and its impact assessment on a plant-wide scale

In this study, we perform a systematic plant-wide assessment of the organic carbon recovery concept on wastewater treatment plants by an advanced cellulose recovery enabling technology called rotating belt filter (RBF). To this end, first, an empirical model is developed to describe organic carbon recovery by the RBF, which is then used for the plant-wide performance evaluation to further understand the impact of organic carbon recovery by framing four different scenarios. The key features of the scenario analysis are: (i) an RBF operating with thick mat increases methane production (around 10%) and brings down aeration energy demand (by 8%) compared to the primary clarifier (PC) and, (ii) the sludge retention time (SRT) of the activated sludge (AS) tank increases by 55% when an RBF runs with thick mat and therefore promotes higher nitrification rate, (iii) organic carbon recovery by the RBF does not increase the greenhouse gas (N2O+N2O) emission. Further sensitivity analysis indicates that the impact of the organic carbon recovery concept depends on the wastewater characteristics, especially the cellulose content and its biodegradability. Overall, the organic carbon recovery technology can be used to provide plant specific improvements achieved by maximizing organic carbon recovery in the form of methane gas or enhancing nitrogen removal depending on the treatment plant operation objectives and priorities.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering Centre, Trojan Technologies
Authors: Behera, C. R. (Intern), Santoro, D. (Ekstern), Gernaey, K. V. (Intern), Sin, G. (Intern)
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Scopus rating (2016): CiteScore 3.16
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Web of Science (2015): Indexed yes
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Scopus rating (2014): CiteScore 2.72
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.03
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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 organizational LCA’, using ISO/TS 14072 as a backbone; moreover, the European Commission launched a guide for the organisation environmental footprint.

General information

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Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, Technische Universität Berlin
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Chapter: 20
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Overarching sustainability objectives overcome incompatible directions in the Common Fisheries Policy

The lack of clarity in the objectives of the Common Fisheries Policy (CFP) must be addressed to create a more efficient balance across diverse ecological, economic and social dimensions. Particularly economic and social objectives present at an overarching level must be made explicit and addressed in lower level management measures, in order to link them to biological objectives and allow policy to build a balance across types of objectives. Selecting clear objectives is essential, particularly for policy impact assessment. The aim of this paper is to demonstrate how more specific high level objectives to managing fisheries can be derived from stakeholders. The paper first reviews the definition of objectives, from a historical and conceptual perspective. Secondly, it discusses the issues of manageability and acceptability, and finally describes an articulation of the high level objectives derived from extensive stakeholder consultations at European and regional level. The results from workshops at the European level to identify objectives were further examined at regional level for the Baltic and North Seas in additional individual consultations. The German case addresses two seas (Baltic and North Seas), has a complex governance structure (due to federalism) and significant roles for the three types of actors (industry, government and environmental NGOs). The analysis suggests that establishing higher level sustainability objectives within the CFP can help diverse interest groups to develop a consensus on management actions to meet complex social goals.
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.

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Oxide Modules

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Authors: Le, T. H. (Intern), Van Nong, N. (Intern), Pryds, N. (Intern)
Pages: 719-734
Ozonation control and effects of ozone on water quality in recirculating aquaculture systems

To address the undesired effect of chemotherapeutants in aquaculture, ozone has been suggested as an alternative to improve water quality. To ensure safe and robust treatment, it is vital to define the ozone demand and ozone kinetics of the specific water matrix to avoid ozone overdose. Different ozone dosages were applied to water in freshwater recirculating aquaculture systems (RAS). Experiments were performed to investigate ozone kinetics and demand, and to evaluate the effects on the water quality, particularly in relation to fluorescent organic matter. This study aimed at predicting a suitable ozone dosage for water treatment based on daily ozone demand via laboratory studies. These ozone dosages will be eventually applied and maintained at these levels in pilot-scale RAS to verify predictions. Selected water quality parameters were measured, including natural fluorescence and organic compound concentration changes during ozonation. Ozone reactions were described by first order kinetics. Organic matter, assessed as chemical oxygen demand and fluorescence, decreased by 25% (low O3), 30% (middle O3) and 53% (high O3), while water transmittance improved by 15% over an 8-day period. No fish mortality was observed. Overall, this study confirms that ozone can improve RAS water quality, provides a better understanding of the ozone decay mechanisms that can be used to define further safe ozone treatment margins, and that fluorescence could be used as a monitoring tool to control ozone. This study might be used as a tool to design ozone systems for full-scale RAS by analysing water sample from the specific RAS in the laboratory.

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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
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.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Synthetic Biology, Department of Biotechnology and Biomedicine
Authors: Klausen, M. S. (Intern), Sommer, M. O. A. (Intern)
Pages: 3-14
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Patient-specific estimation of detailed cochlear shape from clinical CT images

A personalized estimation of the cochlear shape can be used to create computational anatomical models to aid cochlear implant (CI) surgery and CI audio processor programming ultimately resulting in improved hearing restoration. The purpose of this work is to develop and test a method for estimation of the detailed patient-specific cochlear shape from CT images. From a collection of temporal bone CT images, we build a cochlear statistical deformation model (SDM), which is a description of how a human cochlea deforms to represent the observed anatomical variability. The model is used for regularization of a non-rigid image registration procedure between a patient CT scan and a CT image, allowing us to estimate the detailed patient-specific cochlear shape. We test the accuracy and precision of the predicted cochlear shape using both CT and CT images. The evaluation is based on classic generic metrics, where we achieve competitive accuracy with the state-of-the-art methods for the task. Additionally, we expand the evaluation with a few anatomically specific scores. The paper presents the process of building and using the SDM of the cochlea. Compared to current best practice, we demonstrate competitive performance and some useful properties of our method.

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Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, University of Bern, Alma IT Systems, Pompeu Fabra University, Technical University of Munich, Scanco Medical AG
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Web of Science (2017): Indexed Yes
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Scopus rating (2016): CiteScore 1.76 SJR 0.522 SNIP 1.291
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.481 SNIP 1.108 CiteScore 1.7
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.486 SNIP 1.301 CiteScore 1.79
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.551 SNIP 1.217 CiteScore 1.85
BFI (2012): BFI-level 1
Performance and stability of (ZrO$_2$)$_{0.89}$(Y$_2$O$_3$)$_{0.01}$(Sc$_2$O$_3$)$_{0.10}$LaCr$_{0.85}$Cu$_{0.10}$Ni$_{0.05}$O$_{3-\delta}$ oxygen transport membranes under conditions relevant for oxy-fuel combustion

Self-standing, planar dual-phase oxygen transport membranes consisting of 70 vol.% (ZrO$_2$)$_{0.89}$(Y$_2$O$_3$)$_{0.01}$(Sc$_2$O$_3$)$_{0.10}$ (10Sc1YSZ) and 30 vol.% LaCr$_{0.85}$Cu$_{0.10}$Ni$_{0.05}$O$_{3-\delta}$ (LCCN) were successfully developed and tested. The stability of the composite membrane was studied in simulated oxy-fuel power plant flue-gas conditions (CO$_2$, SO$_2$, H$_2$O). The analyses of the exposed composites by X-ray diffraction (XRD), X-ray fluorescence (XRF), attenuated total reflection Fourier transform infrared spectroscopy (ATR-FTIR) and Raman spectroscopy revealed an excellent stability. Oxygen permeation fluxes were measured across 1000 μm thick and 110 μm thick self-supported 10Sc1YSZ-LCCN (70-30 vol.%) membranes from 700 °C to 950 °C using air as the feed gas and N$_2$ or CO$_2$ as the sweep gas. The 110 μm thick membrane, prepared by tape-casting and lamination processes, showed oxygen fluxes up to 1.02 mLN cm$^{-2}$ min$^{-1}$ (950 °C, air/N$_2$). Both membranes demonstrated stable performances over long-term stability tests (250-300 h) performed at 850 °C using pure CO$_2$ as the sweep gas.

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Scopus rating (2016): CiteScore 6.13 SJR 2.062 SNIP 1.72
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2 SNIP 1.771 CiteScore 5.89
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.433 SNIP 1.935 CiteScore 5.42
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.452 SNIP 2.001 CiteScore 5.38
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Web of Science (2013): Indexed yes
Persistence of antimicrobial resistance genes from sows to finisher pigs

Antimicrobial resistance in pigs has been under scrutiny for many years. However, many questions remain unanswered, including whether the initial antimicrobial resistance level of a pig will influence the antimicrobial resistance found at slaughter. Faecal samples from finishers pigs from 681 farms and from sows from 82 farms were collected, and levels of seven antimicrobial resistance genes, ermB, ermF, sulI, sulII, tet(M), tet(O), and tet(W), were quantified by high-capacity qPCR. There were 40 pairs of observations where the finishers were born in the farms of the sows. The objective of this study was to evaluate whether the levels of AMR genes found in finisher pigs at slaughter were associated with the levels in the farm where the pigs were born, and whether the levels of the AMR genes were equal in the sow and finisher pig populations. We found a significant positive correlation between the levels of AMR genes found in finisher pigs at slaughter were associated with the levels in the farm where the pigs were born, and whether the levels of the AMR genes were equal in the sow and finisher pig populations. We found a significant positive correlation between the levels of AMR genes found in finisher pigs at slaughter were associated with the levels in the farm where the pigs were born, and whether the levels of the AMR genes were equal in the sow and finisher pig populations. We found a significant positive correlation between the levels of AMR genes found in finisher pigs at slaughter were associated with the levels in the farm where the pigs were born, and whether the levels of the AMR genes were equal in the sow and finisher pig populations. We found a significant positive correlation between the levels of AMR genes found in finisher pigs at slaughter were associated with the levels in the farm where the pigs were born, and whether the levels of the AMR genes were equal in the sow and finisher pig populations.

General information

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Organisations: National Veterinary Institute, Epidemiology, Bacteriology & Parasitology
Authors: Birkegård, A. C. (Intern), Halasa, T. (Intern), Folkesson, A. (Intern), Clasen, J. (Intern), Græsbøll, K. (Intern), Toft, N. (Intern)
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Publication date: 2018
Main Research Area: Technical/natural sciences

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Pesticide use in the wheat-maize double cropping systems of the North China Plain: Assessment, field study, and implications

In the North China Plain (NCP), rising inputs of pesticides have intensified the environmental impact of farming activities in recent decades by contributing to surface water and groundwater contamination. In response to this, the Chinese government imposed stricter regulations on pesticide approval and application, and better monitoring strategies are being developed. However, sufficient and well-directed research on the accumulation and impact of different pesticides is needed for informed decision-making. In this study, current pesticide use, and recent and current research on water contamination by pesticides in the NCP are reviewed and assessed. Additionally, a small-scale field study was performed to determine if residuals from currently-used pesticides in the NCP can be detected in surface water, and in connected shallow groundwater. The contaminants of interest were commonly used pesticides on winter wheat-summer maize fields (the dominant cropping system in the NCP), such as 2,4-D and atrazine. Sampling took place in May, July, and October 2013; and March 2014. Results from our literature research showed that sampling is biased towards surface water monitoring. Furthermore, most studies focus on organic chlorinated pesticides (OCPs) like the isomers of dichlorodiphenyltrichloroethane (DDT) and hexachlorocyclohexane (HCH), which were banned in China in 1983. However, currently-used herbicides like 2,4-D and atrazine were detected in river water and groundwater in all samplings of our field study. The highest concentrations of 2,4-D and atrazine were found in the river water, ranging up to 3.00 and 0.96μg/L, respectively. The monitoring of banned compounds was found to be important because several studies indicate that they are still accumulating in the environment and/or are still illegally in use. However, supported by our own data, we find that the monitoring in groundwater and surface water of currently permitted pesticides in China needs equal attention, and should therefore be increased.

General information
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Organisations: Department of Environmental Engineering, Water Resources Engineering, Geological Survey of Denmark and Greenland, Chinese Academy of Sciences
Authors: Brauns, B. (Intern), Jakobsen, R. (Ekstern), Song, X. (Ekstern), Bjerg, P. L. (Intern)
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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
Phospholipids composition and molecular species of large yellow croaker (Pseudosciaena crocea) roe

The research aims to study phospholipids (PL) classes and molecular species of large yellow croaker (Pseudosciaena crocea) roe. Both gas chromatography-mass spectrometry (GC-MS) and high-performance liquid chromatography with evaporative light-scattering detection (HPLC-ELSD) were utilized to analyze and identify the PLs fatty acids compositions and classes in the P. crocea roe, respectively. Docosahexaenoic acid (DHA, C22:6) and eicosapentaenoic acid (EPA, C20:5) account for 35.0% and 6.9% of the PLs. Phosphatidylcholines (PC), lysophosphatidylcholines (LPC), phosphatidylethanolamines (PE) and phosphatidylinositol (PI) account for 76.36±0.62%, 12.30±0.55%, 9.12±0.02% and 1.09±0.01% of the total PLs, respectively. In addition, the PLs molecular species were characterized by ultra-high performance liquid chromatography-electrospray ionization-quadruple-time of flight mass spectrometry (UPLC-Q-TOF-MS). A total of 92 PLs molecular species was identified, including 49 PCs, 13 PEs, 10 phosphatidic acids (PAs), 13 phosphatidylinositol (Ps), 3 phosphatidylglycerols (PGs), 2 sphingomyelins (SMs), and 2 PIs of the P. crocea roe.

General information
State: Published
Organisations: National Food Institute, Research Group for Bioactives – Analysis and Application, Fuzhou University, Technical University of Denmark
Physico-mechanical and structural properties of eggshell membrane gelatin-chitosan blend edible films

This study investigated the physico-mechanical and structural properties of composite edible films based on eggshell membrane gelatin (G) and chitosan (Ch) (75G:25Ch, 50G:50Ch, 25G:75Ch). The results demonstrated that the addition of Ch increased elongation at break significantly (p<0.05), but resulted in no significant change in tensile strength (TS) using 75G:25Ch, 50G:50Ch mixtures in comparison with gelatin-based film. The water solubility and water vapor permeability of the 50G:50Ch film decreased significantly compared to plain films (100G:0Ch and 0G:100Ch) and other composite films (p<0.05). Fourier transform infrared spectroscopy evaluation of structural properties showed that both polymers are totally miscible. Scanning electron microscopy was used to study the morphology of the composite films; it revealed a homogenous and compact structure in 75G:25Ch and 50G:50 Ch. Also, the chemical interactions introduced by the addition of chitosan to eggshell membrane gelatin as new resources could improve the films’ functional properties.

General information

State: Published
Organisations: National Food Institute, Research Group for Food Production Engineering, Kermanshah University of Medical Sciences, Shahid Beheshti University of Medical Sciences
Authors: Mohammadi, R. (Ekstern), Mohammadifar, M. A. (Intern), Rouhi, M. (Ekstern), Kariminejad, M. (Ekstern), Mortazavian, A. M. (Ekstern), Sadeghi, E. (Ekstern), Hasanvand, S. (Ekstern)
Pages: 406-412
Publication date: 2018
Main Research Area: Technical/natural sciences
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.

General information
State: Published
Organisations: National Food Institute, Research Group for Nano-Bio Science, Czech Academy of Sciences, Ghent University
Authors: Lišková, J. (Ekstern), Douglas, T. E. (Ekstern), Wijnants, R. (Ekstern), Samal, S. K. (Ekstern), Mendes, A. C. L. (Intern), Chronakis, I. S. (Intern), Bačáková, L. (Ekstern), Skirtach, A. G. (Ekstern)
Number of pages: 4
Pages: 186-189
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Letters
Volume: 214
ISSN (Print): 0167-577X
Ratings:
BFI (2018): BFI-level 1
Phytoplankton defence mechanisms: traits and trade-offs: Defensive traits and trade-offs

In aquatic ecosystems, unicellular algae form the basis of the food webs. Theoretical and experimental studies have demonstrated that one of the mechanisms that maintain high diversity of phytoplankton is through predation and the consequent evolution of defence mechanisms. Proposed defence mechanisms in phytoplankton are diverse and include physiological (e.g. toxicity, bioluminescence), morphological (e.g. silica shell, colony formation), and behavioural (e.g. escape response) traits. However, the function of many of the proposed defence mechanisms remains elusive, and the costs and benefits (trade-offs) are often unquantified or undocumented. Here, we provide an overview of suggested
phytoplankton defensive traits and review their experimental support. Wherever possible we quantify the trade-offs from experimental evidence and theoretical considerations. In many instances, experimental evidence suggests that defences are costless. However, we argue that (i) some costs materialize only under natural conditions, for example, sinking losses, or dependency on the availability of specific nutrients, and (ii) other costs become evident only under resource-deficient conditions where a rivalry for limiting resources between growth and defence occurs. Based on these findings, we suggest two strategies for quantifying the costs of defence mechanisms in phytoplankton: (i) for the evaluation of defence costs that are realized under natural conditions, a mechanistic understanding of the hypothesized component processes is required; and (ii) the magnitude of the costs (i.e. growth reduction) must be assessed under conditions of resource limitation.

**General information**

State: Accepted/In press
Organisations: National Institute of Aquatic Resources, Centre for Ocean Life
Authors: Pančić, M. (Intern), Kiørboe, T. (Intern)
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Biological Reviews
ISSN (Print): 1464-7931
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.94 SJR 4.345 SNIP 3.251
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 6.417 SNIP 3.716 CiteScore 10.09
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 6.032 SNIP 3.828 CiteScore 9.82
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 5.783 SNIP 4.135 CiteScore 11.08
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 4.928 SNIP 3.666 CiteScore 9.47
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 4.568 SNIP 2.959 CiteScore 8.14
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 4.338 SNIP 3.299
BFI (2009): BFI-level 2
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 5.267 SNIP 3.868
Scopus rating (2006): SJR 3.598 SNIP 2.974
Scopus rating (2005): SJR 3.194 SNIP 2.455
Scopus rating (2004): SJR 3.244 SNIP 3.241
Scopus rating (2003): SJR 4.008 SNIP 3.029
Scopus rating (2001): SJR 3.661 SNIP 3.259
Scopus rating (2000): SJR 3.709 SNIP 2.824
Phytoscreening for vinyl chloride in groundwater discharging to a stream

This study applies an optimized phytoscreening method to locate a chlorinated ethene plume discharging into a stream. To evaluate the conditions most suitable for successful phytoscreening, trees along the stream bank were monitored through different seasons with different environmental conditions and hence different uptake/loss scenarios. Vinyl chloride (VC) as well as cis-dichloroethylene (cis-DCE), trichloroethylene (TCE), and tetrachloroethylene (PCE) were detected in the trees, documenting that phytoscreening is a viable method to locate chlorinated ethene plumes, including VC, discharging to streams. The results reveal, that phytoscreening for VC is more sensitive to environmental conditions affecting transpiration than for the other chlorinated ethenes detected. Conditions leading to higher groundwater uptake by transpiration than contaminant loss by diffusion from the tree trunks are optimal (e.g., low relative humidity, plentiful hours of sunshine and an intermediate air temperature). Additionally, low precipitation prior to the sampling event is beneficial, as uptake of infiltrating precipitation dilutes the concentration in the trees. All chlorinated ethenes were sensitive to dilution by clean precipitation and in some months, this resulted in no detection of contaminants in the trees at all. Under optimal environmental conditions the tree cores allowed detection of chlorinated solvents and their metabolites in the underlying groundwater. Whereas, for less ideal conditions there was a risk of no detection of the more volatile VC. This study is promising for the future applicability of phytoscreening to locate shallow groundwater contamination with the degradation products of chlorinated solvents.

General information
State: Accepted/In press
Organisations: Department of Environmental Engineering, Water Resource Engineering, Environmental Chemistry
Authors: Ottosen, C. B. (Intern), Rønde, V. K. (Intern), Trapp, S. (Intern), Bjerg, P. L. (Intern), Broholm, M. M. (Intern)
Number of pages: 9
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Ground Water Monitoring & Remediation
ISSN (Print): 1069-3629
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.35 SJR 0.882 SNIP 1.144
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.37 SNIP 0.451 CiteScore 0.68
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.648 SNIP 0.792 CiteScore 1.03
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.775 SNIP 0.693 CiteScore 1.11
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.849 SNIP 1.02 CiteScore 1.24
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.838 SNIP 0.9 CiteScore 0.97
ISI indexed (2011): ISI indexed yes
Pike stocking for lake restoration

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Skov, C. (Intern)
Number of pages: 402
Pages: 269-288
Publication date: 2018

Host publication information
Title of host publication: Biology and Ecology of Pike
Publisher: CRC Press
Editors: Skov, C., Nilsson, P. A.
ISBN (Print): 9781482262902
Chapter: 11
Main Research Area: Technical/natural sciences
Publication: Research - peer-review › Book chapter – Annual report year: 2018

Plasmon-exciton polaritons in two-dimensional semiconductor/metal interfaces
The realization and control of polaritons is of paramount importance in the prospect of novel photonic devices. Here, we investigate the emergence of plasmon-exciton polaritons in hybrid structures consisting of a two-dimensional transition-metal dichalcogenide (TMDC) deposited onto a metal substrate or coating a metallic thin film. We determine the polaritonic spectrum and show that, in the former case, the addition of a top dielectric layer and, in the latter case, the thickness of the metal film can be used to tune and promote plasmon-exciton interactions well within the strong-coupling regime. Our results demonstrate that Rabi splittings exceeding 100 meV can readily be achieved in planar dielectric/TMDC/metal structures under ambient conditions. We thus believe that this Rapid Communication provides a simple and intuitive picture to tailor strong coupling in plaxcitonics with potential applications for engineering compact photonic devices with tunable optical properties.

General information
State: Published
Organisations: Center for Nanostructured Graphene, Department of Photonics Engineering, Structured Electromagnetic Materials, Department of Micro- and Nanotechnology, Technical University of Denmark
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.
Population genetics of pike

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Marine Living Resources
Authors: Wennerström, L. (Ekstern), Bekkevold, D. (Intern), Laikre, L. (Ekstern)
Number of pages: 402
Pages: 164-185
Publication date: 2018

Host publication information
Title of host publication: Biology and Ecology of Pike
Publisher: CRC Press
Editors: Skov, C., Nilsson, P. A.
ISBN (Print): 9781482262902
Chapter: 7
Main Research Area: Technical/natural sciences
Publication: Research - peer-review › Book chapter – Annual report year: 2018
Porosity and density measurements of sodium acetate trihydrate for thermal energy storage

Sodium acetate trihydrate (SAT) can be used as phase change material in latent heat storage with or without utilizing supercooling. The change of density between liquid to solid state leads to formation of cavities inside the bulk SAT during solidification. Samples of SAT which had solidified from supercooled state at ambient temperature and samples which had solidified with a minimal degree supercooled were investigated. The temperature dependent densities of liquid and the two types of solid SAT were measured with a density meter and a thermomechanical analyzer. The cavities formed inside samples of solid SAT, which had solidified after a high or minimal degree of supercooling, were investigated by X-ray scanning and computer tomography. The apparent density of solid SAT depended on whether it solidified from a supercooled state or not. A sample which solidified from a supercooled liquid contained 15% cavities and had a density of 1.26 g/cm$^3$ at 25 °C. SAT which had solidified with minimal supercooling contained 9% cavities and had a density of 1.34 g/cm$^3$ at 25 °C. The apparent densities of the solid SAT samples were significant lower than the value of solid SAT reported in literature of 1.45 g/cm$^3$. The density of liquid and supercooled SAT with extra water was also determined at different temperatures.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Building Energy, Department of Physics, Neutrons and X-rays for Materials Physics, Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, University of Zaragoza, Technical University of Denmark, Graz University of Technology
Pages: 707-714
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Applied Thermal Engineering
Volume: 131
ISSN (Print): 1359-4311
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Potassium Capture by Kaolin, Part 1: KOH

The reaction of gaseous KOH with kaolin and mullite powder under suspension-fired conditions was studied by entrained flow reactor (EFR) experiments. A water-based slurry containing kaolin/mullite and KOH was fed into the reactor and the reacted solid samples were analyzed to quantify the K-capture level. The effect of reaction temperature, K-concentration in the flue gas, and, thereby, molar ratio of K/(Al+Si) in reactants, gas residence time, and solid particle size on K-capture reaction was systematically investigated. Corresponding equilibrium calculations were conducted with FactSage 7.0. The experimental results showed that kaolin reached almost full conversion to K-aluminosilicates under suspension-fired conditions at 1100–1450 °C for a residence time of 1.2 s and a particle size of D_{50} = 5.47 μm. The amount of potassium captured by kaolin generally followed the equilibrium at temperatures above 1100°C, but lower conversion was observed at 800 and 900 °C. Crystalline kaliophilite (KAlSiO₄) was formed at higher temperatures (1300 and 1450 °C), whereas, amorphous K-aluminosilicate was formed at lower temperatures. Coarse kaolin (D_{50} = 13.48 μm) captured KOH less effectively than normal (D_{50} = 5.47 μm) and fine (D_{50} = 3.51 μm) kaolin powder at 1100 and 1300 °C. The difference was less significant at 900°C. Mullite generated from kaolin captured KOH less effectively than kaolin at temperatures below 1100 °C. However, at 1300 and 1450 °C, the amount of potassium captured by mullite became comparable to that of kaolin.

General information
State: Accepted/In press
Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre, Ørsted Bioenergy & Thermal Power
Number of pages: 12
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Energy and Fuels
ISSN (Print): 0887-0624
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.49
Predictive assessment of models for dynamic functional connectivity

In neuroimaging, it has become evident that models of dynamic functional connectivity (dFC), which characterize how intrinsic brain organization changes over time, can provide a more detailed representation of brain function than traditional static analyses. Many dFC models in the literature represent functional brain networks as a meta-stable process with a discrete number of states; however, there is a lack of consensus on how to perform model selection and learn the number of states, as well as a lack of understanding of how different modeling assumptions influence the estimated state dynamics. To address these issues, we consider a predictive likelihood approach to model assessment, where models are evaluated based on their predictive performance on held-out test data. Examining several prominent models of dFC (in their probabilistic formulations) we demonstrate our framework on synthetic data, and apply it on two real-world examples: a face recognition EEG experiment and resting-state fMRI. Our results evidence that both EEG and fMRI are better characterized using dynamic modeling approaches than by their static counterparts, but we also demonstrate that one must be cautious when interpreting dFC because parameter settings and modeling assumptions, such as window lengths and emission models, can have a large impact on the estimated states and consequently on the interpretation of the brain dynamics.
Preface: Introduction to pike and this book

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, Lund University
Authors: Nilsson, P. A. (Ekstern), Skov, C. (Intern)
Number of pages: 402
Pages: 1-9
Publication date: 2018

Host publication information
Title of host publication: Biology and Ecology of Pike
Publisher: CRC Press
Editors: Skov, C., Nilsson, P. A.
ISBN (Print): 9781482262902
Chapter: 1
Main Research Area: Technical/natural sciences
Publication: Research - peer-review > Book chapter – Annual report year: 2018

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 (2018): BFI-level 1
Primary genotoxicity in the liver following pulmonary exposure to carbon black nanoparticles in mice

Background
Little is known about the mechanism underlying the genotoxicity observed in the liver following pulmonary exposure to carbon black (CB) nanoparticles (NPs). The genotoxicity could be caused by the presence of translocated particles or by circulating inflammatory mediators released during pulmonary inflammation and acute-phase response. To address this, we evaluated induction of pulmonary inflammation, pulmonary and hepatic acute-phase response and genotoxicity.
following exposure to titanium dioxide (TiO2), cerium oxide (CeO2) or CB NPs. Female C57BL/6 mice were exposed by intratracheal instillation, intravenous injection or oral gavage to a single dose of 162 μg NPs/mouse and terminated 1, 28 or 180 days post-exposure alongside vehicle control.

Results
Liver DNA damage assessed by the Comet Assay was observed after intravenous injection and intratracheal instillation of CB NPs but not after exposure to TiO2 or CeO2. Intratracheal exposure to NPs resulted in pulmonary inflammation in terms of increased neutrophils influx for all NPs 1 and 28 days post-exposure. Persistent pulmonary acute phase response was detected for all NPs at all three time points while only a transient induction of hepatic acute phase response was observed. All 3 materials were detected in the liver by enhanced darkfield microscopy up to 180 days post-exposure. In contrast to TiO2 and CeO2 NPs, CB NPs generated ROS in an acellular assay.

Conclusions
Our results suggest that the observed hepatic DNA damage following intravenous and intratracheal dosing with CB NPs was caused by the presence of translocated, ROS-generating, particles detected in the liver rather than by the secondary effects of pulmonary inflammation or hepatic acute phase response.
Probing cardiac metabolism by hyperpolarized 13C MR using an exclusively endogenous substrate mixture and photoinduced nonpersistent radicals

To probe the cardiac metabolism of carbohydrates and short chain fatty acids simultaneously in vivo following the injection of a hyperpolarized 13 C-labeled substrate mixture prepared using photo-induced nonpersistent radicals. Droplets of mixed [1-13 C]pyruvic and [1-13 C]butyric acids were frozen into glassy beads in liquid nitrogen. Ethanol addition was investigated as a means to increase the polarization level. The beads were irradiated with ultraviolet light and the radical concentration was measured by ESR spectroscopy. Following dynamic nuclear polarization in a 7T polarizer, the beads were dissolved, and the radical-free hyperpolarized solution was rapidly transferred into an injection pump located inside a 9.4T scanner. The hyperpolarized solution was injected in healthy rats to measure cardiac metabolism in vivo. Ultraviolet irradiation created nonpersistent radicals in a mixture containing 13 C-labeled pyruvic and butyric acids, and enabled the hyperpolarization of both substrates by dynamic nuclear polarization. Ethanol addition increased the radical concentration from 16 to 26 mM. Liquid-state 13 C polarization was 3% inside the pump at the time of injection, and increased to 5% by addition of ethanol to the substrate mixture prior to ultraviolet irradiation. In the rat heart, the in vivo 13 C signals from lactate, alanine, bicarbonate, and acetylcarnitine were detected following the metabolism of the injected substrate mixture. Copolarization of two different 13 C-labeled substrates and the detection of their myocardial metabolism in vivo was achieved without using persistent radicals. The absence of radicals in the solution containing the hyperpolarized 13 C-substrates may simplify the translation to clinical use, as no radical filtration is required prior to injection.

General information
State: Published
Organisations: Center for Hyperpolarization in Magnetic Resonance, Department of Electrical Engineering, Center for Magnetic Resonance, Lausanne University Hospital, Ecole Polytechnique Federale de Lausanne (EPFL), University of Florida, University of Lausanne
Authors: Bastiaansen, J. A. M. (Ekstern), Yoshihara, H. A. I. (Ekstern), Capozzi, A. (Intern), Schwitter, J. (Ekstern), Gruetter, R. (Ekstern), Merritt, M. E. (Ekstern), Comment, A. (Ekstern)
Number of pages: 9
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Magnetic Resonance in Medicine
ISSN (Print): 0740-3194
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.52 SJR 1.867 SNIP 1.438
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.291 SNIP 1.48 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.952 SNIP 1.39 CiteScore 3.32
Probing the chemistry of adhesion between a 316L substrate and spin-on-glass coating

Hydrogen silsesquioxane ([HSiO3/2]n) based "spin-on-glass" has been deposited on 316L substrate and cured in Ar/H2 gas atmosphere at 600 °C to form a continuous surface coating with sub-micrometer thickness. The coating functionality depends primarily on the adhesion to the substrate, which is largely affected by the chemical interaction at the interface between the coating and the substrate. We have investigated this interface by transmission electron microscopy and electron energy loss spectroscopy. The analysis identified a 5-10 nm thick interaction zone containing signals from O, Si, Cr and Fe. Analysis of the energy loss near edge structure of the present elements identified predominantly signal from [SiO4]4- units together with Fe2+, Cr2+ and traces of Cr3+. High-resolution transmission electron microscopy images of the interface region confirm a crystalline Fe2SiO4 interfacial region. In agreement with computational thermodynamics, it is proposed that the spin-on-glass forms a chemically bonded silicate-rich interaction zone with the substrate. It was further suggested that this zone is composed of a corundum-type oxide at the substrate surface, followed by an olivine-structure intermediate phase and a spinel-type oxide in the outer regions of the interfacial zone.

General information
**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
Volume: 247
ISSN (Print): 0960-8524
Ratings:
  - BFI (2018): BFI-level 2
  - Web of Science (2018): Indexed yes
  - 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
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: Published
Organisations: National Food Institute, Research Group for Food Production Engineering, Brigham Young University, Shiraz University, University of Crete
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.
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' filled 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 a 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 is 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)
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Volume: 36
Promoting private sector engagement in climate change adaptation and flood resilience: A case study of innovative approaches applied by MSMEs in Mumbai, India.

Recurring heavy precipitation and flooding cause extensive loss and damage in cities like Mumbai. Among the worst affected are Micro Small and Medium Enterprises (MSMEs) which suffer damage to physical structure and loss of business. These costs amount to millions of dollars and are borne by MSMEs in the absence of adequate insurance protection. With limited flood management services and inadequate infrastructure provided by the municipal authorities,
MSMEs are implementing their own temporary measures for flood protection. These are often ineffective during heavy precipitation and create risks of maladaptation. As climate change is expected to worsen the risk of flash floods with changes in intensity, frequency and duration of rainfall, MSMEs need long-term solutions to build their adaptive capacity and resilience. This paper describes the business case for private sector engagement in flood risk reduction and climate adaptation from the perspective of MSMEs in Mumbai. Based on extensive field surveys of MSMEs located in industrial estates, the paper discusses the implications of floods for MSMEs. Moreover, the authors present a framework developed for MSMEs to make informed risk reduction and adaptation decisions and implement effective structural and non-structural measures to minimize the recurring adverse impacts of floods on their business operations.

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Organisations: Department of Management Engineering, UNEP DTU Partnership  
Authors: Schaer, C. (Intern), Pantakar, A. (Ekstern)  
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BFI (2014): BFI-level 1  
BFI (2013): BFI-level 1  
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Original language: English  
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Publication: Research - peer-review › Journal article – Annual report year: 2018

Prototype of the novel CAMEA concept—A backend for neutron spectrometers

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Organisations: Department of Physics, Neutrons and X-rays for Materials Physics, Paul Scherrer Institut, University of Copenhagen, Ecole Polytechnique Federale de Lausanne (EPFL)  
Authors: Markó, M. (Ekstern), Groitl, F. (Ekstern), Birk, J. O. (Ekstern), Freeman, P. G. (Ekstern), Lefmann, K. (Ekstern), Christensen, N. B. (Intern), Niedermayer, C. (Ekstern), Jurányi, F. (Ekstern), Lass, J. (Ekstern), Hansen, A. (Ekstern), Rønnow, H. M. (Ekstern)  
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Pulse carving using nanocavity-enhanced nonlinear effects in photonic crystal Fano structures

We experimentally demonstrate the use of a photonic crystal Fano resonance for carving-out short pulses from long-duration input pulses. This is achieved by exploiting an asymmetric Fano resonance combined with carrier-induced
nonlinear effects in a photonic crystal membrane structure. The use of a nanocavity concentrates the input field to a very small volume leading to an efficient nonlinear resonance shift that carves a short pulse out of the input pulse. Here, we demonstrate shortening of ~500 ps and ~100 ps long pulses to ~30 ps and ~20 ps pulses, respectively. Furthermore, we demonstrate error-free low duty cycle return-to-zero signal generation at 2 Gbit/s with energy consumption down to ~1 pJ/bit and power penalty of ~2 dB. The device physics and limitations are analyzed using nonlinear coupled-mode theory.
The mass transfer from target to films is incongruent for chalcogenide sulfides in contrast to the expectations of pulsed laser deposition (PLD) as a stoichiometric film growth process. Films produced from a CZTS (Cu₂ZnSnS₄) multi-component target have no Cu below a fluence threshold of 0.2 J/cm², and the Cu content is also very low at low fluence from a single-component target. Above this threshold, the Cu content in the films increases almost linearly up to a value above the stoichiometric value, while the ratio of the concentration of the other metals Zn to Sn (Zn/Sn) remains constant. Films of a similar material CTS (Cu₂SnS₃) have been produced by PLD from a CTS target and exhibits a similar trend in the same fluence region. The results are discussed on the basis of solid-state data and the existing data from the literature.
Pumice stones as potential in-situ burning enhancer

Small-scale and mid-scale experiments were conducted in order to evaluate pumice stones as a potential enhancement for in-situ burning (ISB). Four oil types, several emulsification degrees of one crude oil were studied. In general, it was observed that the pumice stones did not improve the burning efficiency (BE). In fact, for large pumice coverage ratios, the BE was affected negatively, especially for the emulsified crude oil, which is the most likely condition of the oil that may be subjected to ISB. Furthermore, it was observed that a relatively large amount of the pumice stones were sinking during and after the burn, thus bringing the oil into the water column. Finally, the species production of CO and CO₂ was not reduced. Based on the presented results, pumice stones have a negative impact on the efficiency of ISB, and they are ruled out as an ISB enhancer and should not be used in relation to ISB.

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BFI (2018): BFI-level 1
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Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.18 SJR 0.897 SNIP 1.704
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Scopus rating (2015): SJR 0.981 SNIP 1.561 CiteScore 2.06
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.729 SNIP 1.512 CiteScore 1.82
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.724 SNIP 1.812 CiteScore 1.89
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.69 SNIP 1.495 CiteScore 1.51
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.918 SNIP 1.575 CiteScore 1.77
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.296 SNIP 1.45
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.77 SNIP 1.353
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.872 SNIP 1.501
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.783 SNIP 1.148
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.588 SNIP 1.435
Scopus rating (2005): SJR 0.408 SNIP 1.283
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Scopus rating (2003): SJR 0.371 SNIP 1.209
Scopus rating (2002): SJR 0.377 SNIP 0.873
Scopus rating (2001): SJR 0.792 SNIP 1.256
Scopus rating (2000): SJR 0.863 SNIP 0.628
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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 re-verification 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)
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Quantification of local mobilities
A new method for quantification of mobilities of local recrystallization boundary segments is presented. The quantification is based on microstructures characterized using electron microscopy and on determination of migration velocities and driving forces for local boundary segments. Pure aluminium is investigated and the results show that even for a single recrystallization boundary, different boundary segments migrate differently, and the differences can be understood based on variations in mobilities and local deformed microstructures. The present work has important implications for understanding of recrystallization boundary migration, and suggests an experimental way forward for how to determine boundary mobilities during recrystallization.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Materials science and characterization
Authors: Zhang, Y. B. (Intern)
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Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
Quantifying demand flexibility of power-to-heat and thermal energy storage in the control of building heating systems

In the future due to continued integration of renewable energy sources, demand-side flexibility would be required for managing power grids. Building energy systems will serve as one possible source of energy flexibility. The degree of flexibility provided by building energy systems is highly restricted by power-to-heat conversion such as heat pumps and thermal energy storage possibilities of a building. To quantify building demand flexibility, it is essential to capture the dynamic response of the building energy system with thermal energy storage. To identify the maximum flexibility a
building’s energy system can provide, optimal control is required. In this paper, optimal control serves to determine in
detail demand flexibility of an office building equipped with heat pump, electric heater, and thermal energy storage tanks. 
The demand flexibility is quantified using different performance indicators that sufficiently characterize flexibility in terms of 
size (energy), time (power) and costs. To fully describe power flexibility, the paper introduces the instantaneous power 
flexibility as power flexibility indicator. The instantaneous power flexibility shows the potential power flexibility of TES and 
power-to-heat in any case of charging, discharging or idle mode. A simulation case study is performed showing that a 
water tank, a phase change material tank, and a thermochemical material tank integrated with building heating system can 
be designed to provide flexibility with optimal control.

**General information**
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Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Eindhoven University of 
Technology
Authors: Finck, C. (Ekstern), Li, R. (Intern), Kramer, R. (Ekstern), Zeiler, W. (Ekstern)
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Web of Science (2018): Indexed yes
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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
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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
Quantitative characterization of TiO2 nanoparticle release from textiles by conventional and single particle ICP-MS

TiO2 is ubiquitously present in a wide range of everyday items, both as an intentionally incorporated additive and naturally occurring constituent. It can be found in a wide range of consumer products, including personal care products, food contact materials, and textiles. Normal use of these products may lead to consumer and/or environmental exposure to TiO2, possibly in form of nanoparticles. The aim of this study is to perform a leaching test and apply state-of-the-art methods to investigate nano-TiO2 and total Ti release from five types of commercially available conventional textiles: table placemats, wet wipes, microfiber cloths, and two types of baby bodysuits, with Ti contents ranging from 2.63 to 1448 μg/g. Released particle analysis was performed using conventional and single particle inductively coupled plasma mass spectrometry (ICP-MS and spICP-MS), in conjunction with transmission electron microscopy (TEM), to measure total and particulate TiO2 release by mass and particle number, as well as size distribution. Less than 1% of the initial Ti content was released over 24 h of leaching, with the highest releases reaching 3.13 μg/g. The fraction of nano-TiO2 released varied among fabric types and represented 0–80% of total TiO2 release. Particle mode sizes were 50–75 nm, and TEM imaging revealed particles in sizes of 80–200 nm. This study highlights the importance of using a multi-method approach to obtain quantitative release data that is able to provide an indication regarding particle number, size distribution, and mass concentration, all of which can help in understanding the fate and exposure of nanoparticles.

General information
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Organisations: Department of Environmental Engineering, Environmental Chemistry
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Scopus rating (2016): CiteScore 1.74 SJR 0.485 SNIP 0.555
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Scopus rating (2015): SJR 0.569 SNIP 0.689 CiteScore 1.97
Quartz OSL dating of late quaternary Chinese and Serbian loess: A cross Eurasian comparison of dust mass accumulation rates

Reconstructing dust Mass Accumulation Rate (MAR) from loess deposits is critical to understanding past atmospheric mineral dust activity and requires accurate independent age models from loess deposits across Europe and Asia. Previous correlations of loess in Europe and China have tended to focus on multi-millennial timescales, with no detailed examination of dust MAR at the two ends of the Eurasian loess belt on shorter, sub-orbital scales. Here we present a detailed quartz optically stimulated luminescence (OSL) chronology from the Serbian Titel Loess Plateau (Veliki Surduk loess core) and the Chinese Loess Plateau (Lingtai section). The luminescence ages pass internal tests and show consistent increases in age with depth, with no obvious major hiatuses. However, as reported before, it seems the quartz OSL technique is only capable of accurate age determination up to accrued doses of ca. 150 Gy (ca. 30-40 ka) due to approaching field saturation of the quartz OSL signal. Two age-depth models were used to reconstruct dust MARs, where one utilises OSL data solely and the other additionally makes assumptions about sedimentation rates. Although short-term fluctuations in MAR are model dependent, general MAR patterns between the two sites are very similar, with peak MAR occurring rather late in the last glacial (ca. 13-25 ka). This suggests that at least broad scale trends in dust activity within the last glacial period may be similar at a continental scale.
Radiobiological effects of tritiated water short-term exposure on V79 clonogenic cell survival

We set out to improve the accuracy of absorbed dose calculations for in-vitro measurements of the Relative Biological Effectiveness (RBE) of tritiated water (HTO) for the clonogenic cell survival assay, also considering the influence of the end-of-track Linear Energy Transfer (LET) of low-energy electrons. The COmputation Of Local Electron Release (COOLER) program was adopted to investigate the cell geometry and the tritium full beta-decay spectrum impact on the S-values and subsequently on the RBE of HTO for clonogenic cell survival at similar high dose rates. S-values for cells growing in suspension are usually comparable to those for adherent cells. RBEs calculated at the 10% survival fraction through the use of the average energy are almost similar to those obtained with the beta-spectrum. For adherent cells, an RBE of 1.6 was found when HTO cell survival curves were compared to acute γ-ray exposures. Irrespective of the geometrical configuration, the RBE was 2.0 when the comparison was made with similar dose rates. These results underline the importance of irradiating at equal dose rates and cell culture conditions when measuring in-vitro RBE-values.
Reaching carbon neutral transport sector in Denmark - Evidence from the incorporation of modal shift into the TIMES energy system modeling framework

Energy/Economy/Environment/Engineering (E4) models have been rarely apt to represent human behaviour in transportation mode adoption. This paper contributes to the scientific literature by using an E4 model to analyse the long-term decarbonisation of the Danish transport sector. The study is carried out with TIMES-DK, the integrated energy system model of Denmark, which has been expanded in order to endogenously determine modal shares. The methodology extends the technology competition within the modes to competition across modes by aggregating the passenger modal travel demands into demand segments based on the distance range. Modal shift is based not only on the levelised costs of the modes, but also on speed and infrastructure requirement. Constraints derived from the National Travel Survey guarantee consistent travel habits and avoid unrealistic modal shifts. The comparison of model versions with and without modal shift identifies its positive contribution to the fulfilment of the Danish environmental targets. Four sensitivity analyses on the key variables of modal shift assess how their alternative realizations affect the decarbonisation of the transport sector and enable shifting away from car. The results indicate that less strict travel time budget (TTB) and increased speed of public bus lead to a more efficient decarbonisation by 2050.
Reactivating the Ni-YSZ electrode in solid oxide cells and stacks by infiltration

The solid oxide cell (SOC) could play a vital role in energy storage when the share of intermittent electricity production is high. However, large-scale commercialization of the technology is still hindered by the limited lifetime. Here, we address this issue by examining the potential for repairing various failure and degradation mechanisms occurring in the fuel electrode, thereby extending the potential lifetime of a SOC system. We successfully infiltrated the nickel and yttria-stabilized zirconia cermet electrode in commercial cells with Gd-doped ceria after operation. By this method we fully reactivated the fuel electrode after simulated reactant starvation and after carbon formation. Furthermore, by infiltrating after 900h of operation, the degradation of the fuel electrode was reduced by a factor of two over the course of 2300h. Lastly, the scalability of the concept is demonstrated by reactivating an 8-cell stack based on a commercial design.
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Scopus rating (2016): CiteScore 6.22 SJR 1.945 SNIP 1.483
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.945 SNIP 1.686 CiteScore 6.34
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.983 SNIP 2.071 CiteScore 6.3
Web of Science (2014): Indexed yes
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BFI (2011): BFI-level 1
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ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.297 SNIP 1.981
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.117 SNIP 1.793
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.968 SNIP 1.726
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.597 SNIP 1.489
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.8 SNIP 2.224
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.65 SNIP 1.825
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.852 SNIP 1.818
Scopus rating (2003): SJR 1.66 SNIP 1.583
Scopus rating (2002): SJR 1.959 SNIP 1.4
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.115 SNIP 1.492
Scopus rating (2000): SJR 1.106 SNIP 0.914
Scopus rating (1999): SJR 0.854 SNIP 0.998
Re-activation of degraded nickel cermet anodes - Nano-particle formation via reverse current pulses

The Ni/yttria-stabilized-zirconia (YSZ) cermet is the most commonly applied fuel electrode for solid oxide cells (SOCs). Loss of Ni/YSZ electrode activity is a key life-time limiting factor of the SOC. Developing means to mitigate this loss of performance or re-activate a fuel electrode is therefore important.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Applied Electrochemistry, Politecnico di Torino
Authors: Hauch, A. (Intern), Marchese, M. (Ekstern), Lanzini, A. (Ekstern), Graves, C. R. (Intern)
Number of pages: 11
Pages: 110-120
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Power Sources
Volume: 377
ISSN (Print): 0378-7753
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 6.22 SJR 1.945 SNIP 1.483
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.945 SNIP 1.686 CiteScore 6.34
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.983 SNIP 2.071 CiteScore 6.3
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.985 SNIP 2.138 CiteScore 5.63
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.293 SNIP 2.016 CiteScore 5.04
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.247 SNIP 2.181 CiteScore 5.13
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.297 SNIP 1.981
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.117 SNIP 1.793
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
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 2000–2016. 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

Publication information
Journal: Renewable and Sustainable Energy Reviews
Volume: 81
ISSN (Print): 1364-0321
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Accurate characterization of promoter activity is important when designing expression systems for systems biology and metabolic engineering applications. Promoters that respond to changes in the environment enable the dynamic control of gene expression without the necessity of inducer compounds, for example. However, the dynamic nature of these processes poses challenges for estimating promoter activity. Most experimental approaches utilize reporter gene expression to estimate promoter activity. Typically the reporter gene encodes a fluorescent protein that is used to infer a constant promoter activity despite the fact that the observed output may be dynamic and is a number of steps away from the transcription process. In fact, some promoters that are often thought of as constitutive can show changes in activity when growth conditions change. For these reasons, we have developed a system of ordinary differential equations for estimating dynamic promoter activity for promoters that change their activity in response to the environment that is robust to noise and changes in growth rate. Our approach, inference of dynamic promoter activity (PromAct), improves on existing methods by more accurately inferring known promoter activity profiles. This method is also capable of estimating the correct scale of promoter activity and can be applied to quantitative data sets to estimate quantitative rates.
Recreational sea fishing in Europe in a global context—Participation rates, fishing effort, expenditure, and implications for monitoring and assessment

Marine recreational fishing (MRF) is a high-participation activity with large economic value and social benefits globally, and it impacts on some fish stocks. Although reporting MRF catches is a European Union legislative requirement, estimates are only available for some countries. Here, data on numbers of fishers, participation rates, days fished, expenditures, and catches of two widely targeted species were synthesized to provide European estimates of MRF and placed in the global context. Uncertainty assessment was not possible due to incomplete knowledge of error distributions; instead, a semi-quantitative bias assessment was made. There were an estimated 8.7 million European recreational sea fishers corresponding to a participation rate of 1.6%. An estimated 77.6 million days were fished, and expenditure was €5.9 billion annually. There were higher participation, numbers of fishers, days fished and expenditure in the Atlantic than the Mediterranean, but the Mediterranean estimates were generally less robust. Comparisons with other regions showed that European MRF participation rates and expenditure were in the mid-range, with higher participation in Oceania and the United States, higher expenditure in the United States, and lower participation and expenditure in South America and Africa. For both northern European sea bass (Dicentrarchus labrax, Moronidae) and western Baltic cod (Gadus morhua, Gadidae) stocks, MRF represented 27% of the total removals. This study highlights the importance of MRF and the need for bespoke, regular and statistically sound data collection to underpin European fisheries management. Solutions are proposed for future MRF data collection in Europe and other regions to support sustainable fisheries management.
**Redefining Requirements of Ancillary Services for Technology Agnostic Sources**
New sources for ancillary services are needed, yet the requirements for service provision in most countries are explicitly formulated for traditional generators. This leads to waste of the potential for new technologies to deliver ancillary services. In order to harness this potential, we propose to parameterize the requirements of ancillary services so that reserves can be built by combining the advantageous properties of different technologies. The proposal is exemplified through a laboratory test where it shown that the system needs can be covered through cheaper and smaller reserves.

**General information**
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Energy system management, Automation and Control, Lawrence Berkeley National Laboratory, SLAC National Accelerator Laboratory
Pages: 2633-2642
Publication date: 2018

**Host publication information**
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ISBN (Print): 978-0-9981331-1-9
Main Research Area: Technical/natural sciences
Conference: 51st Hawaii International Conference on System Sciences, Waikoloa, United States, 03/01/2018 - 03/01/2018
Monitoring, Control, and Protection ancillary services, Requirements, Demand response
Electronic versions:
paper0334.pdf
paper0334_1_.pdf
Publication: Research - peer-review › Article in proceedings – Annual report year: 2018

**Redesign of a Grignard-Based Active Pharmaceutical Ingredient (API) Batch Synthesis to a Flow Process for the Preparation of Melitracen HCl**
A Grignard-based batch process, for the preparation of Melitracen HCl, has been redesigned to fit a continuous reactor system. The Grignard addition is carried out at room temperature, with subsequent hydrolysis of the magnesium alkoxide intermediate followed by dehydration of the resulting alcohol. The product undergoes further workup by simple gravimetric phase separation and then crystallization with 2 M HCl in diethyl ether to afford pure Melitracen HCl. All steps in the laboratory setup were concatenated, and the setup was proven capable of producing a significant portion of the commercial quantities of Melitracen HCl. The flow setup profits from a reduced footprint, lower energy consumption, fewer synthetic steps, and reduced raw material usage compared to the batch process.

**General information**
State: Accepted/In press
Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre, The Hempel Foundation Coatings Science and Technology Centre (CoaST), H. Lundbeck A/S
Authors: Pedersen, M. J. (Intern), Skovby, T. (Ekstern), Mealy, M. J. (Ekstern), Dam-Johansen, K. (Intern), Kiil, S. (Intern)
Number of pages: 8
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Organic Process Research and Development
Redirection of lipid flux toward phospholipids in yeast increases fatty acid turnover and secretion

Bio-based production of fatty acids and fatty acid-derived products can enable sustainable substitution of petroleum-derived fuels and chemicals. However, developing new microbial cell factories for producing high levels of fatty acids requires extensive engineering of lipid metabolism, a complex and tightly regulated metabolic network. Here we generated a Saccharomyces cerevisiae platform strain with a simplified lipid metabolism network with high-level production of free fatty acids (FFAs) due to redirected fatty acid metabolism and reduced feedback regulation. Deletion of the main fatty acid activation genes (the first step in ss-oxidation), main storage lipid formation genes, and phosphatidate phosphatase genes resulted in a constrained lipid metabolic network in which fatty acid flux was directed to a large extent toward phospholipids. This resulted in simultaneous increases of phospholipids by up to 2.8-fold and of FFAs by up to 40-fold compared with wild-type levels. Further deletion of phospholipase genes PLB1 and PLB2 resulted in a 46% decrease in FFA levels and 105% increase in phospholipid levels, suggesting that phospholipid hydrolysis plays an important role in FFA production when phospholipid levels are increased. The multiple deletion mutant generated allowed for a study of fatty acid dynamics in lipid metabolism and represents a platform strain with interesting properties that provide insight into the future development of lipid-related cell factories.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Yeast Cell Factories, Chalmers University of Technology
Authors: Ferreira, R. (Ekstern), Teixeiraa, P. G. (Ekstern), Siewers, V. (Ekstern), Nielsen, J. (Intern)
Pages: 1262-1267
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication Information
Journal: Proceedings of the National Academy of Sciences of the United States of America
Volume: 115
Issue number: 6
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 8.56 SJR 6.321 SNIP 2.629
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 6.767 SNIP 2.682 CiteScore 8.84
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 6.853 SNIP 2.725 CiteScore 8.86
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 6.989 SNIP 2.73 CiteScore 9.5
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 6.792 SNIP 2.682 CiteScore 9.49
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 6.771 SNIP 2.636 CiteScore 9.31
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 6.769 SNIP 2.529
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Reduced sintering of mass-selected Au clusters on SiO2 by alloying with Ti: an aberration-corrected STEM and computational study

Au nanoparticles represent the most remarkable example of a size effect in heterogeneous catalysis. However, a major issue hindering the use of Au nanoparticles in technological applications is their rapid sintering. We explore the potential of stabilizing Au nanoclusters on SiO2 by alloying them with a reactive metal, Ti. Mass-selected Au/Ti clusters (400 000 amu) and Au2057 clusters (405 229 amu) were produced with a magnetron sputtering, gas condensation cluster beam source in conjunction with a lateral time-of-flight mass filter, deposited onto a silica support and characterised by XPS and LEIS. The sintering dynamics of mass-selected Au and Au/Ti alloy nanoclusters were investigated in real space and real time with atomic resolution aberration-corrected HAADF-STEM imaging, supported by model DFT calculations. A strong anchoring effect was revealed in the case of the Au/Ti clusters, because of a much increased local interaction with the support (by a factor 5 in the simulations), which strongly inhibits sintering, especially when the clusters are more than ∼0.60 nm apart. Heating the clusters at 100 °C for 1 h in a mixture of O2 and CO, to simulate CO oxidation conditions, led to some segregation in the Au/Ti clusters, but in line with the model computational investigation, Au atoms were still present on the surface. Thus size-selected, deposited nanoalloy Au/Ti clusters appear to be promising candidates for sustainable gold-based nanocatalysis.

General information
State: Accepted/In press
Organisations: Experimental Surface and Nanomaterials Physics, Department of Physics, Università degli Studi di Milano-Bicocca, Swansea University, University of Birmingham
Authors: Niu, Y. (Ekstern), Schlexer, P. (Ekstern), Sebök, B. (Intern), Chorkendorff, I. (Intern), Pacchioni, G. (Ekstern), Palmer, R. E. (Ekstern)
Number of pages: 5
Publication date: 2018
Regulating combined sewage discharges to support EU Water Framework Directive ambitions in natural water bodies

Main Research Area: Technical/natural sciences

Publication information
Journal: Nanoscale
ISSN (Print): 2040-3364
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 7.46 SJR 2.769 SNIP 1.459
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.842 SNIP 1.588 CiteScore 7.97
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.651 SNIP 1.676 CiteScore 7.64
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.55 SNIP 1.469 CiteScore 6.89
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.761 SNIP 1.346 CiteScore 6.08
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 2.494 SNIP 1.448 CiteScore 5.69
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Scopus rating (2010): SJR 1.827 SNIP 0.62
Web of Science (2009): Indexed yes
Original language: English
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Regulating combined sewage discharges to support EU Water Framework Directive ambitions in natural water bodies

General information
State: Published
Authors: Vezzaro, L. (Intern), Brudler, S. (Intern), McKnight, U. S. (Intern), Rasmussen, J. J. (Ekstern), Ambjerg-Nielsen, K. (Intern)
Number of pages: 86
Publication date: 2018

Publication information
Place of publication: Kgs. Lyngby
Publisher: Department of Environmental Engineering, Technical University of Denmark (DTU)
Relating Magnetic Properties and High Hyperthermia Performance of Iron Oxide Nanoflowers

We investigated in depth the interrelations among structure, magnetic properties, relaxation dynamics and magnetic hyperthermia performance of magnetic nanoflowers. The nanoflowers are about 39 nm in size, and consist of densely packed iron oxide cores. They display a remanent magnetization, which we explain by the exchange coupling between the cores, but we observe indications for internal spin disorder. By polarized small angle neutron scattering we unambiguously confirm that on average the nanoflowers are preferentially magnetized along one direction. The extracted discrete relaxation time distribution of the colloidally dispersed particles indicates the presence of three distinct relaxation contributions. We can explain the two slower processes by Brownian and classical Néel relaxation, respectively. The additionally observed very fast relaxation contributions are attributed by us to the relaxation of the disordered spins within the nanoflowers. Finally, we show that the intrinsic loss power (ILP, magnetic hyperthermia performance) of the nanoflowers measured in colloidal dispersion at high frequency is comparatively large and independent of the viscosity of the surrounding medium. This concurs with our assumption that the observed relaxation in the high frequency range is primarily a result of internal spin relaxation, and probably connected to the disordered spins within the individual nanoflowers.

General information
State: Accepted/In press
Organisations: Department of Micro- and Nanotechnology, Magnetic Systems, Department of Physics, Neutrons and X-rays for Materials Physics, Universidad de Cantabria, Technische Universitat Braunschweig, Physikalisch-Technische Bundesanstalt, Uppsala University, University College London, Federal Institute for Materials Research and Testing, Chalmers University of Technology, University of Rosloch, Micromod Partikeltechnologie GmbH, Institut Laue-Langevin, RISE Acreo
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
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Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.64
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.65
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.84
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.78
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Relationship between PC index and magnetospheric field-aligned currents measured by Swarm satellites

Abstract The relationship between the magnetospheric field-aligned currents (FAC) monitored by the Swarm satellites and the magnetic activity PC index (which is a proxy of the solar wind energy incoming into the magnetosphere) is examined. It is shown that current intensities measured in the R1 and R2 FAC layers at the poleward and equatorward boundaries of the auroral oval are well correlated, the R2 currents being evidently secondary in relation to R1 currents and correlation in the dawn and dusk oval sectors being better than in the noon and night sectors. There is evident relationship between the PC index and the intensity of field-aligned currents in the R1 dawn and dusk layers: increase of FAC intensity in the course of substorm development is accompanied by increasing the PC index values. Correlation between PC and FAC intensities in the R2 dawn and dusk layers is also observed, but it is much weaker. No correlation is observed between PC and field-aligned currents in the midnight as well as in the noon sectors ahead of the substorm expansion phase. The results are indicative of the R1 field-aligned currents as a driver of the polar cap magnetic activity (PC index) and currents in the R2 layer.

General information
State: Accepted/In press
Organisations: National Space Institute, Geomagnetism, Arctic and Antarctic Research Institute
Authors: Troshichev, O. (Ekstern), Sormakov, D. (Ekstern), Behlke, R. (Intern)
Number of pages: 27
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Atmospheric and Solar-Terrestrial Physics
ISSN (Print): 1364-6826
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.39 SJR 0.76 SNIP 0.86
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.93 SNIP 0.943 CiteScore 1.48
Relative validity of a web-based food frequency questionnaire for Danish adolescents

With increased focus on dietary intake among youth and risk of diseases later in life, it is of importance, prior to assessing diet-disease relationships, to examine the validity of the dietary assessment tool. This study's objective was to evaluate the relative validity of a self-administered web-based FFQ among Danish children aged 12 to 15 years. From a nested sub-cohort within the Danish National Birth Cohort, 124 adolescents participated. Four weeks after completion of the FFQ, adolescents were invited to complete three telephone-based 24HRs; administered 4 weeks apart. Mean or median intakes of nutrients and food groups estimated from the FFQ were compared with the mean of 3x24HRs. To assess the level of ranking we calculated the proportion of correctly classified into the same quartile, and the proportion of misclassified (into the opposite quartile). Spearman's correlation coefficients and de-attenuated coefficients were calculated to assess agreement between the FFQ and 24HRs. The mean percentage of all food groups, for adolescents classified into the same and opposite quartile was 35 and 7.5%, respectively. Mean Spearman's correlation was 0.28 for food groups and 0.35 for nutrients, respectively. Adjustment for energy and within-person variation in the 24HRs had little effect on the magnitude of the correlations for food groups and nutrients. We found overestimation by the FFQ compared with the 24HRs for fish, fruits, vegetables, oils and dressing and underestimation by the FFQ for meat/poultry and sweets. Median intake of beverages, dairy, bread, cereals, the mean total energy and carbohydrate intake did not differ significantly between the two methods. The relative validity of the FFQ compared with the 3x24HRs showed that the ranking ability differed across food groups and nutrients with best ranking for estimated intake of dairy, fruits, and oils and dressing.
Larger variation was observed for fish, sweets and vegetables. For nutrients, the ranking ability was acceptable for fatty acids and iron. When evaluating estimates from the FFQ among Danish adolescents these findings should be considered.
Reliability Worth Analysis of Distribution Systems Using Cascade Correlation Neural Networks

Reliability worth analysis is of great importance in the area of distribution network planning and operation. The reliability worth’s precision can be affected greatly by the customer interruption cost model used. The choice of the cost models can change system and load point reliability indices. In this study, a cascade correlation neural network is adopted to further develop two cost models comprising a probabilistic distribution model and an average or aggregate model. A contingency-based analytical technique is adopted to conduct the reliability worth analysis. Furthermore, the possible effects of adding distributed generation units into the network are evaluated. The proposed approach has been tested on a radial distribution test network evaluating the reliability worth. The results show that the probabilistic distribution model provides a more realistic model for the reliability analysis.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric equipment technologies, Nanyang Technological University, University of New South Wales, Shiraz University of Technology, University of Sharjah
Authors: Heidari, A. (Ekstern), Agelidis, V. (Intern), Pou, J. (Ekstern), Aghaei, J. (Ekstern), Ghias, A. M. Y. M. (Ekstern)
Number of pages: 9
Pages: 412-420
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: I E E E Transactions on Power Systems
Volume: 33
Issue number: 1
ISSN (Print): 0885-8950
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.602 SNIP 3.486 CiteScore 6.6
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.831 SNIP 3.577 CiteScore 5.31
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.939 SNIP 4.35 CiteScore 6.33
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.177 SNIP 3.516 CiteScore 5.84
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.725 SNIP 3.254 CiteScore 5.34
Remediation of incomplete nitrification and capacity increase of biofilters at different drinking water treatment plants through copper dosing

Drinking water treatment plants based on groundwater may suffer from incomplete ammonium removal, which deteriorates drinking water quality and constrains water utilities in the operation of their plants. Ammonium is normally removed through nitrification in biological granular media filters, and recent studies have demonstrated that dosing of copper can stimulate the removal of ammonium. Here, we investigated if copper dosing could generically improve ammonium removal of biofilters, at treatment plants with different characteristics. Copper was dosed at ≤1.5μg Cu/L to biofilters at 10 groundwater treatment plants, all of which had displayed several years of incomplete nitrification. Plants exceeded the Danish national water quality standard of 0.05mg NH4+/L by a factor of 2–12. Within only 2-3 weeks of dosing, ammonium removal rates increased significantly (up to 150%). Nitrification was fully established, with ammonium effluent concentrations of <0.01mg NH4+-N/L at most plants, regardless of the differences in raw water chemistry, ammonium loading rates, filter design and operation, or treatment plant configuration. However, for filters without primary filtration, it took longer time to reach complete ammonium removal than for filters receiving prefiltered water, likely due to sorption of copper to iron oxides, at plants without prefiltration. With complete ammonium removal, we subjected two plants to short-term loading rate upshifts, to examine the filters' ability to cope with loading rate variations. After 2 months of dosing and an average loading rate of 1.0g NH4+-N/m3 filter material/h, the loading rate was upshifted by 50%. Yet, a filter managed to completely remove all the influent ammonium, showing that with copper dosing the filter had extra capacity to remove ammonium even beyond its normal loading rates. Depth sampling revealed that the ammonium removal rate of the filter's upper 10cm increased more than 7-fold from 0.67 to 4.90g NH4+-N/m3/h, and that nitrite produced from increased ammonium oxidation was completely oxidized further to nitrate. Hence, no problems with nitrite accumulation or breakthrough occurred. Overall, copper dosing generally enhanced nitrification efficiency and allowed a range of quite different plants to meet water quality standards, even at increased loading rates. The capacity increase is highly relevant in practice, as it makes filters more robust towards sudden ammonium loading rate variations.

General information
State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems, Krüger A/S
Authors: Wagner, F. B. (Intern), Borch Nielsen, P. (Ekstern), Boe-Hansen, R. (Ekstern), Albrechtsen, H. (Intern)
Pages: 42-51
Publication date: 2018
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
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Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Department of Micro- and Nanotechnology, Colloids and Biological Interfaces, Department of Chemistry, University of Copenhagen
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Web of Science (2017): Indexed Yes
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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
Removal of hydrogen sulphide from pig house using biofilter with fungi

Biological air cleaners used for reducing emissions of odorants are often challenged by the low solubility of reduced sulphur compounds. In a recent study high removal of hydrogen sulphide (∼75%) from the exhaust air from a pig house was achieved using a biofilter. The aim of this study was to investigate if this high removal could be due to the presence of fungi. The removal of reduced sulphur compounds in a 600-mm wide cellulose biofilter was measured at depths of 0, 200, 400 and 600 mm and the results compared with estimated fungal hyphae surface area per biofilm area. Over 19 months, removal of hydrogen sulphide was measured during periods with and without fungi. The results demonstrate a correlation between the fungal hyphae surface area and the removal of hydrogen sulphide with the highest removal in the first 200 mm of the biofilter and decreasing removal with depth. During periods with presence of fungi, the removal of hydrogen sulphide (64%) was significantly higher than during periods without fungi (18%). It is hypothesised that the observed fungi oxidise hydrogen sulphide and may play a major role in biofilters treating air from pig houses due to the expansion of the active surface area caused by the hyphae.

General information

State: Published
Organisations: Center for Electron Nanoscopy, Aarhus University, SKOV A/S
Authors: Hansen, M. J. (Ekstern), Pedersen, C. L. (Ekstern), Søgaard Jensen, L. H. (Intern), Guldberg, L. B. (Ekstern), Feilberg, A. (Ekstern), Nielsen, L. P. (Ekstern)
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Research Investigations into Herder Fate, Effects and Windows of Opportunity

General information
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Organisations: Department of Civil Engineering, Section for Building Design, S.L. Ross Environmental Research Ltd., Aarhus University, U.S. Army Cold Regions Research and Engineering Laboratory, SL Ross

Biofiltration of waste gases, Chemical analysis, Odours, Sulphur compounds, Microbiology

DOIs: 10.1016/j.biolsystemseng.2017.12.004
Source: FindIt
Source-ID: 2395253053
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Resilience in moving water: Effects of turbulence on the predatory impact of the lobate ctenophore Mnemiopsis leidyi: Mnemiopsis leidyi feeding in turbulence

Despite its delicate morphology, the lobate ctenophore Mnemiopsis leidyi thrives in coastal ecosystems as an influential zooplankton predator. Coastal ecosystems are often characterized as energetic systems with high levels of natural turbulence in the water column. To understand how natural wind-driven turbulence affects the feeding ecology of M. leidyi, we used a combination of approaches to quantify how naturally and laboratory generated turbulence affects the behavior, feeding processes and feeding impact of M. leidyi. Experiments using laboratory generated turbulence demonstrated that turbulence can reduce M. leidyi feeding rates on copepods and Artemia nauplii by >50%. However, detailed feeding data from the field, collected during highly variable surface conditions, showed that wind-driven turbulence did not affect the feeding rates or prey selection of M. leidyi. Additional laboratory experiments and field observations suggest that the feeding process of M. leidyi is resilient to wind-driven turbulence because M. leidyi shows a behavioral response to turbulence by moving deeper in the water column. Seeking refuge in deeper waters enables M. leidyi to maintain high feeding rates even under high turbulence conditions generated by wind driven mixing. As a result, M. leidyi exerted a consistently high predatory impact on prey populations during highly variable and often energetic wind-driven mixing conditions. This resilience adds to our understanding of how M. leidyi can thrive in a wide spectrum of environments around the world. The limits to this resilience also set boundaries to its range expansion into novel areas.
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. 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).
Marine free living copepods can survive harsh periods and cope with seasonal fluctuations in environmental conditions using resting eggs (embryonic dormancy). Laboratory experiments show that temperature is the common driver for resting egg production. Hence, we hypothesize (i) that seasonal temperature variation, rather than variation in food abundance is the main driver for the occurrence of the resting eggs strategy in marine and estuarine copepod species; and (ii) that the thermal boundaries of the distribution determine where resting eggs are produced and whether they are produced to cope with warm or cold periods. We compile literature information on the occurrence of resting egg production and relate this to spatio-temporal patterns in sea surface temperature and chlorophyll a concentration obtained from satellite observations. We find that the production of resting eggs has been reported for 42 species of marine free living copepods. Resting eggs are reported in areas with high seasonal variation in sea surface temperature (median range 11°C). Temporal variation in chlorophyll a concentrations, however, seems of less importance. Resting eggs are commonly produced to cope with both warm and cold periods and, depending on the species, they are produced at the upper or lower thermal boundaries of a species’ distribution.
Reversible and irreversible deactivation of Cu-CHA NH₃-SCR catalysts by SO₂ and SO₃

Abstract Sulfur oxides are a common source for the deactivation of Cu-exchanged CHA zeolite based catalysts used for NOx reduction in diesel exhausts by selective catalytic reduction with NH₃ (NH₃-SCR). Since water and possible formation of SO₃ affect the deactivation of Cu-CHA catalysts, the deactivation in the presence of SO₂ or a mixture of SO₂ and SO₃ was studied by measuring the SCR activity in wet and dry gas at 200 and 550 °C. The estimated S-content in the catalysts before and after 4 h regeneration at 550 °C in NO, NH₃, O₂ and H₂O was related to the deactivation. The deactivation can be divided into two parts: a reversible deactivation that is restored by the regeneration treatment, and an irreversible part. The irreversible deactivation does not affect the activation energy for NH₃-SCR and display a 1:1 correlation with the S-content, consistent with deactivation by Cu-sulfate formation. The reversible deactivation results in a lower activation energy and a deactivation that is larger than expected from the S-content. The presence of SO₃ at 200 °C leads to higher reversible and irreversible deactivation, but has no significant impact at 550 °C. Furthermore, the irreversible deactivation is always higher when exposed at 200 °C than at 550 °C, and in wet conditions, compared to a dry feed. The deactivation is predominantly reversible, making regeneration at 550 °C a realistic approach to handle S-
poisoning in exhaust systems.

**General information**

State: Published
Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre, University of Houston, Haldor Topsoe AS
Authors: Hammershøi, P. S. (Intern), Jangjou, Y. (Ekstern), Epling, W. S. (Ekstern), Jensen, A. D. (Intern), Janssens, T. V. (Ekstern)
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Web of Science (2015): Indexed yes
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Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
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ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.629 SNIP 2.236 CiteScore 6.08
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
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ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.461 SNIP 1.895
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.301 SNIP 2.232
Web of Science (2009): Indexed yes
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Scopus rating (2008): SJR 2.455 SNIP 2.275
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.493 SNIP 2.5
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.284 SNIP 2.229
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.095 SNIP 2.233
Abstract The paper presents a review of experiments and calculation procedures for the resistances of ship structural components subjected to impact loadings. The purpose of the paper is to highlight the importance of large-scale collision and grounding experiments and to discuss the technical difficulties and challenges in analytical, empirical and numerical analyses. Experiments on ship structural components are benchmarks and baselines, used to propose analytical or empirical formulae for the structural energy absorptions and/or to validate numerical analyses considering the actual structural and material characteristics. In recent literature, analytical and numerical calculations provide relatively accurate prediction of the purely plastic responses of ship structures under impact loads, but universal approaches have not been found for fracture predictions. The existing formulae for failure criteria still show limitations when evaluating material fracture in various damage patterns. Recently, semi-analytical approaches have been developed to evaluate the relationship between the absorbed energy and the damaged material volume, taking into account the structural arrangements. It seems that these semi-analytical methods often show better accuracy than the numerical simulations when predicting the experimental results.
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.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power components, Vrije Universiteit Brussel, University of New South Wales, Energy Systems, Incorporated, Universita di Salerno
Authors: Gandoman, F. H. (Ekstern), Ahmadi, A. (Ekstern), Sharaf, A. M. (Ekstern), Siano, P. (Ekstern), Pou, J. (Ekstern), Hredzak, B. (Ekstern), Agelidis, V. G. (Intern)
Review of friction modeling in metal forming processes

Abstract In metal forming processes, friction between tool and workpiece is an important parameter influencing the material flow, surface quality and tool life. Theoretical models of friction in metal forming are based on analysis of the real contact area in tool-workpiece interfaces. Several research groups have studied and modeled the asperity flattening of workpiece material against tool surface in dry contact or in contact interfaces with only thin layers of lubrication with the aim to improve understanding of friction in metal forming. This paper aims at giving a review of the most important contributions during the last 80 years covering experimental techniques, upper bound solutions, slip-line analyses and numerical simulations. Each of the contributions shed light on the importance of the real contact area and the influencing parameters including the material properties, surface conditions, normal pressure, sliding length and speed, temperature changes, friction on the flattened plateaus and deformation of the underlying material. The review illustrates the development in the understanding of asperity flattening and the methods of analysis.
RNA-Seq Highlights High Clonal Variation in Monoclonal Antibody Producing CHO Cells

The development of next-generation sequencing technologies has opened new opportunities to better characterize complex eukaryotic cells. Chinese hamster ovary (CHO) cells play a primary role in therapeutic protein production, with currently five of the top ten blockbuster drugs produced in CHO. However, engineering superior CHO cells with improved production features has had limited success to date and cell lines are still developed through the generation and screening of large strain pools. Here, we applied RNA sequencing to contrast a high and a low monoclonal antibody producing cell line. Rigorous experimental design achieved high reproducibility between biological replicates, remarkably reducing variation to less than 10%. More than 14000 gene-transcripts are identified and surprisingly 58% are classified as differentially expressed, including 2900 with a fold change higher than 1.5. The largest differences are found for gene-transcripts belonging to regulation of apoptosis, cell death, and protein intracellular transport GO term classifications, which are found to be significantly enriched in the high producing cell line. RNA sequencing is also performed on subclones, where down-regulation of genes encoding secreted glycoproteins is found to be the most significant change. The large number of significant differences even between subclones challenges the notion of identifying and manipulating a few key genes to generate high production CHO cell lines.

General information
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Organisations: Novo Nordisk Foundation Center for Biosustainability, Quantitative Modeling of Cell Metabolism, University of Queensland
Authors: Orellana, C. A. (Ekstern), Marcellin, E. (Ekstern), Palfreyman, R. W. (Ekstern), Munro, T. P. (Ekstern), Gray, P. P. (Ekstern), Nielsen, L. K. (Intern)
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Main Research Area: Technical/natural sciences

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Web of Science (2017): Indexed yes
Robust Allocation of Reserve Policies for a Multiple-Cell Based Power System

This paper applies a robust optimization technique for coordinating reserve allocations in multiple-cell based power systems. The linear decision rules (LDR)-based policies were implemented to achieve the reserve robustness, and consist of a nominal power schedule with a series of linear modifications. The LDR method can effectively adapt the participation factors of reserve providers to respond to system imbalance signals. The policies considered the covariance of historic system imbalance signals to reduce the overall reserve cost. When applying this method to the cell-based power system for a certain horizon, the influence of different time resolutions on policy-making is also investigated, which presents guidance for its practical application. The main results illustrate that: (a) the LDR-based method shows better performance, by producing smaller reserve costs compared to the costs given by a reference method; and (b) the cost index decreases with increased time intervals, however, longer intervals might result in insufficient reserves, due to low time resolution. On the other hand, shorter time intervals require heavy computational time. Thus, it is important to choose a proper time interval in real time operation to make a trade off.

General Information
State: Published
Organisations: Department of Electrical Engineering, Automation and Control, Center for Electric Power and Energy, Energy system management, Distributed energy resources, Global Energy Interconnection Research Institute Europe GmbH, North China Electric Power University
Authors: Hu, J. (Ekstern), Lan, T. (Ekstern), Heussen, K. (Intern), Marinelli, M. (Intern), Prostejovsky, A. M. (Intern), Lei, X. (Ekstern)
Number of pages: 15
Publication date: 2018
We explore theoretically how nonlocal corrections in the description of a metal affect the strong coupling between excitons and plasmons in typical examples where nonlocal effects are anticipated to be strong, namely, small metallic nanoparticles, thin metallic nanoshells, or dimers with narrow separations, either coated with or encapsulating an excitonic layer. Through detailed simulations based on the generalized nonlocal optical response theory, which simultaneously accounts both for modal shifts due to screening and for surface-enhanced Landau damping, we show that, contrary to expectations, the influence of nonlocality is rather limited, as in most occasions the width of the Rabi splitting remains largely unaffected and the two hybrid modes are well distinguishable. We discuss how this behavior can be understood in view of the popular coupled-harmonic-oscillator model, while we also provide analytic solutions based on Mie theory to describe the hybrid modes in the case of matryoshka-like single nanoparticles. Our analysis provides an answer to a so far open question, that of the influence of nonlocality on strong coupling, and is expected to facilitate the design and study of plexcitonic architecture with ultrafine geometrical details.
Robust speech dereverberation with a neural network-based post-filter that exploits multi-conditional training of binaural cues

This study presents an algorithm for binaural speech dereverberation based on the supervised learning of short-term binaural cues. The proposed system combined a delay-and-sum beamformer (DSB) with a neural network-based post-filter that attenuated reverberant components in individual time-frequency (T-F) units. A multi-conditional training (MCT) procedure was used to simulate the uncertainties of short-term binaural cues in response to room reverberation by mixing the direct part of head related impulse responses (HRIRs) with diffuse noise. Despite being trained with only anechoic HRIRs, the proposed dereverberation algorithm was tested in a variety of reverberant environments and achieved considerable improvements relative to a coherence-based approach in terms of three objective metrics reflecting speech quality and speech intelligibility. Moreover, a systematic evaluation showed that the proposed system generalized very well to a wide range of acoustic conditions, including various measured binaural room impulse responses (BRIRs) reflecting different reverberation times, azimuth positions spanning the entire frontal hemifield, various source-receiver distances as well as different artificial heads.
Based on the principles and metrics of green chemistry and sustainable development, biocatalysis is both a green and sustainable technology. This is largely a result of the spectacular advances in molecular biology and biotechnology achieved in the past two decades. Protein engineering has enabled the optimization of existing enzymes and the invention of entirely new biocatalytic reactions that were previously unknown in Nature. It is now eminently feasible to develop enzymatic transformations to fit predefined parameters, resulting in processes that are truly sustainable by design. This approach has successfully been applied, for example, in the industrial synthesis of active pharmaceutical ingredients. In addition to the use of protein engineering, other aspects of biocatalysis engineering, such as substrate, medium, and reactor engineering, can be utilized to improve the efficiency and cost-effectiveness and, hence, the sustainability of biocatalytic reactions. Furthermore, immobilization of an enzyme can improve its stability and enable its reuse multiple
times, resulting in better performance and commercial viability. Consequently, biocatalysis is being widely applied in the production of pharmaceuticals and some commodity chemicals. Moreover, its broader application will be further stimulated in the future by the emerging biobased economy.

**General information**

**State:** Published

**Organisations:** Department of Chemical and Biochemical Engineering, KT Consortium, PROSYS - Process and Systems Engineering Centre, Delft University of Technology

**Authors:** Sheldon, R. A. (Ekstern), Woodley, J. M. (Intern)

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Scopus rating (2016): CiteScore 42.79 SJR 19.282 SNIP 10.369

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Web of Science (2015): Indexed yes

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Scopus rating (2014): SJR 18.369 SNIP 11.47 CiteScore 44.56

Web of Science (2014): Indexed yes

BFI (2013): BFI-level 2

Scopus rating (2013): SJR 22.176 SNIP 12.915 CiteScore 49.12

ISI indexed (2013): ISI indexed yes

BFI (2012): BFI-level 2

Scopus rating (2012): SJR 20.511 SNIP 11.43 CiteScore 39.08

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BFI (2011): BFI-level 2

Scopus rating (2011): SJR 19.538 SNIP 11.534 CiteScore 39.19

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Scopus rating (2010): SJR 18.393 SNIP 11.114

BFI (2009): BFI-level 2


Web of Science (2009): Indexed yes

BFI (2008): BFI-level 2

Scopus rating (2008): SJR 16.038 SNIP 8.682

Web of Science (2008): Indexed yes


Scopus rating (2005): SJR 12.157 SNIP 9.264

Scopus rating (2004): SJR 11.196 SNIP 8.924

Web of Science (2004): Indexed yes


Scalable Synthesis of Carbon-Supported Platinum–Lanthanide and –Rare-Earth Alloys for Oxygen Reduction

Platinum–rare-earth alloys have proven to be both active and stable under accelerated stability tests in their bulk polycrystalline form. However, a scalable method for the synthesis of a high-surface-area supported catalyst of these alloys has so far not been presented. Herein we discuss the thermodynamics relevant for the reduction conditions of the rare earths to form alloys with platinum. We show how the tolerance for water and oxygen severely limits the synthesis parameters and how under certain conditions the thermal reduction of YCl₃ with H₂ is possible from 500 °C. From the insight gained, we synthesized a PtₓY/C catalyst by modifying a Pt/C catalyst and confirmed alloy formation by both X-ray diffraction and X-ray photoelectron spectroscopy measurements. These reveal crystalline intermetallic phases and the metallic state of yttrium. Without any optimization of the method, the catalyst has an improved mass activity in comparison to the unmodified catalyst, proving the viability of the method. Initial work based on thermodynamic equilibrium calculations on reduction time show promise in controlling the phase formed by tuning the parameters of time, temperature, and gas composition.

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Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 4.039 SNIP 2.134 CiteScore 9.88
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 3.641 SNIP 2.022 CiteScore 8.74
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 3.271 SNIP 1.859 CiteScore 7.41
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
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Scattering of graphene plasmons at abrupt interfaces: An analytic and numeric study

We discuss the scattering of graphene surface plasmon-polaritons (SPPs) at an interface between two semi-infinite graphene sheets with different doping levels and/or different underlying dielectric substrates. We take into account retardation effects and the emission of free radiation in the scattering process. We derive approximate analytic expressions for the reflection and the transmission coefficients of the SPPs as well as the same quantities for the emitted free radiation. We show that the scattering problem can be recast as a Fredholm equation of the second kind. Such equation can then be solved by a series expansion, with the first term of the series correspond to our approximated analytical solution for the reflection and transmission amplitudes. We have found that almost no free radiation is emitted in the scattering process and that under typical experimental conditions the back-scattered SPP transports very little energy. This work provides a theoretical description of graphene plasmon scattering at an interface between distinct Fermi levels which could be relevant for the realization of plasmonic circuitry elements such as plasmonic lenses or reflectors, and for controlling plasmon propagation by modulating the potential landscape of graphene.

General information

State: Published
Organisations: Center for Nanostructured Graphene, Department of Photonics Engineering, Structured Electromagnetic Materials, University of Minho, Universidade de Lisboa
Authors: Chaves, A. J. (Ekstern), Amorim, B. (Ekstern), Bludov, Y. V. (Ekstern), Gonçalves, P. A. D. (Intern), Peres, N. M. R. (Ekstern)
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Web of Science (2015): Indexed yes
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Scopus rating (2012): SJR 3.206 SNIP 1.394 CiteScore 3.57
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Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 3.382 SNIP 1.438 CiteScore 3.61
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
Scopus rating (2010): SJR 3.417 SNIP 1.451
Web of Science (2010): Indexed yes
Searching for Short GRBs in Soft Gamma Rays with INTEGRAL/PICsIT

With gravitational wave (GW) detections by the LIGO/Virgo collaboration over the past several years, there is heightened interest in gamma-ray bursts (GRBs), especially "short" GRBs (T <2s). The high-energy PICsIT detector (~0.2 ─ 10 MeV) on-board the INTErnational Gamma-Ray Astrophysics Laboratory (INTEGRAL) is able to observe sources out to approximately 70° off-axis, making it essentially a soft gamma-ray, all-sky monitor for impulsive events, such as SGRBs. Because SGRBs typically have hard spectra with peak energies of a few hundred keV, PICsIT with its ~ 3000 cm² collecting area is able to provide spectral information about these sources at soft gamma-ray energies. We have begun a study of PICsIT data for faint SGRB similar to the one associated with the binary neutron star (BNS) merger GW170817, and also are preparing for future GW triggers by developing a realtime burst analysis for PICsIT. Searching the PICsIT data for significant excesses during ~30 min-long pointings containing times of SGRBs, we have been able to differentiate between SGRBs and spurious events. Also, this work allows us to assess what fraction of reported SGRBs have been detected by PICsIT, which can be used to provide an estimate of the number of GW BNS events seen by PICsIT during the next LIGO/Virgo observing run starting in Fall 2018.

General information
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Organisations: National Space Institute, Astrophysics and Atmospheric Physics, National Institute for Astrophysics, University of Geneva, Max-Planck Institut für Extraterrestrische Physik, Centro de Astrobiologia, University College Dublin, The Research Institute in Astrophysics and Planetology, CEA Saclay, RAS - Space Research Institute, European Space Agency
Authors: Rodi, J. (Ekstern), Bazzano, A. (Ekstern), Ubertini, P. (Ekstern), Natalucci, L. (Ekstern), Savchenko, V. (Ekstern), Kuulkers, E. (Ekstern), Ferrigno, C. (Ekstern), Bozzo, E. (Ekstern), Brandt, S. (Intern), Chenevez, J. (Intern), Courvoisier, T. J. (Ekstern), Diehl, R. (Ekstern), Domingo, A. (Ekstern), Hanlon, L. (Ekstern), Jourdain, E. (Ekstern), von Kienlin, A. (Ekstern), Laurent, P. (Ekstern), Lebrun, F. (Ekstern), Gutovinov, A. (Ekstern), Martin-Carrillo, A. (Ekstern), Mereghetti, S. (Ekstern), Roques, J. (Ekstern), Sunyaev, R. (Ekstern)
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Sea State Estimation Using Vessel Response in Dynamic Positioning

This paper presents a novel method for estimating the sea state parameters based on the heave, roll and pitch response of a vessel in dynamic positioning (DP), i.e., without forward speed. The algorithm finds the wave spectrum estimate from the response measurements by directly solving a set of linear equations, and as a result it is computationally efficient. The main vessel parameters are required as input. Apart from this the method is signal-based, with no assumptions on the wave spectrum shape. Performance of the proposed algorithm is demonstrated on full-scale experimental DP data of a vessel in three different sea states at head, bow, beam, quartering and following sea waves, respectively.

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Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, Norwegian University of Science and Technology
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Secondary immune response of rainbow trout following repeated immersion vaccination

Teleosts are able to raise a protective immune response, comprising both innate and adaptive elements, against various pathogens. This is the basis for a widespread use of vaccines, administered as injection or immersion, in the aquaculture industry. It has been described that repeated injection vaccination of fish raises a secondary immune response, consisting of rapid, accelerated and increased antibody reaction. This study reports how rainbow trout responds to repeated immersion vaccination against yersiniosis (ERM) caused by the bacterial pathogen Yersinia ruckeri. It was found that rainbow trout does not raise a classical secondary response following repeated immersion vaccination. Serum antibody titres were merely slightly increased even after three immunizations, using 30-s immersion into a bacterin consisting of formalin-inactivated Y. ruckeri (serotype O1, biotypes 1 and 2), performed over a 3-month period. The densities of IgM-positive lymphocytes in spleen of fish immunized three times were increased compared to control fish, but no general trend for an increase with the number of immunizations was noted. The lack of a classical secondary response following repeated immersion vaccination may partly be explained by limited uptake of antigen by immersion compared to injection.

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Organisations: National Veterinary Institute, Innate Immunology, Bacteriology & Parasitology, University of Copenhagen
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Segmentation-Driven Tomographic Reconstruction.

The tomographic reconstruction problem is concerned with creating a model of the interior of an object from some measured data, typically projections of the object. After reconstructing an object it is often desired to segment it, either automatically or manually. For computed tomography (CT), the classical reconstruction methods suffer from their inability to handle limited and/or corrupted data. Form any analysis tasks computationally demanding segmentation methods are used to automatically segment an object, after using a simple reconstruction method as a first step. In the literature, methods that completely combine reconstruction and segmentation have been suggested, but these are often non-convex and have very high computational demand. We propose to move the computational effort from the segmentation process to the reconstruction process, and instead design reconstruction methods such that the segmentation subsequently can be carried out by use of a simple segmentation method, for instance just a thresholding method. We tested the advantages of going from a two-stage reconstruction method to a one stage segmentation-driven reconstruction method for the phase contrast tomography reconstruction problem. The tests showed a clear improvement for realistic materials simulations and that the one-stage method was clearly more robust toward noise. The noise-robustness result could be a step toward making this method more applicable for lab-scale experiments. We have introduced a segmentation-driven reconstruction method which incorporates information about the main texture direction in an object. We proved that this method has mathematically desirable properties such as being convex and lower semicontinuous. We have also demonstrated the practical applicability of the method.

within image denoising, image deblurring and CT reconstruction. In order to use the proposed method we also proposed efficient and robust methods for estimating the main direction in either corrupted images or from limited and corrupted CT projection data. For directional object we also proposed two different reconstruction methods that separates the directional parts in the object from the non-directional parts. These method could for example be used for objects consisting of fibres and cracks. The results can be categorized as either completely combined reconstruction and segmentation of the object, or as highly supporting for the following segmentation process. Computed tomography is used within medical diagnosis, food science, materials science, production inspection, quality assessment, etc. Segmentation-driven reconstruction methods can help improve both manual and automated segmentation processes that are used to analyze an object after the scanning. The results in this thesis are both of theoretical interest within regularization theory and
Selection for life-history traits to maximize population growth in an invasive marine species

Species establishing outside their natural range, negatively impacting local ecosystems, are of increasing global concern. They often display life-history features characteristic for r-selected populations with fast growth and high reproduction rates to achieve positive population growth rates (r) in invaded habitats. Here, we demonstrate substantially earlier maturation at a 2 orders of magnitude lower body mass at first reproduction in invasive compared to native populations of the comb jelly Mnemiopsis leidyi. Empirical results are corroborated by a theoretical model for competing life-history traits that predicts maturation at the smallest possible size to optimize r, while individual lifetime reproductive success (R0 ), optimized in native populations, is near constant over a large range of intermediate maturation sizes. We suggest that high variability in reproductive tactics in native populations is an underappreciated determinant of invasiveness, acting as substrate upon which selection can act during the invasion process.
Selection of functional 2A sequences within foot-and-mouth disease virus; requirements for the NPGP motif with a distinct codon bias

Foot-and-mouth disease virus (FMDV) has a positive-sense ssRNA genome including a single, large, open reading frame. Splitting of the encoded polyprotein at the 2A/2B junction is mediated by the 2A peptide (18 residues long) which induces a non-proteolytic, co-translational, "cleavage" at its own C-terminus. A conserved feature among variants of 2A is the C-terminal motif N16P17G18/P19 where P19 is the first residue of 2B. It has been shown previously that certain amino acid substitutions can be tolerated at residues E14, S15 and N16 within the 2A sequence of infectious FMDVs but no variants at residues P17, G18 or P19 have been identified. In this study, using highly degenerate primers, we analysed if any other residues can be present at each position of the NPG/P motif within infectious FMDV. No alternative forms of this motif were found to be encoded by rescued FMDVs after 2, 3 or 4 passages. However, surprisingly, a clear codon preference for the wt nucleotide sequence encoding the NPGP motif within these viruses was observed. Indeed, the codons selected...
to code for P17 and P19 within this motif were distinct; thus the synonymous codons are not equivalent.
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.

Selective Hydrodeoxygenation of Alkyl Lactates to Alkyl Propionates with Fe-based Bimetallic Supported Catalysts

Hydrodeoxygenation (HDO) of methyl lactate (ML) to methyl propionate (MP) was performed with various base-metal supported catalysts. A high yield of 77% MP was obtained with bimetallic Fe-Ni/ZrO₂ in methanol at 220°C and 50 bar H₂. A synergistic effect of Ni increased the yield of MP significantly when using Fe-Ni/ZrO₂ instead of Fe/ZrO₂ alone. Moreover, the ZrO₂ support contributed to improve the yield as a phase transition of ZrO₂ from tetragonal to monoclinic occurred after metal doping giving rise to fine dispersion of the Fe and Ni on the ZrO₂, resulting in a higher catalytic activity of the material. Interestingly, it was observed that Fe-Ni/ZrO₂ also effectively catalyzed methanol reforming to produce H₂ in situ, followed by HDO of ML, yielding 60% MP at 220°C with 50 bar N₂ instead of H₂. Fe-Ni/ZrO₂ also catalyzed HDO of other short-chain alkyl lactates to the corresponding alkyl propionates in high yields around 70%. No loss of activity of Fe-Ni/ZrO₂ occurred in five consecutive reaction runs demonstrating the high durability of the catalyst system.
Selective Oxidative Carbonylation of Aniline to Diphenylurea with Ionic Liquids

A catalytic system for the selective oxidative carbonylation of aniline to diphenylurea based on Pd complexes in combination with imidazolium ionic liquids is presented. Both oxidants, Pd complexes and ionic liquids affect the activity of the reaction while the choice of oxidant determines the selectivity of the reaction. Together they allows the reaction to proceed under comparatively mild conditions without loss of activity. In-situ NMR examination of the reaction led to the observation of a previously suggested intermediate supporting the proposed mechanism.

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Organisations: Department of Chemistry, Centre for Catalysis and Sustainable Chemistry, Organic Chemistry, Universitat Rovira i Virgili
Sensory evaluation and chemical analysis of exhaled and dermally emitted bioeffluents

Conditions in which exhaled and dermally emitted bioeffluents could be sampled separately or together (whole-body emission) were created. Five lightly dressed males exhaled the air through a mask to another, identical chamber or without a mask to the chamber in which they were sitting; the outdoor air supply rate was the same in both chambers. The carbon dioxide concentration in the chamber with exhaled air was 2000 ppm. Chamber temperatures were 23°C or 28°C, and ozone was present or absent in the supply airflow. When dermally emitted bioeffluents were present, the perceived air quality (PAQ) was less acceptable, and the odor intensity was higher than when only exhaled bioeffluents were present. The presence or absence of exhaled bioeffluents in the unoccupied chamber made no significant difference to sensory assessments. At 28°C and with ozone present, the odor intensity increased and the PAQ was less acceptable in the chambers with whole-body bioeffluents. The concentrations of nonanal, decanal, geraniol acetone, and 6-MHO were higher when dermally emitted bioeffluents were present; they increased further when ozone was present. The concentration of squalene then decreased and increased again at 28°C. Dermally emitted bioeffluents seem to play a major role in the sensory nuisance experienced when occupied volumes are inadequately ventilated.
Serine/Threonine protein kinases from bacteria, archaea and eukarya share a common evolutionary origin deeply rooted in the tree of life

The main family of serine/threonine/tyrosine protein kinases present in eukarya was defined and described by Hanks et al. in 1988. It was initially believed that these kinases do not exist in bacteria, but extensive genome sequencing revealed their existence in many bacteria. For historical reasons, the term "eukaryotic-type kinases" propagated in the literature to describe bacterial members of this protein family. Here, we argue that this term should be abandoned as a misnomer, and we provide several lines of evidence to support this claim. Our comprehensive phylostratigraphic analysis suggests that Hanks-type kinases present in eukarya, bacteria and archaea all share a common evolutionary origin in the lineage leading to the last universal common ancestor (LUCA). We found no evidence to suggest substantial horizontal transfer of genes encoding Hanks-type kinases from eukarya to bacteria. Moreover, our systematic structural comparison suggests that bacterial Hanks-type kinases resemble their eukaryal counterparts very closely, while their structures appear to be dissimilar from other kinase families of bacterial origin. This indicates that a convergent evolution scenario, by which
bacterial kinases could have evolved a kinase domain similar to that of eukaryal Hanks-type kinases, is not very likely. Overall, our results strongly support a monophyletic origin of all Hanks-type kinases, and we therefore propose that this term should be adopted as a universal name for this protein family.

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Web of Science (2008): Indexed yes
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Web of Science (2007): Indexed yes
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Shifts in the source and composition of dissolved organic matter in Southwest Greenland lakes along a regional hydro-climatic gradient

Dissolved organic matter (DOM) concentration and quality were examined from Arctic lakes located in three clusters across south-west (SW) Greenland, covering the regional climatic gradient: cool, wet coastal zone; dry inland interior; and cool, dry ice-marginal areas. We hypothesized that differences in mean annual precipitation between sites would result in a reduced hydrological connectivity between lakes and their catchments and that this concentrates degraded DOM. The DOM in the inland lake group was characterized by a lower aromaticity and molecular weight, a low soil-like fluorescence, and carbon stable isotope (δ13C-DOC) values enriched by ~2‰ relative to the coastal group. DOC-specific absorbance (SUVA254) and DOC-specific soil-like fluorescence (SUVFCl) revealed seasonal and climatic gradients across which DOM exhibited a dynamic we term "pulse-process": Pulses of DOM exported from soils to lakes during snow and ice melt were followed by pulses of autochthonous DOM inputs (possibly from macrophytes), and their subsequent photochemical and microbial processing. These effects regulated the dynamics of DOM in the inland lakes and suggested that if circumpolar lakes currently situated in cool wetter climatic regimes with strong hydrological connectivity have reduced connectivity under a drier future climate, they may evolve toward an end-point of large stocks of highly degraded DOC, equivalent to the inland lakes in the present study. The regional climatic gradient across SW Greenland and its influence on DOM properties in these lakes provide a model of possible future changes to lake C cycling in high-latitude systems where climatic changes are most pronounced.
Short-term exposure to repeated chasing stress does not induce habituation in Senegalese sole, Solea senegalensis

Animals can habituate to certain repeated stressors and reduce the physiological response that such stressor evoked initially. Studies related to stress habituation in fish are scarce and the available data differ depending on the species and on the type, duration and severity of the stressor. The main objective of this study was to investigate the stress response of juvenile Senegalese sole (Solea senegalensis) submitted to repeated chasing stress for 3 days previous to the experiment in order to evaluate the occurrence of habituation to those stress conditions in this fish species. Thus, five different experimental groups were evaluated: not stressed fish (control, C), fish stressed only on the experimental day (ST/naïve), and fish stressed on the experimental day and on the 3 previous days: during the day (ST/Dt), at night (ST/Nt) or both (ST/Dt + Nt). Parameters related to primary and secondary responses to chasing were evaluated in plasma, liver and brain. Chasing in ST/naïve group induced incremented values of plasma cortisol, glucose and lactate but no changes in catecholamine levels compared to controls. In trained fish, higher cortisol but decreased glucose, lactate and catecholamine levels were observed after stress compared to controls and to ST/naïve groups. In the liver, stress did not induce any changes with respect to controls whereas ST/Dt and ST/Dt + Nt showed lower values of glucose and glycogen than stressed naïve fish. In the brain, ST/naïve group presented no significant changes in serotonergic activity. However, incremented serotonergic activity was detected in fish previously trained. Furthermore, dopaminergic activity decreased in diurnal trained and nocturnal trained groups with respect to ST/naïve fish. Crh expression in hypothalamus was higher in ST/naïve fish but not in fish submitted to repeated stress compared to controls. In summary, it seems that there was no habituation to the repeated acute stress protocol in Solea senegalensis in terms of serotonergic activity and cortisol release during the physiological stress response. However, the decreased levels of plasma catecholamines and energy metabolites, and of the hypothalamic crh mRNA abundance and dopaminergic activity, indicate a modulation of the stress response in trained fish. Altogether, the results suggest that either the chasing stressor was too strong or the training period too short for the animals to habituate, indicating that repeated chasing within short periods should be avoided when manipulating fish in order to keep proper welfare conditions in this species.

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Organisations: National Institute of Aquatic Resources, Section for Aquaculture, Universidade do Porto, Universidade de Vigo, University of Vigo
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Scopus rating (2013): SJR 1.136 SNIP 1.3 CiteScore 2.18
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Short-term feed and light deprivation reduces voluntary activity but improves swimming performance in rainbow trout Oncorhynchus mykiss

Rainbow trout Oncorhynchus mykiss (~180 g, 16 °C and <5 kg m−3) that were feed deprived and kept in total darkness showed a significant increase in critical swimming speed (Ucrit) between 1 and 12 days of deprivation (from 3.35 to 4.46 body length (BL) s−1) with no increase in maximum metabolic rate (MMR). They also showed a significant decrease in the estimated metabolic rate at 0 BL s−1 over 12 days which leads to a higher factorial aerobic metabolic scope at day 12 (9.38) compared to day 1 (6.54). Routine metabolic rates were also measured in ~90 g rainbow trout that were swimming freely in large circular respirometers at 16 °C. These showed decreasing consumption oxygen rates and reductions in the amount of oxygen consumed above standard metabolic rate (a proxy for spontaneous activity) over 12 days, though this happened significantly faster when they were kept in total darkness when compared to a 12:12-h light–dark (LD) photoperiod. Weight loss during this period was also significantly reduced in total darkness (3.33% compared to 4.98% total body weight over 12 days). Immunological assays did not reveal any consistent up- or downregulation of antipathogenic and antioxidant enzymes in the serum or skin mucus of rainbow trout between 1 and 12 days of feed and light deprivation. Overall, short periods of deprivation do not appear to significantly affect the performance of rainbow trout which appear to employ a behavioural energy-sparing strategy, albeit more so in darkness than under a 12:12-h LD regime.

General information
Signal to noise comparison of metabolic imaging methods on a clinical 3T MRI

MRI with hyperpolarized tracers has enabled new diagnostic applications, e.g. metabolic imaging in cancer research. However, the acquisition of the transient, hyperpolarized signal with spatial and frequency resolution requires dedicated imaging methods. Here, we compare three promising candidates for 2D MR spectroscopic imaging (MRSI): (i) multi-echo balanced steady-state free precession (me-bSSFP), (ii) echo planar spectroscopic imaging (EPSI) sequence and (iii) phase-encoded, pulseacquisition chemical-shift imaging (CSI)

Silicon Waveguide with Lateral p-i-n Diode for Nonlinearity Compensation by On-Chip Optical Phase Conjugation

A 1-dB Q-factor improvement through optical phase conjugation in a silicon waveguide with a lateral p-i-n diode enables BER<HD-FEC after 644-km dispersion-compensated transmission for all channels of a 5xWDM 16-QAM single-polarization signal

Silylative Pinacol Coupling Catalyzed by Nitrogen-Doped Carbon-Encapsulated Nickel/Cobalt Nanoparticles: Evidence for a Silyl Radical Pathway

The silylative pinacol coupling of arylaldehydes catalyzed by an easily accessible, heterogeneous base-metal catalyst is demonstrated. Instead of using the classical combination of catalyst, stoichiometric metal reductants, and chlorosilanes, the developed reaction only requires the use of a catalyst and a hydrosilane, which serves as both reductant and silylating agent. A rare mechanistic investigation in this field focusing on the organic reactants was undertaken using various techniques including experimental rate orders, kinetic isotope effect, radical scavengers, and stoichiometric tests. The obtained results provided evidence for a reaction mechanism which is different from the classical pinacol coupling pathway. We propose that the heterogeneous catalyst facilitates easy access to silyl radicals, thereby circumventing the usual need for explosive initiators to access these species. In addition, leaching tests and recycling of the catalyst were performed, clearly supporting the heterogeneous nature of the catalyst.
Simple preparation of thiol-ene particles in glycerol and surface functionalization by thiol-ene chemistry (TEC) and surface chain transfer free radical polymerization (SCT-FRP)

Thiol-ene (TE) based polymer particles have traditionally been prepared via emulsion polymerization in water (using surfactants, stabilizers and co-solvents). Here, we present a green and simple alternative with excellent control over particle size, while avoiding the addition of stabilizers. Glycerol is applied as a dispersing medium for the preparation of offstoichiometric TE (OSTE) microparticles, where sizes in the range of 40 to 400 µm are obtained solely by changing the mixing speed of the emulsions prior to cross-linking. Control over surface chemistry is achieved by surface functionalization of excess thiol groups via photochemical thiol-ene chemistry (TEC) resulting in a functional monolayer. In addition, surface chain transfer free radical polymerization (SCT-FRP) was used for the first time to introduce a thicker polymer layer on the particle surface. The application potential of the system is demonstrated by using functional particles as a support for immobilized enzymes in a continuous plug-flow reactor.
Simulation of transcontinental wind and solar PV generation time series

The deployment of Renewable Energy Sources (RES) is driving modern power systems towards a fundamental green transition. In this regard, there is a need to develop models to accurately capture the variability of wind and solar photovoltaic (PV) power, at different geographical and temporal scales. This paper presents a general methodology based on meteorological reanalysis techniques allowing to simulate aggregated RES time series over large geographical areas. It also introduces a novel PV conversion approach based on aggregated power curves in order to capture the uncertainty associated to the technical characteristics of individual installations spread across large regions. The proposed
methodology is validated using actual power data in Europe and can be applied to represent intermittent generation in network development plans, reliability and market studies, as well as operational guidelines.

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Authors: Nuño Martínez, E. (Intern), Maule, P. (Intern), Hahmann, A. N. (Intern), Cutululis, N. A. (Intern), Sørensen, P. E. (Intern), Karagali, I. (Intern)
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Scopus rating (2010): SJR 1.494 SNIP 2.215
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Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.214 SNIP 1.65
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Scopus rating (2005): SJR 1.215 SNIP 1.26
Simulation Study of Active Ceilings with Phase Change Material in Office Buildings for Different National Building Regulations

The aim of this study was to examine the performance of phase change material (PCM) in active ceilings for an office room under different Danish building regulations for both heating and cooling purposes. A model of a two-person office room was simulated with the only heating and cooling source being radiant ceiling panels containing PCM. The target was to reduce energy use for the simulation models and still meet the recommended criteria of Category II for the European Standard EN 15251:2007 namely, 23°C – 26°C (73.4°F – 78.8°F) during summer and between 20°C – 24°C (68.0°F – 73.4°F) during winter. The office model was simulated for a whole year and analyzed for three Danish building regulations BR10 (2010), BR15 (2015) and BR20 (2020). The results show that the indoor environment was within the desired Category II, according to EN 15251 for the whole occupancy period. The predicted percentage of dissatisfied (PPD) was below the desired 10% for Class II of EN15251 during 95% of the occupied hours in a year for BR10, 94% for BR15 and 100% for BR20. The use of PCM model decreased energy use by 45% for BR10, 35% for BR15, while it increased by 17% for BR20. The results indicate that active ceilings with integrated PCM could help maintain a satisfactory thermal indoor environment while reducing the energy use. This demonstrated a great potential for PCM to be used to achieve strict energy frame requirements for future low energy buildings.

General information

State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Technical University of Denmark
Authors: Farhan, H. (Ekstern), Stefansen, C. (Ekstern), Bourdakis, E. (Intern), Kazanci, O. B. (Intern), Olesen, B. W. (Intern)
Number of pages: 8
Publication date: 2018

Host publication information

Title of host publication: Proceedings of the 2018 ASHRAE Winter Conference
Publisher: American Society of Heating, Refrigerating and Air-Conditioning Engineers
Main Research Area: Technical/natural sciences
Conference: ASHRAE 2018 Winter Conference, Chicago, United States, 20/01/2018 - 20/01/2018
Source: PublicationPreSubmission
Source-ID: 143486111
Publication: Research - peer-review › Article in proceedings – Annual report year: 2018

Simulation Study of Performance of Active Ceilings with Phase Change Material in Office Buildings under Extreme Climate Conditions

This study examined the performance of Phase Change Material (PCM) in active ceiling panels under extreme climate conditions. The purpose was to reduce the annual energy use and still maintain an indoor climate corresponding to Category II in the European Standard, EN15251. Dynamic yearly simulations were run with a building simulation software for eight climates. The chosen climates were Dubai – UAE, Istanbul – Turkey, Lima – Peru, Moscow – Russia, Nuuk – Greenland, Salvador – Brazil, Tokyo – Japan and Tromsø – Norway. Two models of a two-person office were made for each climate; one model with active ceiling with PCM and an all-air ventilation model without PCM to compare the models and investigate the effects of using PCM in active ceilings. The results show that the PCM models lowered the peak room temperature during the cooling season. None of the PCM models had temperatures outside the desired ranges, and in general provided a more comfortable thermal indoor climate than the all-air system. The PPD level was lower for the PCM models in all of the tested climates, except for the hot climates Dubai and Salvador. The largest differences in energy use were found in the cold climates, namely Moscow, Nuuk and Tromsø. The PCM model of Nuuk used 42% less energy annually than the all-air system, while the PCM models of Tromsø and Moscow had 39% and 30% lower annual energy use, respectively. The PCM models of Istanbul and Dubai showed an energy use 24% and 13%
lower compared to the all-air models. The subtropical climates Tokyo and Salvador had an 7% and 2% lower energy use, respectively. Lima was the only climate where the PCM model had a negative effect on the energy use with -20%. The implementation of PCM showed to have the largest benefit in terms of energy use under cold climate conditions; however, all climates, except for Lima, showed that active ceilings with PCM could be implemented with positive effects by lowering the peak room temperatures and the energy use in buildings.

**General information**

State: Published  
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Technical University of Denmark  
Authors: Stefansen, C. (Ekstern), Farhan, H. (Ekstern), Bourdakis, E. (Intern), Kazanci, O. B. (Intern), Olesen, B. W. (Intern)  
Number of pages: 8  
Publication date: 2018

**Host publication information**

Title of host publication: Proceedings of the 2018 ASHRAE Winter Conference  
Publisher: American Society of Heating, Refrigerating and Air-Conditioning Engineers  
Main Research Area: Technical/natural sciences  
Conference: ASHRAE 2018 Winter Conference, Chicago, United States, 20/01/2018 - 20/01/2018  
Source: PublicationPreSubmission  
Source-ID: 143486105  
Publication: Research - peer-review › Article in proceedings – Annual report year: 2018

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**Single-Phase Boost Inverter-Based Electric Vehicle Charger With Integrated Vehicle to Grid Reactive Power Compensation**

Vehicle to grid (V2G) reactive power compensation using electric vehicle (EV) onboard chargers helps to ensure grid power quality by achieving unity power factor operation. However, the use of EVs for V2G reactive power compensation increases the second-order harmonic ripple current component at the DC-side of the charger. For single-phase, single-stage EV chargers, the ripple current component has to be supplied by the EV battery, unless a ripple compensation method is employed. Additionally, continuous usage of EV chargers for reactive power compensation, when the EV battery is not charging from the grid, exposes the EV battery to these undesirable ripple current components for a longer period and discharges the battery due to power conversion losses. This paper presents a way to provide V2G reactive power compensation through a boost inverter-based single stage EV charger and a DC-side capacitor without adversely affecting the EV battery. The operation of the boost inverter-based EV charger with second-order harmonic and switching frequency ripple current reduction, the dynamic behavior of the system, the transition between different operating modes, the DC-side capacitor voltage control above a minimum allowed voltage, and the DC-side capacitor sizing are extensively analyzed. The performance of the proposed system is verified using an experimental prototype, and presented results demonstrate the ability of the system to provide V2G reactive power compensation both with and without the EV battery.

**General information**

State: Published  
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric equipment technologies, University of New South Wales  
Authors: Wickramasinghe Abeywardana, D. B. (Ekstern), Acuna, P. (Ekstern), Hredzak, B. (Ekstern), Aguilera, R. P. (Ekstern), Agelidis, V. (Intern)  
Number of pages: 10  
Pages: 3462-3471  
Publication date: 2018  
Main Research Area: Technical/natural sciences

**Publication information**

Journal: I E E E Transactions on Power Electronics  
Volume: 33  
Issue number: 4  
ISSN (Print): 0885-8993  
Ratings:  
BFI (2018): BFI-level 2  
Web of Science (2018): Indexed yes  
BFI (2017): BFI-level 2  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 2  
Scopus rating (2016): CiteScore 9.96 SJR 2.728 SNIP 3.615  
Web of Science (2016): Indexed yes
Single-point reactive power control method on voltage rise mitigation in residential networks with high PV penetration

Voltage rise (VR) due to reverse power flow is an important obstacle for high integration of Photovoltaic (PV) into residential networks. This paper introduces and elaborates a novel methodology of an index-based single-point-reactive power-control (SPRPC) methodology to mitigate voltage rise by absorbing adequate reactive power from one selected point. The proposed index utilizes short circuit analysis to select the best point to apply this Volt/Var control method. SPRPC is supported technically and financially by distribution network operator that makes it cost effective, simple and efficient to eliminate VR in the affected network. With SPRPC none of the previous PV inverters need to upgrade and can retain their unity power factor to not to conflict with current grid codes. Comprehensive 24-h simulation studies are done on a modified IEEE 69-bus Network emulating a traditional residential power system with high r/x ratio. Efficacy, effectiveness and cost study of SPRPC is compared to droop control to evaluate its advantages.

General information

State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric equipment technologies, University of New South Wales, University of Salerno, Aalborg University

BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.498 SNIP 3.819 CiteScore 9.2
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.299 SNIP 4.318 CiteScore 8.78
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.396 SNIP 4.427 CiteScore 8.41
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.945 SNIP 3.803 CiteScore 6.98
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.993 SNIP 3.359 CiteScore 7.12
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.796 SNIP 2.89
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.786 SNIP 2.726
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.538 SNIP 3.073
Web of Science (2008): Indexed yes
Scopus rating (2005): SJR 3.761 SNIP 3.411
Scopus rating (2004): SJR 2.931 SNIP 3.653
Scopus rating (2003): SJR 3.742 SNIP 3.056
Scopus rating (2002): SJR 3.953 SNIP 2.632
Scopus rating (2001): SJR 3.048 SNIP 1.904
Scopus rating (2000): SJR 0.664 SNIP 1.453
Scopus rating (1999): SJR 0.591 SNIP 2.399
Original language: English
Electric vehicle (EV) charger, Reactive power, Second-order harmonic ripple current, Vehicle to grid (V2G)

DOIs:
10.1109/TPEL.2017.2700944

Source: FindIt
Source-ID: 2395376206
Publication: Research - peer-review › Journal article – Annual report year: 2018
Sintering of MnCo$_2$O$_4$ coatings prepared by electrophoretic deposition

Sintering of MnCo$_2$O$_4$ coatings prepared by electrophoretic deposition on steel substrates has been studied in air and in reducing-oxidizing atmosphere. Effect of temperature and pO$_2$ on the resulting coating density was evaluated from scanning electron microscopy images of polished cross sections. Best sample microstructure defined by having high density and no cracks, was found after a reduction at 1000 °C and reoxidation at 900 °C.
In-situ electron paramagnetic resonance (EPR) spectroscopy was applied to dilute copper chabazite (CHA) zeolites under gas flows relevant for the selective catalytic reduction of NO with ammonia (NH3-SCR). Under both reducing and oxidizing conditions, we observed differences in reactivity between the different monomeric copper sites present: When reducing with NO+NH3, the rate of reduction of Cu2+ sites depends on NH3 coverage. The subsequent oxidation with O2 results in a clean EPR spectrum of only one type of copper site, whereas oxidation in NO+O2 gives two types of copper sites. The rate of oxidation differs significantly between reaction with O2 alone and with NO+O2 together. Thus it was revealed that [Cu(NH3)2]+ complexes, which are regarded to be only weakly associated with the framework, nevertheless have different reactivity depending on the Al distribution in the proximity. The observed differences in reactivity of copper sites has implications for the mechanistic understanding of NH3-SCR with Cu-zeolites.
Smart grid communication infrastructure comparison for distributed control of distributed energy resources using internet of things devices

Communication between distributed energy resources and aggregators is necessary to improve the efficiency of power use and solve stability issues. For the communication, the probability of delivery for measurements and control commands, determines the possible power system services. The probability of delivery is determined by the processing units, data connection, middleware, and serialization. The comparison is made based on multiple experimental setups to test the performance of different middleware and serialization with different processing units and data connections in a Smart Grid context. The hardware includes Beagle Bones, Raspberry Pi's, and Dell laptops processing units, and the data connection bandwidths include 1, 10, 100 and 1000 Mbit/s. The results show that there are better alternatives to XMPP and Web Services middleware and XML serialization as advocated for by the prevalent communication standards. The paper gives guidance in choosing the best software and hardware for communication depending on the use case.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Energy system management, Department of Applied Mathematics and Computer Science, Software Engineering, Technical University of Denmark
Authors: Petersen, B. S. (Intern), Bindner, H. W. (Intern), Poulsen, B. (Intern), You, S. (Intern)
Number of pages: 8
Pages: 7-14
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Electrical and Electronic Engineering and Telecommunications
Volume: 7
Issue number: 1
ISSN (Print): 2319-2518
Original language: English
Computer Networks and Communications, Electrical and Electronic Engineering, Instrumentation, Communication, Infrastructure, Middleware, Serialization, Smart grid
DOI: 10.18178/ijeetc.7.1.7-14
Source: FindIt
Source-ID: 2395733390
Publication: Research - peer-review › Journal article – 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 (WCMSO12)
Publisher: Springer
Editors: A. S., T. V., S. F., K. B., K. M.
ISBN (Print): 978-3-319-67987-7
ISBN (Electronic): 978-3-319-67988-4
Main Research Area: Technical/natural sciences
Conference: 12th World Congress of Structural and Multidisciplinary Optimisation, Braunschweig, Germany, 05/06/2017 - 05/06/2017
Heat conduction, Anisotropic, Mesh adaptation, Topology optimization, MATLAB
DOIs: 10.1007/978-3-319-67988-4_92
Source: FindIt
Source-ID: 2393936603
Publication: Research - peer-review › Article in proceedings – Annual report year: 2018

Sources of Antibiotic Resistance Genes in a Rural River System

General information
State: Accepted/In press
Organisations: National Food Institute, Research Group for Analytical and Predictive Microbiology, Dalhousie University, University of Regina, Acadia University
Authors: McConnell, M. M. (Ekstern), Hansen, L. T. (Intern), Neudorf, K. D. (Ekstern), Hayward, J. (Ekstern), Jamieson, R. C. (Ekstern), Yost, C. K. (Ekstern), Tong, A. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Environmental Quality
ISSN (Print): 0047-2425
Ratings: BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.51 SJR 1.049 SNIP 1.15
BFI (2015): BFI-level 2
Spatial ecology

**General information**

State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, Durham University
Authors: Skov, C. (Intern), Lucas, M. C. (Ekstern), Jacobsen, L. (Intern)
Number of pages: 402
Pages: 83-123
Publication date: 2018

**Host publication information**

Title of host publication: Biology and Ecology of Pike
Spatio-temporal patterns in the coral reef communities of the Spermonde Archipelago, 2012–2014, II: Fish assemblages display structured variation related to benthic condition

The Spermonde Archipelago is a complex of ~70 mostly populated islands off Southwest Sulawesi, Indonesia, in the center of the Coral Triangle. The reefs in this area are exposed to a high level of anthropogenic disturbances. Previous studies have shown that variation in the benthos is strongly linked to water quality and distance from the mainland. However, little is known about the fish assemblages of the region and if their community structure also follows a relationship with benthic structure and distance from shore. In this study, we used eight islands of the archipelago, varying in distance from 1 to 55 km relative to the mainland, and 3 years of surveys, to describe benthic and fish assemblages and to examine the spatial and temporal influence of benthic composition on the structure of the fish assemblages. Cluster analysis indicated that distinct groups of fish were associated with distance, while few species were present across the entire range of sites. Relating fish communities to benthic composition using a multivariate generalized linear model confirmed that fish groups relate to structural complexity (rugosity) or differing benthic groups; either algae, reef builders (coral and crustose coralline algae) or invertebrates and rubble. From these relationships we can identify sets of fish species that may be lost given continued degradation of the Spermonde reefs. Lastly, the incorporation of water quality, benthic and fish indices indicates that local coral reefs responded positively after an acute disturbance in 2013 with increases in reef builders and fish diversity over relatively short (1 year) time frames. This study contributes an important, missing component (fish community structure) to the growing literature on the Spermonde Archipelago, a system that features environmental pressures common in the greater Southeast Asian region.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Centre for Ocean Life, Leibniz Center for Tropical Marine Research, Monaco Scientific Centre, Universitas Hasanuddin, Autonomous University of Barcelona, University of Bremen, Leibniz Centre for Tropical Marine Ecology
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Frontiers in Marine Science
Volume: 5
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.53 SJR 0.173 SNIP 0.109
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.145 SNIP 0.05
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
Original language: English
Electronic versions:
Publishers version
DOIs:
10.3389/fmars.2018.00036
Publication: Research - peer-review › Journal article – Annual report year: 2018

Spectral/hp element methods: Recent developments, applications, and perspectives

The spectral/hp element method combines the geometric flexibility of the classical h-type finite element technique with the desirable numerical properties of spectral methods, employing high-degree piecewise polynomial basis functions on coarse finite element-type meshes. The spatial approximation is based upon orthogonal polynomials, such as Legendre or Chebychev polynomials, modified to accommodate a C 0 - continuous expansion. Computationally and theoretically, by increasing the polynomial order p, high-precision solutions and fast convergence can be obtained and, in particular, under
certain regularity assumptions an exponential reduction in approximation error between numerical and exact solutions can be achieved. This method has now been applied in many simulation studies of both fundamental and practical engineering flows. This paper briefly describes the formulation of the spectral/hp element method and provides an overview of its application to computational fluid dynamics. In particular, it focuses on the use of the spectral/hp element method in transitional flows and ocean engineering. Finally, some of the major challenges to be overcome in order to use the spectral/hp element method in more complex science and engineering applications are discussed.

### General information

State: Published
Organization: Department of Applied Mathematics and Computer Science, Scientific Computing, Center for Energy Resources Engineering, Technical University of Denmark, Imperial College London, Aalborg University
Authors: Xu, H. (Ekstern), Cantwell, C. (Ekstern), Monteserin, C. (Ekstern), Eskilsson, C. (Ekstern), Engsig-Karup, A. P. (Intern), Sherwin, S. (Ekstern)
Number of pages: 22
Pages: 1-22
Publication date: 2018
Main Research Area: Technical/natural sciences

### Publication information

Journal: Journal of Hydrodynamics
Volume: 30
Issue number: 1
ISSN (Print): 1001-6058

Ratings:
- Web of Science (2018): Indexed yes
- Web of Science (2017): Indexed yes
- Scopus rating (2016): CiteScore 1.47 SJR 0.26 SNIP 0.386
- Web of Science (2015): Indexed yes
- Scopus rating (2014): SJR 0.252 SNIP 0.393 CiteScore 1.24
- Scopus rating (2013): SJR 0.321 SNIP 0.673 CiteScore 1.09
- Scopus rating (2012): SJR 0.258 SNIP 0.601 CiteScore 0.91
- ISI indexed (2013): ISI indexed yes
- Scopus rating (2012): SJR 0.341 SNIP 1.036 CiteScore 0.88
- ISI indexed (2012): ISI indexed yes
- Scopus rating (2011): SJR 0.439 SNIP 0.926 CiteScore 1.12
- ISI indexed (2011): ISI indexed yes
- Scopus rating (2010): SJR 0.409 SNIP 1.202
- Web of Science (2010): Indexed yes
- Scopus rating (2009): SJR 0.213 SNIP 0.287
- Web of Science (2009): Indexed yes
- Scopus rating (2008): SJR 0.262 SNIP 0.917
- Scopus rating (2007): SJR 0.208 SNIP 0.66
- Scopus rating (2006): SJR 0.247 SNIP 1.208
- Scopus rating (2005): SJR 0.199 SNIP 0.842
- Scopus rating (2004): SJR 0.202 SNIP 0.74
- Scopus rating (2003): SJR 0.2 SNIP 0.304
- Scopus rating (2002): SJR 0.173 SNIP 0.123
- Scopus rating (2001): SJR 0.203 SNIP 0
- Scopus rating (2000): SJR 0.1
- Scopus rating (1999): SJR 0.103
- Original language: English


Electronic versions:
- filestore_40_.pdf

DOIs:
- 10.1007/s42241-018-0001-1

Source: FindIt
Source-ID: 2396504605
Stable isotope-resolved analysis with quantitative dissolution dynamic nuclear polarization

Metabolite profiles and their isotopomer distributions can be studied non-invasively in complex mixtures with NMR. The advent of dissolution Dynamic Nuclear Polarization (dDNP) and isotope enrichment add sensitivity and resolution to such metabolic studies. Metabolic pathways and networks can be mapped and quantified if protocols that control and exploit the ex situ signal enhancement are created. We present a sample preparation method, including cell incubation, extraction and signal enhancement, to facilitate reproducible and quantitative dDNP (qdDNP) NMR-based isotope tracer analysis. We further illustrate how qdDNP was applied to gain systematic and novel metabolic phenotypic insights into aggressive cancer cells.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Magnetic Resonance, Center for Hyperpolarization in Magnetic Resonance, Technical University of Denmark
Pages: 674–678
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication Information
Journal: Analytical Chemistry
Volume: 90
Issue number: 1
ISSN (Print): 0003-2700
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 6.08
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 6
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 5.79
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 6.01
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 5.8
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 5.86
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
Statistical prediction of far-field wind-turbine noise, with probabilistic characterization of atmospheric stability

Here we provide statistical low-order characterization of noise propagation from a single wind turbine, as affected by mutually interacting turbine wake and environmental conditions. This is accomplished via a probabilistic model, applied to an ensemble of atmospheric conditions based upon atmospheric stability; the latter follows from the basic form for stability distributions established by Kelly and Gryning [Boundary-Layer Meteorol. 136, 377–390 (2010)]. For each condition, a parabolic-equation acoustic propagation model is driven by an atmospheric boundary-layer (“ABL”) flow model; the latter solves Reynolds-Averaged Navier-Stokes equations of momentum and temperature, including the effects of stability and the ABL depth, along with the drag due to the wind turbine. Sound levels are found to be highest downwind for modestly stable conditions not atypical of mid-latitude climates, and noise levels are less elevated for very stable conditions, depending on ABL depth. The probabilistic modelling gives both the long-term (ensemble-mean) noise level and the variability as a function of distance, per site-specific atmospheric stability statistics. The variability increases with the distance; for distances beyond 3km downwind, this variability is the highest for stability distributions that are modestly...
dominated by stable conditions. However, mean noise levels depend on the widths of the stable and unstable parts of the stability distribution, with more stably-dominated climates leading to higher mean levels.

**General information**
State: Published
Organisations: Department of Wind Energy, Resource Assessment Modelling
Authors: Kelly, M. C. (Intern), Barlas, E. (Intern), Sogachev, A. (Intern)
Number of pages: 17
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Journal of Renewable and Sustainable Energy
Volume: 10
Issue number: 1
Article number: 013302
ISSN (Print): 1941-7012
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.2 SJR 0.418 SNIP 0.523
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.372 SNIP 0.52 CiteScore 1.02
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.406 SNIP 0.697 CiteScore 1.05
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.441 SNIP 0.856 CiteScore 1.26
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 0.575 SNIP 1.246 CiteScore 1.77
ISI indexed (2012): ISI indexed yes
Scopus rating (2011): SJR 0.344 SNIP 1.024 CiteScore 1.3
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Web of Science (2010): Indexed yes
Original language: English
DOIs:
10.1063/1.5012899
Source: FindIt
Source-ID: 2395353488
Publication: Research - peer-review › Journal article – Annual report year: 2018

**Status for laksen og dens forvaltning i Danmark 2017**

**General information**
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, Section for Marine Living Resources
Authors: Koed, A. (Intern), Sivebæk, F. (Intern), Eg Nielsen, E. (Intern)
Publication date: 2018

**Publication information**
Source/Publisher: Fiskepleje.dk
Main Research Area: Technical/natural sciences
Stocking for pike population enhancement

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Guillerault, N. (Ekstern), Hühn, D. (Ekstern), Cucherousset, J. (Ekstern), Arlinghaus, R. (Ekstern), Skov, C. (Intern)
Number of pages: 402
Pages: 215-248
Publication date: 2018

Host publication information
Title of host publication: Biology and Ecology of Pike
Publisher: CRC Press
Editors: Skov, C., Nilsson, P. A.
ISBN (Print): 9781482262902
Chapter: 9
Main Research Area: Technical/natural sciences
Publication: Research - peer-review › Book chapter – Annual report year: 2018

Streamer properties and associated x-rays in perturbed air
Streamers are ionization waves in electric discharges. One of the key ingredients of streamer propagation is an ambient gas that serves as a source of free electrons. Here, we explore the dependence of streamer dynamics on different spatial distributions of ambient air molecules. We vary the spatial profile of air parallel and perpendicular to the ambient electric field. We consider local sinusoidal perturbations of 5%–100%, as induced from discharge shock waves. We use acylindrically symmetric particle-in-cell code to simulate the evolution of bidirectional streamers and compare the electron density, electric field, streamer velocity and electron energy of streamers in uniform air and in perturbed air. In all considered cases, the motion is driven along in decreasing air density and damped along increasing air density. Perturbations of at most 5%–10% change the velocity differences by up to approximately 40%. Perturbations perpendicular to the electric field additionally squeeze or branch streamers. Air variations can thus partly explain the difference of velocities and morphologies of streamer discharges. In cases with large perturbations, electrons gain energies of up to 30 keV compared to 100 eV in uniformly distributed air. For such perturbations parallel to the ambient electric field, we see the spontaneous initiation of a negative streamer; for perpendicular perturbations, x-rays with energies of up to 20 keV are emitted within 0.17 ns.

General information
State: Published
Organisations: National Space Institute, Astrophysics and Atmospheric Physics, Russian Federal Nuclear Center
Authors: Köhn, C. (Intern), Chanrion, O. (Intern), Babich, L. P. (Ekstern), Neubert, T. (Intern)
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Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
We describe a probe-class mission concept that provides an unprecedented view of the X-ray sky, performing timing and 0.2-30 keV spectroscopy over timescales from microseconds to years. The Spectroscopic Time-Resolving Observatory for Broadband Energy X-rays (STROBE-X) comprises three primary instruments. The first uses an array of lightweight optics (3-m focal length) that concentrate incident photons onto solid state detectors with CCD-level (85-130 eV) energy resolution, 100 ns time resolution, and low background rates to cover the 0.2-12 keV band. This technology is scaled up from NICER, with enhanced optics to take advantage of the longer focal length of STROBE-X. The second uses large-area collimated silicon drift detectors, developed for ESA's LOFT, to cover the 2-30 keV band. These two instruments each provide an order of magnitude improvement in effective area compared with its predecessor (NICER and RXTE, respectively). Finally, a sensitive sky monitor triggers pointed observations, provides high duty cycle, high time resolution, high spectral resolution monitoring of the X-ray sky with ~20 times the sensitivity of the RXTE ASM, and enables multi-wavelength and multi-messenger studies on a continuous, rather than scanning basis. We include updated instrument designs resulting from the GSFC IDL run in November 2017. For the first time, the broad coverage provides simultaneous study of thermal components, non-thermal components, iron lines, and reflection features from a single platform for accreting black holes at all scales. The enormous collecting area allows detailed studies of the dense matter equation of state using both thermal emission from rotation-powered pulsars and harder emission from X-ray burst oscillations. The combination of the wide-field monitor and the sensitive pointed instruments enables observations of potential electromagnetic counterparts to LIGO/Virgo and neutrino events. Extragalactic science, such as constraining bulk metallicity of medium to high redshift clusters and nearby compact groups and unprecedented timing investigations of active galactic nuclei, is also obtained.
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. YBa$_2$Cu$_4$O$_x$ 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.
Structural characterization of bioactive heteropolysaccharides from the medicinal fungus Inonotus obliquus (Chaga)

The aim of this paper was to perform a comprehensive characterization of polysaccharides isolated from the interior (IOI) and exterior (IOE) parts of the fungus Inonotus obliquus. Pre-extraction with DCM and MeOH, followed by water and alkali extraction and ethanol precipitation gave two water extracts and two alkali extracts. Neutral and acidic polysaccharide fractions were obtained after anion-exchange chromatography of the water extracts. The neutral polysaccharides...
(60–73kDa) were heterogeneous and branched and consisted of a (1→3)-linked β-Glc backbone with (1→6)-linked kinks in the chain at approximately every fifth residue, with branches of (1→6)-linked β-Glc in addition to substantial amounts of (1→6)-linked α-Gal with 3-O-methylation at about every third Gal residue. The acidic polysaccharide fractions (10–31kDa) showed similar structural motifs as the neutral fractions differing mainly by the presence of (1→4)-linked α-GalA and α-GlcA. β-Xyl, α-Man and α-Rha were also present in varying amounts in all fractions. No major structural differences between the IOI and IOE fractions were observed. An alkaline polysaccharide fraction (>450kDa) was obtained from the IOI alkali extract, and consisted mainly of (1→3)- and (1→6)-linked β-Glc and (1→4)-linked β-Xyl. Several of the fractions showed in vitro immunomodulatory effect by increasing NO production in the murine macrophage and dendritic cell lines J774.A1 and D2SC/1. Most fractions managed to increase NO production only at the highest concentration tested (100μg/ml), while the neutral fraction IOE-WN activated potent NO production at 10μg/ml and was considered the most promising immunomodulating fraction in this study.

**General information**

State: Published
Organisations: Department of Chemistry, Organic Chemistry, University of Oslo, Oslo University Hospital, Norwegian University of Science and Technology
Authors: Wold, C. W. (Ekstern), Kjeldsen, C. (Intern), Corthay, A. (Ekstern), Rise, F. (Ekstern), Christensen, B. E. (Ekstern), Duus, J. Ø. (Intern), Inngjerdingen, K. T. (Ekstern)
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Scopus rating (2016): CiteScore 5.15 SJR 1.404 SNIP 1.745
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
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Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.584 SNIP 1.969 CiteScore 4.69
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BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.372 SNIP 1.808
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.43 SNIP 1.718
BFI (2008): BFI-level 1
Structural Stability and Vibration: An Integrated Introduction by Analytical and Numerical Methods
This book offers an integrated introduction to the topic of stability and vibration. Strikingly, it describes stability as a function of boundary conditions and eigenfrequency as a function of both boundary conditions and column force. Based on a post graduate course held by the author at the University of Southern Denmark, it reports on fundamental formulas and makes uses of graphical representation to promote understanding. Thanks to the emphasis put on analytical methods and numerical results, the book is meant to make students and engineers familiar with all fundamental equations and their derivation, thus stimulating them to write interactive and dynamic programs to analyze instability and vibrational modes.

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 dependent 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.
Substrate specificity and transfucosylation activity of GH29 α-l-fucosidases for enzymatic production of human milk oligosaccharides

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 xylolglucan 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.

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Scopus rating (2015): SJR 1.069 SNIP 1.07 CiteScore 3.07
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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.994 SNIP 1.248 CiteScore 2.77
Subwavelength Hyperlens Resolution With Perfect Contrast Function

Recently it has been shown that plasmonic effects in hyperbolic metamaterials may facilitate overcoming the diffraction limit and enhance the contrast function of an image by filtering background radiation. Unfortunately, the contrast function of such a dark-field hyperlens degrades in the deep-subwavelength regime. We push forward the concept of the contrast function revival in the subwavelength imaging by introduction of the proper phase difference between coherent sources. To study this effect we develop a simplified theory of the wave propagation through a hyperbolic metamaterial and show that, in principle, two sources standing apart at any subwavelength distance can be distinguished. We suggest two feasible designs, the first of which employs the obliquely incident light, while the second one is based on a properly designed metasurface. The concept can be used in high-contrast subwavelength microscopy.
Sugarcane bagasse hydrolysate as a potential feedstock for red pigment production by Monascus ruber

Sugarcane bagasse (SCB) hydrolysate could be an interesting source for red pigment production by Monascus ruber Tieghem IOC 2225. The influence of different wavelength of light-emitting diode (LED) at 250µmol.m−2.s−1 of photon flux density on red pigment production by M. ruber in glucose-based medium was evaluated. Then, SCB hydrolysate was used as carbon source under the previously selected light incidence conditions. In glucose-based medium, the highest pigment production was achieved in fermentation assisted with orange LED light (8.28UA490nm), white light (8.26UA490nm) and under dark condition (7.4AUA490nm). By using SCB hydrolysate-based medium, the highest red pigment production (18.7UA490nm) was achieved under dark condition and the glucose and cellobiose present in the hydrolysate were metabolized. SCB enzymatic hydrolysate was demonstrated to be a promising carbon source for high thermal stability red pigment production (activation energy of 10.5kcal.mol−1), turning an interesting alternative for implementation in biorefineries.

**General information**

State: Published

Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Biomass Conversion and Bioprocess Technology, University of São Paulo, Technical University of Denmark

Authors: Terán Hilares, R. (Ekstern), de Souza, R. A. (Ekstern), Marcelino, P. F. (Ekstern), da Silva, S. S. (Ekstern), Dragone, G. (Ekstern), Mussatto, S. I. (Intern), Santos, J. C. (Ekstern)
Introduction: $^{135}$La has favorable nuclear and chemical properties for Auger-based targeted internal radiotherapy. Here we present detailed investigations of the production, emissions, imaging characteristics, and dosimetry related to $^{135}$La therapy. Methods and Results: $^{135}$La was produced by 16.5 MeV proton irradiation of metallic $^{3}$Ba on a medical cyclotron, and was isolated and purified by trap-and-release on weak cation-exchange resin. The average production rate was $407\pm 19$ MBq/µA (saturation activity, $n = 3$), and the radionuclidic purity was 98% at 20 h post irradiation. Chemical separation recovered $> 98\%$ of the $^{135}$La with an effective molar activity of $70\pm 20$ GBq/µmol. To better assess cellular and organ dosimetry of this nuclide, we have recalculated the X-ray and Auger emission spectra using a Monte Carlo model accounting for effects of multiple vacancies during the Auger cascade. The generated Auger spectrum was used to recalculate cellular S-factors. Conclusion: $^{135}$La was produced with high specific activity, reactivity, radionuclidic purity, and yield. The emission spectrum and the dosimetry are favorable for internal radionuclide therapy.

**General information**

State: Published
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, University of Oxford, Lund University, Australian National University
Authors: Fonslet, J. (Intern), Lee, B. Q. (Ekstern), Tran, T. A. (Ekstern), Siragusa, M. (Intern), Jensen, M. (Intern), Kibedi, T. (Ekstern), Stuchbery, A. E. (Ekstern), Severin, G. (Intern)
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- 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
- Scopus rating (2012): SJR 1.301 SNIP 1.569 CiteScore 3.12
57 Fe-Mössbauer spectroscopy and electrochemical activities of graphitic layer encapsulated iron electrocatalysts for the oxygen reduction reaction

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 ⁵⁷Fe-Mössbauer spectroscopy the iron containing components were identified including α-Fe, γ-Fe, γ-Fe₂O₃, and Fe₃C as well as a minor doublet component due to Fe³⁺ in high spin and/or Fe²⁺ 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 Fe₃C 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.
Supply chain collaboration in industrial symbiosis networks
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 efficiency of IS networks and can hence be used by stakeholders involved in these networks.
Surface technology is essential for transition to a hydrogen-based energy system

The importance of advanced surface technology for the success of the ongoing energy turnaround in Germany has recently been discussed in this journal. The purpose of the present article is to add views based on the conditions valid for the Nordic region.

General information
State: Published
Organisations: Department of Mechanical Engineering, Danish Technological Institute, Jönköping University
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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.354 SNIP 0.767 CiteScore 1.08
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.377 SNIP 0.368 CiteScore 0.87
Diagnostic metagenomics is a rapidly evolving laboratory tool for culture-independent tracing of foodborne pathogens. The method has the potential to become a generic platform for detection of most pathogens and many sample types. Today, however, it is still at an early and experimental stage. Studies show that metagenomic methods, from sample storage and DNA extraction to library preparation and shotgun sequencing, have a great influence on data output. To construct protocols that extract the complete metagenome but with minimal bias is an ongoing challenge. Many different software strategies for data analysis are being developed, and several studies applying diagnostic metagenomics to human clinical samples have been published, detecting, and sometimes, typing bacterial infections. It is possible to obtain a draft genome of the pathogen and to develop methods that can theoretically be applied in real-time. Finally, diagnostic metagenomics can theoretically be better geared than conventional methods to detect co-infections. The present review focuses on the current state of test development, as well as practical implementation of diagnostic metagenomics to trace foodborne bacterial infections in fecal samples from animals and humans.
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 Chlorophyll-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.

General information
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Organisations: Centre for Ocean Life, National Institute of Aquatic Resources, Section for Oceans and Arctic, College of Charleston, Naples University, Polytechnic University of Marche
Authors: Di Tullio, G. R. (Ekstern), Mariani, P. (Intern), Benassai, G. (Ekstern), Di Luccio, D. (Ekstern), Grieco, L. (Ekstern)
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Swim and fly: escape strategy in neustonic and planktonic copepods

Copepods can respond to predators by powerful escape jumps that in some surface-dwelling forms may propel the copepod out of the water. We studied the kinematics and energetics of submerged and out-of-water jumps of two neustonic pontellid copepods, Anomalocera patersoni and Pontella mediterranea, and one pelagic calanoid copepod, Calanus helgolandicus (euxinus). We show that jumping out of the water does not happen just by inertia gained during the copepod's acceleration underwater, but also requires the force generated by the thoracic limbs when breaking through the water's surface to overcome surface tension, drag and gravity. The timing of this appears to be necessary for success. At the moment of breaking the water interface, the instantaneous velocity of the two pontellids reached 125 cm s⁻¹, while
their maximum underwater speed (115 cm s-1) was close to that of similarly sized C. helgolandicus (106 cm s-1). The average specific power produced by the two pontellids during out-of-water jumps (1700-3300 W kg-1 muscle mass) was close to that during submerged jumps (900-1600 W kg-1 muscle mass) and, in turn, similar to that produced during submerged jumps of C. helgolandicus (1300 W kg-1 muscle mass). The pontellids may shake off water adhering to their body by repeated strokes of the limbs during flight, which leads to a slight acceleration in the air. Our observations suggest that out-of-water jumps of pontellids are not dependent on any exceptional ability to perform this behavior but have the same energetic cost and are based on the same kinematic patterns and contractive capabilities of muscles as those of copepods swimming submerged.

General information
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Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, National Institute of Aquatic Resources, Centre for Ocean Life, National Academy of Sciences of Ukraine
Authors: Svetlichny, L. (Ekstern), Larsen, P. S. (Intern), Kiørboe, T. (Intern)
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Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2016): CiteScore 2.62 SJR 1.722 SNIP 1.279
Web of Science (2016): Indexed yes
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Web of Science (2015): Indexed yes
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Scopus rating (2014): SJR 1.722 SNIP 1.331 CiteScore 2.51
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ISI indexed (2013): ISI indexed yes
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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
Synergy potential for oil and geothermal energy exploitation

A new solution for harvesting energy simultaneously from two different sources of energy by combining geothermal energy production and thermal enhanced heavy oil recovery is introduced. Numerical simulations are employed to evaluate the feasibility of generating energy from geothermal resources, both for thermally enhanced oil recovery from a heavy oil reservoir and for direct heating purposes. A single phase non-isothermal fluid flow modeling for geothermal doublet system and a two-phase non-isothermal fluid flow modelling for water flooding in an oil reservoir are utilised. Sensitivity and feasibility analyses of the synergy potential of thermally-enhanced oil recovery and geothermal energy production are performed. A series of simulations are carried out to examine the effects of reservoir properties on energy consumption and oil recovery for different injection rates and injection temperature. Our results show that total oil production strongly depends on the shape of heat plume which can be affected by porosity, permeability, injection temperature, well spacing and injection rate in the oil reservoir. The favourable oil recovery obtains at high amount of (a) injection rate, (b) injection temperature, (c) porosity and (d) low amount of oil reservoir permeability respectively. Furthermore, our study indicates the wellbore spacing plays an important role in oil recovery and an optimum wellbore spacing can be established. The analyses suggest that the extra amount of oil produced by utilising the geothermal energy could make the geothermal business case independent and may be a viable option to reduce the overall project cost. Furthermore, the results display that the enhance oil productions are able to reduce the required subsidy for a single doublet geothermal project up to 50%.
Syngas biomethanation: state-of-the-art review and perspectives

Significant research efforts are currently being made worldwide to develop more efficient biomethane production processes from a variety of waste streams. The biomethanation of biomass-derived syngas can contribute to increasing the potential of methane production as it opens the way for the conversion of recalcitrant biomasses, generally not fully exploitable by anaerobic digestion systems. Additionally, this biological process presents several advantages over its analogous process of catalytic methanation such as the use of inexpensive biocatalysts, milder operational conditions, higher tolerance to the impurities of syngas, and higher product selectivity. However, there are still several challenges to
be addressed for this technology to reach commercial stage. This work reviews the progress made over the last few years in syngas biomethanation processes in order to provide an overview of the current state of the art of this technology. The most relevant aspects determining the performance of syngas biomethanation processes are extensively discussed here, including microbial diversity and metabolic interactions in mixed microbial consortia, the influence of operating parameters and bioreactor designs, and the potential of modelling as a tool for the design and control of this bioprocess. © 2017 Society of Chemical Industry and John Wiley & Sons, Ltd

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State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, PILOT PLANT
Authors: Grimalt Alemany, A. (Intern), Skiadas, I. V. (Intern), Gavala, H. N. (Intern)
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Main Research Area: Technical/natural sciences

Publication information
Journal: Biofuels, Bioproducts and Biorefining
Volume: 12
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.58 SJR 1.114 SNIP 1.291
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.643 SNIP 1.451 CiteScore 3.44
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.74 SNIP 1.704 CiteScore 3.92
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.821 SNIP 1.867 CiteScore 4.49
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.487 SNIP 1.656 CiteScore 3.56
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.122 SNIP 2.284 CiteScore 4.68
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.046 SNIP 2.399
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.674 SNIP 2.237
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.97 SNIP 0.866
Original language: English
Biomethanation, Synthesis gas, Carbon monoxide, Methane, Microbial consortia, Mixed cultures
DOIs:
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Source-ID: 2391702558
Publication: Research - peer-review › Review – Annual report year: 2018
Synthesis of branched and linear 1,4-linked galactan oligosaccharides

We report the synthesis of linear and branched (1→4)-D-galactans. Four tetra- and one pentasaccharide were accessed by adopting a procedure of regioselective ring opening of a 4,6-O-naphthylidene protecting group followed by glycosylation using phenyl thioglycoside donors. The binding of the linear pentasaccharide with galectin-3 is also investigated by determination of a co-crystal structure. The binding of the (1→4)-linked galactan to Gal-3 highlights oligosaccharides of pectic galactan, which is abundant in the human diet, as putative Gal-3 ligands.
Synthesis of Two Tetrasaccharide Pentenyl Glycosides Related to the Pectic Rhamnogalacturonan I Polysaccharide

The synthesis of two protected tetrasaccharide pentenyl glycosides with diarabinan and digalactan branching related to the pectic polysaccharide rhamnogalacturonan I is reported. The strategy relies on the coupling of N-phenyl trifluoracetimidate disaccharide donors to a common rhamnosyl acceptor. The resulting trisaccharide thioglycosides were finally coupled to an n-pentenyl galactoside acceptor to access the two protected branched tetrasaccharides.

General information
State: Published
Organisations: Department of Chemistry, Organic Chemistry, Technical University of Denmark
Authors: Zakharova, A. N. (Ekstern), Awan, S. I. (Intern), Nami, F. (Intern), Gotfredsen, C. H. (Intern), Madsen, R. (Intern), Clausen, M. H. (Intern)
Number of pages: 14
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Journal: Molecules
Volume: 23
Issue number: 2
Article number: 327
ISSN (Print): 1420-3049
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Synthetic addiction extends the productive life time of engineered Escherichia coli populations

Bio-production of chemicals is an important driver of the societal transition toward sustainability. However, fermentations with heavily engineered production organisms can be challenging to scale to industrial volumes. Such fermentations are subject to evolutionary pressures that select for a wide range of genetic variants that disrupt the biosynthetic capacity of the engineered organism. Synthetic product addiction that couples high-yield production of a desired metabolite to expression of nonconditionally essential genes could offer a solution to this problem by selectively favoring cells with biosynthetic capacity in the population without constraining the medium. We constructed such synthetic product addiction
by controlling the expression of two nonconditionally essential genes with a mevalonic acid biosensor. The product-
addicted production organism retained high-yield mevalonic acid production through 95 generations of cultivation,
corresponding to the number of cell generations required for >200-m3 industrial-scale production, at which time the
nonaddicted strain completely abolished production. Using deep DNA sequencing, we find that the product-addicted
populations do not accumulate genetic variants that compromise biosynthetic capacity, highlighting how synthetic
networks can be designed to control genetic population heterogeneity. Such synthetic redesign of evolutionary forces with
endogenous processes may be a promising concept for realizing complex cellular designs required for sustainable bio-
manufacturing.

**General information**
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Bacterial Synthetic Biology, Department of
Biotechnology and Biomedicine
Authors: Rugbjerg, P. (Intern), Sarup-Lytzen, K. (Intern), Nagy, M. (Intern), Sommer, M. O. A. (Intern)
Number of pages: 6
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 8.56 SJR 6.321 SNIP 2.629
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 6.767 SNIP 2.682 CiteScore 8.84
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 6.853 SNIP 2.725 CiteScore 8.86
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 6.989 SNIP 2.73 CiteScore 9.5
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 6.792 SNIP 2.682 CiteScore 9.49
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 6.771 SNIP 2.636 CiteScore 9.31
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 6.769 SNIP 2.529
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 6.913 SNIP 2.544
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 6.899 SNIP 2.445
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 6.766 SNIP 2.441
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
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Original language: English

Series: Methods in Molecular Biology
Volume: 1671
ISSN: 1064-3745
Main Research Area: Technical/natural sciences
DOIs:
Systematic comparison of different techniques to measure hippocampal subfield volumes in ADNI2

Objective: Subfield-specific measurements provide superior information in the early stages of neurodegenerative diseases compared to global hippocampal measurements. The overall goal was to systematically compare the performance of five representative manual and automated T1 and T2 based subfield labeling techniques in a sub-set of the ADNI2 population.

Methods: The high resolution T2 weighted hippocampal images (T2-HighRes) and the corresponding T1 images from 106 ADNI2 subjects (41 controls, 57 MCI, 8 AD) were processed as follows. A. T1-based: 1. Freesurfer + Large-Diffeomorphic-Metric-Mapping in combination with shape analysis. 2. FreeSurfer 5.1 subfields using in-vivo atlas. B. T2-HighRes: 1. Model-based subfield segmentation using ex-vivo atlas (FreeSurfer 6.0). 2. T2-based automated multi-atlas segmentation combined with similarity-weighted voting (ASHS). 3. Manual subfield parcellation. Multiple regression analyses were used to calculate effect sizes (ES) for group, amyloid positivity in controls, and associations with cognitive/memory performance for each approach. Results: Subfield volumetry was better than whole hippocampal volumetry for the detection of the mild atrophy differences between controls and MCI (ES: 0.27 vs 0.11). T2-HighRes approaches outperformed T1 approaches for the detection of early stage atrophy (ES: 0.27 vs 0.10), amyloid positivity (ES: 0.11 vs 0.04), and cognitive associations (ES: 0.22 vs 0.19). Conclusions: T2-HighRes subfield approaches outperformed whole hippocampus and T1 subfield approaches. None of the different T2-HighRes methods tested had a clear advantage over the other methods. Each has strengths and weaknesses that need to be taken into account when deciding which one to use to get the best results from subfield volumetry.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, University of California at San Francisco, University of Pennsylvania, Northwestern University, University College London, VA Medical Center
Pages: 1006-1018
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Ratings:
Web of Science (2018): Indexed yes
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Scopus rating (2016): CiteScore 4.57 SJR 2.245 SNIP 1.296
Scopus rating (2015): SJR 2.158 SNIP 1.124 CiteScore 4.46
Scopus rating (2014): SJR 1.258 SNIP 0.909 CiteScore 2.79
Scopus rating (2013): SJR 0.482 SNIP 0.339 CiteScore 1.25
ISI indexed (2013): ISI indexed no
Original language: English
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Source: Scopus
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An integrated optimization-based framework for product and process design is proposed. The framework uses a set of methods and tools to obtain the optimal product–process design solution given a set of economic and environmental sustainability targets. The methods and tools required are property prediction through group contributions, unless supported with a database, computer-aided molecular and mixture/blend design for generation of novel as well as existing products and mathematical programming for formulating and solving multiscale integrated process–product design problems. The application of the framework is demonstrated through three case studies: (i) refrigeration cycle unit for R134a replacement, (ii) a mixed working fluid design problem for R134a replacement, and (iii) pure solvent design for water-acetic acid LLE extraction. Through the application of the framework it is demonstrated that all solutions satisfy
product, process, economic, and environmental targets simultaneously. The solution is obtained through a direct
deterministic mathematical optimization strategy. The framework proposed in this work is generic and can be applied to a
wide range of problems where an integrated solution to process-product design is beneficial.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, PROSYS - Process and Systems Engineering
Centre, KT Consortium
Authors: Cignitti, S. (Intern), Mansouri, S. S. (Intern), Woodley, J. M. (Intern), Abildskov, J. (Ekstern)
Pages: 677–688
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Journal: Industrial & Engineering Chemistry Research
Volume: 57
Issue number: 2
ISSN (Print): 0888-5885
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Scopus rating (2009): SJR 1.002 SNIP 1.164
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.142 SNIP 1.267
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.105 SNIP 1.239
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.035 SNIP 1.204
Web of Science (2006): Indexed yes
System evaluation of offshore platforms with gas liquefaction processes

Abstract Floating, production, storage and offloading plants are facilities used for offshore processing of hydrocarbons in remote locations. At present, the produced gas is injected back into the reservoir instead of being exported. The implementation of refrigeration processes offshore for liquefying natural gas provides the opportunity to monetize offshore gas resources. The present work analyzes the performance of offshore platforms, from the oil processing to the gas liquefaction system. Different feed compositions, system layouts and liquefaction processes are considered. Potential system improvements are discussed based on an energy and exergy analysis. Compared to a standard platform where gas is directly injected into the reservoir, the total power consumption increases by up to 50%, and the exergy destruction within the processing plant doubles when a liquefaction system is installed. It is therefore essential to conduct a careful analysis of the trade-off between the capital costs and operating revenues for such options.

General information
State: Published
Organisations: Department of Mechanical Engineering, Thermal Energy, University of São Paulo
Authors: Nguyen, T. (Intern), de Oliveira Júnior, S. (Ekstern)
Pages: 594–606
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Main Research Area: Technical/natural sciences

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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
Using a novel FPGA-based network emulator, microsecond-scale packets with 12.5-20-Gb/s data are generated, routed through a nanosecond Si-photonic switch, and received in a fast-locking burst-mode receiver. Error-free links with <382-ns system-level switching are shown.

**System-Level Demonstration of a Dynamically Reconfigured Burst-Mode Link Using a Nanosecond Si-Photonic Switch**

Using a novel FPGA-based network emulator, microsecond-scale packets with 12.5-20-Gb/s data are generated, routed through a nanosecond Si-photonic switch, and received in a fast-locking burst-mode receiver. Error-free links with <382-ns system-level switching are shown.

**General information**
State: Accepted/In press
Organisations: Department of Photonics Engineering, Networks Technology and Service Platforms, University of California at San Diego, IBM Thomas J. Watson Research Center
Authors: Forencich, A. (Ekstern), Kamchevska, V. (Intern), Dupuis, N. (Ekstern), Lee, B. G. (Ekstern), Baks, C. (Ekstern), Papen, G. (Ekstern), Schares, L. (Ekstern)
Number of pages: 3
Publication date: 2018

**Host publication information**
Title of host publication: Proceedings of Optical Fiber Communication Conference and Exhibition 2018
Tailored Electron Transfer Pathways in Aucore /Ptshell -Graphene Nanocatalysts for Fuel Cells

Au–Pt core–shell nanoparticles (Au@Pt NPs) covalently immobilized on graphene (G) are efficient electrocatalysts in low-temperature polymer electrolyte membrane fuel cells. The 9.5 ± 2 nm Au@Pt NPs with atomically thin Pt shells are attached on graphene via L-cysteine (Cys), which serves as linkers controlling NP loading and dispersion, enhancing the Au@Pt NP stability, and facilitating interfacial electron transfer. The increased activity of G-Cys-Au@Pt, compared to non-chemically immobilized G-Au@Pt and commercial platinum NPs catalyst (C–Pt), is a result of (1) the tailored electron transfer pathways of covalent bonds integrating Au@Pt NPs into the graphene framework, and (2) synergetic electronic effects of atomically thin Pt shells on Au cores. Enhanced electocatalytic oxidation of formic acid, methanol, and ethanol is observed as higher specific currents and increased stability of G-Cys-Au@Pt compared to G-Au@Pt and C–Pt. Oxygen reduction on G-Cys-Au@Pt occurs at 25 mV lower potential and 43 A gPt−1 higher current (at 0.9 V vs reversible hydrogen electrode) than for C–Pt. Functional tests in direct formic acid, methanol and ethanol fuel cells exhibit 95%, 53%, and 107% increased power densities for G-Cys-Au@Pt over C–Pt, respectively.
TARSyn: Tunable Antibiotic Resistance Devices Enabling Bacterial Synthetic Evolution and Protein Production

Evolution can be harnessed to optimize synthetic biology designs. A prominent example is recombinant protein production—a dominating theme in biotechnology for more than three decades. Typically, a protein coding sequence (cds) is recombined with genetic elements, such as promoters, ribosome binding sites and terminators, which control expression in a cell factory. A major bottleneck during production is translational initiation. Previously we identified more effective translation initiation regions (TIRs) by creating sequence libraries and then selecting for a TIR that drives high-level expression—an example of synthetic evolution. However, manual screening limits the ability to assay expression levels of all putative sequences in the libraries. Here we have solved this bottleneck by designing a collection of translational coupling devices based on a RNA secondary structure. Exchange of different sequence elements in this device allows for different coupling efficiencies, therefore giving the devices a tunable nature. Sandwiching these devices between the cds and an antibiotic selection marker that functions over a broad dynamic range of antibiotic concentrations adds to the tunability and allows expression levels in large clone libraries to be probed using a simple cell survival assay on the respective antibiotic. The power of the approach is demonstrated by substantially increasing production of two commercially interesting proteins, a Nanobody and an Affibody. The method is a simple and inexpensive alternative to advanced screening techniques that can be carried out in any laboratory.

Task-Modulated Cortical Representations of Natural Sound Source Categories

In everyday sound environments, we recognize sound sources and events by attending to relevant aspects of an acoustic input. Evidence about the cortical mechanisms involved in extracting relevant category information from natural sounds is, however, limited to speech. Here, we used functional MRI to measure cortical response patterns while human listeners...
categorized real-world sounds created by objects of different solid materials (glass, metal, wood) manipulated by different sound-producing actions (striking, rattling, dropping). In different sessions, subjects had to identify either material or action categories in the same sound stimuli. The sound-producing action and the material of the sound source could be decoded from multivoxel activity patterns in auditory cortex, including Heschl’s gyrus and planum temporale. Importantly, decoding success depended on task relevance and category discriminability. Action categories were more accurately decoded in auditory cortex when subjects identified action information. Conversely, the material of the same sound sources was decoded with higher accuracy in the inferior frontal cortex during material identification. Representational similarity analyses indicated that both early and higher-order auditory cortex selectively enhanced spectrotemporal features relevant to the target category. Together, the results indicate a cortical selection mechanism that favors task-relevant information in the processing of nonvocal sound categories.

General information
State: Published
Organisations: Department of Electrical Engineering, Hearing Systems, Department of Applied Mathematics and Computer Science, Cognitive Systems, Princeton University, Copenhagen University Hospital
Authors: Hjortkjær, J. (Intern), Kassuba, T. (Ekstern), Madsen, K. H. (Intern), Skov, M. (Ekstern), Siebner, H. R. (Ekstern)
Number of pages: 12
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  BFI (2018): BFI-level 2
  Web of Science (2018): Indexed yes
  BFI (2017): BFI-level 2
  Web of Science (2017): Indexed yes
  BFI (2016): BFI-level 2
  Scopus rating (2016): CiteScore 5.5 SJR 3.706 SNIP 1.521
  Web of Science (2016): Indexed yes
  BFI (2015): BFI-level 2
  Scopus rating (2015): SJR 4.818 SNIP 1.815 CiteScore 6.68
  Web of Science (2015): Indexed yes
  BFI (2014): BFI-level 2
  Scopus rating (2014): SJR 4.815 SNIP 2 CiteScore 6.86
  BFI (2013): BFI-level 2
  Scopus rating (2013): SJR 5.34 SNIP 1.909 CiteScore 7.26
  ISI indexed (2013): ISI indexed yes
  Web of Science (2013): Indexed yes
  BFI (2012): BFI-level 2
  Scopus rating (2012): SJR 5.015 SNIP 1.924 CiteScore 7.28
  ISI indexed (2012): ISI indexed yes
  BFI (2011): BFI-level 2
  Scopus rating (2011): SJR 5.128 SNIP 1.893 CiteScore 7.2
  ISI indexed (2011): ISI indexed yes
  Web of Science (2011): Indexed yes
  BFI (2010): BFI-level 2
  Scopus rating (2010): SJR 4.981 SNIP 1.834
  BFI (2009): BFI-level 2
  Scopus rating (2009): SJR 5.005 SNIP 1.884
  BFI (2008): BFI-level 2
  Scopus rating (2008): SJR 4.886 SNIP 1.767
Techno economic analysis of a wind-photovoltaic-biomass hybrid renewable energy system for rural electrification: A case study of Kallar Kahar

This paper focuses on the techno-economic feasibility of a grid-tied hybrid microgrid system for local inhabitants of Kallar Kahar near Chakwal city of Punjab province in Pakistan and investigates the potential for electricity generation through hybrid wind, photovoltaic and biomass system. The comprehensive resource assessment of wind, biomass and solar energy is carried out for grid integration. Homer Pro software is used to model a hybrid microgrid system. Optimization results and sensitivity analysis is carried out to ensure the robustness and cost-effectiveness of the proposed hybrid microgrid system. The total load has been optimally shared among generated power through wind, photovoltaic and biomass resources and surplus power is supplied to the national grid in case of low local demand of the load. The results of techno-economic feasibility study show that hybrid power system can generate more than 50 MW. The cost of energy based on peak load demand profiles are considered for both residential and commercial sectors. The cost of hybrid system for peak load of 73.6 MW is 180.2 million USD and levelized cost of energy is 0.05744 $/kWh.

General information
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Organisations: Department of Mechanical Engineering, Thermal Energy, University of Management & Technology, Lahore
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Web of Science (2018): Indexed yes
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
Temperature induced variation in gene expression of thyroid hormone receptors and deiodinases of European eel (Anguilla anguilla) larvae

Thyroid hormones (THs) are key regulators of growth, development, and metabolism in vertebrates and influence early life development of fish. TH is produced in the thyroid gland (or thyroid follicles) mainly as T4 (thyroxine), which is metabolized to T3 (3,5,3'-triiodothyronine) and T2 (3,5-diiodothyronine) by deiodinase (DIO) enzymes in peripheral tissues. The action of these hormones is mostly exerted by binding to a specific nuclear thyroid hormone receptor (THR). In this study, we i) cloned and characterized thr sequences, ii) investigated the expression pattern of the different subtypes of thrs and dios, and iii) studied how temperature affects the expression of those genes in artificially produced early life history stages of European eel (Anguilla anguilla), reared in different thermal regimes (16, 18, 20 and 22°C) from hatch until first-feeding. We identified 2 subtypes of thr (thrα and thrβ) with 2 isoforms each (thrαA, thrαB, thrβA, thrβB) and 3 subtypes of deiodinases (dio1, dio2, dio3). All thr genes identified showed high similarity to the closely related Japanese eel (Anguilla japonica). We found that all genes investigated in this study were affected by larval age (in real time or at specific developmental stages), temperature, and/or their interaction. More specifically, the warmer the temperature the earlier the expression response of a specific target gene. In real time, the expression profiles appeared very similar and only shifted with temperature. In developmental time, gene expression of all genes differed across selected developmental stages, such as at hatch, during teeth formation or at first-feeding. Thus, we demonstrate that the expression of thrs and dios show sensitivity to temperature and are involved in and during early life development of European eel.
Replacing coal with biomass in power plants is a viable option for reducing net CO₂ emissions and combating climate change. However, biomass combustion in boilers may exacerbate problems related to ash deposition and corrosion, demanding effective deposit removal. The tensile adhesion strength of model biomass ash deposits, containing mixtures of KCl, K₂SO₄, CaO, CaSO₄, and K₂Si₄O₉, has been investigated in this study. The deposits were prepared on superheater steel tubes and sintered in an oven. The superheater steel tube was cooled by air, incorporating a temperature gradient across the deposits. After sintering, the deposits were removed using an electrically controlled arm and the corresponding tensile adhesion strength was measured. The influence of the flue gas temperature (500–700 °C), steel surface temperature (500–650 °C), and deposit composition was investigated. The results revealed that increasing the flue gas temperature as well as the steel surface temperature led to a sharp increase in the tensile adhesion strength of the model deposits. The sharp increase was typically observed near the melting temperature (or deformation temperature) of the investigated model deposits. Furthermore, migration of molten/vapor species from the outer layer of the deposit to the deposit–tube interface, causing liquid-state sintering, was observed at high flue gas temperatures, leading to an increase in the tensile adhesion strength. Varying the ash chemistry of the model deposits revealed that the melt fraction of the deposit was highly influential in determining the deposit adhesion strength. The addition of compounds that increased the melt fraction of the deposit increased the tensile adhesion strength, whereas the addition of inert compounds with a high melting point, such as CaO, decreased the tensile adhesion strength. Moreover, the results suggested that the adhesion strength of the deposits was influenced by the corrosion occurring at the deposit–tube interface.

General information
State: Accepted/In press
Organisations: Department of Chemical and Biochemical Engineering, CHEC Research Centre, Ørsted Bioenergy & Thermal Power
Authors: Laxminarayan, Y. (Intern), Nair, A. B. (Ekstern), Jensen, P. A. (Intern), Wu, H. (Intern), Jappe Frandsen, F. (Intern), Sander, B. (Ekstern), Glarborg, P. (Intern)
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Publication date: 2018
Main Research Area: Technical/natural sciences

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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.49
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 3.34
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 3.3
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 3.52
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 3.25
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 3.05
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. The primary merit of the upper bound model lies in its simplicity (a closed-form equation). On the other hand, the lower bound model provides safe results, but is more complicated to apply. 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)
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Number of pages: 12
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Main Research Area: Technical/natural sciences

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Journal: Engineering Structures
Volume: 155
ISSN (Print): 0141-0296
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Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): 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: Published
Organisations: Department of Environmental Engineering, Ca’ Foscari University of Venice
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Number of pages: 11
Pages: 217-227
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

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Volume: 147
Issue number: 24
ISSN (Print): 0147-6513
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BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.99 SJR 1.205 SNIP 1.484
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.208 SNIP 1.419 CiteScore 3.46
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.114 SNIP 1.418 CiteScore 2.96
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.135 SNIP 1.316 CiteScore 2.8
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.063 SNIP 1.377 CiteScore 2.6
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.137 SNIP 1.21 CiteScore 2.71
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.278 SNIP 1.32
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.338 SNIP 1.399
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.289 SNIP 1.499
Testing spatial heterogeneity with stock assessment models
This paper describes a methodology that combines meta-population theory and stock assessment models to gain insights about spatial heterogeneity of the meta-population in an operational time frame. The methodology was tested with stochastic simulations for different degrees of connectivity between sub-populations and applied to two case studies, North Sea cod (Gadus morua) and Northeast Atlantic sardine (Sardina pilchardus). Considering that the biological components of a population can be partitioned into discrete spatial units, we extended this idea into a property of additivity of sub-population abundances. If the additivity results hold true for putative sub-populations, then assessment results based on sub-populations will provide information to develop and monitor the implementation of finer scale/local management. The simulation study confirmed that when sub-populations are independent and not too heterogeneous with regards to productivity, the sum of stock assessment model estimates of sub-populations' SSB is similar to the SSB estimates of the meta-population. It also showed that a strong diffusion process can be detected and that the stronger the connection between SSB and recruitment, the better the diffusion process will be detected. On the other hand it showed that weak to moderate diffusion processes are not easy to identify and large differences between sub-populations productivities may be confounded with weak diffusion processes. The application to North Sea cod and Atlantic sardine exemplified how much insight can be gained. In both cases the results obtained were sufficiently robust to support the regional analysis.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, European Commission - Joint Research Center, Instituto Português do Mar e da Atmosfera, IFREMER, AZTI Technalia, Instituto Español de Oceanografía, Cefas
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Publication date: 2018
Main Research Area: Technical/natural sciences

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Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
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
The application of municipal renewable energy policies at community level in Denmark: A taxonomy of implementation challenges

The implementation of national renewable energy targets requires policies at the local level. Communities are considered as key arenas of transforming policies into actions, where technical configurations intersect with socioeconomic interests. Local governments put great efforts into developing and applying energy strategies. Although many frontrunner projects are well-documented, insufficient attention is paid to the average-performing municipalities that are challenged in linking technical energy scenarios with socioeconomic realities.

The following implementation gap between national policy and local practice leads to a non-attainment of national energy targets. This paper analyses the Strategic Energy Plans (SEP) of 17 Danish municipalities based on their development, scope, and inclusion of local communities. As a synopsis, the main technical, physical, organizational and socioeconomic challenges for local energy policy implementation were illustrated. Internal organization, lacking municipal capacities, combined with the complexity of communities leads to procedural deficits in strategy production. The resulting neglect of socioeconomics and other community peculiarities by technology-driven strategies impede strategy implementation. As a consequence, a community-oriented taxonomy of implementation challenges is introduced. This approach might help to improve the scope of SEPs, ensure a local anchoring of energy strategies, and raise awareness for challenges already present during strategy production to facilitate strategy implementation.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics
Authors: Petersen, J. (Intern)
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Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.78 SJR 0.921 SNIP 1.271
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.803 SNIP 1.25 CiteScore 2.68
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.885 SNIP 1.558 CiteScore 2.3
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.671 SNIP 2.088 CiteScore 1.94
BFI (2012): BFI-level 1
The bane of low-dimensionality clustering

In this paper, we give a conditional lower bound of \(n^{\omega(k)}\) on running time for the classic \(k\)-median and \(k\)-means clustering objectives (where \(n\) is the size of the input), even in low-dimensional Euclidean space of dimension four, assuming the Exponential Time Hypothesis (ETH). We also consider \(k\)-median (and \(k\)-means) with penalties where each point need not be assigned to a center, in which case it must pay a penalty, and extend our lower bound to at least three-dimensional Euclidean space. This stands in stark contrast to many other geometric problems such as the traveling salesman problem, or computing an independent set of unit spheres. While these problems benefit from the so-called (limited) blessing of dimensionality, as they can be solved in time \(n^{O(k^{1-1/d})}\) or \(2^{n^{1-1/d}}\) in \(d\) dimensions, our work shows that widely-used clustering objectives have a lower bound of \(n^{\omega(k)}\), even in dimension four. We complete the picture by considering the two-dimensional case: we show that there is no algorithm that solves the penalized version in time less than \([\text{Equation}]\), and provide a matching upper bound of \([\text{Equation}]\). The main tool we use to establish these lower bounds is the placement of points on the moment curve, which takes its inspiration from constructions of point sets yielding Delaunay complexes of high complexity.

General information

State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic, University of Copenhagen, Université Grenoble Alpes, Sorbonne Universités
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The Debye-Hückel theory and its importance in modeling electrolyte solutions

A colleague at the Technical University of Denmark has often stated: “Life is too short for electrolytes”. Another well-known scientist in the field of molecular simulation has recently said during an international Thermodynamics conference: “All my life I have tried to keep myself away from water and electrolytes”. Sadly, what these statements correctly imply is that there are far too many unclear questions and concepts in electrolyte thermodynamics, and associated difficulties in modeling electrolyte solutions. In this work, we attempt to shed some light on some important concepts and misconceptions in electrolyte thermodynamics associated with the development of electrolyte equations of state, with emphasis on those based on the Debye-Hückel theory. Detailed mathematics is needed for some of the derivations but for brevity and in order to emphasize the principles rather than the derivations, the latter are omitted. We first discuss the peculiarities of electrolyte thermodynamics and associated modeling and continue with the derivation of the Debye-Hückel theory. The assumptions and limits of application of Debye-Hückel are discussed in particular. Next, the Born term and its significance and implications are presented in more detail. A discussion and outlook section conclude this review. Several of the statements in this work challenge “accepted beliefs” in electrolyte thermodynamics and, while we believe that this challenge is justified, we hope that a useful debate can result in improved and predictive thermodynamic models for electrolyte solutions.
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 shows 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
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Organisations: Department of Management Engineering, Management Science, Implementation and Performance Management, Copenhagen Business School
Authors: Nardelli, G. (Intern), Rajala, R. (Forskerdatabase)
Pages: 38-53
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Web of Science (2017): Indexed yes
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Scopus rating (2016): CiteScore 1
BFI (2015): BFI-level 2
BFI (2014): BFI-level 2
BFI (2013): BFI-level 2
ISI indexed (2013): ISI indexed no
The future of fish passage science, engineering, and practice

Much effort has been devoted to developing, constructing and refining fish passage facilities to enable target species to pass barriers on fluvial systems, and yet, fishway science, engineering and practice remain imperfect. In this review, 17 experts from different fish passage research fields (i.e., biology, ecology, physiology, ecohydraulics, engineering) and from different continents (i.e., North and South America, Europe, Africa, Australia) identified knowledge gaps and provided a roadmap for research priorities and technical developments. Once dominated by an engineering-focused approach, fishway science today involves a wide range of disciplines from fish behaviour to socioeconomics to complex modelling of passage prioritization options in river networks. River barrier impacts on fish migration and dispersal are currently better understood than historically, but basic ecological knowledge underpinning the need for effective fish passage in many regions of the world, including in biodiversity hotspots (e.g., equatorial Africa, South-East Asia), remains largely unknown. Designing efficient fishways, with minimal passage delay and post-passage impacts, requires adaptive management and continued innovation. While the use of fishways in river restoration demands a transition towards fish passage at the community scale, advances in selective fishways are also needed to manage invasive fish colonization. Because of the erroneous view in some literature and communities of practice that fish passage is largely a proven technology, improved international collaboration, information sharing, method standardization and multidisciplinary training are needed. Further development of regional expertise is needed in South America, Asia and Africa where hydropower dams are currently being planned and constructed.
The Global Acetylome of the Human Pathogen Vibrio cholerae V52 Reveals Lysine Acetylation of Major Transcriptional Regulators

Protein lysine acetylation is recognized as an important reversible post translational modification in all domains of life. While its primary roles appear to reside in metabolic processes, lysine acetylation has also been implicated in regulating pathogenesis in bacteria. Several global lysine acetylome analyses have been carried out in various bacteria, but thus far there have been no reports of lysine acetylation taking place in the important human pathogen Vibrio cholerae. In this study, we analyzed the lysine acetylproteome of the human pathogen V. cholerae V52. By applying a combination of immuno-enrichment of acetylated peptides and high resolution mass spectrometry, we identified 3,402 acetylation sites on 1,240 proteins. Of the acetylated proteins, more than half were acetylated on two or more sites. As reported for other bacteria, we observed that many of the acetylated proteins were involved in metabolic and cellular processes and there was an over-representation of acetylated proteins involved in protein synthesis. Of interest, we demonstrated that many global transcription factors such as CRP, H-NS, IHF, Lrp and RpoN as well as transcription factors AphB, TcpP, and PhoB involved in direct regulation of virulence in V. cholerae were acetylated. In conclusion, this is the first global protein lysine acetylome analysis of V. cholerae and should constitute a valuable resource for in-depth studies of the impact of lysine acetylation in pathogenesis and other cellular processes.
**General information**

State: Published
Organisations: Department of Biotechnology and Biomedicine, Research Groups, Bacterial Signal Transduction, Novo Nordisk Foundation Center for Biosustainability, Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, Karolinska Institutet, Umeå University
Authors: Jers, C. (Intern), Ravikumar, V. (Intern), Lezyk, M. J. (Intern), Sultan, A. (Intern), Sjöling, Å. (Ekstern), Wai, S. N. (Ekstern), Mijakovic, I. (Intern)
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Main Research Area: Technical/natural sciences

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- Scopus rating (2015): SJR 2.238 SNIP 1.335 CiteScore 4.13
- Web of Science (2015): Indexed yes
- Scopus rating (2014): SJR 1.635 SNIP 0.918 CiteScore 3.02
- Scopus rating (2013): SJR 1.321 SNIP 0.3 CiteScore 2.43
- ISI indexed (2013): ISI indexed no
- Scopus rating (2012): SJR 0.251 SNIP 0.189

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**Bibliographical note**

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**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
The impact of applying product-modelling techniques in configurator projects

This paper aims to increase understanding of the impact of using product-modelling techniques to structure and formalise knowledge in configurator projects. Companies that provide customised products increasingly apply configurators in support of sales and design activities, reaping benefits that include shorter lead times, improved quality of specifications and products, and lower overall product costs. The design and implementation of configurators are a challenging task that calls for scientifically based modelling techniques to support the formal representation of configurator knowledge. Even though extant literature has shown the importance of formal modelling techniques, the impact of utilising these techniques remains relatively unknown. Therefore, this article studies three main areas: (1) the impact of using modelling techniques based on Unified Modelling Language (UML), in which the phenomenon model and information model are considered visually, (2) non-UML-based modelling techniques, in which only the phenomenon model is considered and (3) non-formal modelling techniques. This study analyses the impact to companies from increased availability of product knowledge and improved control of product variants. The methodology employed is an exploratory survey, followed by interviews with 18 manufacturing companies providing customised products. The results indicate that companies using UML-based modelling techniques tend to have improved documentation of their product knowledge and an improved ability to reduce the number of product variants. This paper contributes to an increased understanding of what companies can gain from using more formalised modelling techniques in configurator projects, and under what circumstances they should be used.
Computational speech segregation aims to automatically segregate speech from interfering noise, often by employing ideal binary mask estimation. Several studies have tried to exploit contextual information in speech to improve mask estimation accuracy by using two frequently-used strategies that (1) incorporate delta features and (2) employ support vector machine (SVM) based integration. In this study, two experiments were conducted. In Experiment I, the impact of exploiting spectro-temporal context using these strategies was investigated in stationary and six-talker noise. In Experiment II, the delta features were explored in detail and tested in a setup that considered novel noise segments of the six-talker noise. Computing delta features led to higher intelligibility than employing SVM based integration and intelligibility increased with the amount of spectral information exploited via the delta features. The system did not, however, generalize well to novel segments of this noise type. Measured intelligibility was subsequently compared to extended short-term objective intelligibility, hit–false alarm rate, and the amount of mask clustering. None of these objective measures alone could account for measured intelligibility. The findings may have implications for the design of speech segregation systems, and for the selection of a cost function that correlates with intelligibility.

**General information**

State: Published
Organisations: Department of Electrical Engineering, Hearing Systems
Authors: Bentsen, T. (Intern), Kressner, A. A. (Intern), Dau, T. (Intern), May, T. (Intern)
The Impact of Parametrization on Randomized Search Heuristics

In this work we present runtime analyses of randomized search heuristics (RSH) in various settings that are determined by parameters of the problems, the algorithms and also exogenous parameters like noise. In the process we provide new techniques for the theoretical analysis of RSH as well as new optimization algorithms. We consider the following topics.

Escaping local optima using local search. We analyze memetic algorithms, i.e. evolutionary algorithms equipped with a local search after mutation. To this end we consider the (1+1) EA equipped with Standard Local Search (SLS) and Variable-Depth Search (VDS) on an artificial test function. We determine features of the fitness landscape that lead to the (1+1) EA using SLS outperforming the (1+1) EA using VDS with an exponential performance gap. Moreover, we present a new local search operator, Opportunistic Local Search (OLS), that can deal with such features in the landscape and show that the (1+1) EA with OLS can efficiently optimize a discretized Rastrigin function. Stochastic fitness functions. We analyze the role of populations in stochastic optimization. We assume that the objective function is subject to noise, introducing stochastic errors in its evaluation. On classical test functions, such noise makes optimization by the simple (1+1) EA hillclimber infeasible even in exponential time. Interestingly, the use of parent and offspring populations of only logarithmic size turns the algorithm into an efficient one. The results are obtained by drift analysis. An asymptotic expansion of the expected runtime of the (1+λ) EA on ONE MAX. We consider the (1+λ) EA with mutation probability c/n, where c > 0 is a constant on ONE MAX. We give an asymptotic expansion for the expected runtime depending on both c and λ. Our results show that c = 1 is the optimal mutation rate for λ = o(log n log log n log log log n) and that c only has an impact on the lower-order terms of the expected runtime, i.e. c = 1 is no longer the only optimal mutation rate. Our methods are strongly based on variable drift theorems for upper and lower bounds and a precise analysis of order statistics of the binomial distribution. To the best of our knowledge this is the first tight runtime analysis of a population-based EA, up to lower-order terms. Furthermore, we develop helpful stochastic tools for runtime analyses. Optimal mutation rates for the (1+λ) EA on ONE MAX. We consider the (1+λ) EA with mutation probability c/n on ONE MAX, where c > 0 and λ are constant. We present an improved variable drift theorem that weakens the requirement that no large steps towards the optimum may occur in the process to a stochastic one, reducing the analysis of the expected optimization time to finding an exact expression for the drift. We formalize an exact closed-form expression for the drift and provide small error approximations that are very efficient to compute. Self-adjusting mutation rates for the (1+λ) EA on ONE MAX. We propose a new mechanism to self-adjust the mutation rate in population-based evolutionary algorithms. It consists of creating half the offspring with a higher and the rest with a lower mutation rate. The mutation rate is then adjusted, based on the success of the subpopulations. We show that the (1+λ) EA optimizes ONE MAX in an expected optimization time of O(nλ/log λ + n log n) which has been shown to be best-possible among all λ-parallel mutation-based unbiased black-box algorithms.

General information
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Organisations: Department of Applied Mathematics and Computer Science , Algorithms and Logic
Authors: Gießen, C. (Intern), Witt, C. (Intern)
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Electronic versions:
The importance of robust design methodology

While a systematic quality strategy is of crucial importance for the success of manufacturing companies, the universal applicability and effectiveness of implemented quality management practices were called into question by a number of major product recalls in recent years. This article seeks to illustrate how already simple analyses and early stage design methods can help to better understand one of the potential reasons for these failures, namely the variation inherent in manufacturing, assembly, and use processes. Usually thoroughly controlled in production, it seems as if particularly the risk of unanticipated variation effects remain largely underestimated and thus unaccounted for in design practice, sometimes with disastrous consequences. To foster the awareness of this variation and to illustrate the benefits of its early consideration in product development, this paper reviews one of the most infamous recalls in automotive history, that of the GM ignition switch, from the perspective of Robust Design. It is investigated if available Robust Design methods such as sensitivity analysis, tolerance stack-ups, design clarity, etc. would have been suitable to account for the performance variation, which has led to a number of fatal product defects and the recall of 30 million vehicles. Furthermore, the disclosed legal case files were examined, offering a unique opportunity to examine how technical malfunctioning of the ignition switch could stay undetected long enough to result in fatalities.

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Organisations: Department of Mechanical Engineering, Engineering Design and Product Development
Authors: Eifler, T. (Intern), Howard, T. J. (Intern)
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The Influence of a Radiant Panel System with Integrated Phase Change Material on Energy Use and Thermal Indoor Environment
This study examined the effect on energy use and thermal comfort when combining microencapsulated phase change material (PCM) with radiant ceiling panels in a two-person office. The performance of the system was studied during the cooling season in the climates of Copenhagen, Denmark, and Rome, Italy, using a basic cooling strategy and a night cooling strategy. Negligible effect was observed in both Copenhagen and Rome with PCM integration using the basic cooling strategy with a constant cooling set point of 26°C (78.8°F). This caused nearly constant temperatures in the office, preventing full utilization of the PCM potential as charge and discharge of the PCM was averted. Application of night cooling strategy created more optimum temperature conditions for PCM activation with cooling of the office during night down to 23°C (73.4°F), enabling discharge of the PCM. This decreased the peak cooling power by 15% and increased the occupied hours in Category I of the European standard EN 16798-1 (EN 2016) by 8% in Copenhagen. Clearer effects were observed in Rome, decreasing the peak cooling power by 17% and increasing the occupied hours in Category I by 18%. These enhancements were achieved due to reduced operative temperature fluctuations caused by the construction thermal mass increase when integrating PCM. The study was based on both measured and theoretical properties of the ceiling panels, and greater enhancements of thermal indoor conditions were obtained using the theoretical panel specifications.

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Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Technical University of Denmark
Authors: Nielsen, L. F. (Ekstern), Bourdakis, E. (Intern), Kazanci, O. B. (Intern), Olesen, B. W. (Intern)
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The International Location Decision: A Study of Manufacturing Firms
The aim of this paper is to build a broader understanding of the international location decision (ILD) of manufacturing by investigating and mapping Danish manufacturing firms’ related activities and underlying processes. Using an exploratory
survey approach on 17 Danish firms, the study shows there is less emphasis on cost than in past studies and a large unstructured human influence. A framework containing six categories of ILD factors—cost, labor and social characteristics, infrastructure, politics and regulations, economics, and markets and resources—and an assessment of their respective single factors are presented. Lastly, the paper identifies five major shortcomings in the current practice: unstructured processes, noninvolvement of the operational level of the organization, static perspective of dynamic factors, uneven balance between quantitative and qualitative factors, and no organizational learning. For engineering managers facing an ILD, the insights in this paper can be used to reflect and identify potential shortcomings in own practice of ILDs and help re-focusing future process designs.

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Organisations: Department of Management Engineering, Management Science, Operations Management, Technical University of Denmark
Authors: Touray, E. (Ekstern), Schmidt, A. (Ekstern), Herbert-Hansen, Z. N. L. (Intern)
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Scopus rating (2010): SJR 0.298 SNIP 0.397
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Scopus rating (2007): SJR 0.21 SNIP 0.304
Scopus rating (2006): SJR 0.19 SNIP 0.291
Scopus rating (2005): SJR 0.18 SNIP 0.159
Scopus rating (2004): SJR 0.16 SNIP 0.217
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The lives and times of jellyfish: Modelling the population dynamics and ecological role of jellyfish in marine pelagic ecosystems

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Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic
Authors: Schnedler-Meyer, N. A. (Intern)
Publication date: 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.
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Scopus rating (2010): SJR 1.016 SNIP 1.056
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Scopus rating (2009): SJR 0.77 SNIP 0.943
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Scopus rating (2008): SJR 0.739 SNIP 0.853
Scopus rating (2007): SJR 0.51 SNIP 0.773
Scopus rating (2006): SJR 0.597 SNIP 0.694
Scopus rating (2005): SJR 0.522 SNIP 0.77
Scopus rating (2004): SJR 0.694 SNIP 1.007
Scopus rating (2003): SJR 0.61 SNIP 0.77
Scopus rating (2002): SJR 0.609 SNIP 0.522
Scopus rating (2001): SJR 0.473 SNIP 0.527
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The Melting Curve of Nickel Up to 100 GPa Explored by XAS

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Authors: Boccato, S. (Ekstern), Torchio, R. (Ekstern), Kantor, I. (Intern), Morard, G. (Ekstern), Anzellini, S. (Ekstern), Giampaoli, R. (Ekstern), Briggs, R. (Ekstern), Smareglia, A. (Ekstern), Irifune, T. (Ekstern), Pascarelli, S. (Ekstern)
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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.
Theory of timber connections with slender dowel type fasteners

A theory on the lateral load-carrying capacity of timber connections with slender fasteners is presented. The base of the theory is the coupled mechanical phenomena acting in the connection, while the wood and the slender fastener deform and yield prior to failure. The objective is to derive a sufficient description of actions and responses which have determining influence on the load-carrying capacity of timber connections with slender fasteners. Model assumptions are discussed and made, but simplifications are left out. Even so, simple mathematical equations describing the lateral capacity are derived from mechanical equilibrium of the deformed fastener. The herein proposed theory is verified against tests. The tests were designed to vary the influence of isolated mechanical phenomenon as much as possible. The theory shows a very high accuracy and precision when predicting the load-carrying capacity of the tested connections.

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Organisations: Department of Civil Engineering, Danish Timber Information
Authors: Svensson, S. (Intern), Munch-Andersen, J. (Ekstern)
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Scopus rating (2015): SJR 0.399 SNIP 0.685 CiteScore 0.75
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.38 SNIP 0.778 CiteScore 0.61
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Scopus rating (2013): SJR 0.346 SNIP 0.648 CiteScore 0.53
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Scopus rating (2012): SJR 0.428 SNIP 0.844 CiteScore 0.58
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BFI (2011): BFI-level 1
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BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.333 SNIP 1.021
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Scopus rating (2009): SJR 0.346 SNIP 0.552
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Scopus rating (2008): SJR 0.117 SNIP 0.023
Web of Science (2007): Indexed yes
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.
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.
The Role of Place Cues in Voluntary Stream Segregation for Cochlear Implant Users
Sequential stream segregation by cochlear implant (CI) listeners was investigated using a temporal delay detection task composed of a sequence of regularly presented bursts of pulses on a single electrode (B) interleaved with an irregular sequence (A) presented on a different electrode. In half of the trials, a delay was added to the last burst of the regular B sequence, and the listeners were asked to detect this delay. As a jitter was added to the period between consecutive A bursts, time judgments between the A and B sequences provided an unreliable cue to perform the task. Thus, the segregation of the A and B sequences should improve performance. In Experiment 1, the electrode separation and the sequence duration were varied to clarify whether place cues help CI listeners to voluntarily segregate sounds and whether a two-stream percept needs time to build up. Results suggested that place cues can facilitate the segregation of sequential sounds if enough time is provided to build up a two-stream percept. In Experiment 2, the duration of the sequence was fixed, and only the electrode separation was varied to estimate the fission boundary. Most listeners were able to segregate the sounds for separations of three or more electrodes, and some listeners could segregate sounds coming from adjacent electrodes.

The Role of Pore-Formers on Grain Interior and Grain Boundary Conductivity in Tape-Cast Porous Sheets for Electrochemical Flue Gas Purification
Ce_{0.9}Gd_{0.1}O_{1.95} (CGO) electrolytes for electrochemical flue gas purification were fabricated by means of tape casting with different types, shapes and sizes of pore-formers. The sintered bodies were characterized with electrochemical impedance spectroscopy, to investigate the role of the different pore-formers on the electrochemical properties of the cast tapes. A strong effect of the different pore-formers on the conductivity (both grain interior and grain boundary conductivities) was observed. In addition, the conductivity data were also correlated with previously obtained gas permeability data. The conductivity data correlated with the permeability data in the sense that a higher permeability lead to a lower conductivity. The porosity of the samples also influenced the conductivities. The higher the porosity of the sintered bodies, the lower the conductivity was, as expected.
The role of shellfish aquaculture in reduction of eutrophication in an urban estuary

Mitigating coastal eutrophication is a global challenge. In many places where land-based management has reduced nutrient discharges, coastal waterbodies remain impaired. This study examined ‘bioextraction’ of nutrients from the water by oyster aquaculture in Long Island Sound, Connecticut, as an example of how aquaculture might complement land-based measures in urban estuaries. Eutrophication status, nutrient removal, and ecosystem service value were estimated through eutrophication assessment, application of hydrologic, circulation, and local- and ecosystem-scale models, and economic valuation. System-scale modeling estimated that current oyster aquaculture, via sequestration into tissue and shell only, removes an equivalent of 1.31%, and expanded production could remove 2.68%, of total annual land-based nitrogen inputs by aquaculture alone. Up-scaled local-scale results were similar to results from the system-scale modeling, suggesting that this upscaling method could be useful in waterbodies without circulation models. The minimum value of the ecosystem service of nitrogen removed by oyster production was estimated by means of an avoided costs method, which uses the cost of alternative nutrient management measures such as wastewater treatment and urban Best Management Practices to estimate the value of the removed nitrogen, to be $8.5 million per year, with maximum value at expanded production of $470 million per year. Removal and value estimates are conservative because they do not include removal by clams in Connecticut due to the lack of a clam model, or by oysters and clams in New York due to data limitations, nor denitrification losses. If oyster associated removal from all Connecticut and New York lease acres (5% of bottom area) and denitrification losses for both states are included, nitrogen removal estimates increase to 10% – 30% of total annual inputs. The total N removal could be higher if removal by clams is included. Additional research is needed for inclusion of shellfish growers in nutrient trading programs. These optimistic results are specific to Long Island Sound but the modeling approach is transferable and can be used to evaluate possible contribution by shellfish aquaculture in other urban estuaries.

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Publication information
The SysteMHC Atlas project

Mass spectrometry (MS)-based immunopeptidomics investigates the repertoire of peptides presented at the cell surface by major histocompatibility complex (MHC) molecules. The broad clinical relevance of MHC-associated peptides, e.g. in precision medicine, provides a strong rationale for the large-scale generation of immunopeptidomic datasets and recent developments in MS-based peptide analysis technologies now support the generation of the required data. Importantly, the availability of diverse immunopeptidomic datasets has resulted in an increasing need to standardize, store and exchange this type of data to enable better collaborations among researchers, to advance the field more efficiently and to establish quality measures required for the meaningful comparison of datasets. Here we present the SysteMHC Atlas (https://systemhcatlas.org), a public database that aims at collecting, organizing, sharing, visualizing and exploring immunopeptidomic data generated by MS. The Atlas includes raw mass spectrometer output files collected from several laboratories around the globe, a catalog of context-specific datasets of MHC class I and class II peptides, standardized MHC allele-specific peptide spectral libraries consisting of consensus spectra calculated from repeat measurements of the same peptide sequence, and links to other proteomics and immunology databases. The SysteMHC Atlas project was created and will be further expanded using a uniform and open computational pipeline that controls the quality of peptide identifications and peptide annotations. Thus, the SysteMHC Atlas disseminates quality controlled immunopeptidomic information to the public domain and serves as a community resource toward the generation of a high-quality comprehensive map of the human immunopeptidome and the support of consistent measurement of immunopeptidomic sample cohorts.

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Web of Science (2013): Indexed yes
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Scopus rating (2012): SJR 6.13 SNIP 2.392 CiteScore 8.62
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
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Web of Science (2011): Indexed yes
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Scopus rating (2010): SJR 5.24 SNIP 2.034
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Web of Science (2008): Indexed yes
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Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.108 SNIP 1.862
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.12 SNIP 1.535
Scopus rating (2001): SJR 0.131 SNIP 1.402
Scopus rating (2000): SJR 0.141 SNIP 1.672
Web of Science (2000): Indexed yes
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The transmission spectrum of sound through a phononic crystal subjected to liquid flow

The influence of liquid-flow up to 7 mm/s is examined on transmission spectra of phononic crystals, revealing a potential use for slow liquid-flow measurement techniques. It is known that transmission of ultrasound through a phononic crystal is determined by its periodicity and depends on the material characteristics of the crystal's constituents. Here, the crystal consists of metal rods with the space in between filled with water. Previous studies have assumed still water in the crystal, and here, we consider flowing liquid. First, the crystal bandgaps are investigated in still water, and the results of transmission experiments are compared with theoretical band structures obtained with the finite element method. Then, changes in transmission spectra are investigated for different speeds of liquid flow. Two situations are investigated: a crystal is placed with a principal symmetry axis in the flow direction (ΓX) and then at an angle (ΓM). The good stability of the bandgap structure of the transmission spectrum for both directions is observed, which may be of importance for the application of phononic crystals as acoustic filters in an environment of flowing liquid. Minor transmission amplitude changes on the other hand reveal a possibility for slow liquid flow measurements.

Phononic crystals (PCs) are generally formed by a periodic arrangement of materials (scatterers) with elastic properties different from those of the homogeneous matrix in between the scatterers, typically scaled at the wavelengths of interest and giving rise to the emergence of transmission bandgaps. The concept was studied by Yablonovitch 1 in optics for a photonic crystal in the ultraviolet microwave regime, where he shows that bandgaps in the spectrum exist as a result of interferences between direct and reverberated paths of waves. A similar behavior of acoustic waves in phononic crystals (PCs) has been observed. Additionally, ultrasonic waves in a periodic structure are used for sensing purposes, such as acoustic waveguides and acoustic lenses, to control, direct, and manipulate sound.2,3 The reported experiments are as follows: ultrasound is emitted by a transducer, and it travels through the PC, thereby probing its acoustic properties (density, viscosity, speed of sound, …, speed of water flow). A specific transmission spectrum, including bandgaps, emerges, and its specific characteristics are determined by the physical properties of the PC. Over the last decade, PCs have been introduced as a platform for (still) liquid sensing purposes,4–9 based on significant spectral changes induced by composition changes of the liquid mixture.10 Many works discuss the application of PCs for fluid characterization such as viscosity, density, and concentration measurement of liquid solutions. However, no study of possible flow-speed influence on PC filter characteristics has been reported. For the case in which fluid-flow measurements without the presence of a PC is considered, we can cite, for example, Nishimura et al.,11 for measuring the small open channel fluid flow using pulse-echo signals scattered from the particles in a pipe. From the slope of the correlation peak amplitude with the variation in pulse-echo excitation time, the authors estimate the flow-speed of the medium, for speeds much higher than what is studied in the current paper. Here, we study the band structure and its stability and explore minor effects in actual transmission amplitudes to the flow-speed. The low speeds involved are comparable to what one may expect on a large scale in tidal water currents for example. The phononic crystal under study consists of a square lattice arrangement of 169 steel rods, each having a diameter of 1.2 mm and a length of 150 mm. A photography of the crystal is shown in Fig. 1(a). The rods were aligned using two supporting plates that had been machined to have periodic arrays of holes, and Fig. 1(b) shows the square lattice pattern of the cylinders and the directions of the highest symmetry, referred to as ΓX and ΓM. The lattice constant, being the distance between the centers of any two adjacent rods, was measured: a = 2.52 mm. The crystal made of cylinders is submerged in water, such that the water in between the cylinders acts as the crystal matrix. Assuming a sound speed in water of 1480 m/s, incident ultrasound with a wavelength corresponding to the lattice constant would have a frequency on the order of 1 MHz. Steel (rods) and water (host medium) were chosen here as the constituent materials of the crystal due to the large contrast in their densities and elastic constants, as this has been shown to be an effective approach for the formation of bandgaps in other studies on phononic crystals.12–14 To study effects of liquid flow on the transmission spectrum, that spectrum was first determined using through-transmission experiments using an emitting and a receiving transducer, namely, two Valpey-Fisher ISO104GP transducers with a nominal center frequency of and a beamwidth of approximately 10 mm. Two types of experiments have been performed on the crystal: through-transmission measurements in the ΓX direction and in the ΓM direction; the results are shown in Fig. 2.

General information
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Organisations: Department of Applied Mathematics and Computer Science , Statistics and Data Analysis, Georgia Institute of Technology
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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.

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Authors: Ashley, J. (Intern), Sun, Y. (Intern)
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The UV filtering potential of drop-casted layers of frustules of three diatom species

Diatoms are in focus as biological materials for a range of photonic applications. Many of these applications would require embedding a multitude of diatoms in a matrix (e.g. paint, crème or lacquer); however, most studies on the photonic and spectral properties of diatoms frustules (silica walls) have been carried out on single cells. In this study, for the first time, we test the spectral properties of layers of frustules of three diatom species (Coscinodiscus granii, Thalassiosira punctifera and Thalassiosira pseudonana), with special focus on transmission and reflectance in the UV range. The transmittance efficiency in the UV A and B range was: T. pseudonana (56–59%) >C. granii (53–54%) >T. punctifera (18–21%) for the rinsed frustules. To investigate the underlying cause of these differences, we performed X-ray scattering analysis, measurement of layer thickness and microscopic determination of frustule nanostructures. We further tested dried intact cells in the same experimental setup. Based on the sedata we discuss the relative importance of crystal structure properties, nanostructure and quantity of material on the spectral properties of diatom layers. Characterization of the UV protection performance of layers of diatom frustules is of central relevance for their potential use as innovative bio-based UV filters.

General information
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Organisations: Department of Mechanical Engineering, Engineering Design and Product Development, National Institute of Aquatic Resources, Section for Oceans and Arctic, University of Copenhagen, International Iberian Nanotechnology Laboratory, Københavns Universitet
Authors: Su, Y. (Ekstern), Lenau, T. A. (Intern), Gundersen, E. (Ekstern), Kirkensgaard, J. J. K. (Ekstern), Maibohm, C. (Ekstern), Pinti, J. P. A. (Intern), Ellegaard, M. (Forskerdatabase)
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Three-Dimensional Graphene Matrix-Supported and Thylakoid Membrane-Based High-Performance Bioelectrochemical Solar Cell

A combination of thylakoid membranes (TM) as photobiocatalysts with high-surface-area electroactive materials could hold great potential for sustainable "green" solar energy conversion. We have studied the orientated immobilization of TMs on high-surface-area graphene electrodes, which were fabricated by electroreduction of graphene oxide and simultaneous electrodeposition with further aminoaryl functionalization. We have achieved the highest performance to date under direct electron transfer conditions through a biocompatible "wiring" of TMs to graphene sheets. The photo-biocurrent density generated by the optimized mediator-free TM-based bioanodes yielded up to 5.24 ± 0.50 μA cm⁻².

The photobioelectrochemical cell integrating the photobioanode in combination with an oxygen reducing enzymatic biocathode delivered a maximum power output of 1.79 ± 0.19 μW cm⁻². Our approach ensures a simplified cell design, a greater load of photosynthetic units, a minimized overpotential loss, and an enhanced overall performance.

General information
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Authors: Pankratova, G. (Ekstern), Pankratov, D. (Intern), Di Bari, C. (Ekstern), Goñi-Urtiaga, A. (Ekstern), Toscano, M. D. (Ekstern), Chi, Q. (Intern), Pita, M. (Ekstern), Gorton, L. (Ekstern), Lacey, A. L. D. (Ekstern)
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Three Dimensional Polarimetric Neutron Tomography of Magnetic Fields

Through the use of Time-of-Flight Three Dimensional Polarimetric Neutron Tomography (ToF 3DPNT) we have for the first time successfully demonstrated a technique capable of measuring and reconstructing three dimensional magnetic field strengths and directions unobtrusively and non-destructively with the potential to probe the interior of bulk samples which is not amenable otherwise. Using a pioneering polarimetric set-up for ToF neutron instrumentation in combination with a newly developed tailored reconstruction algorithm, the magnetic field generated by a current carrying solenoid has been measured and reconstructed, thereby providing the proof-of-principle of a technique able to reveal hitherto unobtainable information on the magnetic fields in the bulk of materials and devices, due to a high degree of penetration into many materials, including metals, and the sensitivity of neutron polarisation to magnetic fields. The technique puts the potential of the ToF time structure of pulsed neutron sources to full use in order to optimise the recorded information quality and reduce measurement time.

General information
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Organisations: Department of Physics, Neutrons and X-rays for Materials Physics, Department of Energy Conversion and Storage, Imaging and Structural Analysis, Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics, University of Copenhagen, Japan Atomic Energy Agency, University of California at Berkeley, University of Manchester
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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
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Scopus rating (2012): SJR 1.458 SNIP 0.896 CiteScore 2.44
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Tilskud til udsætning af flodkrebs i søer

General information
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Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology
Authors: Berg, S. (Intern)
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Links:
Publication: Communication › Internet publication – Annual report year: 2018

Time and activity sequence prediction of business process instances
The ability to know in advance the trend of running process instances, with respect to different features, such as the expected completion time, would allow business managers to timely counteract to undesired situations, in order to prevent losses. Therefore, the ability to accurately predict future features of running business process instances would be a very helpful aid when managing processes, especially under service level agreement constraints. However, making such accurate forecasts is not easy: many factors may influence the predicted features. Many approaches have been proposed to cope with this problem but, generally, they assume that the underlying process is stationary. However, in real cases this assumption is not always true. In this work we present new methods for predicting the remaining time of running cases. In particular we propose a method, assuming process stationarity, which achieves state-of-the-art performances and two other methods which are able to make predictions even with non-stationary processes. We also describe an approach able to predict the full sequence of activities that a running case is going to take. All these methods are extensively evaluated on different real case studies.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Software Engineering, University of Padua, Eindhoven University of Technology
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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.353 SNIP 1.1 CiteScore 1.25
Timing of lake-level changes for a deep last-glacial Lake Missoula: optical dating of the Garden Gulch area, Montana, USA

Glaciolacustrine sediments in the Clark Fork River valley at Garden Gulch, near Drummond, Montana, USA record highstand positions of the ice-dammed glacial Lake Missoula and repeated subaerial exposure. During these highstands the lake was at greater than 65% of its recognized maximum capacity. The initial lake transgression deposited a basal sand unit. Subsequent cycles of lake-level fluctuations are recorded by sequences of laminated and cross laminated silt, sand, and clay deformed by periglacial processes during intervening periods of lower lake levels. Optically stimulated luminescence (OSL) dating of quartz sand grains, using single-aliquot regenerative-dose procedures, was carried out on 17 samples. Comparison of infrared stimulated luminescence (IRSL) from K-rich feldspar to OSL from quartz for all the samples suggests that they were well bleached prior to deposition and burial. Ages for the basal sand and overlying glaciolacustrine exposure surfaces are indistinguishable within one standard deviation, and give a weighted mean age of 20.9 ± 1.3 ka (n = 11). Based on sedimentological and stratigraphic analysis we infer that the initial transgression, and at least six cycles of lake-level fluctuation, occurred over time scales of decades to ~2 ka. Bioturbated sandy slopewash dated at 10.6 ± 0.9 ka and 11.9 ± 1.2 ka unconformably overlies the upper glaciolacustrine deposits. The uppermost sediments, above the glaciolacustrine section, are younger than the Glacier Peak tephra (13.7-13.4 cal ka B.P.), which was deposited across parts of the drained lake basin, but has not been found at Garden Gulch. Our study indicates that glacial Lake Missoula reached >65% of maximum capacity by about 20.9 ± 1.3 ka and either partially or completely drained twelve times from this position. Rapid lowering from the lake's highstand position due to ice-dam failure likely led to scour in the downstream portions of the glacial Lake Missoula basin and megafloods in the Channeled Scabland.

General information
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Organisations: Center for Nuclear Technologies, Radiation Physics, University of Montana, University of the Fraser Valley
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To every manifest domain a CSP expression – a rôle for mereology in computer science

We give an abstract model of parts and part-hood relations, of Stanisław Lesniewski’s mereology. Mereology applies to software application domains such as the financial service industry, railway systems, road transport systems, health care, oil pipelines, secure [IT] systems, etc. We relate this model to axiom systems for mereology, showing satisfiability, and show that for every mereology there corresponds a class of Communicating Sequential Processes, that is: a λ-expression.

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Organisations: Department of Applied Mathematics and Computer Science
Authors: Bjørner, D. (Intern)
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Topological bifurcations of coherent structures and dimension reduction of plasma convection models

Research in fusion energy seeks to develop a green, safe, and sustainable energy source. Nuclear fusion can be achieved by heating a hydrogen gas to temperatures of millions of kelvin. At fusion temperatures, some or all the electrons leave the atomic nucleus of the hydrogen atom. This results in an overall neutral gaseous state of negatively charged free electrons and positively charged ions. This state of matter is called plasma. To achieve and maintain fusion temperatures, the plasma must avoid direct contact with any solid material. Since the plasma consists of charged particles, it can be confined with an appropriate configuration of strong magnetic fields. Toroidal magnetic confinement devices, such as the tokamak, are the most promising designs for a fusion reactor. A tokamak can operate in two distinct modes of operation. These are the low confinement mode (L-mode) and the high confinement mode (H-mode). H-mode is the preferred operating mode for a fusion reactor. The transition from L-mode to H-mode is called the L–H transition. The confinement properties of a plasma are largely determined by the physics near the edge of the confinement region of the plasma. The edge transport of a magnetically confined plasma is predominantly caused by recurring bursts of coherent plasma structures. These structures are in L-mode called blob filaments (blobs) and in H-mode categorized into edge localized mode (ELM) filaments or inter-ELM filaments. To improve the plasma confinement, it is important to understand the evolution of these structures. We apply a dynamical systems approach to quantitatively describe the time evolution of these structures. Three state variables describe blobs in a plasma convection model. A critical point of a variable defines a feature point where that variable is significant. For a range of Rayleigh and Prandtl numbers, we analyze the bifurcations of the critical points of the three variables with time as the main bifurcation parameter. Plasma simulations can be computationally demanding. We apply a Galerkin method to approximate a plasma convection model with a reduced model. The time evolution of the energies of the pressure profile, the turbulent flow, and the zonal flow capture the dynamic behavior of the convection model. Rayleigh decomposition splits the variables of the model into averaged variables and fluctuation variables. We approximate the fluctuation variables by truncated Fourier series and project the equations onto the Fourier basis functions. This results in a computationally simpler model with the spatial dimension reduced by one. Bifurcation diagrams for the energies show consistency between the bifurcation structures of the full and the reduced model.

Finally, we utilize a data-driven modeling approach called SINDy to identify a reduced model from simulation data of a convection model. The reduced model reveals a predator-prey relationship between the zonal flow energy and the turbulent energy. The analytically derived bifurcation diagram for the reduced model has the same structure as the data-based bifurcation diagram for the full model.

General information
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Organisations: Department of Applied Mathematics and Computer Science, Mathematics, Plasma Physics and Fusion Energy, Department of Physics
The aim of this work is to present a fast and viable approach for taking into account turbulence in topology optimization of complex fluid flow systems, without resorting to any simplifying assumptions in the derivation of discrete adjoints. Topology optimization is an iterative gradient-based design process which minimizes an objective and satisfies a set of selected design constraints by distributing material in a design domain. The gradients are obtained using adjoint sensitivity analysis which requires solutions of a forward state problem and an additional adjoint problem. In the presented article the forward solver is based on finite volume discretized Reynolds-averaged Navier–Stokes equations coupled with either one- or two-equation turbulence closure models, and the adjoint solver is obtained via automatic differentiation. The presented approach is demonstrated on the optimization of several 2D and 3D examples including a detailed comparison to designs and sensitivities obtained with different turbulence models and under a frozen turbulence assumption. The results demonstrate the importance of exact sensitivity analysis and open new possibilities for the design of large scale multiphysics problems involving turbulent flows.
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.

General information
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Organisations: Center for Bachelor of Engineering Studies, Afdelingen for Informatik, Novitek Solutions ApS, Aalborg University
Authors: Blaszczyk, T. (Intern), Sørensen, J. A. (Intern), Lynggaard, P. (Forskerdatabase), Larsen, K. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication information
Towards Domain-specific Flow-based Languages

Due to the significant growth of the demand for data-intensive computing, in addition to the emergence of new parallel and distributed computing technologies, scientists and domain experts are leveraging languages specialized for their problem domain, i.e., domain-specific languages, to help them describe their problems and solutions, instead of using general purpose programming languages. The goal of these languages is to improve the productivity and efficiency of the development and simulation of concurrent scientific models and systems. Moreover, they help to expose parallelism and to specify the concurrency within a component or across different independent components. In this paper, we introduce the concept of domain-specific flow-based languages which allows domain experts to use flow-based languages adapted to a particular problem domain. Flow-based programming is used to support concurrency, while the domain-specific part of these languages is used to define atomic processes and domain-specific validation rules for composite processes. We propose a modeling language that can be used to develop such domain-specific languages. Since this language allows one to define other languages, we often refer to it as a meta-modeling language.

Towards High Power Density Metal Supported Solid Oxide Fuel Cell for Mobile Applications

For use of metal supported solid oxide fuel cell (MS-SOFC) in mobile applications it is important to reduce the thermal mass to enable fast startup, increase stack power density in terms of weight and volume and reduce costs. In the present study, we report on the effect of reducing the Technical University of Denmark (DTU) SoA MS-SOFCs support layer thickness from 313 μm gradually to 108 μm. The support layer thickness decrease in the DTU co-sintering MS-SOFC fabrication route results in an increased densification of the support layer and a slight decrease in performance. To mitigate the performance loss, two different routes for increasing the porosity of the support layer and thus performance were explored. The first route is the introduction of gas channels by puncturing of the green tape casted support layer. The second route is modification of the co-sintering profile. In summary, the cell thickness and thus weight and volume was reduced and the cell power density at 0.7 V at 700°C was increased by 46% to 1.01 Wcm−2 at a fuel utilization of 48%. All modifications were performed on a stack technological relevant cell size of 12 cm × 12 cm.
Towards Improved Biophysical Calculations to Identify Disease-Causing Mutations

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Organisations: Novo Nordisk Foundation Center for Biosustainability, Research Groups, Bacterial Cell Factory Optimization, University of Copenhagen
Authors: Lindorff-Larsen, K. (Ekstern), Stein, A. (Ekstern), Teilum, K. (Ekstern), Nielsen, A. T. (Intern), Hartmann-Petersen, R. (Ekstern)
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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.203 SNIP 1.166 CiteScore 3.33
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ISI indexed (2013): ISI indexed yes
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BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.322 SNIP 1.204 CiteScore 3.75
The impact of public research outcomes on economies, and societies, in particular, in terms of innovation and development is widely accepted and empirically investigated [9, 3]. However, many studies suggest a systematic underestimation of the impact and benefits of public research. Empirical studies describe that current approaches capture only specific aspects of knowledge transfer between public research institutions and private entities. The main interrelated reasons contributing to this systematic underestimation are that most established knowledge transfer measurements focus on intermediaries and use proxy indicators like patents, licenses, spin-outs and co-publications as data sources, but these metrics are problematic because they can result in type I and type II errors, since many of them capture a transfer that is never utilized by a private entity (e.g. like unused patents). In addition, there are occasions where the proxy is not met so the actual use is not being captured.

We try to improve this systematic underestimation by adapting novel computer linguistics methods to this field and putting them into perspective with the existing measures of knowledge transfer. We use both basic and more advanced statistical learning tools from the field of computational linguistics and statistical learning to trace the knowledge fragments [2, 6]. In addition, we utilize a mixture of standard algebraic and probabilistic methods. Furthermore, pattern recognition, classification algorithms help to trace the public research outcomes, going beyond plain word co-occurrence.

**Trace of Knowledge: Benchmarking Novel Text Mining Based Measurements**

The impact of public research outcomes on economies, and societies, in particular, in terms of innovation and development is widely accepted and empirically investigated [9, 3]. However, many studies suggest a systematic underestimation of the impact and benefits of public research. Empirical studies describe that current approaches capture only specific aspects of knowledge transfer between public research institutions and private entities. The main interrelated reasons contributing to this systematic underestimation are that most established knowledge transfer measurements focus on intermediaries and use proxy indicators like patents, licenses, spin-outs and co-publications as data sources, but these metrics are problematic because they can result in type I and type II errors, since many of them capture a transfer that is never utilized by a private entity (e.g. like unused patents). In addition, there are occasions where the proxy is not met so the actual use is not being captured.

We try to improve this systematic underestimation by adapting novel computer linguistics methods to this field and putting them into perspective with the existing measures of knowledge transfer. We use both basic and more advanced statistical learning tools from the field of computational linguistics and statistical learning to trace the knowledge fragments [2, 6]. In addition, we utilize a mixture of standard algebraic and probabilistic methods. Furthermore, pattern recognition, classification algorithms help to trace the public research outcomes, going beyond plain word co-occurrence.

**General information**

State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Tracking anguillid eels: five decades of telemetry-based research

Advances in telemetry technologies have provided new opportunities to reveal the often-cryptic spatial ecology of anguillid eels. Herein we review 105 studies published between 1972 and 2016 that used a variety of telemetry technologies to study the movements of eels in a variety of habitats. Eight anguillid species have been tracked in three main geographical locations: Western Europe, the north-eastern part of North America and Australasia. Telemetry has proven to be an effective method for determining patterns of yellow eel movements in continental waters. It has also been used extensively to investigate the migratory behaviour of maturing eels as they leave fresh water to reach the sea. Among recent findings is the observation that downstream migration in continental waters is quite discontinuous, characterised by extended stopovers. Reconstructed migration routes in the open ocean obtained from satellite tags have provided indications of spawning areas, extensive vertical migrations and initial clues about the orientation mechanisms at sea. Telemetry studies have also revealed apparent evidence of predation by marine mammals and fish at sea, suggesting a significant natural source of mortality during the eel spawning migration. Finally, we discuss some limitations of telemetry technology and future directions, as well as associated challenges, to the developing field of eel spatial ecology.

General information

State: Published
Organisations: National Institute of Aquatic Resources, Section for Freshwater Fisheries Ecology, Universite Laval, Fisheries and Oceans Canada, NIWA, Nihon University
Authors: Beguer-Pon, M. (Ekstern), Dodson, J. J. (Ekstern), Castonguay, M. (Ekstern), Jellyman, D. (Ekstern), Aarestrup, K. (Intern), Tsukamoto, K. (Ekstern)
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Publication information

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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.57 SJR 0.711 SNIP 0.763
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.813 SNIP 0.704 CiteScore 1.51
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.069 SNIP 0.997 CiteScore 2.18
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.222 SNIP 0.984 CiteScore 2.24
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.004 SNIP 0.903 CiteScore 2.11
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Tracking the picosecond deactivation dynamics of a photoexcited iron carbene complex by time-resolved X-ray scattering

Recent years have seen the development of new iron-centered N-heterocyclic carbene (NHC) complexes for solar energy applications. Compared to typical ligand systems, the NHC ligands provide Fe complexes with longer-lived metal-to-ligand charge transfer (MLCT) states. This increased lifetime is ascribed to strong ligand field splitting provided by the NHC ligands that raises the energy levels of the metal centered (MC) states and therefore reduces the deactivation efficiency of MLCT states. Among currently known NHC systems, \( \text{[Fe(btbp)}_2\text{]}^{2+} \) (btbp = 2,6-bis(3-tert-butyl-imidazol-1-ylidene)pyridine) is a unique complex as it exhibits a short-lived MC state with a lifetime on the scale of a few hundreds of picoseconds. Hence, this complex allows for a detailed investigation, using 100 ps X-ray pulses from a synchrotron, of strong ligand field effects on the intermediate MC state in an NHC complex. Here, we use time-resolved wide angle X-ray scattering (TRWAXS) aided by density functional theory (DFT) to investigate the molecular structure, energetics and lifetime of the high-energy MC state in the Fe-NHC complex \( \text{[Fe(btbp)}_2\text{]}^{2+} \) after excitation to the MLCT manifold. We identify it as a 260 ps metal-centered quintet (5MC) state, and we refine the molecular structure of the excited-state complex verifying the DFT results. Using information about the hydrodynamic state of the solvent, we also determine, for the first time, the energy of the 5MC state as 0.75 + 0.15 eV. Our results demnstrate that due to the increased ligand field strength caused by NHC ligands, upon transition from the ground state to the 5MC state, the metal to ligand bonds extend by unusually large values: by 0.29 angstrom in the axial and 0.21 angstrom in the equatorial direction. These results imply that the transition in the photochemical properties from typical Fe complexes to novel NHC compounds is manifested not only in the destabilization of the MC states, but also in structural distortion of these states.

General information
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Organisations: Neutrons and X-rays for Materials Physics, Department of Physics, European Synchrotron Radiation Facility, Lund University, European XFEL
Number of pages: 10
Pages: 405-414
Transcriptomic profiling of interacting nasal staphylococci species reveals global changes in gene and non-coding RNA expression

Interspecies interactions between bacterial pathogens and the commensal microbiota can influence disease outcome. In the nasal cavities, Staphylococcus epidermidis has been shown to be a determining factor for Staphylococcus aureus colonization and biofilm formation. However, the interaction between S. epidermidis and S. aureus has mainly been described by phenotypic analysis, and little is known about how this interaction modulates gene expression. This study aimed to determine the interactome of nasal S. aureus and S. epidermidis isolates to understand the molecular effect of interaction. After whole-genome sequencing of two nasal staphylococcal isolates, an agar-based RNA sequencing setup was utilized to identify interaction-induced transcriptional alterations in surface-associated populations. Our results revealed differential expression of several virulence genes in both species. We also identified putative non-coding RNAs (ncRNAs) and, interestingly, detected a putative ncRNA transcribed antisense to esp, the serine protease of S. epidermidis, that has previously been shown to inhibit nasal colonization of S. aureus. In our study, the gene encoding Esp and the antisense ncRNA are both downregulated during interaction with S. aureus. Our findings contribute to a better understanding of pathogen physiology in the context of interactions with the commensal microbiota, and may provide targets for future therapeutics.
Transformation of iron containing constituent intermetallic particles during hydrothermal treatment

Aluminium alloys AA3102 and AA9108 were treated with high temperature steam, which resulted in the formation of an oxide layer of average thickness of 300–400 nm. Hydrothermal steam treatment resulted in the removal or oxidation of Al (Fe) Mn and Al (Fe-Si) Mn type intermetallic particles present in the alloys. Furthermore, electron energy loss spectroscopy analysis revealed that the during the steam treatment, the Fe enriched areas of the Al (Fe-Si) Mn type intermetallic particles were transformed into Fe₂O₃ and Fe₃O₄ phases, while energy-dispersive X-ray spectroscopy line profile measurements by scanning transmission electron microscope showed that Mn and Si were leached out and incorporated into the surrounding oxide layer. Further, the part of intermetallic phase was transformed into polycrystalline material.

General information
State: Published
Organisations: Materials and Surface Engineering, Department of Mechanical Engineering, Center for Electron Nanoscopy
Authors: Borgaonkar, S. (Intern), Din, R. U. (Intern), Kasama, T. (Intern), Ambat, R. (Intern)
Pages: 121-128
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Main Research Area: Technical/natural sciences

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Journal: Thin Solid Films
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.83 SJR 0.64 SNIP 0.897
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.705 SNIP 0.98 CiteScore 1.84
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.73 SNIP 1.115 CiteScore 1.94
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.818 SNIP 1.215 CiteScore 2
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.899 SNIP 1.162 CiteScore 1.86
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.995 SNIP 1.337 CiteScore 2.13
Transgenerational interactions between pesticide exposure and warming in a vector mosquito

While transgenerational plasticity may buffer ectotherms to warming and pesticides separately, it remains unknown how combined exposure to warming and pesticides in the parental generation shapes the vulnerability to these stressors in the offspring. We studied the transgenerational effects of single and combined exposure to warming (4°C increase) and the pesticide chlorpyrifos on life history traits of the vector mosquito Culex pipiens. Parental exposure to a single stressor, either warming or the pesticide, had negative effects on the offspring: both parental exposure to warming and to the pesticide resulted in an overall lower offspring survival, and a delayed offspring metamorphosis. Parental exposure to a single stressor did, however, not alter the vulnerability of the offspring to the same stressor in terms of survival. Parental pesticide exposure resulted in larger offspring when the offspring experienced the same stressor as the parents. Within both the parental and offspring generations, warming made the pesticide more toxic in terms of survival. Yet, this synergism disappeared in the offspring of parents exposed to both stressors simultaneously because in this condition the pesticide was already more lethal at the lower temperature. Our results indicate that transgenerational effects will not increase the ability of this vector species to deal with pesticides in a warming world. Bifactorial transgenerational experiments are crucial to understand the combined impact of warming and pesticides across generations, hence to assess the efficacy of vector control in a warming world.

General information
State: Accepted/In press
Organisations: National Institute of Aquatic Resources, Section for Oceans and Arctic, University of Leuven, Nha Trang University
Authors: Tran, T. T. (Ekstern), Janssens, L. (Ekstern), Dinh, K. V. (Intern), Stoks, R. (Ekstern)
Publication date: 2018
Main Research Area: Technical/natural sciences

Publication Information
Journal: Evolutionary Applications (Online)
Tuning the Two-Dimensional Electron Gas at Oxide Interfaces with Ti-O Configurations: Evidence from X-ray Photoelectron Spectroscopy

Chemical redox reaction can lead to a two-dimensional electron gas (2DEG) at the interface between a TiO2-terminated SrTiO3 (STO) substrate and an amorphous LaAlO3 (a-LAO) capping layer. When replacing the STO substrate with rutile and anatase TiO2 substrates, considerable differences in interfacial conduction are observed. Based on X-ray photoelectron spectroscopy (XPS) and transport measurements, we conclude that the interfacial conduction comes from redox reactions, and that the differences among the materials systems result mainly from variations in the activation energies for the diffusion of oxygen vacancies at substrate surfaces.

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Organisations: Department of Energy Conversion and Storage, Electrofunctional materials, Chinese Academy of Sciences, Technical University of Denmark
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Publication information
Journal: A C S Applied Materials and Interfaces
Volume: 10
Issue number: 1
ISSN (Print): 1944-8244
Two-Stage Load Shedding for Secondary Control in Hierarchical Operation of Islanded Microgrids

A two-stage load shedding scheme is presented to cope with the severe power deficit caused by microgrid islanding. Coordinated with the fast response of inverter-based distributed energy resources (DERs), load shedding at each stage and the resulting power flow redistribution are estimated. The first stage of load shedding will cease rapid frequency decline in which the measured frequency deviation is employed to guide the load shedding level and process. Once a new steady-state is reached, the second stage is activated, which performs load shedding according to the priorities of loads. The effectiveness of the proposed scheme is verified through time-domain simulation in PSCAD/EMTDC based on a scaled-down microgrid system.

**General information**

State: Accepted/In press
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electric power systems, Illinois Institute of Technology
Authors: Zhou, Q. (Ekstern), Li, Z. (Ekstern), Wu, Q. (Intern), Shahidehpour, M. (Ekstern)
Number of pages: 8
Publication date: 2018
Main Research Area: Technical/natural sciences

**Publication information**

Journal: IEEE Transactions on Smart Grid
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Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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 cm$^2$ 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.

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Organisations: National Space Institute, Astrophysics and Atmospheric Physics

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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
Unbiased, complete solar charging of a neutral flow battery by a single Si photocathode

Solar redox flow batteries have attracted attention as a possible integrated technology for simultaneous conversion and storage of solar energy. In this work, we review current efforts to design aqueous solar flow batteries in terms of battery electrolyte capacity, solar conversion efficiency and depth of solar charge. From a materials cost and design perspective, a simple, cost-efficient, aqueous solar redox flow battery will most likely incorporate only one semiconductor, and we demonstrate here a system where a single photocathode is accurately matched to the redox couples to allow for a complete solar charge. The single TiO₂ protected Si photocathode with a catalytic Pt layer can fully solar charge a neutral TEMPO-sulfate/ferricyanide battery with a cell voltage of 0.35 V. An unbiased solar conversion efficiency of 1.6% is obtained and this system represents a new strategy in solar RFBs where a single silicon photocathode is paired with energetically suitable redox couples to build an integrated solar energy conversion and storage device with full realization of the energy storage capacity.
Uncertainty propagation through an aeroelastic wind turbine model using polynomial surrogates

Polynomial surrogates are used to characterize the energy production and lifetime equivalent fatigue loads for different components of the DTU 10 MW reference wind turbine under realistic atmospheric conditions. The variability caused by different turbulent inflow fields are captured by creating independent surrogates for the mean and standard deviation of each output with respect to the inflow realizations. A global sensitivity analysis shows that the turbulent inflow realization has a bigger impact on the total distribution of equivalent fatigue loads than the shear coefficient or yaw miss-alignment. The methodology presented extends the deterministic power and thrust coefficient curves to uncertainty models and adds new variables like damage equivalent fatigue loads in different components of the turbine. These surrogate models can then be implemented inside other work-flows such as: estimation of the uncertainty in annual energy production due to wind resource variability and/or robust wind power plant layout optimization. It can be concluded that it is possible to capture the global behavior of a modern wind turbine and its uncertainty under realistic inflow conditions using polynomial response surfaces. The surrogates are a way to obtain power and load estimation under site specific characteristics without sharing the proprietary aeroelastic design.

General information
State: Published
Authors: Murcia Leon, J. P. (Intern), Réthoré, P. (Intern), Dimitrov, N. K. (Intern), Natarajan, A. (Intern), Sørensen, J. D. (Intern), Graf, P. (Ekstern), Kim, T. (Intern)
Pages: 910-922
Publication date: 2018
Main Research Area: Technical/natural sciences

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Journal: Renewable Energy
Volume: 119
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Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
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.

General information
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Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Jönköping University
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Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.33 SJR 2.155 SNIP 2.048
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.439 SNIP 2.157 CiteScore 4.29
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.677 SNIP 2.304 CiteScore 4.7
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.597 SNIP 2.304 CiteScore 4.43
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.284 SNIP 2.08 CiteScore 3.5
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.865 SNIP 2.267 CiteScore 3.6
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.34 SNIP 2.474
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.981 SNIP 2.173
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 3.64 SNIP 2.625
Web of Science (2008): Indexed yes
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.
Understanding predictability and exploration in human mobility

Predictive models for human mobility have important applications in many fields including traffic control, ubiquitous computing, and contextual advertisement. The predictive performance of models in literature varies quite broadly, from over 90% to under 40%. In this work we study which underlying factors - in terms of modeling approaches and spatio-temporal characteristics of the data sources - have resulted in this remarkably broad span of performance reported in the literature. Specifically we investigate which factors influence the accuracy of next-place prediction, using a high-precision location dataset of more than 400 users observed for periods between 3 months and one year. We show that it is much easier to achieve high accuracy when predicting the time-bin location than when predicting the next place. Moreover, we demonstrate how the temporal and spatial resolution of the data have strong influence on the accuracy of prediction.

Finally we reveal that the exploration of new locations is an important factor in human mobility, and we measure that on average 20-25% of transitions are to new places, and approx. 70% of locations are visited only once. We discuss how these mechanisms are important factors limiting our ability to predict human mobility.
Understanding the spectral and timing behaviour of a newly discovered transient X-ray pulsar Swift J0243.6+6124

We present the results obtained from timing and spectral studies of the newly discovered accreting X-ray binary pulsar Swift J0243.6+6124 using Nuclear Spectroscopy Telescope Array observation in 2017 October at a flux level of ~280 mCrab. Pulsations at 9.854 ± 0.005 s were detected in the X-ray light curves of the pulsar. Pulse profiles of the pulsar were found to be strongly energy dependent. A broad profile at lower energies was found to evolve into a double-peaked profile in ≥ 30 keV. The 3-79 keV continuum spectrum of the pulsar was well described with a negative and positive exponential cutoff or high-energy cutoff power-law models modified with a hot blackbody at ~3 keV. An iron emission line was also detected at 6.4 keV in the source spectrum. We did not find any signature of cyclotron absorption line in our study. Results obtained from phase-resolved and time-resolved spectroscopy are discussed in the paper.
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.09 SJR 2.338 SNIP 1.077
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.67 SNIP 1.097 CiteScore 4
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 3.175 SNIP 1.289 CiteScore 4.79
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.113 SNIP 1.218 CiteScore 5.1
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.159 SNIP 1.401 CiteScore 4.89
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.902 SNIP 1.355 CiteScore 4.63
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.035 SNIP 1.34
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.527 SNIP 1.444
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 3.611 SNIP 1.287
Scopus rating (2007): SJR 3.347 SNIP 1.283
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 3.948 SNIP 1.225
Scopus rating (2004): SJR 4.035 SNIP 1.372
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 2.842 SNIP 1.346
Scopus rating (2002): SJR 2.464 SNIP 1.311
Scopus rating (2001): SJR 2.24 SNIP 1.037
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 2.926 SNIP 1.109
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 3.208 SNIP 1.125

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X-rays: stars, Pulsars: individual: Swift J0243.6+6124, Stars: neutron

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Universal Alternative Splicing of Noncoding Exons

The human transcriptome is so large, diverse, and dynamic that, even after a decade of investigation by RNA sequencing (RNA-seq), we have yet to resolve its true dimensions. RNA-seq suffers from an expression-dependent bias that impedes characterization of low-abundance transcripts. We performed targeted single-molecule and short-read RNA-seq to survey the transcriptional landscape of a single human chromosome (Hsa21) at unprecedented resolution. Our analysis reaches the lower limits of the transcriptome, identifying a fundamental distinction between protein-coding and noncoding gene content: almost every noncoding exon undergoes alternative splicing, producing a seemingly limitless variety of isoforms. Analysis of syntenic regions of the mouse genome shows that few noncoding exons are shared between human and mouse, yet human splicing profiles are recapitulated on Hsa21 in mouse cells, indicative of regulation by a deeply conserved splicing code. We propose that noncoding exons are functionally modular, with alternative splicing generating an enormous repertoire of potential regulatory RNAs and a rich transcriptional reservoir for gene evolution.

General information
State: Accepted/In press
Organisations: Novo Nordisk Foundation Center for Biosustainability, Quantitative Modeling of Cell Metabolism, Garvan Institute of Medical Research, Tecnologico de Monterrey, Pacific Biosciences, University of Queensland
Authors: Deveson, I. W. (Ekstern), Brunck, M. E. (Ekstern), Blackburn, J. (Ekstern), Tseng, E. (Ekstern), Hon, T. (Ekstern), Clark, T. A. (Ekstern), Clark, M. B. (Ekstern), Crawford, J. (Ekstern), Dinger, M. E. (Ekstern), Nielsen, L. K. (Intern), Mattick, J. S. (Ekstern), Mercer, T. R. (Ekstern)
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Scopus rating (2016): CiteScore 4.31
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Use of Forward Osmosis to Harvest Methane Oxidizing Bacteria Producing Single Cell Protein

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Organisations: Department of Environmental Engineering, Residual Resource Engineering, Water Technologies, Technical University of Denmark
Authors: Pape, M. L. (Ekstern), Valverde Pérez, B. (Intern), Schneider, C. (Intern), Kjeldgaard, A. F. (Intern), Zachariae, A. A. (Ekstern), Hélix-Nielsen, C. (Intern), Zarebska, A. (Intern), Smets, B. F. (Intern)
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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.

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Using microcantilever sensors to measure poly(lactic-co-glycolic acid) plasticization by moisture uptake
Polymeric materials absorb water when exposed to humidity or in contact with aqueous solutions. The polymer and water molecules interact, changing the physicochemical parameters of the material; the most noticeable effect is a decreased glass transition temperature (T_g), known as plasticization. We used microcantilever sensors to measure the T_g versus moisture content in poly(lactic-co-glycolic acid) (PLGA), a biodegradable polymer used in implants and as a drug carrier. We demonstrate a concomitant measurement of the mass absorption and T_g using nanograms of material and an inexpensive setup. The standard deviation of T_g for this system was 0.025 °C, and the variation in T_g with respect to a 1% RH change was clearly resolved. The decrease in the T_g of PLGA was linear (R^2 = 0.99) at a rate of 6.03 ± 0.57 °C per mass% of water absorbed. The initial dry T_g of PLGA was extrapolated to 41.24 ± 0.07 °C.

General information
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Organisations: Department of Micro- and Nanotechnology, Nanoprobes, University of São Paulo
Authors: Alves, G. M. A. (Ekstern), Bose-Goswami, S. (Intern), Mansano, R. D. (Ekstern), Boisen, A. (Intern)
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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.023 SNIP 2.02 CiteScore 2.46
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.877 SNIP 1.956 CiteScore 2.17
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Using titer and titer normalized to confluence are complementary strategies for obtaining Chinese hamster ovary cell lines with high volumetric productivity of etanercept

The selection of clonally-derived Chinese hamster ovary (CHO) cell lines with the highest production rate of recombinant glycoproteins remains a big challenge during early stages of cell line development. Different strategies using either product titer or product titer normalized to cell number are being used to assess suspension-adapted clones when grown statically in microtiter plates. However, no reported study so far has performed a direct head-to-head comparison of these two early reporters for predicting clone performance. Therefore, we developed a screening platform for high-throughput analysis of titer and confluence of etanercept-producing clones. We then performed an unbiased comparison of clone ranking based on either titer or TTC-based ranking gives rise to the selection of clones with similar volumetric productivity in batch cultures. Therefore, a combinatorial titer- and TTC-based ranking is proposed, allowing for selection of distinct clones with both, high integral viable cell density (IVCD) and high specific productivity features, respectively. This contributes to selection of a versatile panel of clones that can be further characterized and from which the final producer clone can be selected that best fits the production requirements.
Utilisation of Electrodialytically Treated Sewage Sludge Ash in Mortar

Phosphorous is a scarce resource and there is a need to develop methods for recovery of this irreplaceable nutrient from secondary resources, e.g. from sewage sludge ash (SSA). Today SSA is most often disposed of and the resource is lost. In the present study, about 90% phosphorous was recovered from SSA by electrodialytic separation in a bench scale set-up, and the particulate residue after the extraction (SSA-ED) was evaluated for use as cement replacement in mortar. The SSA-ED and untreated SSA were grinded for 0, 30 s and 10 min in order to obtain fractions with different degrees of fineness. Each fraction was tested as cement replacement with 20% substitution in mortar. The technical and aesthetical properties of mortars containing the two SSAs were compared to the properties of ordinary mortar. The SSA-ED was acidic; however, this did not significantly influence the mortar properties on short term investigated here. For example, the compressive strength of the mortar with SSA-ED only decreased by 8% compared to ordinary mortar. The workability of mortars with SSA or SSA-ED was reduced compared to the reference. The colour of mortar with SSA-ED was warm reddish, and more intense than the colour of the mortar with SSA. The intense colour was due to the increased concentration of hematite during ED. This study showed potential for separating SSA to two resources by combining electrodialytic extraction of phosphorous and subsequent utilization of the residual mineral ash in mortar.
In the framework of the FP7 ECsafeSeafood project, 62 seafood samples commercialized in Europe Union from several representative species – mackerel, tuna, salmon, seabream, cod, monkfish, crab, shrimp, octopus, perch and plaice – were analysed for residues of 21 personal care products (PCPs), including 11 UV-filters (UV-Fs) and 10 musk fragrances (musks). PCPs analysis were performed by Quick, Easy, Cheap, Effective Rugged, Safe (QuEChERS), combined with liquid-liquid extraction (LLE) or dispersive solid-phase extraction (dSPE), followed by gas chromatography-tandem mass spectrometry (GC-MS/MS). The results showed the presence in a wide range of samples of nine out of eleven UV-Fs compounds analysed, namely 2-ethylhexyl salicylate (EHS), 2-ethylhexyl,4-methoxycinnamate (EHMC), 4-methylbenzylidenecamphor (4-MBC), benzophenone-1 (BP1), benzophenone-3 (BP3), isoamyl-4-methoxycinnamate (IMC), 2,2′-dihydroxy-4,4′-dimethoxybenzophenone (DHMB), homosalate (HS), and octocrylene (OC), whereas galaxolide (HHCB), galaxolide lactone (HHCB-lactone), and tonalide (AHTN) were the most found musks. The potential risks to human health associated with the exposure to eight of the more prevalent PCPs – EHS, EHM, 4-MBC, BP1, BP3, IMC, HHCB, and AHTN - through seafood consumption were assessed for consumers from five European countries (Belgium, Ireland, Italy, Portugal and Spain). Results showed that the human exposure to UV-Fs and musks estimated from the concentration values found in seafood and the daily consumption of concerned seafood species, were far below toxicological reference values.
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 V^2 . It was also found that the performance does not decline during times of high PV generation.

**General information**
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Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Energy system operation and management, Danish Energy Association
Authors: Pertl, M. (Intern), Douglass, P. J. (Ekstern), Heussen, K. (Intern), Kok, K. (Intern)
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Web of Science (2012): Indexed yes
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Scopus rating (2011): SJR 0.942 SNIP 2.157 CiteScore 2.97
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BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.004 SNIP 1.795
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.88 SNIP 1.561
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.574 SNIP 1.302
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Validation of real-time PCR and bacteriological culture for identification of Streptococcus agalactiae and Staphylococcus aureus in milk and on teat skin in herds with automatic milking system

General information
State: Published
Organisations: National Veterinary Institute, Bacteriology & Parasitology, University of Copenhagen
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Vanadium-Catalyzed Deoxydehydration of Glycerol Without an External Reductant
A vanadium-catalysed deoxydehydration (DODH) of neat glycerol has been developed. Cheap and readily available ammonium metavanadate (NH₄VO₃) affords higher yields of allyl alcohol than the well-established catalyst methyltrioxorhenium. A study in which deuterium-labelled glycerol was used was undertaken to further elucidate the dual role of glycerol as both an oxidant and reductant. This study led to the proposal of a metal-catalysed DODH mechanism for the production of allyl alcohol and a deeper understanding of the formation of the byproducts acrolein and propanal.

General information
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Organisations: Department of Chemistry, Organic Chemistry
Authors: Petersen, A. R. (Intern), Nielsen, L. B. (Intern), Dethlefsen, J. R. (Intern), Fristrup, P. (Intern)
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BFI (2017): BFI-level 1
Vapor pressure and specific electrical conductivity in the solid and molten $\text{H}_2\text{O-CsH}_2\text{PO}_4-\text{CsPO}_3$ system—a novel electrolyte for water electrolysis at $\sim 225–400$ °C

Cesium dihydrogen phosphate, $\text{CsH}_2\text{PO}_4$ (CDP) was studied for water electrolysis at $\sim 225–400$ °C. In the presence of sufficient humidity, CDP is structurally disordered and super-protonic conducting with conductivities reaching $0.2–0.25$ S cm$^{-1}$, when determined in suitable H-shaped sealed conductivity cells. Freshly prepared 99.7 ± 0.3% gravimetric pure CDP with correct X-ray diffraction and DSC diagram melted at $\sim 345$ °C. The vapor pressures, above CDP alone and mixed with 20–50 mol% CsPO$_3$ or 13 mol% H$_2$O, were determined in sealed ampoules up to 355 °C by means of Raman spectroscopy based on internal reference gases. Pressures up to $\sim 49$ bar were estimated, much higher than previously expected. Conductivities were given as polynomials and plotted in solid and liquid states. Water splitting electrolysis $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$ was demonstrated by Raman at $\sim 355$ °C under a water pressure of $\sim 23$ bar in a quartz cell with platinum electrodes, showing molten CDP to have significant potential for water electrolysis.
The study described here investigated whether angle-independent vector flow imaging (VFI) technique estimates peak velocities in the portal vein comparably to pulsed wave Doppler (PWD). Furthermore, intra- and inter-observer agreement was assessed in a substudy. VFI and PWD peak velocities were estimated with from intercostal and subcostal views for 32 healthy volunteers, and precision analyses were conducted. Blinded to estimates, three physicians rescanned 10 volunteers for intra- and inter-observer agreement analyses. The precision of VFI and PWD was 18% and 28% from an intercostal view and 23% and 77% from a subcostal view, respectively. Bias between VFI and PWD was 0.57 cm/s ($p = 0.38$) with an intercostal view and 9.89 cm/s ($p$
Abdominal ultrasound, Agreement analysis, Portal vein, Precision analysis, Pulsed wave Doppler, Vector flow imaging, Vector velocity
Viscous flow in a soft valve

Fluid-structure interactions are ubiquitous in nature and technology. However, the systems are often so complex that numerical simulations or ad hoc assumptions must be used to gain insight into the details of the complex interactions between the fluid and solid mechanics. In this paper, we present experiments and theory on viscous flow in a simple bioinspired soft valve which illustrate essential features of interactions between hydrodynamic and elastic forces at low Reynolds numbers. The set-up comprises a sphere connected to a spring located inside a tapering cylindrical channel. The spring is aligned with the central axis of the channel and a pressure drop is applied across the sphere, thus forcing the liquid through the narrow gap between the sphere and the channel walls. The sphere’s equilibrium position is determined by a balance between spring and hydrodynamic forces. Since the gap thickness changes with the sphere’s position, the system has a pressure-dependent hydraulic resistance. This leads to a nonlinear relation between applied pressure and flow rate: flow initially increases with pressure, but decreases when the pressure exceeds a certain critical value as the gap closes. To rationalize these observations, we propose a mathematical model that reduced the complexity of the flow to a two-dimensional lubrication approximation. A closed-form expression for the pressure drop/flow rate is obtained which reveals that the flow rate $Q$ depends on the pressure drop $\Delta p$, sphere radius $a$, gap thickness $h_0$, and viscosity $\eta$ as $Q \sim \eta^{-1} a^{1/2} h_0^{5/2} (1 - \Delta p/\Delta p_c)^{5/2} \Delta p$, where the critical pressure $\Delta p_c$ scales with spring constant $k$ as $\Delta p_c \sim k h_0 a^{-2}$. These predictions compared favourably to the results of our experiments with no free parameters.

General information
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Organisations: Department of Physics, Biophysics and Fluids, University of California at Davis, Technical University of Denmark
Authors: Park, K. (Intern), Tixier, A. (Ekstern), Christensen, A. (Ekstern), Arnbjerg-Nielsen, S. F. (Ekstern), Zwieniecki, M. A. (Ekstern), Jensen, K. H. (Intern)
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Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.912 SNIP 1.676 CiteScore 2.57
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.865 SNIP 1.808 CiteScore 2.66
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.894 SNIP 1.915 CiteScore 2.71
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
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Vitamin D vitamers affect vitamin D status differently in young healthy males

Dietary intake of vitamin D includes vitamin D3 (vitD3), 25-hydroxyvitamin D3 (25OH-D3), and vitamin D2 (vitD2). However, the bioactivity of the different species has not been scientifically established. The hypothesis in this study was that vitD3, 25OH-D3, and vitD2 have an equal effect on 25-hydroxyvitamin D in serum (vitamin D status). To test our hypothesis, we performed a randomized, crossover study. Twelve young males consumed 10 µg/day vitD3 during a four-week run-in period, followed by 3 × 6 weeks of 10 µg/day vitD3, 10 µg/day 25OH-D3, and 10 µg/day vitD2. The content of vitD3, vitD2, 25OH-D3, and 25-hydroxyvitamin D2 (25OH-D2) in serum was quantified by liquid chromatography-tandem mass spectrometry (LC-MS/MS). The hypothesis that the three sources of vitamin D affect vitamin D status equally was rejected. Based on the assumption that 1 µg vitD3/day will show an increase in vitamin D status of 1.96 nmol/L, the results showed that 23 µg vitD2 and 6.8 µg 25OH-D3 was similar to 10 µg vitD3. These results demonstrate that further investigations are necessary to determine how to quantify the total vitamin D activity based on chemical quantification of the individual vitamin D metabolites to replace the total vitamin D activity assessed in biological rat models.

General information

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Organisations: National Food Institute, Research Group for Bioactives – Analysis and Application, Department of Applied Mathematics and Computer Science, Division of Risk Assessment and Nutrition, Research Group for Risk-Benefit, University of Copenhagen
Authors: Jakobsen, J. (Intern), Wreford Andersen, E. A. (Intern), Christensen, T. (Intern), Andersen, R. (Intern), Bügel, S. (Ekstern)
Water thermophoresis in carbon nanotubes: the interplay between thermophoretic and friction forces

Thermophoresis is the phenomenon wherein particles experience a net drift induced by a thermal gradient. In this work, molecular dynamics simulations are conducted to study with atomistic detail the thermophoresis of water nanodroplets inside carbon nanotubes (CNTs) and its interplay with the retarding liquid-solid friction. Different applied temperatures, thermal gradients, and droplet sizes are used to reveal the dynamics of the two kinetic regimes of the thermophoretic motion in CNTs. The results indicate that during the droplet motion, the thermophoretic force is independent of the velocity of the droplet, whereas the magnitude of the retarding friction force exhibits a linear dependence. In fact, in the initial regime the magnitude of the friction force increases linearly with the droplet velocity, until the thermophoretic force is balanced by the friction force as the droplet reaches its terminal velocity in the final regime. In addition, an increase in the magnitude of the thermophoretic force is found for longer water droplets. These findings provide a deeper understanding of liquid transport driven by temperature gradients in nanoconfined geometries where liquid-solid interfaces govern fluidics.

General information
State: Accepted/In press
Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, Universidad de Concepcion
Authors: Oyarzua, E. (Ekstern), Walther, J. H. (Intern), Zambrano, H. A. (Ekstern)
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- Web of Science (2017): Indexed yes
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- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 1.771 SNIP 1.244 CiteScore 4.45
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 1.772 SNIP 1.253 CiteScore 4.29
- Web of Science (2014): Indexed yes
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- Scopus rating (2013): SJR 1.715 SNIP 1.216 CiteScore 4.05
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 1.916 SNIP 1.184 CiteScore 3.67
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 1.697 SNIP 1.203 CiteScore 3.6
- ISI indexed (2011): ISI indexed yes
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- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 1.802 SNIP 1.196
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 2.127 SNIP 1.369
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 2
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- Web of Science (2008): Indexed yes
- Scopus rating (2007): SJR 1.84 SNIP 1.138
- Web of Science (2007): Indexed yes
- Scopus rating (2006): SJR 1.467 SNIP 1.128
- Web of Science (2006): Indexed yes
- Scopus rating (2005): SJR 1.389 SNIP 1.104
- Web of Science (2005): Indexed yes
- Scopus rating (2004): SJR 1.173 SNIP 1.007
- Web of Science (2004): Indexed yes
- Scopus rating (2003): SJR 1.093 SNIP 0.925
- Web of Science (2003): Indexed yes
- Scopus rating (2002): SJR 1.122 SNIP 0.973
- Web of Science (2002): Indexed yes
- Scopus rating (2001): SJR 1.09 SNIP 0.914
- Web of Science (2001): Indexed yes
What has happened to the "aquatic phycomycetes" (sensu Sparrow)? Part I: A brief historical perspective

Abstract The "aquatic phycomycetes" constitute an ecologically and economically important assemblage of eukaryotic microorganisms, because they share many morphological traits and important ecological functions and they interact with each other in aquatic ecosystems. The last two decades of research have provided both molecular and structural evidence that the "aquatic phycomycetes" are a diverse, polyphyletic grouping and therefore not a valid taxonomic entity. Very little research has been conducted for many years with the "aquatic phycomycetes", possibly because in general these microorganisms are often hard to isolate and maintain in most laboratory facilities, little background data has been available to identify the species, the studies were time consuming, the state of the art technology in many cases did not permit studies on these groups and they were thought to be economically and ecologically unimportant. However, this perception has changed recently. For example, some of these species (1) are now known to play important roles in biomass conversion and sequestration of CO2, (2) are parasites of many fungal, plant and animal species, (3) may harbor genes of important enzymes for industrial applications and (4) can serve as indicator species for eco-tox monitoring. This review discusses the assemblages of microorganisms which Sparrow placed into the aquatic phycomycetes, their history in brief and their current phylogenetic placement.

General information
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Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, University of Sydney, Instituto de Botanica de Sao Paulo
Authors: Gleason, F. H. (Ekstern), Marano, A. V. (Ekstern), Lilje, O. (Ekstern), Lange, L. (Intern)
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Web of Science (2017): Indexed Yes
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BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.422 SNIP 1.728 CiteScore 5.32
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.754 SNIP 1.227 CiteScore 4
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.358 SNIP 1.376 CiteScore 3.66
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.343 SNIP 1.334 CiteScore 3.45
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.922 SNIP 1.101 CiteScore 2.58
ISI indexed (2011): ISI indexed no
What we once knew – Mapping of marine sediments on the Greenland west coast: Comparing fishers’ ecological knowledge with historical and recent sources

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Scopus rating (2016): CiteScore 2.63
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.18
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.62
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.46
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
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.

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Authors: Ai, Z. (Intern), Mak, C. (Ekstern)
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Web of Science (2017): Indexed Yes
Wood pellet milling tests in a suspension-fired power plant

This paper investigates the milling behavior of two industrial wood pellet qualities (designated I1 and I2 as per ISO 17225-2:2014) in large-scale coal roller mills, each equipped with a dynamic classifier. The purpose of the study was to test if pellet comminution and subsequent particle classification (i.e., the classifier cut size) are affected by the internal pellet particle size distribution obtained after pellet disintegration in hot water. Furthermore, optimal conditions for comminuting pellets were identified. The milling behavior was assessed by determining the specific grinding energy consumption and
the differential mill pressure. The size and shape of comminuted pellets sampled from burner pipes were analyzed by dynamic image analysis and sieve analysis, respectively. The results showed that the internal pellet particle size distribution affected both the milling behavior and the classifier cut size. I2 pellets with coarser internal particles than I1 pellets required more energy for milling, led to a higher mill pressure drop and showed a larger classifier cut size. Comminuted pellet particles sampled from burner pipes were notably finer than internal pellet (feed) particles. At similar mill-classifier conditions, characteristic particle sizes of 0.50mm for comminuted I1 pellets (compared to 0.83mm for material within I1 pellets) and of 0.56mm for comminuted I2 pellets (compared to 1.09mm for material within I2 pellets), respectively, were obtained. Pellet comminution at lower mill loads and lower primary airflow rates reduced the mill power consumption, the mill pressure drop, and the classifier cut size. However, this was at the expense of a higher specific grinding energy consumption. Derived 2D shape parameters for comminuted and internal pellet particles were similar. Mill operating changes had a negligible effect on the original elongated wood particle shape. To achieve the desired comminuted product fineness (i.e., the classifier cut size) with lower specific grinding energy consumption, power plant operators need to choose pellets with a finer internal particle size distribution.

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Scopus rating (2015): SJR 1.519 SNIP 1.822 CiteScore 4.09
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.629 SNIP 2.161 CiteScore 3.96
BFI (2013): BFI-level 2
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ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.682 SNIP 2.075 CiteScore 3.77
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.575 SNIP 1.773 CiteScore 3.38
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.629 SNIP 1.88
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.545 SNIP 1.856
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.471 SNIP 1.718
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).
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.
Zirconia UV-curable colloids for additive manufacturing via hybrid inkjet printing-stereolithography

Currently, additive manufacturing of ceramics by stereolithography (SLA) is limited to single materials and by a poor thickness resolution that strongly depends on the ceramic particles-UV light interaction. Combining selective laser curing with inkjet printing represents a novel strategy to overcome these constrains. Nonetheless, this approach requires UV-curable inks that allow hardening of the printed material and sintering to high density. In this work, we report how to design an ink for inkjet printing of yttria stabilized zirconia (YSZ) which can be impressed by addition of UV-curable monomers. We especially show how the formulation of the inks and particularly the UV-monomer concentration impacts the printability and the UV-curing. This leads to prints that are resistant to solvent washing first and densify to 96% dense YSZ layers after sintering.
Estimation of caffeine intake from analysis of caffeine metabolites in wastewater
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
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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), Ryu, Y. (Ekstern), Santos, M. M. (Ekstern), Thomas, K. V. (Ekstern), de Voogt, P. (Ekstern), Yang, Z. (Ekstern), Castiglioni, S. (Ekstern)
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Publication information
Journal: Science of the Total Environment
The equivalent static loads method for structural optimization does not in general generate optimal designs

The Equivalent Static Loads Method (ESLM) is an algorithm intended for dynamic response structural optimization. The algorithm attempts to solve a sequence of static response structural optimization problems approximating the original problem. It is argued in several published articles that if the ESLM converges, then it finds a KKT point of the considered dynamic structural response optimization problem. The theoretical convergence properties of the ESLM are however not as strong as previously reported. We propose and analyze easily reproducible counter examples based on a two-bar truss illustrating that the ESLM in general fails in finding optimal designs to the considered dynamic response problem.

General information
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Organisations: Department of Wind Energy, Wind Turbine Structures and Component Design
Authors: Stolpe, M. (Intern), Verbart, A. (Intern), Rojas Labanda, S. (Intern)
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BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.14
Web of Science (2016): Indexed yes
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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
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 1.85
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
Coupled European and Greenland last glacial dust activity driven by North Atlantic climate

Centennial-scale mineral dust peaks in last glacial Greenland ice cores match the timing of lowest Greenland temperatures, yet little is known of equivalent changes in dust-emitting regions, limiting our understanding of dust-climate interaction. Here, we present the most detailed and precise age model for European loess dust deposits to date, based on 125 accelerator mass spectrometry $^{14}$C ages from Dunaszekcsó, Hungary. The record shows that variations in glacial dust deposition variability on centennial-millennial timescales in east central Europe and Greenland were synchronous within uncertainty. We suggest that precipitation and atmospheric circulation changes were likely the major influences on European glacial dust activity and propose that European dust emissions were modulated by dominant phases of the North Atlantic Oscillation, which had a major influence on vegetation and local climate of European dust source regions.
D-efficient or deficient? A robustness analysis of stated choice experimental designs

This paper is motivated by the increasing popularity of efficient designs for stated choice experiments. The objective in efficient designs is to create a stated choice experiment that minimizes the standard errors of the estimated parameters. In order to do so, such designs require specifying prior values for the parameters to be estimated. While there is significant literature demonstrating the efficiency improvements (and cost savings) of employing efficient designs, the bulk of the literature tests conditions where the priors used to generate the efficient design are assumed to be accurate. However, there is substantially less literature that compares how different design types perform under varying degree of error of the prior. The literature that does exist assumes small fractions are used (e.g., under 20 unique choice tasks generated), which is in contrast to computer-aided surveys that readily allow for large fractions. Further, the results in the literature are abstract in that there is no reference point (i.e., meaningful units) to provide clear insight on the magnitude of any issue.
Our objective is to analyze the robustness of different designs within a typical stated choice experiment context of a trade-off between price and quality. We use as an example transportation mode choice, where the key parameter to estimate is the value of time (VOT). Within this context, we test many designs to examine how robust efficient designs are against a misspecification of the prior parameters. The simple mode choice setting allows for insightful visualizations of the designs themselves and also an interpretable reference point (VOT) for the range in which each design is robust. Not surprisingly, the D-efficient design is most efficient in the region where the true population VOT is near the prior used to generate the design: the prior is $20/h and the efficient range is $10–$30/h. However, the D-efficient design quickly becomes the most inefficient outside of this range (under $5/h and above $40/h), and the estimation significantly degrades above $50/h. The orthogonal and random designs are robust for a much larger range of VOT. The robustness of Bayesian efficient designs varies depending on the variance that the prior assumes. Implementing two-stage designs that first use a small sample to estimate priors are also not robust relative to uninformative designs. Arguably, the random design (which is the easiest to generate) performs as well as any design, and it (as well as any design) will perform even better if data cleaning is done to remove choice tasks where one alternative dominates the other.

**General information**

State: Accepted/In press
Organisations: Department of Management Engineering, Transport DTU, Transport Modelling, University of California at Berkeley, Massachusetts Institute of Technology
Authors: Walker, J. L. (Ekstern), Wang, Y. (Ekstern), Thorhauge, M. (Intern), Ben-Akiva, M. (Ekstern)
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Main Research Area: Technical/natural sciences

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Scopus rating (2016): CiteScore 0.66
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.7
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.81
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.82
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.8
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0.69
BFI (2010): BFI-level 1
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D-efficient, Experimental design, Mode choice model, Robustness, Stated choice experiments, Value-of-time
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Source: Scopus
Source-ID: 85037722100
Publication: Research - peer-review • Journal article – Annual report year: 2017

**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**

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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
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.
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.
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.
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
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Organisations: Department of Photonics Engineering, Nanophotonics Theory and Signal Processing, Aalto University
Authors: Partanen, M. (Ekstern), Hæøyren, T. (Intern), Oksanen, J. (Ekstern)
Number of pages: 6
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Article number: 11534
Mucin dispersions as a model for the oromucosal mucus layer in in vitro and ex vivo buccal permeability studies of small molecules

The mucus layer is believed to play a part in drug permeation across the oral mucosa. Human freeze-dried saliva (HFDS) and porcine gastric mucin (PGM) was evaluated as model for mucus layer per se or in conjunction with in vitro and ex vivo buccal permeability models. Four small molecules (nicotine, mannitol, propranolol, caffeine) showed decreased permeability across mucin dispersions, compared to controls, and a greater effect was seen with HFDS than with PGM. Permeability of propranolol and caffeine across filter-grown TR146 cells was decreased by the presence of mucin, whereas no effect was found on nicotine and mannitol. Incubation of porcine buccal mucosa with mucin dispersions for 24 h compromised the integrity of the tissue, whereas 30 min incubation did not affect tissue integrity. Tissue incubation with mucin dispersions did not decrease nicotine permeability. For the studied model drugs, it is concluded that mucin dispersions constitute a minor barrier for drug diffusion compared to the epithelium.

General information
State: Published
Organisations: Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics, Department of Micro- and Nanotechnology, University of Copenhagen
Authors: Marxen, E. (Ekstern), Mosgaard, M. D. (Intern), Pedersen, A. M. L. (Ekstern), Jacobsen, J. (Ekstern)
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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
Web of Science (2013): Indexed yes
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Web of Science (2012): Indexed yes
ISI indexed (2011): ISI indexed no
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Publication: Research - peer-review › Journal article – Annual report year: 2017
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**Potential to curb the environmental burdens of American beef consumption using a novel plant-based beef substitute**

The food demands of the United States (US) impart significant environmental pressures. The high rate of consumption of beef has been shown to be the largest driver of food-borne greenhouse gas emissions, water use and land occupation in the US diet. The environmental benefits of substituting animal products with vegetal foods are well documented, but significant psychological barriers persist in reducing meat consumption. Here we use life cycle assessment to appraise the environmental performance of a novel vegetal protein source in the mean US diet where it replaces ground beef, and in vegetarian and vegan diets where it substitutes for legumes, tofu and other protein sources. We find that relative to the mean US diet, vegetarian and vegan diets significantly reduce per-capita food-borne greenhouse gas emission (32% and
blue water use (70% and 75%, respectively) and land occupation (70% and 79%, respectively), primarily in the form of rangeland. The substitution of 10%, 25% and 50% of ground beef with plant-based burger (PBB) at the national scale results in substantial reductions in annual US dietary greenhouse gas emissions (4.55–45.42 Mt CO₂ equivalents), water consumption (1.30–12.00 km³) and land occupation (22300–190100 km²). Despite PBB’s elevated environmental pressures compared to other vegetal protein sources, we demonstrate that minimal risk exists for the disservices of PBB substitution in non-meat diets to outweigh the benefits of ground-beef substitution in the omnivorous American diet. Demand for plant-based oils in PBB production has the potential to increase land use pressures in biodiversity hotspots, though these could be obviated through responsible land stewardship. Although the apparent environmental benefits of the PBB are contingent on actual uptake of the product, this study demonstrates the potential for non-traditional protein substitutes to play a role in a transition towards more sustainable consumption regimes in the US and potentially abroad.
The role of intention as mediator between latent effects and behavior: application of a hybrid choice model to study departure time choices

An increasing number of papers are focusing on integrating psychological aspects into the typical discrete choice models. The majority of these studies account for several latent effects, but they mainly focused on the direct effect of attitudes, perception, and norms in the discrete choice. None of them consider the effect of intention and its role as mediator between those psychological effects and the choice, as implied in the Theory of Planned Behavior. In this paper we contribute to the literature in this field by specifically studying the direct effect of the intention on the actual behavior, while attitude, social norms, and perceived behavioral control affect the intention to behave in a given way. We apply a hybrid choice model to study the departure time choice. For this, we use data from Danish commuters in the morning rush hours in the Greater Copenhagen area. We find a significant effect of the intention to arrive at work on time on the departing time choice, and also a significant effect of the lower level mediators on intention. Furthermore, the attitude toward short travel time is also significant in explaining the departure time choice. Finally, in terms of forecasting, we find that individuals who have a strong intention to be at work on time will be less likely to reschedule their departure time. This suggests that campaigns targeting the working culture could affect the subject norms among colleagues, which in turn influence individuals’ intention to be on time or to reschedule to a less congested time slot.

General information
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Organisations: Department of Management Engineering, Transport DTU, Transport Modelling, Newcastle University, University of California at Berkeley
Authors: Thorhauge, M. (Intern), Cherchi, E. (Ekstern), Walker, J. L. (Ekstern), Rich, J. (Intern)
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Main Research Area: Technical/natural sciences

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Scopus rating (2016): CiteScore 2.37 SJR 1.587 SNIP 1.798
Web of Science (2016): Indexed yes
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Scopus rating (2015): SJR 1.337 SNIP 1.394 CiteScore 2.1
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.781 SNIP 2.06 CiteScore 2.49
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
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ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
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

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Patent number: WO2017202934
Date: 30/11/2017
Priority date: 26/05/2016
Priority number: EP20160171485
Original language: English
Main Research Area: Technical/natural sciences
VARIANTS OF ACETYLSEROTIN 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.

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Organisations: Novo Nordisk Foundation Center for Biosustainability, iLoop
Authors: Luo, H. (Intern)
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Publication: Research › Patent – Annual report year: 2017

Disrupt mig vel: Har du det rigtige mindset, chef?
Lederens mindset er mere afgørende for succes end teknologier. Begynd derfor med at identificere og udfordre dit eget mindset.

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Afdelingen for Forretningsudvikling, Copenhagen Business School
Authors: Rydén, P. (Intern), Ringberg, T. (Ekstern), Østergaard Jacobsen, P. (Ekstern)
Number of pages: 5
Publication date: 29 Nov 2017

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Newspaper: Berlingske Business
Volume: 2017
No.: 29.11.2017
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Electronic versions:
Disrupt_mig_vel_Har_du_det_rigtige_mindset_chef_Berlingske_Business.pdf
Publication: Communication › Comment/debate – Annual report year: 2017

Ecosystem quality in LCIA: status quo, harmonization, and suggestions for the way forward
Purpose: Life cycle impact assessment (LCIA) results are used to assess potential environmental impacts of different products and services. As part of the UNEP-SETAC life cycle initiative flagship project that aims to harmonize indicators of potential environmental impacts, we provide a consensus viewpoint and recommendations for future developments in LCIA related to the ecosystem quality area of protection (AoP). Through our recommendations, we aim to encourage LCIA developments that improve the usefulness and global acceptability of LCIA results. Methods: We analyze current ecosystem quality metrics and provide recommendations to the LCIA research community for achieving further developments towards comparable and more ecologically relevant metrics addressing ecosystem quality. Results and discussion: We recommend that LCIA development for ecosystem quality should tend towards species-richness-related metrics, with efforts made towards improved inclusion of ecosystem complexity. Impact indicators—which result from a range of modeling approaches that differ, for example, according to spatial and temporal scale, taxonomic coverage, and whether the indicator produces a relative or absolute measure of loss—should be framed to facilitate their final expression in a single, aggregated metric. This would also improve comparability with other LCIA damage-level indicators. Furthermore, to allow for a broader inclusion of ecosystem quality perspectives, the development of an additional indicator
related to ecosystem function is recommended. Having two complementary metrics would give a broader coverage of ecosystem attributes while remaining simple enough to enable an intuitive interpretation of the results. Conclusions: We call for the LCIA research community to make progress towards enabling harmonization of damage-level indicators within the ecosystem quality AoP and, further, to improve the ecological relevance of impact indicators.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment, Norwegian University of Science and Technology, Irstea, U.S. Environmental Protection Agency, European Commission Joint Research Centre Institute, University of Alberta, ETH Zurich, Radboud University Nijmegen, University of Texas
Authors: Woods, J. S. (Ekstern), Damiani, M. (Ekstern), Fantke, P. (Intern), Henderson, A. D. (Ekstern), Johnston, J. M. (Ekstern), Bare, J. (Ekstern), Sala, S. (Ekstern), Maia de Souza, D. (Ekstern), Pfister, S. (Ekstern), Posthuma, L. (Ekstern), Rosenbaum, R. K. (Ekstern), Verones, F. (Ekstern)
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Publication date: 27 Nov 2017
Main Research Area: Technical/natural sciences

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BFI (2018): BFI-level 2
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BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.43 SJR 1.328 SNIP 1.423
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.504 SNIP 1.554 CiteScore 3.49
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.736 SNIP 1.738 CiteScore 3.65
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.666 SNIP 1.979 CiteScore 3.35
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.515 SNIP 1.701 CiteScore 2.89
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.581 SNIP 1.716 CiteScore 2.82
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.447 SNIP 1.861
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.201 SNIP 1.592
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.863 SNIP 1.33
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.8 SNIP 1.22
Web of Science (2007): Indexed yes
Genome-wide analysis of *E. coli* cell-gene interactions

**Background:** The pursuit of standardization and reliability in synthetic biology has achieved, in recent years, a number of advances in the design of more predictable genetic parts for biological circuits. However, even with the development of high-throughput screening methods and whole-cell models, it is still not possible to predict reliably how a synthetic genetic construct interacts with all cellular endogenous systems. This study presents a genome-wide analysis of how the expression of synthetic genes is affected by systematic perturbations of cellular functions. We found that most perturbations modulate expression indirectly through an effect on cell size, putting forward the existence of a generic Size-Expression interaction in the model prokaryote *Escherichia coli*. Results: The Size-Expression interaction was quantified by inserting a dual fluorescent reporter gene construct into each of the 3822 single-gene deletion strains comprised in the KEIO collection. Cellular size was measured for single cells via flow cytometry. Regression analyses were used to discriminate between expression-specific and gene-specific effects. Functions of the deleted genes broadly mapped onto three systems with distinct primary influence on the Size-Expression map. Perturbations in the Division and Biosynthesis (DB) system led to a large-cell and high-expression phenotype. In contrast, disruptions of the Membrane and Motility (MM) system caused small-cell and low-expression phenotypes. The Energy, Protein synthesis and Ribosome (EPR) system was predominantly associated with smaller cells and positive feedback on ribosome function. Conclusions: Feedback between cell growth and gene expression is widespread across cell systems. Even though most gene disruptions proximally affect one component of the Size-Expression interaction, the effect therefore ultimately propagates to both. More specifically, we describe the dual impact of growth on cell size and gene expression through cell division and ribosomal content. Finally, we elucidate aspects of the tight control between swarming, gene expression and cell growth. This work provides foundations for a systematic understanding of feedbacks between genetic and physiological systems.
Disrupt mig vel: Fire gode råd om disruption

Forandring. Ønsket om at være teknologisk foran, kommer ofte til at ske på bekostning af fokus på kundernes oplevelser. Lighedstegnet mellem disruption og ny teknologi er kun den halve sandhed.

General information
State: Published
Organisations: Center for Bachelor of Engineering Studies, Afdelingen for Forretningsudvikling, Copenhagen Business School
Authors: Rydén, P. (Intern), Ringberg, T. (Ekstern), Østergaard Jacobsen, P. (Ekstern)
Number of pages: 4
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Newspaper: Berlingske Business
Volume: 2017
No.: 22.11.2017
Main Research Area: Technical/natural sciences
Electronic versions: Disrupt_mig_vel_Fire_gode_r_d_om_disruption_Berlingske_Business.pdf
Publication: Communication › Comment/debate – Annual report year: 2017

LANDSPLANREDEGÆRELSEN 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

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Newspaper: Sermitsiaq
Volume: 2017
No.: 46
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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
Date: 16/11/2017
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.

General information
State: Published
Organisations: DTU Danchip, Center for Electron Nanoscopy
Authors: Han, A. (Intern), Tiddi, W. (Intern), Beleggia, M. (Intern)
Publication date: 9 Nov 2017

Publication information
IPC: B29C 67/00 A I
Patent number: WO2017191079
Date: 09/11/2017
Priority date: 02/05/2016
Priority number: EP20160167903
Original language: English
Electronic versions:
WO2017191079A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017191079
Publication: Research › Patent – Annual report year: 2017

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.

General information
State: Published
Organisations: Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics, Department of Micro- and Nanotechnology, Nanoprobes
Authors: Durucan, O. (Intern), Schmidt, M. S. (Ekstern), Rindzevicius, T. (Intern), Boisen, A. (Intern)
Publication date: 9 Nov 2017

Publication information
IPC: G01N 35/00 A I
Patent number: WO2017191080
Date: 09/11/2017
Priority date: 02/05/2016
Priority number: EP20160167956
Original language: English
Electronic versions:
WO2017191080A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
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.

**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.

**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

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Journal: Climate Policy
ISSN (Print): 1469-3062
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BFI (2018): BFI-level 1
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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
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
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Main Research Area: Technical/natural sciences

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Journal: Clinical Neurophysiology
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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
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.
Design optimization, Layout optimization, Levelized cost of energy, Non-uniform wind farm, Offshore wind farm, Random search algorithm

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Source: Scopus
Source-ID: 85028419566
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)
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Publication date: 1 Nov 2017
Main Research Area: Technical/natural sciences

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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
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.

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Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic
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Main Research Area: Technical/natural sciences

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Web of Science (2018): Indexed yes
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
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.921 SNIP 1.347 CiteScore 1.2
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.023 SNIP 1.572 CiteScore 1.26
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.872 SNIP 1.228 CiteScore 0.99
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.862 SNIP 1.166 CiteScore 0.91
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.99 SNIP 1.356
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.019 SNIP 1.397
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.174 SNIP 1.248
Scopus rating (2007): SJR 1.052 SNIP 1.466
Scopus rating (2006): SJR 1.241 SNIP 1.76
Scopus rating (2005): SJR 0.865 SNIP 1.45
Scopus rating (2004): SJR 1.129 SNIP 1.55
Scopus rating (2003): SJR 0.989 SNIP 1.317
Scopus rating (2002): SJR 0.993 SNIP 1.545
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

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Priority number: EP20160164227
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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 monooxygenases, 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 A I
Patent number: WO2017167866
Date: 05/10/2017
Priority date: 19/05/2016
Priority number: EP20160170405
Original language: English
Electronic versions:
WO2017167866A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017167866
Publication: Research › Patent – Annual report year: 2017
Ultra-wideband balanced schottky envelope detector for data communication with high bitrate to carrier frequency ratio

This paper reports on an ultra-wideband (UWB) Schottky diode based balanced envelope detector for the L-, S-, C- and X-bands. The proposed circuit consists of a balun that splits the input signal into two 180° out of phase signals, a balanced detector, that demodulates the two signals, a low pass filter that rejects the second harmonic spurious from the Schottky diode and a bias tee that selects the optimum rectification point. The manufactured prototype is able to demodulate error free a 4 Gbps amplitude shift keying (ASK) signal at 4 GHz carrier frequency, leading to a record bitrate to frequency carrier ratio (Δb) of 100%. Besides this, the detector achieves error free demodulation for carrier frequencies between 4 and 8 GHz, while keeping the bitrate at 4 Gbps.

General information
State: Published
Organisations: Metro-Access and Short Range Systems, Department of Electrical Engineering, Electromagnetic Systems, Department of Photonics Engineering, Networks Technology and Service Platforms, Technische Universitat Darmstadt, Technische Hochschule Mittelhessen
Number of pages: 4
Pages: 2052-2055
Publication date: 4 Oct 2017

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Publisher: Institute of Electrical and Electronics Engineers Inc.
Article number: 8059074
ISBN (Electronic): 9781509063604
Main Research Area: Technical/natural sciences
Conference: 2017 IEEE MTT-S International Microwave Symposium, IMS 2017, Honolulu, United States, 04/06/2017 - 04/06/2017
Amplitude shift keying, Envelope detectors, Microwave detector, Schottky diode. Ultra-Wideband
DOIs:
10.1109/MWSYM.2017.8059074
Source: Scopus
Source-ID: 85032469116
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Povl Ole Fanger’s impact ten years later
This paper pays tribute to Povl Ole Fanger, the late professor at the Technical University of Denmark. His scientific studies, focused on the main parameters affecting indoor environmental quality, have inspired (and still inspire) professional design engineers and academic researchers on human thermal comfort and indoor air quality over the last five decades. In addition, he strongly contributed to the creation of a “European School” that addressed engineering issues and was well integrated with the American School, which was characterised (at that time) by a physiological approach. Ten years after his death, this paper is a memorial of his research in the field of thermal comfort and some aspects of indoor air quality. Only the original papers of this Danish scientist will be discussed. The analysis of each single topic of his research and of its impact on past and present research would require more space than would be available in a review article. The authors are confident that the research described in this paper will serve as a beacon for researchers working on thermal comfort now and in the future.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Indoor Climate and Building Physics, Universita di Salerno, University of Naples Federico II
Authors: d’Ambrosio Alfano, F. R. (Ekstern), Olesen, B. W. (Intern), Palella, B. I. (Ekstern)
Pages: 243-249
Publication date: 1 Oct 2017
Main Research Area: Technical/natural sciences

Publication information
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Volume: 152
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Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.64 SJR 2.093 SNIP 1.965
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.088 SNIP 2.174 CiteScore 4.07
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.123 SNIP 2.936 CiteScore 4.21
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.897 SNIP 2.433 CiteScore 3.79
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.816 SNIP 2.737 CiteScore 3.36
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.506 SNIP 2.536 CiteScore 3.23
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.631 SNIP 2.081
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.564 SNIP 1.79
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.624 SNIP 2.028
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.033 SNIP 1.718
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.411 SNIP 1.788
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.293 SNIP 1.277
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.81 SNIP 1.628
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.567 SNIP 1.4
Scopus rating (2002): SJR 1.172 SNIP 1.631
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.942 SNIP 1.095
Scopus rating (2000): SJR 0.505 SNIP 1.226
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.25 SNIP 0.589
Original language: English
Comfort indices, Moderate environments, PMV, PPD, Thermal comfort, Thermal environments
DOIs:
10.1016/j.enbuild.2017.07.052
Source: Scopus
Source-ID: 85025819530
Publication: Research - peer-review › Review – 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), Bjerge Nørbjerg, T. (Intern), Hornbak Steenstrup, K. (Intern)
Publication date: 21 Sep 2017

Publication information
IPC: G06T 17/30 A1
Patent number: WO2017157917
Date: 21/09/2017
Priority date: 14/03/2016
Priority number: EP20160160088
Original language: English
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017157917
Publication: Research › Patent – Annual report year: 2017

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 (APTMS) 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.

General information
State: Published
Organisations: Department of Photonics Engineering, Plasmonics and Metamaterials, DTU Danchip
Authors: Shkondin, E. (Intern), Sukham, J. (Intern), Panah, M. E. A. (Intern), Takayama, O. (Intern), Malureanu, R. (Intern), Jensen, F. (Intern), Lavrinenko, A. (Intern)
Number of pages: 4
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Series: A I P Conference Proceedings Series
Volume: 1874
ISSN: 0094-243X
Main Research Area: Technical/natural sciences
Conference: 2017 International Conference on Metamaterials and Nanophotonics, Vladivostok, Russian Federation, 18/09/2017 - 18/09/2017
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.

New frontiers of quantified self 3: Exploring understudied categories of users

Quantified Self (QS) field needs to start thinking of how situated needs may affect the use of self-tracking technologies. In this workshop we will focus on the idiosyncrasies of specific categories of users.
Supporting smartphone-based behavioral activation: A simulation study

Behavioral activation has shown to be a simple yet effective therapy for depressive patients. The method relies on extensive collection of patient reported activity data on an hourly basis. We are currently in the process of designing a smartphone-based behavioral activation system for depressive disorders. However, it is an open question to what degree patients would use this approach given the high demand for user input. In order to investigate this question, we collected paper-based behavioral activation forms from 5 patients, covering in total 18 weeks, 115 days, and 1,614 hours of self-reported activity data. In this paper we present an analysis of this data and discuss the implications for the design of a smartphone-based system for behavioral activation.

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.
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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.046 SNIP 1.496 CiteScore 1.79
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.044 SNIP 1.777 CiteScore 1.92
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.082 SNIP 1.636
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.222 SNIP 1.71
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.334 SNIP 1.711
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.216 SNIP 1.613
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.135 SNIP 1.748
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.192 SNIP 1.767
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.053 SNIP 1.889
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.236 SNIP 1.679
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.221 SNIP 1.922
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.424 SNIP 1.724
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.102 SNIP 1.04
Scopus rating (1999): SJR 2.032 SNIP 0.99
Original language: English
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 AI
Patent number: WO2017148785
Date: 08/09/2017
Priority date: 01/03/2016
Priority number: EP20160157983
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Electronic versions:
WO2017148785A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017148785
Publication: Research › Patent – Annual report year: 2017

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.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Algorithms and Logic, University of Rome Tor Vergata, University of Warsaw, Google Inc., University of Copenhagen
Authors: Holm, J. (Ekstern), Italiano, G. F. (Ekstern), Karczmarz, A. (Ekstern), Łacki, J. (Ekstern), Rotenberg, E. (Intern), Sankowski, P. (Ekstern)
Publication date: 1 Sep 2017

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Title of host publication: 25th European Symposium on Algorithms, ESA 2017
Volume: 87
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Article number: 50
ISBN (Electronic): 9783959770491
Main Research Area: Technical/natural sciences
Conference: 25th European Symposium on Algorithms, ESA 2017, Vienna, Austria, 04/09/2017 - 04/09/2017
Algorithms, Coloring, Connectivity, Data structures, Planar graphs
DOIs:
10.4230/LIPIcs.ESA.2017.50
Source: Scopus
Source-ID: 85030538538
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017
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.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems, University of Malta, Galea Curmi Engineering Services Ltd.
Authors: Caruana, C. (Ekstern), Yousif, C. (Ekstern), Bacher, P. (Intern), Buhagiar, S. (Ekstern), Grima, C. (Ekstern)
Pages: 336-346
Publication date: 1 Sep 2017
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Journal: Journal of Building Engineering
Volume: 13
Ratings:
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Scopus rating (2016): CiteScore 2 SJR 0.56 SNIP 1.055
Original language: English
Building envelope, Heat flow, Hollow-core concrete block, Infrared, Insitu, Malta
Source: Scopus
Source-ID: 85029520499
Publication: Research - peer-review › Journal article – Annual report year: 2017

Identification and imaging of modern paints using Secondary Ion Mass Spectrometry with MeV ions
Secondary Ion Mass Spectrometry using MeV ion excitation was applied to analyse modern paint materials containing synthetic organic pigments and binders. It was demonstrated that synthetic organic pigments and binder components with molecular masses in the m/z range from 1 to 1200 could be identified in different paint samples with a high efficiency and in a single measurement. Different ways of mounting of mostly insulating paint samples were tested prior to the analysis in order to achieve the highest possible yield of pigment main molecular ions. As Time-of-Flight mass spectrometer for MeV Secondary Ion Mass Spectrometry is attached to the heavy ion microprobe, molecular imaging on cross-sections of small paint fragments was performed using focused ions. Due to the fact that molecules are extracted from the uppermost layer of the sample and to avoid surface contamination, the paint samples were not embedded in the resin as is usually done when imaging of paint samples using different techniques in the field of cultural heritage.

General information
State: Published
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Ruder Boskovic Institute, Akademie der Bildenden Kunste Wien - Academy of Fine Arts Vienna
Authors: Bogdanović Radović, I. (Ekstern), Siketić, Z. (Ekstern), Jembrih-Simbürger, D. (Ekstern), Marković, N. (Intern), Anghelone, M. (Ekstern), Stoytschew, V. (Ekstern), Jakšić, M. (Ekstern)
Number of pages: 6
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Main Research Area: Technical/natural sciences

Publication information
Journal: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms
Volume: 406
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Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.22 SJR 0.691 SNIP 0.906
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.74 SNIP 1.065 CiteScore 1.32
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.616 SNIP 0.905 CiteScore 1.14
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.681 SNIP 1.205 CiteScore 1.47
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.663 SNIP 0.989 CiteScore 1.18
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.685 SNIP 1.071 CiteScore 1.24
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.846 SNIP 0.971
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.672 SNIP 0.925
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.646 SNIP 0.851
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.787 SNIP 1.064
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.733 SNIP 0.919
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.603 SNIP 1.004
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.736 SNIP 0.942
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.558 SNIP 0.926
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.778 SNIP 0.993
Scopus rating (2001): SJR 0.539 SNIP 0.88
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.767 SNIP 0.894
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.691 SNIP 0.833

Original language: English
Heavy ion microprobe, MeV-SIMS, Modern paints, Molecular imaging, Synthetic organic pigments
DOIs:
10.1016/j.nimb.2017.01.007
Source: Scopus
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.

General information
State: Published
Organisations: Department of Electrical Engineering, Biomedical Engineering, Technical University of Denmark
Authors: Isaksen, J. L. (Ekstern), Mohebbi, A. (Ekstern), Puthusserypady, S. (Intern)
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Main Research Area: Technical/natural sciences

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Web of Science (2018): Indexed yes
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
R&D of 3M technologies towards the realization of exabit/s optical communications

Research efforts initiated by the EXAT Initiative are described to realize Exabit/s optical communications, utilizing the 3M technologies, i.e. multi-core fiber, multi-mode control and multi-level modulation.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Japan National Institute of Information and Communications Technology, Waseda University, University of Tokyo
Authors: Morioka, T. (Intern), Awaji, Y. (Ekstern), Matsushima, Y. (Ekstern), Kamiya, T. (Ekstern)
Number of pages: 9
Pages: 1707-1715
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Main Research Area: Technical/natural sciences

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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.84 SJR 0.246 SNIP 0.59
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.172 SNIP 0.451 CiteScore 0.47
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.178 SNIP 0.376 CiteScore 0.4
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.213 SNIP 0.479 CiteScore 0.47
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.217 SNIP 0.517 CiteScore 0.49
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 (ldh, 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), Solern, C. (Intern), Dantoft, S. H. (Intern)
Publication date: 31 Aug 2017

Publication information
IPC: C12N 15/75 A1
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

**Publication information**
IPC: C12P 5/00 A I
Patent number: WO2017144671
Date: 31/08/2017
Priority date: 24/02/2016
Priority number: EP20160157231
Original language: English
Electronic versions:
WO2017144671A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017144671
Publication: Research › Patent – Annual report year: 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

**Publication information**
IPC: C12P 11/00 A I
Patent number: WO2017144670
Date: 31/08/2017
Priority date: 24/02/2016
Priority number: EP20160157232
Original language: English
Electronic versions:
WO2017144670A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017144670
Publication: Research › Patent – Annual report year: 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

Publication information
Journal: Journal of Pharmacokinetics and Pharmacodynamics
Volume: 44
Issue number: 5
ISSN (Print): 1567-567X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.8 SJR 0.696 SNIP 0.801
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.709 SNIP 0.953 CiteScore 1.77
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.696 SNIP 0.851 CiteScore 1.82
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<td>Indexed yes</td>
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<td>SJR 0.579 SNIP 0.938</td>
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<td>2006</td>
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<td>SJR 0.452 SNIP 0.758</td>
<td>yes</td>
<td>Indexed yes</td>
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<td>2005</td>
<td>1</td>
<td>SJR 0.577 SNIP 1.109</td>
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<td>2004</td>
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<td>SJR 0.558 SNIP 0.99</td>
<td>yes</td>
<td>Indexed yes</td>
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<td>2003</td>
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<td>SJR 0.67 SNIP 1.107</td>
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<td>2002</td>
<td>1</td>
<td>SJR 0.538 SNIP 1.08</td>
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<td>Indexed yes</td>
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<td>2000</td>
<td>1</td>
<td>SJR 0.331 SNIP 1.025</td>
<td>yes</td>
<td>Indexed yes</td>
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<td>1999</td>
<td>1</td>
<td>SJR 0.798 SNIP 1.064</td>
<td>yes</td>
<td>Indexed yes</td>
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**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 100s. 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), 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: 17 Aug 2017

**Publication information**
Type: Observation Report Circulars
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

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**Arktiske ingeniører – forskning i Qaanaaq**

**General information**

State: Published
Organisations: Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Authors: Hendriksen, K. (Intern)
Publication date: 16 Aug 2017

**Publication information**

Newspaper: AG Grønlandsposten
Main Research Area: Technical/natural sciences
Source: PublicationPreSubmission
Source-ID: 137534481
Publication: Communication › Newspaper article – Annual report year: 2017

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**ARTEK's sommerforskning i Qeqartat**

**General information**

State: Published
Organisations: Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Authors: Hendriksen, K. (Intern)
Publication date: 16 Aug 2017

**Publication information**

Newspaper: AG Grønlandsposten
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 spectrometer on 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.

General information
State: Published
Organisations: Department of Photonics Engineering, Fiber Optics, Devices and Non-linear Effects, Centre of Excellence for Silicon Photonics for Optical Communications, Nanophotonic Devices, High-Speed Optical Communication, Diode Lasers and LED Systems, Technical University of Denmark
Authors: Guo, K. (Ekstern), Christensen, J. B. (Intern), Christensen, E. N. (Intern), Ding, Y. (Intern), Ou, H. (Intern), Rottwitt, K. (Intern)
Number of pages: 2
Pages: 57-58
Publication date: 11 Aug 2017

Host publication information
Title of host publication: 17th International Conference on Numerical Simulation of Optoelectronic Devices, NUSOD 2017
Publisher: IEEE Computer Society Press
Article number: 8009989
ISBN (Electronic): 9781509053230
Main Research Area: Technical/natural sciences
Conference: 17th International Conference on Numerical Simulation of Optoelectronic Devices, Lyngby, Denmark, 24/07/2017 - 24/07/2017
DOIs:
10.1109/NUSOD.2017.8009989
Source: Scopus
Source-ID: 85027304736
Publication: Research - peer-review › Journal article – Annual report year: 2017

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.

General information
State: Published
Organisations: Department of Photonics Engineering, Nanophotonics Theory and Signal Processing
Authors: Jensen, M. R. (Intern), Mørk, J. (Intern), Willatzen, M. (Intern)
Number of pages: 2
Pages: 85-86
Publication date: 11 Aug 2017

Host publication information
Title of host publication: 17th International Conference on Numerical Simulation of Optoelectronic Devices, NUSOD 2017
Publisher: IEEE Computer Society Press
Article number: 8010003
ISBN (Electronic): 9781509053230
Main Research Area: Technical/natural sciences
Conference: 17th International Conference on Numerical Simulation of Optoelectronic Devices, Lyngby, Denmark, 24/07/2017 - 24/07/2017
DOIs:
10.1109/NUSOD.2017.8010003
Source: Scopus
Source-ID: 85028598353
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017
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 (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
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), Hejlund-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: espacenet
Source-ID: WO2017129196
The effect of equiaxial stretching on the osteogenic differentiation and mechanical properties of human adipose stem cells

Although mechanical cues are known to affect stem cell fate and mechanobiology, the significance of such stimuli on the osteogenic differentiation of human adipose stem cells (hASCs) remains unclear. In this study, we investigated the effect of long-term mechanical stimulation on the attachment, osteogenic differentiation and mechanical properties of hASCs. Tailor-made, pneumatic cell stretching devices were used to expose hASCs to cyclic equiaxial stretching in osteogenic medium. Cell attachment and focal adhesions were visualised using immunocytochemical vinculin staining on days 3 and 6, and the proliferation and alkaline phosphatase activity, as a sign of early osteogenic differentiation, were analysed on days 0, 6 and 10. Furthermore, the mechanical properties of hASCs, in terms of apparent Young's modulus and normalised contractility, were obtained using a combination of atomic force microscopy based indentation and computational approaches. Our results indicated that cyclic equiaxial stretching delayed proliferation and promoted osteogenic differentiation of hASCs. Stretching also reduced cell size and intensified focal adhesions and actin cytoskeleton. Moreover, cell stiffening was observed during osteogenic differentiation and especially under mechanical stimulation. These results suggest that cyclic equiaxial stretching modifies cell morphology, focal adhesion formation and mechanical properties of hASCs. This could be exploited to enhance osteogenic differentiation.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Nanoprobes, University of Tampere, Tampere University Hospital, National University of Ireland, Galway, Tampere University of Technology
Authors: Virjula, S. (Ekstern), Zhao, F. (Ekstern), Leivo, J. (Ekstern), Vanhatupa, S. (Ekstern), Kreutzer, J. (Ekstern), Vaughan, T. J. (Ekstern), Honkala, A. M. (Ekstern), Viehrig, M. (Intern), Mullen, C. A. (Ekstern), Kallio, P. (Ekstern), McNamara, L. M. (Ekstern), Miettinen, S. (Ekstern)
Number of pages: 11
Pages: 38-48
Publication date: 1 Aug 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of the Mechanical Behavior of Biomedical Materials
Volume: 72
ISSN (Print): 1751-6161
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.33 SJR 0.895 SNIP 1.383
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.086 SNIP 1.501 CiteScore 3.28
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.094 SNIP 1.863 CiteScore 3.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.083 SNIP 1.575 CiteScore 3.15
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.88 SNIP 1.549 CiteScore 2.77
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.18 SNIP 2.235 CiteScore 3.45
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.001 SNIP 2.235
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.911 SNIP 1.894
»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.

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.

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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.
Dynamics of bad-cavity-enhanced interaction with cold Sr atoms for laser stabilization

Hybrid systems of cold atoms and optical cavities are promising systems for increasing the stability of laser oscillators used in quantum metrology and atomic clocks. In this paper we map out the atom-cavity dynamics in such a system and demonstrate limitations as well as robustness of the approach. We investigate the phase response of an ensemble of cold Sr88 atoms inside an optical cavity for use as an error signal in laser frequency stabilization. With this system we realize a regime where the high atomic phase shift limits the dynamical locking range. The limitation is caused by the cavity transfer function relating input field to output field. The cavity dynamics is shown to have only little influence on the prospects for laser stabilization, making the system robust towards cavity fluctuations and ideal for the improvement of future narrow linewidth lasers.

General information
State: Published
Organisations: Department of Chemistry, University of Copenhagen
Authors: Schäffer, S. A. (Intern), Christensen, B. T. (Ekstern), Henriksen, M. R. (Ekstern), Thomsen, J. W. (Ekstern)
Number of pages: 10
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Main Research Area: Technical/natural sciences

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Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 2.25 SJR 1.281 SNIP 0.852
Web of Science (2016): Indexed yes
Scopus rating (2015): SJR 1.451 SNIP 0.903 CiteScore 2.06
Web of Science (2015): Indexed yes
Scopus rating (2014): SJR 2.121 SNIP 1.146 CiteScore 2.46
Web of Science (2014): Indexed yes
Scopus rating (2013): SJR 2.317 SNIP 1.179 CiteScore 2.86
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Scopus rating (2012): SJR 2.515 SNIP 1.239 CiteScore 2.81
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Scopus rating (2011): SJR 2.31 SNIP 1.261 CiteScore 2.79
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Scopus rating (2010): SJR 2.403 SNIP 1.22
Web of Science (2010): Indexed yes
Scopus rating (2009): SJR 2.475 SNIP 1.305
Web of Science (2009): Indexed yes
Scopus rating (2008): SJR 2.559 SNIP 1.241
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.618 SNIP 1.259
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.342 SNIP 1.257
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.017 SNIP 1.286
Web of Science (2005): Indexed yes
Fast computation of the roots of polynomials over the ring of power series

We give an algorithm for computing all roots of polynomials over a univariate power series ring over an exact field $K$. More precisely, given a precision $d$, and a polynomial $Q$ whose coefficients are power series in $x$, the algorithm computes a representation of all power series $f(x)$ such that $Q(f(x)) = 0 \mod x^d$. The algorithm works unconditionally, in particular also with multiple roots, where Newton iteration fails. Our main motivation comes from coding theory where instances of this problem arise and multiple roots must be handled. The cost bound for our algorithm matches the worst-case input and output size $d \deg(Q)$, up to logarithmic factors. This improves upon previous algorithms which were quadratic in at least one of $d$ and $\deg(Q)$. Our algorithm is a refinement of a divide & conquer algorithm by Alekhnovich (2005), where the cost of recursive steps is better controlled via the computation of a factor of $Q$ which has a smaller degree while preserving the roots.

Popov form computation for matrices of Ore polynomials

Let $F[c; s, d]$ be a ring of Ore polynomials over a field. We give a new deterministic algorithm for computing the Popov form $P$ of a non-singular matrix $A \in F[c; s, d]^{n \times n}$. Our main focus is to ensure controlled growth in the size of coefficients from $F$ in the case $F = k(\zeta)$, and even $k = \mathbb{Q}$. Our algorithms are based on constructing from $A$ a linear system over $F$ and performing a structured fraction-free Gaussian elimination. The algorithm is output sensitive, with a cost that depends on
the orthogonality defect of the input matrix: the sum of the row degrees in A minus the sum of the row degrees in P. The resulting bit-complexity for the differential and shift polynomial case over \( \mathbb{Q}(z) \) improves upon the previous best.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Mathematics, University of Waterloo
Authors: Khochtali, M. (Ekstern), Né Nielsen, J. R. (Intern), Storjohann, A. (Ekstern)
Number of pages: 8
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2017_issac_orepopov.pdf
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Source: Scopus
Source-ID: 85027692843
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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 alternatingly 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

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Patent number: WO2017121720
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Priority number: EP20160150905
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Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017121720
Publication: Research › Patent – Annual report year: 2017

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
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Main Research Area: Technical/natural sciences

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BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.544 SNIP 0.916
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.433 SNIP 0.914 CiteScore 1.08
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.506 SNIP 1.385 CiteScore 1.34
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.488 SNIP 1.01 CiteScore 1.55
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.395 SNIP 0.902 CiteScore 0.71
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.344 SNIP 0.668 CiteScore 0.51
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.31 SNIP 0.532
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.269 SNIP 0.454
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.205 SNIP 0.379
Scopus rating (2007): SJR 0.189 SNIP 0.398
Scopus rating (2006): SJR 0.189 SNIP 0.34
Scopus rating (2005): SJR 0.23 SNIP 0.372
Scopus rating (2004): SJR 0.224 SNIP 0.487
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.

General information
State: Published
Organisations: Technical University of Denmark, Embedded Systems Engineering, Department of Applied Mathematics and Computer Science, Vienna University of Technology
Authors: Cilku, B. (Ekstern), Puffitsch, W. (Intern), Prokesch, D. (Ekstern), Schoeberl, M. (Intern), Puschner, P. (Ekstern)
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Source: Scopus
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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), Birkelund, K. (Intern), Jørgensen, A. M. (Intern), Jensen, F. (Ekstern)
Dispersive heterodyne probing method for laser frequency stabilization based on spectral hole burning in rare-earth doped crystals

Frequency-locking a laser to a spectral hole in rare-earth doped crystals at cryogenic temperature has been shown to be a promising alternative to the use of high finesse Fabry-Perot cavities when seeking a very high short term stability laser (M. J. Thorpe et al., Nature Photonics 5, 688 (2011)). We demonstrate here a novel technique for achieving such stabilization, based on generating a heterodyne beat-note between a master laser and a slave laser whose dephasing caused by propagation near a spectral hole generate the error signal of the frequency lock. The master laser is far detuned from the center of the inhomogeneous absorption profile, and therefore exhibits only limited interaction with the crystal despite a potentially high optical power. The demodulation and frequency corrections are generated digitally with a hardware and software implementation based on a field-programmable gate array and a Software Defined Radio platform, making it straightforward to address several frequency channels (spectral holes) in parallel.
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.
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.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radiation Physics
Authors: Lindvold, L. R. (Intern), Helt-Hansen, J. (Intern), Miller, A. (Intern), Anderseml, C. E. (Ekstern)
Publication date: 22 Jun 2017

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
Bacterial cells with improved tolerance to polyols

The present invention relates to bacterial cells genetically modified to improve their tolerance to certain commodity chemicals, such as diols and other polyols, and to methods of preparing and using such bacterial cells for production of polyols 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, Network Reconstruction in Silico Biology, ALE Technology & Software Development
Authors: Lennen, R. (Intern), Nielsen, A. T. (Intern), Herrgard, M. (Intern), Sommer, M. O. A. (Intern), Feist, A. (Intern), Tharwat Tolba Mohamed, E. (Intern)
Publication date: 17 Jun 2017

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Priority number: EP20160176365
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Main Research Area: Technical/natural sciences
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.

General information
State: Published
Organisations: Department of Management Engineering, Systems Analysis
Authors: Ben Amer-Allam, S. (Intern), Münster, M. (Intern), Petrovic, S. (Intern)
Pages: 1252-1263
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Main Research Area: Technical/natural sciences

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Web of Science (2018): Indexed yes
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.
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.

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).
Validation of the actuator disc and actuator line techniques for yawed rotor flows using the New Mexico experimental data

Experimental data acquired in the New Mexico experiment on a yawed 4.5m diameter rotor model turbine are used here to validate the actuator line (AL) and actuator disc (AD) models implemented in the Large Eddy Simulation code EllipSys3D in terms of loading and velocity field. Even without modelling the geometry of the hub and nacelle, the AL and AD models produce similar results that are generally in good agreement with the experimental data under the various configurations considered. As expected, the AL model does better at capturing the induction effects from the individual blade tip vortices, while the AD model can reproduce the averaged features of the flow. The importance of using high quality airfoil data (including 3D corrections) as well as a fine grid resolution is highlighted by the results obtained. Overall, it is found that both models can satisfactorily predict the 3D velocity field and blade loading of the New Mexico rotor under yawed inflow.
Escape routes, weak links, and desynchronization in fluctuation-driven networks

Shifting our electricity generation from fossil fuel to renewable energy sources introduces large fluctuations to the power system. Here, we demonstrate how increased fluctuations, reduced damping, and reduced inertia may undermine the dynamical robustness of power grid networks. Focusing on fundamental noise models, we derive analytic insights into which factors limit the dynamic robustness and how fluctuations may induce a system escape from an operating state. Moreover, we identify weak links in the grid that make it particularly vulnerable to fluctuations. These results thereby not only contribute to a theoretical understanding of how fluctuations act on distributed network dynamics, they may also help designing future renewable energy systems to be more robust.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Optofluidics, Jacobs University Bremen, Technische Universität Darmstadt, Technische Universität Dresden, University of Cologne, Max Planck Institut für Dynamik Und Selbstdorganisation Gottingen, Research Centre Julich (FZJ)
Authors: Schäfer, B. (Ekstern), Matthiae, M. (Intern), Zhang, X. (Ekstern), Rohden, M. (Ekstern), Timme, M. (Ekstern), Witthaut, D. (Ekstern)
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Main Research Area: Technical/natural sciences

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BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.95 SJR 0.993 SNIP 0.896
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.047 SNIP 0.978 CiteScore 1.89
Web of Science (2015): Indexed yes
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
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.

A case hardened component of titanium

The present invention relates to a case hardened component of a titanium alloy, the component having a diffusion zone of a thickness of at least 50 μm, as calculated from the surface of the component, the diffusion zone comprising oxygen and carbon in solid solution and having a distinct phase of a carbo-oxide compound having the composition TiOxC1-x, wherein x is a number in the range of 0.01 to 0.99, which diffusion zone has a microhardness of at least 800 HV0.025 and which carbo-oxide compound has a microhardness of at least 1200 HV0.025. In another aspect the invention relates to a method
of producing the case hardened component. In a further aspect the invention relates to a method of oxidising a component of a Group IV metal.

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.

Fingerprints in compressed strings
In this paper we show how to construct a data structure for a string S of size N compressed into a context-free grammar of size n that supports efficient Karp–Rabin fingerprint queries to any substring of S. That is, given indices i and j, the answer to a query is the fingerprint of the substring S[i:j]. We present the first O(n) space data structures that answer fingerprint queries without decompressing any characters. For Straight Line Programs (SLP) we get O(logN) query time, and for Linear SLPs (an SLP derivative that captures LZ78 compression and its variations) we get O(loglogN) query time. We extend the result to solve the longest common extension problem in query time O(logNlogr) and O(logloglog+loglogN) for SLPs and Linear SLPs, respectively. Here, r denotes the length of the LCE.
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.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Scientific Computing, University of Electronic Science and Technology of China, University of California at Los Angeles
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Web of Science (2016): Indexed yes
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
A Quantitative Property-Property Relationship for the Internal Diffusion Coefficients of Organic Compounds in Solid Materials

Indoor releases of organic chemicals encapsulated in solid materials are major contributors to human exposures and are directly related to the internal diffusion coefficient in solid materials. Existing correlations to estimate the diffusion coefficient are only valid for a limited number of chemical-material combinations. This paper develops and evaluates a quantitative property-property relationship (QPPR) to predict diffusion coefficients for a wide range of organic chemicals and materials. We first compiled a training dataset of 1103 measured diffusion coefficients for 158 chemicals in 32 consolidated material types. Following a detailed analysis of the temperature influence, we developed a multiple linear regression model to predict diffusion coefficients as a function of chemical molecular weight (MW), temperature, and material type (adjusted R2 of 0.93). The internal validations showed the model to be robust, stable and not a result of chance correlation. The external validation against two separate prediction datasets demonstrated the model has good predicting ability within its applicability domain (R2ext > 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.
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.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Optofluidics
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Publication information
IPC: B01L 3/00 A I
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Image quality transfer and applications in diffusion MRI

This paper introduces a new computational imaging technique called image quality transfer (IQT). IQT uses machine learning to transfer the rich information available from one-off experimental medical imaging devices to the abundant but lower-quality data from routine acquisitions. The procedure uses matched pairs to learn mappings from low-quality to corresponding high-quality images. Once learned, these mappings then augment unseen low quality images, for example by enhancing image resolution or information content. Here, we demonstrate IQT using a simple patch-regression implementation and the uniquely rich diffusion MRI data set from the human connectome project (HCP). Results highlight potential benefits of IQT in both brain connectivity mapping and microstructure imaging. In brain connectivity mapping, IQT reveals, from standard data sets, thin connection pathways that tractography normally requires specialised data to reconstruct. In microstructure imaging, IQT shows potential in estimating, from standard “single-shell” data (one non-zero b-value), maps of microstructural parameters that normally require specialised multi-shell data. Further experiments show strong generalisability, highlighting IQT’s benefits even when the training set does not directly represent the application domain. The concept extends naturally to many other imaging modalities and reconstruction problems.
**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.

**General information**

State: Published
Organisations: Technical University of Denmark
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Publication date: 11 May 2017
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
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Scopus rating (2015): SJR 1.596 SNIP 1.268 CiteScore 2.42
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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
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BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.95 SNIP 0.945 CiteScore 1.57
ISI indexed (2012): 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.

title

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Organisations: Department of Management Engineering, Technology and Innovation Management, Gaia Consulting, Prime Minister's Office
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Number of pages: 14
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Concepts and procedures for mapping food and health research infrastructure

Background Recent initiatives in Europe have encouraged the formalisation of research infrastructure to unify fragmented facilities, resources and services; and to facilitate world-class research of complex public health challenges, such as those related to non-communicable disease. How this can be achieved in the area of food and health has, to date, been unclear.

Scope and approach This commentary paper presents examples of the types of food and health research facilities, resources and services available in Europe. Insights are provided on the challenge of identifying and classifying research infrastructure. In addition, suggestions are made for the future direction of food and health research infrastructure in Europe. These views are informed by the EuroDISH project, which mapped research infrastructure in four areas of food and health research: Determinants of dietary behaviour; Intake of foods/nutrients; Status and functional markers of nutritional health; Health and disease risk of foods/nutrients. Key findings and conclusion There is no objective measure to identify or classify research infrastructure. It is therefore, difficult to operationalise this term. EuroDISH demonstrated specific challenges with identifying the degree an organisation, project, network or national infrastructure could be considered a research infrastructure; and establishing the boundary of a research infrastructure (integral hard or soft facilities/resources/services). Nevertheless, there are opportunities to create dedicated food and health research infrastructures in Europe. These would need to be flexible and adaptable to keep pace with an ever-changing research environment and bring together the multi-disciplinary needs of the food and health research community.

General information
Endogenous scheduling preferences and congestion
We consider the timing of activities through a dynamic model of commuting with congestion, in which workers care solely about leisure and consumption. Implicit preferences for the timing of the commute form endogenously due to temporal agglomeration economies. Equilibrium exists uniquely and is indistinguishable from that of a generalized version of the classical Vickrey bottleneck model, based on exogenous trip-timing preferences, but optimal policies differ: the Vickrey model will misstate the benefits of a capacity increase, it will underpredict the benefits of congestion pricing, and pricing may make people better off even without considering the use of revenues.

Flexible non-linear predictive models for large-scale wind turbine diagnostics
We demonstrate how flexible non-linear models can provide accurate and robust predictions on turbine component temperature sensor data using data-driven principles and only a minimum of system modeling. The merits of different model architectures are evaluated using data from a large set of turbines operating under diverse conditions. We then go on to test the predictive models in a diagnostic setting, where the output of the models are used to detect mechanical faults in rotor bearings. Using retrospective data from 22 actual rotor bearing failures, the fault detection performance of the models are quantified using a structured framework that provides the metrics required for evaluating the performance in a fleet wide monitoring setup. It is demonstrated that faults are identified with high accuracy up to 45 days before a warning from the hard-threshold warning system.
Localization and In-vivo characterization of thapsia garganica CYP76AE2 indicates a role in thapsigargin biosynthesis

The Mediterranean plant Thapsia garganica (dicot, Apiaceae), also known as deadly carrot, produces the highly toxic compound thapsigargin. This compound is a potent inhibitor of the sarcoplasmic-endoplasmic reticulum Ca\(^{2+}\)-ATPase calcium pump in mammals and is of industrial importance as the active moiety of the anticancer drug mipsagargin, currently in clinical trials. Knowledge of thapsigargin in planta storage and biosynthesis has been limited. Here, we present the putative second step in thapsigargin biosynthesis, by showing that the cytochrome P450 TgCYP76AE2, transiently expressed in Nicotiana benthamiana, converts epikunzeaol into epidihydrocostunolide. Furthermore, we show that thapsigargin is likely to be stored in secretory ducts in the roots. Transcripts from TgTPS2 (epikunzeaol synthase) and TgCYP76AE2 in roots were found only in the epithelial cells lining these secretory ducts. This emphasizes the involvement of these cells in the biosynthesis of thapsigargin. This study paves the way for further studies of thapsigargin biosynthesis.

General information
State: Published
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Scopus rating (2015): SJR 3.575 SNIP 1.798 CiteScore 6.69
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.085 SNIP 2.096 CiteScore 7.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
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ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
PET/MRI in the presence of metal implants: Completion of the attenuation map from PET emission data

We present a novel technique for accurate whole-body attenuation correction in the presence of metallic endoprosthesis, on integrated non-time-of-flight (non-TOF) PET/MRI scanners. The proposed implant PET-based attenuation map completion (IPAC) method performs a joint reconstruction of radioactivity and attenuation from the emission data to determine the position, shape, and linear attenuation coefficient (LAC) of metallic implants. Methods: The initial estimate of the attenuation map was obtained using the MR Dixon method currently available on the Siemens Biograph mMR scanner. The attenuation coefficients in the area of the MR image subjected to metal susceptibility artifacts are then reconstructed from the PET emission data using the IPAC algorithm. The method was tested on 11 subjects presenting 13 different metallic implants, who underwent CT and PET/MR scans. Relative mean LACs and Dice similarity coefficients were calculated to determine the accuracy of the reconstructed attenuation values and the shape of the metal implant, respectively. The reconstructed PET images were compared with those obtained using the reference CT-based approach and the Dixon-based method. Absolute relative change (aRC) images were generated in each case, and voxel-based analyses were performed. Results: The error in implant LAC estimation, using the proposed IPAC algorithm, was 15.7%±7.8%, which was significantly smaller than the Dixon- (100%) and CT-(39%) derived values. A mean Dice similarity coefficient of 73%±9% was obtained when comparing the IPAC- with the CT-derived implant shape. The voxel-based analysis of the reconstructed PET images revealed quantification errors (aRC) of 13.2%±22.1% for the IPAC with respect to CT-corrected images. The Dixon-based method performed substantially worse, with a mean aRC of 23.1%±38.4%. Conclusion: We have presented a non-TOF emission-based approach for estimating the attenuation map in the presence of metallic implants, to be used for whole-body attenuation correction in integrated PET/MR scanners. The Graphics Processing Unit implementation of the algorithm will be included in the open-source reconstruction toolbox Occiput.io.
Subsequence automata with default transitions

Let $S$ be a string of length $n$ with characters from an alphabet of size $\sigma$. The subsequence automaton of $S$ (often called the directed acyclic subsequence graph) is the minimal deterministic finite automaton accepting all subsequences of $S$. A straightforward construction shows that the size (number of states and transitions) of the subsequence automaton is $O(n\sigma)$ and that this bound is asymptotically optimal. In this paper, we consider subsequence automata with default transitions, that is, special transitions to be taken only if none of the regular transitions match the current character, and which do not consume the current character. We show that with default transitions, much smaller subsequence automata are possible, and provide a full trade-off between the size of the automaton and the delay, i.e., the maximum number of consecutive default transitions followed before consuming a character. Specifically, given any integer parameter $k$, $1 < k \leq \sigma$, we present a subsequence automaton with default transitions of size $O(nk\log k \sigma)$ and delay $O(\log k \sigma)$. Hence, with $k=2$ we obtain an automaton of size $O(n\log \sigma)$ and delay $O(\log \sigma)$. At the other extreme, with $k=\sigma$, we obtain an automaton of size $O(n\sigma)$ and delay $O(1)$, thus matching the bound for the standard subsequence automaton construction. Finally, we generalize the result to multiple strings. The key component of our result is a novel hierarchical automata construction of independent interest.

General information

State: Published
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Scopus rating (2015): SJR 0.682 SNIP 1.105 CiteScore 0.81
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Scopus rating (2014): SJR 0.583 SNIP 0.758 CiteScore 0.75
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.767 SNIP 1.075 CiteScore 0.97
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.836 SNIP 1.47 CiteScore 1.25
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.612 SNIP 1.352 CiteScore 0.91
Scopus rating (2010): SJR 0.634 SNIP 1.021
Scopus rating (2009): SJR 0.764 SNIP 1.216
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.87 SNIP 1.343
Scopus rating (2007): SJR 0.751 SNIP 1.625
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.
Det varer ved


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Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Pedersen, J. O. P. (Intern)
Pages: 12-13
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Publication: Communication › Feature article – Annual report year: 2017
Random sequences are an abundant source of bioactive RNAs or peptides
It is generally assumed that new genes arise through duplication and/or recombination of existing genes. The probability that a new functional gene could arise out of random non-coding DNA is so far considered to be negligible, as it seems unlikely that such an RNA or protein sequence could have an initial function that influences the fitness of an organism. Here, we have tested this question systematically, by expressing clones with random sequences in Escherichia coli and subjecting them to competitive growth. Contrary to expectations, we find that random sequences with bioactivity are not rare. In our experiments we find that up to 25% of the evaluated clones enhance the growth rate of their cells and up to 52% inhibit growth. Testing of individual clones in competition assays confirms their activity and provides an indication that their activity could be exerted by either the transcribed RNA or the translated peptide. This suggests that transcribed and translated random parts of the genome could indeed have a high potential to become functional. The results also suggest that random sequences may become an effective new source of molecules for studying cellular functions, as well as for pharmacological activity screening.

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

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Main Research Area: Technical/natural sciences
Publication: Communication › Feature article – Annual report year: 2017

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.4.1.1.5); 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.

Pin-count reduction for continuous flow microfluidic biochips

Microfluidic biochips are replacing the conventional biochemical analyzers integrating the necessary functions on-chip. We are interested in flow-based biochips, where a continuous flow of liquid is manipulated using integrated microvalves, controlled from external pressure sources via off-chip control pins. Recent research has addressed the physical design of such biochips. However, such research has so far ignored the pin-count, which rises with the increase in the number of microvalves. Given a biochip architecture and a biochemical application, we propose an algorithm for reducing the number of control pins required to run the application. The proposed algorithm has been evaluated on several biochips, including the AquaFlux biochip from Microfluidic Innovations LLC.
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.

Methodology for in situ synchrotron X-ray studies in the laser-heated diamond anvil cell

A review of some important technical challenges related to in situ diamond anvil cell laser heating experimentation at synchrotron X-ray sources is presented. The problem of potential chemical reactions between the sample and the pressure medium or the carbon from the diamond anvils is illustrated in the case of elemental tantalum. Preliminary results of a comparison between reflective and refractive optics for high temperature measurements in the laser-heated diamond anvil cell are briefly discussed. Finally, the importance of the size and relative alignment of X-ray and laser beams for quantitative X-ray measurements is presented.
Friedel's salt profiles from thermogravimetric analysis and thermodynamic modelling of Portland cement-based mortars exposed to sodium chloride solution

Thermogravimetric analysis (TGA), powder X-ray diffraction (XRD) and thermodynamic modelling have been used to obtain Friedel's salt profiles for saturated mortar cylinders exposed to a 2.8 M NaCl solution. Comparison of the measured Friedel's salt profiles with the total chloride profiles indicates that only a minor part of the chloride ions is bound in Friedel's salt in the studied Portland cement (P) and limestone blended (L) cement. The chloride binding capacity with respect to the formation of Friedel's salt by consumption of monocarbonate is reached for the P and L mortars, where only a fraction of about 20% of the amount of C3A is found to contribute to formation of Friedel's salt. Higher amounts of Friedel's salt are formed in the metakaolin containing mortars. However, the limited chloride ingress depths prevent quantification of the potential full chloride binding capacity of Friedel's salt in these mortars. The measured amounts of Friedel's salt by TGA
and the portlandite profiles show that the maximum amount of Friedel's salt is found in the region with limited leaching of calcium, which is in good agreement with the predicted Friedel's salt profiles.
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.

ELECTROKINETIC DEVICE AND METHOD FOR CONSOLIDATING POROUS MATERIALS

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.

Mechanism and Thermochemistry of Coal Char Oxidation and Desorption of Surface Oxides

The present study investigates the coal char combustion by a combination of thermochemical and X-ray photoemission spectroscopy (XPS) analyses. Thermoanalytical methods (differential thermogravimetry, differential scanning calorimetry, and temperature-programmed desorption) are used to identify the key reactive steps that occur upon oxidation and heating of coal char (chemisorption, structural rearrangement and switchover of surface oxides, and desorption) and their energetics. XPS is used to reveal the chemical nature of the surface oxides that populate the char surface and to monitor their evolution throughout thermochemical processing. XPS spectra show the presence on the carbon surface of three main components. It is shown that the most abundant oxygen functionality in the raw char is epoxy. It decreases with preoxidation at 300°C and even more at 500°C, where carboxyl and ether oxygen functionalities prevail. The rearrangement of epoxy during preoxidation goes together with activation of the more stable and less reactive carbon sites. Results are in good agreement with semi-lumped kinetic models of carbon oxidation, which include (1) formation of "metastable" surface oxides, (2) complex switchover, and (3) desorption into CO and CO2.
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 50 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.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Organic Energy Materials
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Source: espacenet
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Publication: Research › Patent – Annual report year: 2017

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, Balmoral, 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.

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Organisations: Department of Management Engineering, Systems Analysis, Management Science
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Main Research Area: Technical/natural sciences

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Intracellular responsive dual delivery by endosomolytic polyplexes carrying DNA anchored porous silicon nanoparticles

Bioresponsive cytosolic nanobased multidelivery has been emerging as an enormously challenging novel concept due to the intrinsic protective barriers of the cells and hardly controllable performances of nanomaterials. Here, we present a new paradigm to advance nano-in-nano integration technology amenable to create multifunctional nanovehicles showing considerable promise to overcome restrictions of intracellular delivery, solve impediments of endosomal localization and aid effectual tracking of nanoparticles. A redox responsive intercalator chemistry comprised of cystine and 9-aminoacridine is designed as a cross-linker to cap carboxylated porous silicon nanoparticles with DNA. These intelligent nanocarriers are then encapsulated within novel one-pot electrostatically complexed nano-networks made of a zwitterionic amino acid (cysteine), an anionic bioadhesive polymer (poly(methyl vinyl ether-alt-maleic acid)) and a cationic endosomolytic polymer (polyethyleneimine). This combined nanocomposite is successfully tested for the co-delivery of hydrophobic (sorafenib) or hydrophilic (calcein) molecules loaded within the porous core, and an imaging agent covalently integrated into the polyplex shell by click chemistry. High loading capacity, low cyto- and hemo-toxicity, glutathione responsive on-command drug release, and superior cytosolic delivery are shown as achievable key features of the proposed formulation. Overall, formulating drug molecules, DNA and imaging agents, without any interference, in a physico-chemically optimized carrier may open a path towards broad applicability of these cost-effective multivalent nanocomposites for treating different diseases.
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
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Publication date: 9 Mar 2017

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Inhomogeneous Markov Models for Describing Driving Patterns

It has been predicted that electric vehicles will play a crucial role in incorporating a large renewable component in the energy sector. If electric vehicles are integrated in a naive way, they may exacerbate issues related to peak demand and transmission capacity limits while not reducing polluting emissions. Optimizing the charging of electric vehicles is paramount for their successful integration. This paper presents a model to describe the driving patterns of electric vehicles in order to provide primary input information to any mathematical programming model for optimal charging. Specifically, an inhomogeneous Markov model that captures the diurnal variation in the use of a vehicle is presented. The model is defined by the time-varying probabilities of starting and ending a trip, and is justified due to the uncertainty associated with the use of the vehicle. The model is fitted to data collected from the actual utilization of a vehicle. Inhomogeneous Markov models imply a large number of parameters. The number of parameters in the proposed model is reduced using B-splines.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Dynamical Systems
Authors: Iversen, E. B. (Intern), Møller, J. K. (Intern), Morales, J. M. (Intern), Madsen, H. (Intern)
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Scopus rating (2016): CiteScore 7.73 SJR 2.851 SNIP 2.58
Web of Science (2016): Indexed yes
Manifest domains: analysis and description

We show that manifest domains, an understanding of which are a prerequisite for software requirements prescriptions, can be precisely described: narrated and formalised. We show that such manifest domains can be understood as a collection of endurant, that is, basically spatial entities: parts, components and materials, and perdurant, that is, basically temporal entities: actions, events and behaviours. We show that parts can be modeled in terms of external qualities whether: atomic or composite parts, having internal qualities: unique identifications, mereologies, which model relations between parts, and attributes. We show that the manifest domain analysis endeavour can be supported by a calculus of manifest domain analysis prompts: is_entity, is_endurant, is_perdurant, is_part, is_component, is_material, is_atomic, is_composite, has_components, has_materials, has_concrete_type, attribute_names, is_stationary, etcetera; and show how the manifest domain description endeavour can be supported by a calculus of manifest domain description prompts: observe_part_sorts, observe_part_type, observe_components, observe_materials, observe_unique_identifier, observe_mereology, observe_attributes. We show how to model attributes, essentially following Michael Jackson (Software requirements & specifications: a lexicon of practice, principles and prejudices. ACM Press, Addison-Wesley, Reading, 1995), but with a twist: The attribute model introduces the attribute analysis prompts is_static_attribute, is_dynamic_attribute, is_inert_attribute, is_reactive_attribute, is_active_attribute, is_autonomous_attribute, is_biddable_attribute and is_programmable_attribute. The twist suggests ways of modeling "access" to the values of these kinds of attributes: the static attributes by simply "copying" them, once, the reactive and programmable attributes by "carrying" them as function parameters whose values are kept always updated, and the remaining, the external_attributes, by inquiring, when needed, as to their value, as if they were always offered on CSP-like channels (Hoare, Communicating sequential processes. C.A.R. Hoare series in computer science. Prentice-Hall International, London, 2004). We show how to model essential aspects of perdurants in terms of their signatures based on the concepts of endurants. And we show how one can "compile" descriptions of endurant parts into descriptions of perdurant behaviours. We do not show prompt calculi for perdurants. The above contributions express a method with principles, techniques and tools for constructing domain descriptions. It is important to realise that we do not wish to nor claim that the method can describe all that it is interesting to know about domains.

General information
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Organisations: Department of Applied Mathematics and Computer Science
Authors: Bjørner, D. (Intern)
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Journal: Formal Aspects of Computing
The effect of three different ad libitum diets for weight loss maintenance: a randomized 18-month trial

Purpose: To test the effect of three diets in their ability to sustain weight loss and improve type 2 diabetes (T2D) and cardiovascular disease (CVD) risk markers after 18-month intervention. Methods: Following a ≥8 % weight loss, 131 healthy, overweight/obese (BMI ± SD 31.5 ± 2.6 kg/m²) men (n = 55) and women (n = 76) aged 28.2 ± 4.8 years were randomized to either 1. Moderate fat (40 E%) with 20 E% MUFA and low in glycemic index (GI) (MUFA, n = 54), 2. Low fat
(25 E%) and medium in GI (LF, n = 51) or 3. Control (35 E% fat) and high in GI (CTR, n = 26) all with similar protein content, and all provided ad libitum. First 6-month intervention with 100 % food provision (previously reported) following 12 months of moderately intensive intervention with 20 % food provision now reported. Results: Attrition rate was higher in MUFA (63 %) than in LF (37 %, P = 0.019) and CTR (42 %, P = 0.09) group. Weight regain in completers was not different between groups (mean ± SEM), MUFA 7.1 ± 2.1 % versus LF 5.6 ± 1.3 % versus CTR 7.2 ± 1.5 %, nor was body fat regain, MUFA 4.8 ± 1.0 % versus LF 4.7 ± 0.8 % versus CTR 5.7 ± 0.6 %. The MUFA group reduced LDL/HDL ratio by −0.47 ± 0.09 compared with −0.23 ± 0.11 in LF (P < 0.05) and 0.06 ± 0.14 (P < 0.005) in CTR groups. Conclusions: Weight regain or body composition did not differ between diets over 18 months. No effects on risk markers for T2D or CVD were found, with the exception of an improvement in the LDL/HDL ratio by the MUFA diet compared to the CTR diet. The LF diet was generally more satisfactory and the MUFA diet seemed more difficult to follow.
We present imaging polarimetry of the superluminous supernova SN 2015bn, obtained over nine epochs between -20 and +46 days with the Nordic Optical Telescope. This was a nearby, slowly evolving Type I superluminous supernova that has been studied extensively and for which two epochs of spectropolarimetry are also available. Based on field stars, we determine the interstellar polarization in the Galaxy to be negligible. The polarization of SN 2015bn shows a statistically significant increase during the last epochs, confirming previous findings. Our well-sampled imaging polarimetry series allows us to determine that this increase (from ∼0.54% to ≳1.10%) coincides in time with rapid changes that took place in the optical spectrum. We conclude that the supernova underwent a "phase transition" at around +20 days, when the photospheric emission shifted from an outer layer, dominated by natal C and O, to a more aspherical inner core, dominated by freshly nucleosynthesized material. This two-layered model might account for the characteristic appearance and properties of Type I superluminous supernovae.
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)
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Klimaforskningen har et troværdighedsproblem
Videnskabelige procedurer, der får takten i den globale opvarming til at ændre sig efter behov, illustrerer med al
tydelighed, at der er brug for mere åbenhed i klimaforskningen

General information
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Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Lansner, F. (Ekstern), Pedersen, J. O. P. (Intern)
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Publication date: 19 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.
Lubrication synergy: Mixture of hyaluronan and dipalmitoylphosphatidylcholine (DPPC) vesicles

Phospholipids and hyaluronan have been implied to fulfill important roles in synovial joint lubrication. Since both components are present in synovial fluid, self-assembly structures formed by them should also be present. We demonstrate by small angle X-ray scattering that hyaluronan associates with the outer shell of dipalmitoylphosphatidylcholine (DPPC) vesicles in bulk solution. Further, we follow adsorption to silica from mixed hyaluronan/DPPC vesicle solution by Quartz Crystal Microbalance with Dissipation measurements. Atomic Force Microscope imaging visualises the adsorbed layer structure consisting of non-homogeneous phospholipid bilayer with hyaluronan/DPPC aggregates on top. The presence of these aggregates generates a long-range repulsive surface force as two such surfaces are brought together. However, the aggregates are easily deformed, partly rearranged into multilayer structures and partly removed from between the surfaces under high loads. These layers offer very low friction coefficient (<0.01), high load bearing capacity (~23 MPa), and self-healing ability. Surface bound DPPC/hyaluronan aggregates provide a means for accumulation of lubricating DPPC molecules on sliding surfaces.

General information
State: Published
Organisations: Department of Chemistry, Physical and Biophysical Chemistry, Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research, SP Technical Research Institute of Sweden, Royal Institute of Technology
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Main Research Area: Technical/natural sciences
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 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
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Professor om kystsikring: Ingen universelle løsninger

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Organisations: Department of Environmental Engineering, Urban Water Systems
Authors: Arnbjerg-Nielsen, K. (Intern)
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En verden uden ende

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State: Published
Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Pedersen, J. O. P. (Intern)
Pages: 5
Publication date: 6 Feb 2017

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Main Research Area: Technical/natural sciences
Publication: Communication › Newspaper article – Annual report year: 2017

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

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State: Published
Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Pedersen, J. O. P. (Intern)
Pages: 4-5
Publication date: 3 Feb 2017

Publication information
A plot-scale study of firn stratigraphy at Lomonosovfonna, Svalbard, using ice cores, borehole video and GPR surveys in 2012-14

Spatial heterogeneity of snow and firn properties on glaciers introduces uncertainty in interpretation of point and profile observations and complicates modelling of meltwater percolation and runoff. Here we present a study of the temporal and spatial dynamics of firn density and stratigraphy at the plot-scale (≈10 m × 10 m × 10 m) repeated annually during 2012-14 at the Lomonosovfonna icefield, Svalbard. Results from cores, video inspections in boreholes and radar grid surveys are compared. Ice layers 0.1-50 cm thick comprised ≈8% of the borehole length. Most of them are 1-3 cm thick and could not be traced between boreholes separated by 3 m. Large lateral variability of firn structure affects representativeness of observations in single holes and calls for repeated studies in multiple points to derive a representative stratigraphy signal. Radar reflections are poorly correlated with ice layers in individual boreholes. However, the match between the high amplitude peaks in the grid-averaged radar signal and horizons of preferential ice layer formation revealed by averaging the video surveys over multiple boreholes is higher. These horizons are interpreted as buried firn layers previously exposed to melt-freeze or wind-driven densification and several of them are consistently recovered throughout three field campaigns.

General information
State: Published
Organisations: Department of Civil Engineering, Arctic Technology Centre, Uppsala University, University Centre in Svalbard, University of Zurich, Norwegian Polar Institute
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Scopus rating (2016): CiteScore 3.57 SJR 2.121 SNIP 1.231
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
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BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.087 SNIP 1.274 CiteScore 3.09
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ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
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.

General information

State: Published
Organisations: Department of Applied Mathematics and Computer Science, Formal Methods
Authors: Nielson, H. R. (Intern), Nielson, F. (Intern)
Pages: 6-32
Publication date: 1 Feb 2017
Main Research Area: Technical/natural sciences
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.
Effect of solvent quality and chain density on normal and frictional forces between electrostatically anchored thermoresponsive diblock copolymer layers

Equilibration in adsorbing polymer systems can be very slow, leading to different physical properties at a given condition depending on the pathway that was used to reach this state. Here we explore this phenomenon using a diblock copolymer consisting of a cationic anchor block and a thermoresponsive block of poly(2-isopropyl-2-oxazoline), PIPOZ. We find that at a given temperature different polymer chain densities at the silica surface are achieved depending on the previous temperature history. We explore how this affects surface and friction forces between such layers using the atomic force microscope colloidal probe technique. The surface forces are purely repulsive at temperatures <40 °C. A local force minimum at short separation develops at 40 °C and a strong attraction due to capillary condensation of a polymer-rich phase is observed close to the bulk phase separation temperature. The friction forces decrease in the cooling stage due to rehydration of the PIPOZ chain. A consequence of the adsorption hysteresis is that the friction forces measured at 25 °C are significantly lower after exposure to a temperature of 40 °C than prior to heating, which is due to higher polymer chain density on the surface after heating.

General information
State: Published
Organisations: Department of Chemistry, Physical and Biophysical Chemistry, Royal Institute of Technology, Universite de Montreal, National Institute for Materials Science Tsukuba, University of Helsinki, SP Technical Research Institute of Sweden
Authors: An, J. (Ekstern), Liu, X. (Intern), Dedinaite, A. (Ekstern), Korchagina, E. (Ekstern), Winnik, F. M. (Ekstern), Claesson, P. M. (Ekstern)
Number of pages: 9
Pages: 88-96
Publication date: 1 Feb 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Colloid and Interface Science
Volume: 487
ISSN (Print): 0021-9797
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 4.14 SJR 1.144 SNIP 1.267
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.095 SNIP 1.263 CiteScore 3.8
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.166 SNIP 1.406 CiteScore 3.74
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.19 SNIP 1.45 CiteScore 3.73
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.298 SNIP 1.469 CiteScore 3.4
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.162 SNIP 1.419 CiteScore 3.3
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
A unified aggregation and relaxation approach for stress-constrained topology optimization

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 (2018): BFI-level 2
Web of Science (2018): Indexed yes
Stress constraints, Singular optima, Constraint aggregation, Topology optimization

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.

General information
State: Published
Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Pedersen, J. O. P. (Intern)
Number of pages: 1
Professor om kystsikring: København er vigtigere end Jylland

General information
State: Published
Organisations: Department of Environmental Engineering, Urban Water Systems
Authors: Arnbjerg-Nielsen, K. (Intern)
Publication date: 26 Jan 2017

Publication information
Type: Debatindlæg
Source/Publisher: Altinget.dk
Last modified date: 26/01/2017
Main Research Area: Technical/natural sciences
Kystsikring
Electronic versions:
Professor_om_kystsikring_K_benhavn_er_vigtigere_end_Jylland_Altингet_grouping=pdf
Links:
Publication: Research › Internet publication – Annual report year: 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 A1
 Patent number: WO2017009365
Date: 19/01/2017
Priority date: 14/07/2015
Priority number: EP20150176608
Original language: English
Electronic versions:
WO2017009365A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017009365
Publication: Research › Patent – Annual report year: 2017

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, ammonium formate, or a combination thereof, and wherein the concentrate comprises the first compound in an amount of at least 5g per litre alcohol.

General information
State: Published
Organisations: Department of Chemistry, Centre for Catalysis and Sustainable Chemistry, Organic Chemistry
Authors: Kegnæs, S. (Intern), Hansen, C. L. (Ekstern), Le Quement, S. T. (Ekstern)
Publication date: 19 Jan 2017

Publication information
IPC: C11D 7/26 A1
 Patent number: WO2017008810
Date: 19/01/2017
Priority date: 10/07/2015
Priority number: EP20150176262
Original language: English
Electronic versions:
WO2017008810A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017008810
Publication: Research › Patent – Annual report year: 2017

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.

General information
State: Published
Organisations: Novo Nordisk Foundation Center for Biosustainability, Glyco-Engineering of CHO
Authors: Herbert Rahmann, S. (Ekstern), Behrens, C. (Ekstern), Vester-Christensen, M. B. (Ekstern), Clausen, H. (Intern), Zhang, Y. (Ekstern), Halim, A. F. (Ekstern), Bennett, E. (Ekstern)
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

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)
Ultrafine particle number flux over and in a deciduous forest

Ultrafine particles (UFP, particles with diameters (Dp) < 100 nm) 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 $-4.90 \times 10^6 \text{ m}^{-2} \text{ s}^{-1}$ 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.
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
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.

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.

General information
State: Published
Organisations: Department of Photonics Engineering, Optical Microsensors and Micromaterials, Optical Sensor Technology, Diode Lasers and LED Systems
Authors: Pedersen, H. C. (Intern), Larsen, H. E. (Intern), Andersen, J. M. (Intern)
Publication date: 5 Jan 2017

Publication information
IPC: G01J 1/42 A1
Patent number: WO2017001233
Date: 05/01/2017
Priority date: 24/05/2016
Priority number: DKPA201670347
Original language: English
Electronic versions:
WO2017001233A1.pdf
Main Research Area: Technical/natural sciences
Source: espacenet
Source-ID: WO2017001233
Publication: Research › Patent – Annual report year: 2017

GCN CIRCULAR 20366, LIGO/Virgo G268556: INTEGRAL search of temporarily 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 LIGOBayestar 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 für 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), 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: 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:
Publication: Research - peer-review › Internet publication – Annual report year: 2017

10.000 fantastiske brobilleder

General information
State: Published
Organisations: Department of Physics
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), Galili, M. (Intern), Verheyen, P. (Ekstern), De Heyn, P. (Ekstern), Lepage, G. (Ekstern), De Coster, J. (Ekstern), Balakrishnan, S. (Ekstern), Absil, P. (Ekstern), Oxenløwe, L. K. (Intern), Van Campenhout, J. (Ekstern), Roelkens, G. (Ekstern)
Pages: 722-726
Publication date: 2017
Main Research Area: Technical/natural sciences
100-Gb/s Transmission Over a 2520-km Integrated MCF System Using Cladding-Pumped Amplifiers

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.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Christian-Albrechts-Universität zu Kiel, University of Southampton, Coriant R&D GmbH, Fujikura Ltd., NTT Corporation
Authors: Castro, C. (Ekstern), Jain, S. (Ekstern), De Man, E. (Ekstern), Jung, Y. (Ekstern), Hayes, J. (Ekstern), Calabro, S. (Ekstern), Pulverer, K. (Ekstern), Bohn, M. (Ekstern), Alam, S. (Ekstern), Richardson, D. J. (Ekstern), Takenaga, K. (Ekstern), Mizuno, T. (Ekstern), Miyamoto, Y. (Ekstern), Morioka, T. (Intern), Rosenkranz, W. (Ekstern)
Number of pages: 4
Pages: 1187-1190
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: IEEE Photonics Technology Letters
Volume: 29
Issue number: 14
ISSN (Print): 1041-1135
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
Space division multiplexing, Multicore fiber, Cladding-pumped multicore amplifier, Long-haul transmission, Integrated multicore link, Repeatered multicore transmission
100G Flexible IM-DD 850 nm VCSEL Transceiver with Fractional Bit Rate Using Eight-Dimensional PAM

We demonstrate a novel optical transceiver scheme with a net flexible bit rate up to 100Gbit/s with 5 Gbit/s granularity, using an eight-dimensional modulation format family, and investigate its performance on capacity, reach, and power tolerance.

General information
State: Published
Organisations: Department of Photonics Engineering, Metro-Access and Short Range Systems, Networks Technology and Service Platforms, Warsaw University of Technology, VI-Systems GmbH
Authors: Lu, X. (Intern), Lyubopytov, V. (Intern), Chorchos, Ł. (Ekstern), Stepniak, G. (Ekstern), Agustin, M. (Ekstern), Kropp, J. R. (Ekstern), Ledentsov, N. (Ekstern), Shchukin, V. A. (Ekstern), Ledentsov, N. (Ekstern), Turkiewicz, J. P. (Ekstern), Tafur Monroy, I. (Intern)
Number of pages: 3
Publication date: 2017

Host publication information
Title of host publication: Proceedings of the 43rd European Conference on Optical Communication
Place of publication: Sweden
Main Research Area: Technical/natural sciences
Conference: 43rd European Conference and Exhibition on Optical Communications, Gothenburg, Sweden, 17/09/2017 - 17/09/2017
Bibliographical note
Paper Tu.2.A

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
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.87 SJR 1.233 SNIP 1.881
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.689 SNIP 1.955 CiteScore 4.15
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.801 SNIP 2.423 CiteScore 4.23
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.533 SNIP 2.341 CiteScore 4.03
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.711 SNIP 2.335 CiteScore 3.21
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.605 SNIP 2.758 CiteScore 3.2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.802 SNIP 2.411
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.312 SNIP 2.761
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.371 SNIP 2.423
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.467 SNIP 2.114
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.149 SNIP 2.603
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.939 SNIP 3.016
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 2.496 SNIP 2.741
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 2.947 SNIP 2.87
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 3.174 SNIP 2.605
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 3.056 SNIP 2.114
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 2.273 SNIP 1.832
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 2.232 SNIP 1.677
Original language: English
Direct detection, Distributed feedback laser (DFB), Electroabsorption modulator, Optical interconnects
Electronic versions:
20170102_invited_v7.pdf
DOIs:
10.1109/JLT.2017.2651947
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

Host publication information
Title of host publication: 2017 Conference on Lasers and Electro-Optics (CLEO)
Publisher: IEEE
ISBN (Print): 978-1-9435-8027-9
Main Research Area: Technical/natural sciences
Conference: 2017 Conference on Lasers and Electro-Optics (CLEO), San Jose, United States, 14/05/2017 - 14/05/2017
Optical waveguides, Nonlinear optics, Frequency modulation, Photonics, Bandwidth, Optimized production technology, Resonant frequency
Source: FindIt
Source-ID: 2392558892
Publication: Research - peer-review › Article in proceedings – Annual report year: 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

Publication information
Journal: A C S Photonics
Volume: 4
Issue number: 6
ISSN (Print): 2330-4022
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 6.48 SJR 3.516 SNIP 1.996
Web of Science (2016): Indexed yes
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 photonic Technology Letters
Volume: 29
Issue number: 3
ISSN (Print): 1041-1135
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
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.

**General information**

State: Published
Organisations: Department of Photonics Engineering, Nanophotonic Devices, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Huazhong University of Science and Technology
Authors: Liao, S. (Ekstern), Ding, Y. (Intern), Dong, J. (Ekstern), Wang, X. D. (Ekstern), Zhang, X. (Ekstern)
Pages: 2741-2745
Publication date: 2017
Main Research Area: Technical/natural sciences

**Journal information**

Journal: Journal of Lightwave Technology
Volume: 35
Issue number: 13
ISSN (Print): 0733-8724
Ratings:
- BFI (2018): BFI-level 2
- Web of Science (2018): Indexed yes
- BFI (2017): BFI-level 2
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 3.87 SJR 1.233 SNIP 1.881
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 1.689 SNIP 1.955 CiteScore 4.15
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 1.801 SNIP 2.423 CiteScore 4.23
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 2
- Scopus rating (2013): SJR 1.533 SNIP 2.341 CiteScore 4.03
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 2
- Scopus rating (2012): SJR 1.711 SNIP 2.335 CiteScore 3.21
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 2
- Scopus rating (2011): SJR 1.605 SNIP 2.758 CiteScore 3.2
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 1.802 SNIP 2.411
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 1
- Scopus rating (2009): SJR 2.312 SNIP 2.761
- Web of Science (2009): Indexed yes
- BFI (2008): BFI-level 2
- Scopus rating (2008): SJR 2.371 SNIP 2.423
- Web of Science (2008): Indexed yes
- Scopus rating (2007): SJR 2.467 SNIP 2.114
- Web of Science (2007): Indexed yes
- Scopus rating (2006): SJR 2.149 SNIP 2.603
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 ether 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 (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
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), Galilii, 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), Morigoka, T. (Intern), Oxenløwe, L. K. (Intern)
Number of pages: 3
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<sup>-9</sup>) at 10 Gb/s over 66-km SSMF is demonstrated without dispersion compensation and FEC.

General information

State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Nanophotonic Devices, University of Rennes, III-V Lab, CEA-Leti
Authors: Cristofori, V. (Intern), Da Ros, F. (Intern), Chaibi, M. E. (Ekstern), Ding, Y. (Intern), Bramerie, L. (Ekstern), Shen, A. (Ekstern), Gallet, A. (Ekstern), Duan, G. (Ekstern), Hassam, K. (Ekstern), Olivier, S. (Ekstern), Oxenløwe, L. K. (Intern), Peucheret, C. (Ekstern)
Pages: 103-104
17th International Conference on Petroleum Phase Behavior and Fouling

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.

General information
State: Published
Organisations: Center for Energy Resources Engineering, Department of Chemical and Biochemical Engineering, CERE – Center for Energy Resources Engineering, Department of Chemistry, Asphalt Team
Authors: von Solms, N. (Intern), Yan, W. (Intern), Andersen, S. (Ekstern)
Pages: 3329-3329
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Energy and Fuels
Volume: 31
Issue number: 4
ISSN (Print): 0887-0624
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.49
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 3.34
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 3.3
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 3.52
ISI indexed (2013): ISI indexed yes

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
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 photocagulation, 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.
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
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
Authors: Castro, C. (Ekstern), Jain, S. (Ekstern), Jung, Y. (Ekstern), De Man, E. (Ekstern), Calabrò, S. (Ekstern), Pulverer, K. (Ekstern), Bohn, M. (Ekstern), Hayes, J. (Ekstern), Ul Alam, S. (Ekstern), Richardson, D. J. (Ekstern), Takenaga, K. (Ekstern), Mizuno, T. (Ekstern), Miyamoto, Y. (Ekstern), Morioka, T. (Intern), Rosenkranz, W. (Ekstern)
Number of pages: 3
Publication date: 2017

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 ($\rho = -0.487$, $P = .041$). 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.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Cognitive Systems, University of Copenhagen, H. Lundbeck A/S
Number of pages: 10
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Schizophrenia Bulletin
Article number: sbx058
ISSN (Print): 0586-7614
Ratings:
BFI (2018): BFI-level 2
24-Dimensional Modulation Formats for 100 Gbit/s IM-DD Transmission Systems Using 850 nm Single-Mode VCSEL

Twenty-four dimensional modulation format with 2 bit/symbol spectrum efficiency is proposed and investigated in an up to 100 Gbit/s VCSEL-based IM-DD transmission system with respect to the channel bandwidth and the power budget.

General information
State: Published
Organisations: Department of Photonics Engineering, Metro-Access and Short Range Systems, Networks Technology and Service Platforms
Authors: Lu, X. (Intern), Lyubopytov, V. (Intern), Tafur Monroy, I. (Intern)
Number of pages: 3
Publication date: 2017

Host publication information
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.
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, 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
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.
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
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), Bausá, 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
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BFI (2018): BFI-level 3
Web of Science (2018): Indexed yes
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
Scopus rating (2015): CiteScore 18.5
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 16.79
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 15.78
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 14.41
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
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 hydropower

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.
We present a high-core-count 32-core multicore erbium/ytterbium-doped fiber amplifier (32c-MC-EYDFA) in a cladding pumped configuration. A side pumping technique is employed for ease of pump coupling in this monolithic all-fiber amplifier. A minimum gain of >17 dB and an average noise figure (NF) of 6.5 dB is obtained over all cores in the wavelength range 1534 nm-1561 nm for −4 dBm input signal power. The core-to-core variation for both amplifier gain and NF is measured to be <2 dB. The 32c-MC-EYDFA was then tested in a repeatered multicore fiber (MCF) loop system and transmission over distances >1850 km was successfully demonstrated. We also compare the total power consumption of our MC-EYDFAs with that of 32 conventional single core erbium doped fiber amplifiers (EDFAs) to illustrate the potential power saving benefits.
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
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Main Research Area: Technical/natural sciences
Links:

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
Organizations: Department of Photonics Engineering, Optical Sensor Technology, Radiometer Medical ApS
Authors: Rodenko, O. (Intern), Fodgaard, H. (Ekstern), Tidemand-Lichtenberg, P. (Intern), Pedersen, C. (Intern)
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UV LED, Time-resolved fluorescence, Immunoassay, Europium chelate, Point-of-care

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**Bibliographical note**
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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%.

**General information**
State: Published
Organizations: Department of Photonics Engineering, Diode Lasers and LED Systems, Copenhagen Center for Health Technology, Leibniz-Institut für Höchstfrequenztechnik
Authors: Jensen, O. B. (Intern), Hansen, A. K. (Intern), Müller, A. (Ekstern), Sumpf, B. (Ekstern), Petersen, P. M. (Intern), Andersen, P. E. (Intern)
Number of pages: 8
Publication date: 2017

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Main Research Area: Technical/natural sciences
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.
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)
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Main Research Area: Technical/natural sciences

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

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.
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 base 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.

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.
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
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Original language: English
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micromachines_08_00187.pdf
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Publication: Research - peer-review › Journal article – Annual report year: 2017

3-D Imaging using Row–Column-Addressed 2-D Arrays with a Diverging Lens: Phantom Study
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°×32°. 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.
3D MEMS Air-core Inductor in a Very High Frequency Switched-Mode Power Converter

General information
State: Published
Organisations: DTU Danchip, Department of Micro- and Nanotechnology, Silicon Microtechnology, Department of Electrical Engineering, Electronics
Authors: Lê Thanh, H. (Intern), Nour, Y. (Intern), Ouyang, Z. (Intern), Knott, A. (Intern), Jensen, F. (Intern), Han, A. (Intern)
Number of pages: 1
Publication date: 2017
Main Research Area: Technical/natural sciences
Inductors, Power converters, Zero voltage switching, Gallium nitride FET, PwrSoC
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3D printed barium titanate/poly-(vinylidene fluoride) nano-hybrid with anisotropic dielectric properties

Electrosprun 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 ($\perp$), where the dielectric constant $k_{\perp}$ at 1 kHz is increased to ca. 200 from 13 of the PVDF matrix.

General information
State: Published
Organisations: Department of Energy Conversion and Storage, Imaging and Structural Analysis, Ceramic Engineering & Science, Technical University of Denmark, Silpakorn University, Universidade Federal do ABC
Authors: Phatharapeetranun, N. (Ekstern), Ksapabutr, B. (Ekstern), Marani, D. (Ekstern), Bowen, J. R. (Intern), Esposito, V. (Intern)
Pages: 12430-12440
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Materials Chemistry C
Volume: 5
Issue number: 47
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.

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering, Acoustic Technology
Authors: Méndez Ribó, M. (Intern), Islam, A. (Intern)
Number of pages: 1
Publication date: 2017
Main Research Area: Technical/natural sciences
Electronic versions:
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Source: PublicationPreSubmission
Source-ID: 134387201
Publication: Research - peer-review › Poster – Annual report year: 2017

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 patients’ 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.
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)
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Publication date: 2017

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Conference: 2017 SBMO/IEEE MTT-S International Microwave and Optoelectronics Conference (IMOC), Águas de Lindoa, Brazil, 27/08/2017 - 27/08/2017
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3D wake measurements from a scanning wind lidar in combination with a fast wind field reconstruction model

High-resolution lidar wake measurements are part of an ongoing field campaign being conducted at the Scaled Wind Farm Technology (SWIFT) facility1 by Sandia National Laboratories and the National Renewable Energy Laboratory using a customized scanning “DTU SpinnerLidar”2 from the Technical University of Denmark. The purpose of the SpinnerLidar measurements at SWIFT is to measure the response of a V27 turbine wake to varying inflow conditions and turbine operating states. Although our fast scanning SpinnerLidar is able to measure the line-of-sight projected wind speed at up to 400 points per second, a single lidar is in principle never able to measure all three wind components (u, v, w) in the scan plane at the same time. This limitation is often referred to as the “lidar cyclops syndrome”. However, by processing the scanned line-of-sight wind speed data via a fast linearized Navier-Stokes CFD code "Lincom Cyclo-buster model,"3 the corresponding 3D wind vector field (u, v, w) can be reconstructed under constraints for conservation of mass and momentum. The resulting model calculated line-of-sight projections of the 3D wind velocity vectors will become consistent with the line-of-sight wind speed measurements from the SpinnerLidar. In this way, SpinnerLidar measured line-of-sight wake data from the SWIFT site at a range of downwind distances were used to calculate the three wind components u(x, y), v(x, y) and w(x, y) in the turbine wake in a number of downwind crosswind scan planes. Fig.1 shows: a) the experimental setup, b) the line-of-sight measured wind field in a crosswind plane 66.2 m downwind, and 3) the corresponding Lincom model reconstructed axial wind component u(x, y).
3D WindScanner lidar measurements of wind and turbulence around wind turbines, buildings and bridges: Paper

WindScanner is a distributed research infrastructure developed at DTU with the participation of a number of European countries. The research infrastructure consists of a mobile technically advanced facility for remote measurement of wind and turbulence in 3D. The WindScanners provide coordinated measurements of the entire wind and turbulence fields, of all three wind components scanned in 3D space. Although primarily developed for research related to on- and offshore wind turbines and wind farms, the facility is also well suited for scanning turbulent wind fields around buildings, bridges, aviation structures and of flow in urban environments. The mobile WindScanner facility enables 3D scanning of wind and turbulence fields in full scale within the atmospheric boundary layer at ranges from 10 meters to 5 (10) kilometers. Measurements of turbulent coherent structures are applied for investigation of flow pattern and dynamical loads from turbines, building structures and bridges and in relation to optimization of the location of, for example, wind farms and suspension bridges. This paper presents our achievements to date and reviews briefly the state-of-the-art of the WindScanner measurement technology with examples of uses for wind engineering applications.
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
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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
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50 ch x 250 Gbit/s 32-QAM Transmission over a Fully Integrated 7-core Multicore Link

A transmitted distance of 180 km over an integrated multicore link is demonstrated for a C-band 32-QAM WDM system, where the complete usable amplification region of the integrated 7-core amplifiers, supporting 50 channels per core, is exploited.

General information
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Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Coriant R&D GmbH, Christian-Albrechts-Universität zu Kiel, University of Southampton, Fujikura Ltd., NTT Corporation
Authors: Castro, C. (Ekstern), Jain, S. (Ekstern), Jung, Y. (Ekstern), De Man, E. (Ekstern), Calabrò, S. (Ekstern), Pulverer, K. (Ekstern), Bohn, M. (Ekstern), Hayes, J. R. (Ekstern), Alam, S. U. (Ekstern), Richardson, D. J. (Ekstern), Sasaki, Y. (Ekstern), Mizuno, T. (Ekstern), Morioka, T. (Intern), Rosenkanz, W. (Ekstern)
Number of pages: 3
Publication date: 2017

60-year record of iodine-129 in Philippines terrestrial sediment revealing human nuclear activities history at low latitude area

General information
State: Published
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Chinese Academy of Sciences
Authors: Hou, X. (Intern), Zhang, L. (Ekstern), Li, H. (Ekstern)
Publication date: 2017
Event: Abstract from 14th International Conference on Accelerator Mass Spectrometry, Ottawa, Canada.
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
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Volume: 28
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Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
700 kilo jern
Nedslag. Historien om krasnojarsk-meteoritten, der blev fundet for over 250 år siden i Sibirien, skal sandsynligvis skrives om. Det kan betyde, at der stadig er kostbare meteoristikykker at finde.

General information
State: Published
Organisations: National Space Institute, Innovation and Research-based consultancy
Authors: Pedersen, J. O. P. (Intern)
Number of pages: 1
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Main Research Area: Technical/natural sciences
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75 GHz InP DHBT power amplifier based on two-stacked transistors
In this paper we present the design and measurements of a two-stage 75-GHz InP Double Heterojunction Bipolar Transistor (DHBT) power amplifier (PA). An optimized two-stacked transistor power cell has been designed, which represents the building block in the power stage as well as in the driver stage of the power amplifier. Besides the series voltage addition of the stacked structure, parallel power combining techniques were adopted to increase the output power of the MMIC amplifier, with four-way and eight-way corporate power combiners at the driver and power stages, respectively. At 75 GHz, the power amplifier exhibits a small signal gain of G = 12.6 dB, output power at 1-dB compression of Pout, 1dB = 18.6 dBm and a saturated output power of Psat > 21.4 dBm.

General information
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Organisations: Department of Electrical Engineering, Electromagnetic Systems, III-V Lab
Authors: Squartecchia, M. (Intern), Midili, V. (Intern), Johansen, T. K. (Intern), Dupuy, J. (Ekstern), Nodjiadjim, V. (Ekstern), Riet, M. (Ekstern), Konczykowska, A. (Ekstern)
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Power amplifier, Indium phosphide, Power combining, Stacked transistor, Double heterojunction bipolar transistor (DHBT)
DOIs:
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Publication: Research › peer-review › Article in proceedings – Annual report year: 2018

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.
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 tests 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/$^{129}$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.

General information
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Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Chinese Academy of Sciences, National Taiwan University, University of California
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- 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
A Ba-free sealing glass with a high CTE and excellent interface stability optimized for SOFC/SOEC stack applications

A new glass-ceramic composition containing Si, Mg, Ca, Na, Al, Zr and B is presented here as sealant for planar SOFCs/SOECs, with the aim of joining the metallic interconnect (Crofer22APU) to the solid oxide cell (YSZ electrolyte or CGO barrier layer). Characteristic temperature, thermo-mechanical properties and compositional variations are reviewed and discussed by thermal analyses and in situ XRD, in order to design and optimize the sealing profile and reduce the residual porosity. The glass after heat treatment partially devitrifies into augite and nepheline with residual glass phase of around 64.3%; after crystallization the glass-ceramic sealant has a CTE of 12.8 x 10^{-6} K^{-1} and it is compliant with the other materials typically used for stack components. This work shows that the developed glass-ceramic can successfully join the ceramic cell with the Crofer22APU (pre-oxidized and alumina coating), proven by tests on small and large-scale
samples. No signs of unwanted reactions at the glass-metal and the glass-cell interface are observed and sufficient gas tightness is achieved.

**General information**

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Organisations: Department of Energy Conversion and Storage, Mixed Conductors, Electrofunctional materials, Politecnico di Torino
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- Scopus rating (2015): SJR 0.447 SNIP 0.866 CiteScore 1.28
- Web of Science (2015): Indexed yes
- Scopus rating (2014): SJR 0.526 SNIP 1.067 CiteScore 1.45
- Scopus rating (2013): SJR 0.587 SNIP 1.004 CiteScore 1.33
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- Web of Science (2013): Indexed yes
- Scopus rating (2012): SJR 0.576 SNIP 0.877 CiteScore 1.27
- ISI indexed (2012): ISI indexed yes
- Scopus rating (2011): SJR 0.622 SNIP 1.117 CiteScore 1.37
- ISI indexed (2011): ISI indexed yes
- Scopus rating (2010): SJR 0.703 SNIP 1.131
- Web of Science (2010): Indexed yes
- Scopus rating (2009): SJR 0.851 SNIP 1.137
- Scopus rating (2008): SJR 0.974 SNIP 1.427
- Scopus rating (2007): SJR 0.7 SNIP 1.249
- Scopus rating (2006): SJR 0.858 SNIP 1.767
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**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
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
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BFI (2018): BFI-level 2
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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
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.024 SNIP 7.97 CiteScore 11.05
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 4.715 SNIP 8.721 CiteScore 11.8
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.327 SNIP 9.043 CiteScore 10.09
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.207 SNIP 7.189 CiteScore 8.89
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.513 SNIP 7.095
BFI (2009): BFI-level 2
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 3.435 SNIP 7.286
Web of Science (2007): Indexed yes
Scopus rating (2005): SJR 3.596 SNIP 8.049
Scopus rating (2004): SJR 2.512 SNIP 6.993
Scopus rating (2003): SJR 4.913 SNIP 7.566
Web of Science (2003): Indexed yes
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.

General information
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Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Electricity markets and energy analytics
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Scopus rating (2016): CiteScore 8.17 SJR 3.757 SNIP 3.624
Web of Science (2016): Indexed yes
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Scopus rating (2015): SJR 3.602 SNIP 3.486 CiteScore 6.6
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.831 SNIP 3.577 CiteScore 5.31
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.939 SNIP 4.35 CiteScore 6.33
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.177 SNIP 3.516 CiteScore 5.84
ISI indexed (2012): ISI indexed yes
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.
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/6-311+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
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About This Book
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.
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
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Scopus rating (2016): CiteScore 3.83 SJR 2.505 SNIP 2.339
Web of Science (2016): Indexed yes
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Scopus rating (2015): SJR 2.334 SNIP 2.412 CiteScore 3.59
Web of Science (2015): Indexed yes
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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
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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
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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
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 rational 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.

General information
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Organisations: Department of Applied Mathematics and Computer Science, Cyber Security
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BFI (2016): BFI-level 1
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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
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.

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Organisations: Department of Chemistry, Organic Chemistry, University of Copenhagen, Imperial College London, Statens Serum Institut
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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
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Wave spectrum, Shipboard estimation, Vessel responses, Qave buoy analogy, Doppler Shift, Spectrum transformation
Absolute Quantification of Protein and mRNA Abundances Demonstrate Variability in GeneSpecific 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.

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

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- **Scopus rating (2013):** SJR 0.547 SNIP 0.861 CiteScore 1.29
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- **BFI (2012):** BFI-level 1
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- **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
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- **Scopus rating (2010):** SJR 0.439 SNIP 0.517
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- **Scopus rating (2009):** SJR 0.688 SNIP 0.645
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- **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
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- **Web of Science (2006):** Indexed yes
- **Scopus rating (2005):** SJR 0.754 SNIP 0.695
- **Web of Science (2005):** Indexed yes
- **Scopus rating (2004):** SJR 0.87 SNIP 0.87
- **Scopus rating (2003):** SJR 0.871 SNIP 0.717
- **Scopus rating (2002):** SJR 0.679 SNIP 0.705
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)
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Source: FindIt
Source-ID: 2372954961
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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.
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 (8-9km) 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 30–80km 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.

General information
State: Published
Organisations: Department of Wind Energy, Meteorology & Remote Sensing, Technical University of Denmark, Uppsala University
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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.

General information
State: Published
Organisations: Department of Environmental Engineering, Water Technologies, EnviDan A/S, Technical University of Denmark
Authors: Jensen, T. R. (Ekstern), Lastra Milone, T. (Ekstern), Petersen, G. (Ekstern), Andersen, H. R. (Intern)
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- BFI (2015): BFI-level 1  
- Web of Science (2015): Indexed yes  
- 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  
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- 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  
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- ISI indexed (2011): ISI indexed yes  
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- BFI (2010): BFI-level 1  
- Scopus rating (2010): SJR 0.522 SNIP 0.602  
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- Scopus rating (2008): SJR 0.579 SNIP 0.697  
- Web of Science (2008): Indexed yes  
- Scopus rating (2007): SJR 0.749 SNIP 0.781  
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- Web of Science (2006): Indexed yes  
- Scopus rating (2005): SJR 0.763 SNIP 0.85  
- Web of Science (2005): Indexed yes  
- Scopus rating (2004): SJR 0.877 SNIP 0.904  
- Web of Science (2004): Indexed yes  
- Scopus rating (2003): SJR 0.882 SNIP 0.902  
- Web of Science (2003): Indexed yes  
- Scopus rating (2002): SJR 0.903 SNIP 0.888  
- Web of Science (2002): Indexed yes  
- Scopus rating (2001): SJR 0.759 SNIP 0.967  
- Web of Science (2001): Indexed yes
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, Afdelinger for Produktionsudvikling, Aarhus University
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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
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Organisations: Department of Chemistry, Organic Chemistry, EDELRIS
Authors: Bonnet, K. (Ekstern), Clausen, M. H. (Intern), Fleury-Brégeot, N. (Ekstern), Lardy, C. (Ekstern), Morgentin, R. (Ekstern), Nielsen, T. E. (Intern), Petersen, M. Á. (Intern), Rasmussen, M. O. (Ekstern), Roche, D. (Ekstern), Wu, P. (Intern)
Access to electricity in rural Africa - from donor support to innovative business models

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Authors: Nygaard, I. (Intern), Hansen, U. E. (Intern), Larsen, T. H. (Intern)
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Acclimation of ammonia tolerant methanogenic consortia using different bioreactor types

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Organisations: Department of Environmental Engineering, Residual Resource Engineering
Authors: Mancini, E. (Intern), Fotidis, I. (Intern), Tian, H. (Intern), Angelidaki, I. (Intern)
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Acclimation to extremely high ammonia levels during continuous biomethanation process

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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).

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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), Harte, J. (Ekstern), Elberling, C. (Ekstern), Dau, T. (Intern)
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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.
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.
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
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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.
Accurate dimensional measurements in production environment using Dynamic Length Metrology

General information
State: Published
Organisations: Department of Mechanical Engineering, Manufacturing Engineering
Authors: Dalla Costa, G. (Intern), De Chiffre, L. (Intern), Hansen, H. N. (Intern)
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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.
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.

General information
State: Published
Organisations: Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, DHI Denmark
Authors: Tomaselli, P. (Ekstern), Christensen, E. D. (Intern)
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Waves, Computational fluid dynamics, Air entrainment
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Achieving flexible and sustainable energy systems

General information
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Organisations: Department of Management Engineering, Systems Analysis
Authors: Skytte, K. (Intern)
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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.
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.

**General information**

State: Published  
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, IFREMER, Cefas, Wageningen IMARES, European Commission - Joint Research Center, Thünen Institute of Sea Fisheries  
Authors: Ulrich, C. (Intern), Vermard, Y. (Ekstern), Dolder, P. J. (Ekstern), Brunel, T. (Ekstern), Jardim, E. (Ekstern), Holmes, S. J. (Ekstern), Kempf, A. (Ekstern), Mortensen, L. O. (Intern), Poos, J. (Ekstern), Rindorf, A. (Intern)  
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Main Research Area: Technical/natural sciences

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Web of Science (2017): Indexed yes  
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Scopus rating (2016): CiteScore 2.63  
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Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 1  
Scopus rating (2013): CiteScore 2.46  
ISI indexed (2013): ISI indexed yes  
Web of Science (2013): Indexed yes  
BFI (2012): BFI-level 1  
Scopus rating (2012): CiteScore 2.35  
ISI indexed (2012): ISI indexed yes  
Web of Science (2012): Indexed yes  
BFI (2011): BFI-level 1  
Scopus rating (2011): CiteScore 2.32  
ISI indexed (2011): ISI indexed yes  
Web of Science (2011): Indexed yes
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.
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.

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
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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 classical model wind turbine wake "blind test" revisited by remote sensing lidars

One of the classical model wind turbine wake "blind test" experiments conducted in the boundary-layer wind tunnel at NTNU in Trondheim and used for benchmarking of numerical flow models has been revisited by remote sensing lidars in a joint experiment called “Lidars For Wind Tunnels” (L4WT) under the auspices of the IRPWind initiative within the community of the European Energy Research Alliance (EERA) Joint Programme on Wind Energy. The wind tunnel has a test section that is 11 m long and a cross-section of 2 by 3 m with windows along one side of the tunnel allowing for optical access from outside of the tunnel. Two continuous-wave lidars developed at DTU Wind Energy, short-range WindScanners, with a minimum focus distance of about 8 m were placed outside the tunnel with the optical heads at the turbine hub height. The short-range WindScanners can address the measurement location by synchronized steering of two wedge-shaped prisms and a translational motor stage for the focusing of the light. In addition, a small telescope (Lidic) was placed inside the wind tunnel and connected to the WindScanner steering system allowing for synchronized measurements. The diameter of the model turbine studied was D=0.894 m and it was designed for a tip speed ratio (TSR) of 6. However, the TSRs used were 3, 6, and 10 at a free-stream velocity of 10 m/s. Due to geometrical constraints imposed by for instance the locations of the wind tunnel windows, all measurements were performed in the very same vertical cross-section of the tunnel and the various down-stream distances of the wake, i.e. 1D, 3D, and 5D were achieved by re-positioning the turbine. The approach used allows for unique studies of the influence of the inherent lidar spatial filtering on previously both experimentally and numerically well characterized flow fields with various spatial flow gradients which is difficult to achieve in full-scale field experiments. As a consequence of the quadratic range dependence on the averaging length of a continuous-wave lidar, the results are of relevance also for full-scale wind turbine lidar measurement scenarios in terms of the averaging length relative to the wind turbine rotor size.
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 ($K_1$) 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)
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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
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.

General information

State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, Universidad de Oviedo
Authors: del Busto, S. (Ekstern), Betegón, C. (Ekstern), Martínez Pañeda, E. (Intern)
Pages: 210-226
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Web of Science (2017): Indexed yes
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Scopus rating (2016): CiteScore 2.39 SJR 1.247 SNIP 1.676
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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
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ISI indexed (2013): ISI indexed yes
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.
A Combination of Machine Learning and Cerebellar-like Neural Networks for the Motor Control and Motor 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, in the form of a Unit Learning Machine. The LWPR algorithm 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.
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.

General Information
State: Published
Organisations: Department of Electrical Engineering, Centre for Playware, Automation and Control, Copenhagen Center for Health Technology
Authors: Baira Ojeda, I. (Intern), Tolu, S. (Intern), Pacheco, M. (Intern), Christensen, D. J. (Intern), Lund, H. H. (Intern)
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Source: PublicationPreSubmission
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Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

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.

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Organisations: Department of Wind Energy, Aerodynamic design
Authors: Bertagnolio, F. (Intern), Aagaard Madsen, H. (Intern), Fischer, A. (Intern)
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Main Research Area: Technical/natural sciences

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BFI (2016): BFI-level 2
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Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
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

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- Scopus rating (2015): SJR 0.497 SNIP 0.838 CiteScore 1.23
- Scopus rating (2014): SJR 0.619 SNIP 1.753 CiteScore 1.46
- Scopus rating (2013): SJR 0.572 SNIP 1.334 CiteScore 1.39
- Scopus rating (2012): SJR 0.769 SNIP 1.284 CiteScore 2.26
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- Scopus rating (2010): SJR 1.114 SNIP 1.626

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**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 threeterminal 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.

**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)

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**Volume:** 8

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A combined UHV-STM-flow cell set-up for electrochemical/electrocatalytic studies of structurally well-defined UHV prepared model electrodes

We describe the construction and discuss the performance of a novel combined ultrahigh vacuum (UHV)-electrochemistry set-up, allowing the controlled preparation and structural characterization of complex nanostructured electrode surfaces by high resolution scanning tunnelling microscopy (STM) under UHV conditions on the one hand and, after electrode transfer under clean conditions, electrochemical measurements under continuous, controlled electrolyte mass transport conditions on the other. Electrochemical measurements can be coupled with online product detection, either using an additional collector electrode or by differential electrochemical mass spectrometry (DEMS). The potential of the set-up will be illustrated in two electrocatalytic reactions on complex, but structurally well-defined bimetallic electrode surfaces, O₂ reduction on PtxAg₁₋ₓ/Pt(111) monolayer surface alloys and bulk CO oxidation on Pt monolayer island modified Ru(0001) electrodes. We will particularly demonstrate the importance of structural characterization after the electrochemical measurements for identifying structural modifications induced by the electrochemical environment and thus avoiding misleading conclusions about the structure-activity relationships.

General information
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Organisations: Department of Physics, Experimental Surface and Nanomaterials Physics, National Veterinary Institute
Authors: Schnaidt, J. (Ekstern), Beckord, S. (Ekstern), Engstfeld, A. K. (Intern), Klein, J. (Intern), Brimaud, S. (Ekstern), Behm, R. J. (Ekstern)
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Main Research Area: Technical/natural sciences

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BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.06 SJR 1.678 SNIP 1.117
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.771 SNIP 1.244 CiteScore 4.45
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.772 SNIP 1.253 CiteScore 4.29
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.715 SNIP 1.216 CiteScore 4.05
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.916 SNIP 1.184 CiteScore 3.67
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.697 SNIP 1.203 CiteScore 3.6
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.802 SNIP 1.196
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.127 SNIP 1.369
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.158 SNIP 1.211
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.84 SNIP 1.138
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.467 SNIP 1.128
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.389 SNIP 1.104
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.173 SNIP 1.007
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.093 SNIP 0.925
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.122 SNIP 0.973
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.09 SNIP 0.914
A compact cyclic plasticity model with parameter evolution

The 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.

General information
State: Published
Organisations: Department of Mechanical Engineering, Solid Mechanics, Technical University of Denmark
Authors: Krenk, S. (Intern), Tidemann, L. (Ekstern)
Pages: 57-68
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Main Research Area: Technical/natural sciences

Publication information
Journal: Mechanics of Materials
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ISSN (Print): 0167-6636
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.76 SJR 1.256 SNIP 1.546
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.224 SNIP 1.785 CiteScore 2.66
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.357 SNIP 1.838 CiteScore 2.56
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.204 SNIP 1.758 CiteScore 2.58
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.325 SNIP 1.909 CiteScore 2.2
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
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., S. (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

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Publisher: SPIE - International Society for Optical Engineering
Article number: 100560O
Series: Proceedings of SPIE, the International Society for Optical Engineering
Volume: 10056
ISSN: 0277-786X
Main Research Area: Technical/natural sciences
A comparative study on the activity of fungal lytic polysaccharide monooxygenases for the depolymerization of cellulose in soybean spent flakes

Lytic polysaccharide monooxygenases (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 monooxygenases (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.
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.
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
Web of Science (2018): Indexed yes
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
Web of Science (2010): Indexed yes
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.

General information
State: Published
Organisations: Department of Mechanical Engineering, Thermal Energy
Authors: Andreasen, J. G. (Intern), Meroni, A. (Intern), Haglind, F. (Intern)
Number of pages: 23
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Energies
Volume: 10
Issue number: 4
Article number: 547
ISSN (Print): 1996-1073
Ratings:
BFI (2018): BFI-level 2
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
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.
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.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Mathematics, Bogazici University
Authors: Anbar, N. (Intern), Bassa, A. (Ekstern), Beelen, P. (Intern)
Pages: 318-330
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Finite Fields and Their Applications
Volume: 48
ISSN (Print): 1071-5797
Ratings:
  BFI (2018): BFI-level 2
  Web of Science (2018): Indexed yes
  BFI (2017): BFI-level 1
  Web of Science (2017): Indexed Yes
  BFI (2016): BFI-level 1
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.
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 Sant'Anna
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 (2018): BFI-level 1
Web of Science (2018): Indexed yes
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
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), Suriyaphadilok, 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 (2018): BFI-level 2
Web of Science (2018): Indexed yes
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
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.

General information

State: Published
Organisations: Department of Photonics Engineering, Coding and Visual Communication, Centre of Excellence for Silicon Photonics for Optical Communications, High-Speed Optical Communication, Technical University of Denmark
Authors: Andersen, J. D. (Intern), Larsen, K. J. (Intern), Bering Bøgh, C. (Ekstern), Forchhammer, S. (Intern), Da Ros, F. (Intern), Dalgaard, K. (Intern), Iqbal, S. (Intern)

Sea state estimation, Wave buoy analogy, Vessel responses, Frequency domain, Time domain

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Source: Findit
Source-ID: 2349389627
Publication: Research - peer-review › Journal article – Annual report year: 2016

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
Scopus rating (2006): SJR 0.887 SNIP 1.773
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.524 SNIP 1.36
Scopus rating (2004): SJR 0.715 SNIP 1.338
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.729 SNIP 1.287
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.886 SNIP 1.149
Scopus rating (2001): SJR 0.599 SNIP 0.983
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.55 SNIP 1.215
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.467 SNIP 0.648

Original language: English
A configurational analysis of success factors in crowdfunding video campaigns

Recent discussions on success factors on crowdfunding campaigns highlight a plentitude of diverse factors that stem from different, partly contradicting theories. We focus on campaign videos and assume more than one way of creating a successful crowdfunding video. We generate data of 1000 randomly chosen Kickstarter projects from the technology and design domain, and analyze those 715 campaigns that contain a video applying a fuzzy-set configuration analysis. Our results suggest that there are indeed several configurations of elements in videos that are correlated with different levels of success (equifinality) and that conditions leading to success are conceptually different from failure (causal asymmetry).

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Lomberg, C. (Intern), Li-Ying, J. (Intern), Alkærsg, L. (Intern)
Number of pages: 6
Publication date: 2017
Main Research Area: Technical/natural sciences

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), Elijasson Lantz, A. (Intern), Gernaey, K. V. (Intern), Sin, G. (Intern)
Pages: 2222-2226
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
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
BFI (2009): BFI-level 1
Original language: English
Electronic versions:
EGU2017_12426.pdf

Publication: Research - peer-review › Conference abstract in journal – 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
**Vascular network dynamics**

Department of Applied Mathematics and Computer Science

Dynamiical Systems

**Period:** 20/05/2018 → …

**Number of participants:** 1

Project participant:

Martens, Erik Andreas (Intern)

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**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)

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**Tendering sustainable energy transitions**

The overall objective of the project is to contribute to a transition toward sustainability in the energy sector of emerging economies, including sustainable development of local communities and local industries. The project will analyse the developmental implications of the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) implemented in South Africa (SA) with a focus on the effects of wind power projects on local industrial development and socioeconomic development in local communities. The project will contribute to enhance the research capacity of the younger researchers involved. It will build upon and contribute to significantly advance the literature on sustainability transitions in developing countries through an innovative combination of complementary perspectives on institutional change, global value chains and infant industry development. It will draw on in-depth fieldwork carried out in SA based on qualitative research methods, such as interviews, documents, direct observations and project inventories. Through direct engagement with key policy makers and stakeholders, the project will seek to ensure that local developmental impacts are prioritized and ensured in renewable energy tendering schemes currently being implemented in SA, other countries in Sub-Saharan Africa (SSA) and internationally.

The project will contribute to socially inclusive models of implementation by private companies involved in large-scale wind power projects by cooperating with the wind industry associations in Denmark and SA and through direct consultations. Finally, the project serves as a pilot research for a subsequent five year research programme, which will be up-scaled to include solar PV, concentrated solar power (CSP) and hydro-power, and additional countries in SSA, such as Ethiopia, Kenya, Ghana and Malawi.

Department of Management Engineering

UNEP DTU Partnership

Systems Analysis

Department of Wind Energy

Integration & Planning

Danish Institute for International Studies
Experimental investigation of gas injection processes for enhanced oil recovery

Department of Chemistry
Period: 15/03/2018 → 14/03/2021
Number of participants: 2
PhD Student:
Tagliaferri, Stefano (Intern)
Main Supervisor:
Nielsen, Sidsel Marie (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Conceptual modeling of transportation and IT services for configuration systems

Department of Management Engineering
Period: 01/03/2018 → 28/02/2021
Number of participants: 4
PhD Student:
Bayer, Michael (Intern)
Supervisor:
Herbert-Hansen, Zaza Nadja Lee (Intern)
Hove, Christina (Ekstern)
Main Supervisor:
Hvam, Lars (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Crystallization Fundamentals of Polymers and Oligomers

Department of Physics
Period: 01/03/2018 → 28/02/2021
Number of participants: 3
PhD Student:
Huss-Hansen, Mathias Kasper (Ekstern)
Supervisor:
Balzano, Luigi (Ekstern)
Main Supervisor:
Knaapila, Matti (Intern)

Financing sources
Developing high performance and climatically reliable Hearing Aids

Department of Mechanical Engineering
Period: 01/03/2018 → 28/02/2021
Number of participants: 4
Phd Student:
Yadav, Abhijeet (Intern)
Supervisor:
Espersen, Christian (Ekstern)
Jellesen, Morten Stendahl (Intern)
Main Supervisor:
Ambat, Rajan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Developing robust concepts for highly integrated products

Department of Mechanical Engineering
Period: 01/03/2018 → 28/02/2021
Number of participants: 4
Phd Student:
Sigurdarson, Nökkvi Steinn (Intern)
Supervisor:
Christensen, Martin Ebro (Intern)
Eifler, Tobias (Intern)
Main Supervisor:
Howard, Thomas J. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

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
Project
Microbial Enzyme Production
Technical University of Denmark
Period: 15/02/2018 → 14/02/2021
Number of participants: 3
Phd Student: Hernández Rollán, Cristina (Intern)
Supervisor: Hoof, Jakob Blæsbjerg (Intern)
Main Supervisor: Nørholm, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Microchannel two-phase flow cooling of power modules
Department of Mechanical Engineering
Period: 15/02/2018 → 14/02/2021
Number of participants: 4
Phd Student: Criscuolo, Gennaro (Intern)
Supervisor: Kærn, Martin Ryhl (Intern)
Palm, Björn (Ekstern)
Main Supervisor: Markussen, Wiebke Brix (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Rewiring the bacterial genome by retromutagenesis for tolerance development in microbial cell factories
Technical University of Denmark
Period: 15/02/2018 → 14/02/2021
Number of participants: 3
Phd Student: Heyde, Sophia Andrea Helga (Intern)
Supervisor: Nikel, Pablo Ivan (Intern)
Main Supervisor: Nørholm, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Usability and understandability of Hybrid Process Models
Technical University of Denmark
Period: 15/02/2018 → 14/02/2021
Number of participants: 4
Phd Student: Abbad Andaloussi, Amine (Intern)
Supervisor: Burattin, Andrea (Intern)
Slaats, Tijs (Ekstern)
Main Supervisor:
Weber, Barbara (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Implementation processes of digitalization
Department of Management Engineering
Management Science
Implementation and Performance Management
Period: 01/02/2018 → 30/06/2018
Number of participants: 2
Implementation, Digitalization, Augmented Reality, Work environment
Acronym: IPD
Project participant:
Ipsen, Christine (Intern)
Balle, Emilie (Intern)

Additive Manufacturing for marine propulsion systems
Department of Mechanical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
PhD Student:
Dahmen, Thomas (Intern)
Supervisor:
Lund, Claus Rarup (Ekstern)
Pedersen, David Bue (Intern)
Main Supervisor:
Hattel, Jesper Henri (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Advanced Damage Models with Intrinsic Size Effects
Department of Mechanical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
PhD Student:
Holte, Ingrid (Ekstern)
Supervisor:
Nielsen, Kim Lau (Intern)
Winther, Grethe (Intern)
Main Supervisor:
Niordson, Christian Frithiof (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Advanced Damage Models with Intrinsic Size Effects
Department of Mechanical Engineering

Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Holte, Ingrid (Intern)
Supervisor:
Nielsen, Kim Lau (Intern)
Winther, Grethe (Intern)
Main Supervisor:
Niordson, Christian Frithiof (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Advanced femtosecond fiber laser technology for science and applications

Department of Photonics Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student:
Buchmann, Tobias Olaf (Intern)
Supervisor:
Bache, Morten (Intern)
Main Supervisor:
Jepsen, Peter Uhd (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Analysis of Lightning and TLEs observed by ASIM and LIS on the International Space Station

National Space Institute
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Heumesser, Matthias (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

Blackstart and Islanding Capabilities of Wind Turbines

Department of Wind Energy
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Jain, Anubhav (Intern)
Supervisor:
Das, Kaushik (Intern)
Göksu, Ömer (Intern)
Main Supervisor:
Cutululis, Nicolaos Antonio (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

Coating with inherent sensing functionality based on dielectric elastomers
Department of Chemical and Biochemical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student:
Krpovic, Sara (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Main Supervisor:
Skov, Anne Ladegaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Concrete frost resistance - modelling frost attack
Department of Civil Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student:
Zaben, Abdulrahman Hasan (Intern)
Supervisor:
Jensen, Ole Mejlhede (Intern)
Main Supervisor:
Hasholt, Marianne Tange (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Context-Aware Access Control
Technical University of Denmark
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student:
Sultan, Shizra (Ekstern)
Supervisor:
Meng, Weizhi (Intern)
Main Supervisor:
Jensen, Christian D. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Designing Systems Visualisations for Decision Support
Department of Management Engineering
Design Toolbox for Personal Health Technology

Department of Applied Mathematics and Computer Science

Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student: Maharjan, Raju (Ekstern)
      Supervisor: Bækgaard, Per (Intern)
      Main Supervisor: Bardram, Jakob Eyvind (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Design Toolbox for Personal Health Technology

Technical University of Denmark

Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student: Kumar, Devender (Intern)
      Supervisor: Bækgaard, Per (Intern)
      Main Supervisor: Bardram, Jakob Eyvind (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Offentlig finansiering
Project: PhD

Design Toolbox for Personal Health Technology

Technical University of Denmark

Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student: Idrissov, Agzam (Intern)
      Supervisor: Parraguez Ruiz, Pedro (Intern)
      Main Supervisor: Maier, Anja (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD
Experiments on Nanoscale Photonic Topological Insulators
Department of Photonics Engineering
Period: 01/02/2018 → 30/11/2019
Number of participants: 3
Phd Student:
Lund, Kasper Ejdal (Intern)
Supervisor:
Mark, Jesper (Intern)
Main Supervisor:
Stobbe, Søren (Intern)

Financing sources
Source: Internal funding (public)

Name of research programme: Forskningsrådsfinansiering
Project: PhD

Genome reduction of a filamentous fungus
Department of Systems Biology
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Rothschild-Mancinelli, Kyle (Intern)
Supervisor:
Mortensen, Uffe Hasbro (Intern)
Vesth, Tammi Camilla (Intern)
Main Supervisor:
Andersen, Mikael Rørdam (Intern)

Financing sources
Source: Internal funding (public)

Name of research programme: Forskningsrådsfinansiering
Project: PhD

Heavy Duty Coatings
Department of Chemical and Biochemical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Ekbrant, Björn Erik Fristrup (Intern)
Supervisor:
Ambat, Rajan (Intern)
Paulsen, Andreas Lundtang (Intern)
Main Supervisor:
Skov, Anne Ladegaard (Intern)

Financing sources
Source: Internal funding (public)

Name of research programme: Industrial PhD
Project: PhD

Lake remediation by microbial fuel cells
Department of Environmental Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Machine Learning and AB-initio Simulations for Accelerated Materials Discovery

Department of Energy Conversion and Storage
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
PhD Student:
Boëlle, Felix Tim (Intern)
Supervisor:
Castelli, Ivano Eligio (Intern)
Thygesen, Kristian Sommer (Intern)
Main Supervisor:
Vegge, Tejs (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Microcontainers for oral drug delivery

Department of Micro- and Nanotechnology
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
PhD Student:
Hansen, Stine Egebro (Intern)
Supervisor:
Nielsen, Line Hagner (Intern)
Main Supervisor:
Boisen, Anja (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Multiplexing of higher order modes in optical fibers

Department of Photonics Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
PhD Student:
Mariam Mathew, Neethu (Intern)
Supervisor:
Usuga Castaneda, Mario A. (Intern)
Grüner-Nielsen, Lars Erik (Intern)
Main Supervisor:
Rottwitt, Karsten (Intern)

Financing sources
**Novel electrocatalysts and 3D porous electrodes for efficient alkaline water electrolysis**

Department of Energy Conversion and Storage  
Period: 01/02/2018 → 31/01/2021  
Number of participants: 3  
Phd Student:  
Gellrich, Florian (Intern)  
Supervisor:  
Traulsen, Marie Lund (Intern)  
Main Supervisor:  
Chatzichristodoulou, Christodoulos (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

**Open source Fog Node: hardware support for virtualization**

Technical University of Denmark  
Period: 01/02/2018 → 31/01/2021  
Number of participants: 3  
Phd Student:  
Kyriakakis, Eleftherios (Intern)  
Supervisor:  
Sparsø, Jens (Intern)  
Main Supervisor:  
Schoeberl, Martin (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Offentlig finansiering  
Project: PhD

**Optimization and Market Integration of Multi-Area AC/HVDC Grids under Uncertainty**

Department of Electrical Engineering  
Period: 01/02/2018 → 31/01/2021  
Number of participants: 4  
Phd Student:  
Tosatto, Andrea (Intern)  
Supervisor:  
Chatzivasileiadis, Spyros (Intern)  
Weckesser, Johannes Tilman Gabriel (Intern)  
Main Supervisor:  
Pinson, Pierre (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Marie Curie (EU-stipendium)  
Project: PhD

**Optimization of industriel anaerobic pre-treatment processes**

Department of Chemical and Biochemical Engineering  
Period: 01/02/2018 → 31/01/2021  
Number of participants: 5  
Phd Student:
Monje López, Vicente Tomás (Intern)
Supervisor:
Flores Alsina, Xavier (Intern)
Junicke, Helena (Intern)
Krühne, Ulrich (Intern)
Main Supervisor:
Gernaey, Krist V. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Patient Training for Gaze Controlled Telepresence
Department of Management Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student:
Zhang, Guangtao (Intern)
Supervisor:
Bardram, Jakob Eyvind (Intern)
Main Supervisor:
Hansen, John Paulin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsstipendium
Project: PhD

PhD on Mesh Generation from Optimized Shapes
Technical University of Denmark
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Stutz, Florian Cyril (Intern)
Supervisor:
Aage, Niels (Intern)
Sigmund, Ole (Intern)
Main Supervisor:
Bærentzen, Jakob Andreas (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

PhD scholarship in CFD Analysis of the Impact of the Scale Build-Up on the Liquid Flow in the Wells used for Oil & Gas Production
Department of Mechanical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student:
Bentzon, Jakob Roar (Intern)
Supervisor:
Feilberg, Karen Louise (Intern)
Main Supervisor:
Walther, Jens Honore (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Production of Polyhydroxyalkanoates from crude glycerol
Department of Chemical and Biochemical Engineering
Period: 01/02/2018 → 31/01/2020
Number of participants: 4
Phd Student:
Burniol Figols, Anna (Intern)
Supervisor:
Daugaard, Anders Egede (Intern)
Skiadas, Ioannis V (Intern)
Main Supervisor:
Gavala, Hariklia N. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Quantitative Modular Maintenance Principles
Department of Mechanical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student:
Sigsgaard, Kristoffer Vandrup (Intern)
Supervisor:
Hvam, Lars (Intern)
Main Supervisor:
Mortensen, Niels Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Reducing salt intake and optimizing sodium to potassium balance in families - Effectiveness and feasibility of a real-life based randomized controlled intervention study
National Food Institute
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Riis, Nanna Louise (Intern)
Supervisor:
Toft, Ulla Marie Nørgaard (Ekstern)
Trolle, Ellen (Intern)
Main Supervisor:
Lassen, Anne Dahl (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Reliable Architecture for Future Smart Communities
Department of Photonics Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Malarski, Krzysztof Mateusz (Intern)
Supervisor:
Berger, Michael Stübert (Intern)
Petersen, Martin Nordal (Intern)
Main Supervisor:
Ruepp, Sarah Renée (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: **Samfinansieret - Andet**
Project: PhD

**Structure Optimization of 3D printed metal through heat and surface treatment**

Department of Mechanical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Valente, Emilie Hørdum (Intern)
Supervisor:
Christiansen, Thomas Lundin (Intern)
Pedersen, David Bue (Intern)
Main Supervisor:
Somers, Marcel A. J. (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: **Institut stipendie (DTU)**
Project: PhD

**Structure property relationships in coatings**

Department of Chemical and Biochemical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Juraskova, Alena (Intern)
Supervisor:
Dam-Johansen, Kim (Intern)
Olsen, Stefan Møller (Intern)
Main Supervisor:
Skov, Anne Ladegaard (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: **Samfinansieret - Andet**
Project: PhD

**The influence of vision on spatial hearing of hearing-impaired hearing-impaired listeners**

Department of Electrical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Huisman, Thirsa (Intern)
Supervisor:
Dau, Torsten (Intern)
Piechowiak, Tobias (Intern)
Main Supervisor:
MacDonald, Ewen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

Thermodynamics and kinetics of mixed interstitial phases in the titanium systems; modelling and synthesis
Department of Mechanical Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student:
Kværndrup, Frederik Bojesen (Intern)
Supervisor:
Dahl, Kristian Vinter (Intern)
Main Supervisor:
Christiansen, Thomas Lundin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Tunable Water-Based Microwave Circuitry and Sensing
Department of Photonics Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 3
Phd Student:
Jacobsen, Rasmus Elkjær (Intern)
Supervisor:
Arslanagic, Samel (Intern)
Main Supervisor:
Lavrinenko, Andrei (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Two-photon Selective Plane Illumination Microscopy through Fibres
Department of Photonics Engineering
Period: 01/02/2018 → 31/01/2021
Number of participants: 4
Phd Student:
Veettikazhy, Madhu (Intern)
Supervisor:
Hansen, Anders Kragh (Intern)
Marti, Dominik (Intern)
Main Supervisor:
Andersen, Peter E. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering m/virksomhed
Project: PhD
Ultra-Trace speciation analysis of chromium in foodstuff by high performance liquid chromatography coupled to inductively coupled plasma mass spectrometry using species specific isotope dilution

National Food Institute  
Period: 01/02/2018 → 31/01/2021  
Number of participants: 3  
Phd Student: Saraiva, Marina (Intern)  
Supervisor: Jitaru, Petru (Ekstern)  
Main Supervisor: Sloth, Jens Jørgen (Intern)

Financing sources  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

Effects of chemical exposure on Hedgehog signaling and development  
National Food Institute  
Research Group for Molecular and Reproductive Toxicology  
Period: 29/01/2018 → 21/06/2018  
Number of participants: 4  
Project participant: Blomberg, Anne Louise (Ekstern)  
Intzilaki, Smaragda Elina (Ekstern)  
Supervisor: Taxvig, Camilla (Intern)  
Main Supervisor: Svingen, Terje (Intern)

Distance management and work hubs  
implementation and employee experiences with work hubs and how to manage them across distance  
Department of Management Engineering  
Management Science  
Implementation and Performance Management  
Period: 24/01/2018 → …  
Number of participants: 2  
distance management, implementation, Innovation  
Project participant: Ipsen, Christine (Intern)  
Nardelli, Giulia (Intern)

Risk Benefit 4 EU  
National Food Institute  
Research Group for Risk-Benefit  
Period: 17/01/2018 → 17/10/2019  
Number of participants: 1  
Acronym: RB4EU  
Project participant: Jakobsen, Lea Sletting (Intern)
Food colors cell factory
Department of Systems Biology
Period: 15/01/2018 → 14/01/2021
Number of participants: 4
Phd Student:
Vestergaard, Andreas Møllerhøj (Intern)
Supervisor:
Kannangara, Rubini (Ekstern)
Mortensen, Uffe Hasbro (Intern)
Main Supervisor:
Frandsen, Rasmus John Normand (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Genome-scale metabolic modelling of antibiotics biosynthesis in actinomycets
Technical University of Denmark
Period: 15/01/2018 → 14/01/2021
Number of participants: 4
Phd Student:
Mohite, Omkar Satyavan (Ekstern)
Supervisor:
Kim, Hyun Uk (Ekstern)
Palsson, Bernhard (Ekstern)
Main Supervisor:
Weber, Tilmann (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Genome-scale metabolic modelling of antibiotics biosynthesis in actinomycets
Technical University of Denmark
Period: 15/01/2018 → 14/01/2021
Number of participants: 4
Phd Student:
Mohite, Omkar Satyavan (Intern)
Supervisor:
Kim, Hyun Uk (Ekstern)
Palsson, Bernhard (Ekstern)
Main Supervisor:
Weber, Tilmann (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Long-Term Security for Big Data
Technical University of Denmark
Period: 15/01/2018 → 14/01/2021
Number of participants: 3
Phd Student:
Kidmose, Andreas Brasen (Intern)
Supervisor:
Andersen, Birger (Intern)
Main Supervisor:
Knudsen, Lars Ramkilde (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Pozzolanic Reaction of Supplementary Cementitious Materials
Department of Civil Engineering
Period: 15/01/2018 → 14/01/2021
Number of participants: 4
PhD Student:
Canul Polanco, Jennifer Anette (Intern)
Supervisor:
Durán-Herrera, Alejandro (Ekstern)
Skibsted, Jørgen (Ekstern)
Main Supervisor:
Jensen, Ole Mejlhede (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Thermochemical treatment of titanium and titanium alloys;
Department of Mechanical Engineering
Period: 15/01/2018 → 14/01/2021
Number of participants: 4
PhD Student:
Meng, Yichen (Intern)
Supervisor:
Dahl, Kristian Vinter (Intern)
Villa, Matteo (Intern)
Main Supervisor:
Christiansen, Thomas Lundin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Wind power system support in future distribution networks
Department of Wind Energy
Period: 15/01/2018 → 14/01/2021
Number of participants: 5
PhD Student:
Pediaditis, Panagiotis (Intern)
Supervisor:
Altin, Müfit (Intern)
Das, Kaushik (Intern)
Koivisto, Matti Juhani (Intern)
Main Supervisor:
Hansen, Anca Daniela (Intern)

Financing sources
Source: Internal funding (public)
OLEAginous yeast platforms for FINE chemicals

Nowadays everybody is aware of the toxic effects of the conventional insecticides that are used to protect our plants from pest insects. The insecticides are harmful for the farmer, who sprays them on the field, for the pollinating insects, e.g., bees, and insecticide residues on fruits and vegetables are harmful for the consumer. But are there other safer ways to protect the plants from pest insects?

Yes, one of most promising methods is mating disruption, where small amounts of insect sex pheromones are released in the field to prevent the males from finding the insect females. This way females do not get fertilized and can not lay eggs that develop into larvae eating the plants. The technology is simple and effective, but until now quite expensive. The EU-funded project OLEFINE will solve this problem, making pheromones so cheap that they will become an affordable alternative to insecticides. Currently, pheromones are produced by chemical synthesis, which is an expensive and polluting process. The scientists in OLEFINE will use biotechnology instead to produce pheromones at low cost by brewing, in the same way how insulin is made for diabetes treatment and enzymes are produced for washing powders.

Novo Nordisk Foundation Center for Biosustainability

Research Groups

Global Econometric Modeling

iLoop

Yeast Metabolic Engineering
Period: 01/01/2018 → 31/12/2021
Number of participants: 4
biotechnology, insect pheromones, mating disruption, sustainability
Acronym: OLEFINE
Project participant:
Borodina, Irina (Intern)
Project Manager, organisational:
Rasmussen, Birte Kastrup (Intern)
Lohmann, Ricarda (Intern)
Project Coordinator:
Herrgard, Markus (Intern)

Air-sampling: A Low-Cost Screening Tool in Biosecured Broiler Production

National Food Institute
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Christensen, Julia (Intern)
Supervisor:
Vigre, Håkan (Intern)
Main Supervisor:
Hoorfar, Jeffrey (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Assembly and Characterization of Red Blood Cell Substitutes

Department of Micro- and Nanotechnology
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Jansman, Michelle (Intern)
Supervisor:
Andresen, Thomas Lars (Intern)
Main Supervisor: Hosta-Rigau, Leticia (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

**Autonomous Bus Demand Modeling from Big Data**

Department of Management Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Peled, Inon (Intern)
Supervisor:
Dauwels, Justin (Ekstern)
Main Supervisor:
Pereira, Francisco Camara (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Bioinformatics of ayurvedic medicine sources and treatment response stratification**

Department of Bio and Health Informatics
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Garcia, Sara (Intern)
Supervisor:
Kadarmideen, Haja (Ekstern)
Thelma, B. K. (Ekstern)
Main Supervisor:
Gupta, Ramneek (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Bioinformatics of the germline-somatic continuum in cancer**

Department of Bio and Health Informatics
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Pastori, Ambra (Intern)
Supervisor:
Pedersen, Anders Gorm (Intern)
Schmiegelow, Kjeld (Ekstern)
Main Supervisor:
Gupta, Ramneek (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
Biomimetic artificial anterior chamber model for corneal transplantations
Department of Mechanical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Svendsen, Nicklas Werge (Intern)
Supervisor:
Nunez, Jevier Francisco Cabrerizo (Ekstern)
Main Supervisor:
Lenau, Torben Anker (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Biosensors for natural product glycosides
Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Chaberski, Evan Kirk (Intern)
Supervisor:
Jensen, Michael Krogh (Intern)
Main Supervisor:
Welner, Ditte Hededam (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Contaminant mass discharge of chlorinated solvents in clay tills: Concepts, quantification and risk assessment
Department of Environmental Engineering
Period: 01/01/2018 → 15/02/2021
Number of participants: 3
Phd Student:
Rosenberg, Louise (Intern)
Supervisor:
Broholm, Mette Martina (Intern)
Main Supervisor:
Bjerg, Poul Legstrup (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Convex Relaxation Techniques for Nonlinear Optimization
Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Eltved, Anders (Intern)
Supervisor:
Chatzivasileiadis, Spyros (Intern)
Main Supervisor:
Andersen, Martin Skovgaard (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Data Driven Analysis of Plant Operation
Department of Mechanical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Bertram, Christian Alexander (Intern)
Supervisor:
Hvam, Lars (Intern)
Main Supervisor:
Mortensen, Niels Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Data Driven Plant Reconfiguration
Department of Mechanical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Lundgaard, Rasmus (Intern)
Supervisor:
Hvam, Lars (Intern)
Main Supervisor:
Mortensen, Niels Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Design and structuring of electrospun nanofiber non-Pt catalysts and electrode for high temperature proton exchange membrane fuel cells
Department of Energy Conversion and Storage
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Bompolaki, Eftychia (Intern)
Supervisor:
Zhang, Wenjing (Angela) (Intern)
Main Supervisor:
Jensen, Jens Oluf (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Designing Covalent and Metal-Organic Framework Nanomaterials for Photoelectrochemical Catalysis and Solar Energy Conversion
Department of Chemistry
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Pan, Qinying (Intern)
Supervisor:
Tanner, David Ackland (Intern)
Main Supervisor:
Chi, Qijin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Determination of Remaining Life of Operational Wind Turbines
Department of Wind Energy
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Conti, Davide (Intern)
Supervisor:
Dimitrov, Nikolay Krasimirov (Intern)
Main Supervisor:
Natarajan, Anand (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Developing Product Architectures in Collaboration with Key-Customers
Department of Mechanical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Askhøj, Christoffer (Intern)
Supervisor:
Hvam, Lars (Intern)
Main Supervisor:
Mortensen, Niels Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Development and implementation of high-dimensional normal behavior areas for citizens with dementia, in proactive care at nursing homes
Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Khomiakov, Maxim (Intern)
Supervisor:
Burattin, Andrea (Intern)
Ersbøll, Bjarne Kjær (Intern)
Main Supervisor:
Stockmarr, Anders (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Development of a screening method to identify compound specific transporters

Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
van der Hoek, Steven Axel (Intern)
Supervisor:
Darbani Shirvaneheleh, Behrooz (Intern)
Main Supervisor:
Borodina, Irina (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Development of novel electrode materials for high temperature electrochemical water splitting

Department of Energy Conversion and Storage
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Mazzanti, Nicola (Intern)
Supervisor:
Chatzichristodoulu, Christodoulos (Intern)
Mogensen, Mogens Bjerg (Intern)
Main Supervisor:
Hendriksen, Peter Vang (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD

Development of Process Integration Methodologies for Systematic Implementation in non-Energy Intensive Industries

Department of Mechanical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Bergamini, Riccardo (Intern)
Supervisor:
Nguyen, Tuong-Van (Intern)
Main Supervisor:
Elmegaard, Brian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Dynamic Nuclear Polarization with Labile Radicals

Department of Electrical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Gunnarsson, Christine Pepke (Intern)
Supervisor:
Capozzi, Andrea (Intern)
Karlsson, Magnus (Ekstern)
Main Supervisor:
Ardenkjær-Larsen, Jan Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Ecological Control Strategies for Biobutanol Production

Department of Chemical and Biochemical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 5
Phd Student:
Pinto, Tiago Nuno Baptista Castro (Intern)
Supervisor:
Alsina, Xavier Flores (Ekstern)
Junicke, Helena (Intern)
Eliasson Lantz, Anna (Intern)
Main Supervisor:
Gernaey, Krist V. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Engineering Pseudomonas putida for the targeted production of new-to-Nature fluorinated compounds

Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Wirth, Nicolas (Intern)
Supervisor:
Jensen, Michael Krogh (Intern)
Main Supervisor:
Nikel, Pablo Ivan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Enhanced Stability and Control of AC/HVDC Grids in Varying Inertis Systems

Department of Electrical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Misyris, Georgios (Intern)
Supervisor:
Chatzivasileiadis, Spyros (Intern)
Weckesser, Johannes Tilman Gabriel (Intern)
Main Supervisor:
Nielsen, Arne Hejde (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Enhancing the role of electric vehicles for a proactive integration in global power systems
Department of Electrical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
  Thingvad, Andreas (Intern)
Supervisor:
  Hu, Junjie (Intern)
  Træholt, Chresten (Intern)
Main Supervisor:
  Marinelli, Mattia (Intern)

Experimental Studies of Polymer Bruch Layers
Department of Chemistry
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
  Ehtiati, Koosha (Intern)
Supervisor:
  Daugaard, Anders Egede (Intern)
Main Supervisor:
  Thormann, Esben (Intern)

Federated deep learning for privacy preserving mobile data modelling
Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
  Taborsky, Petr (Intern)
Supervisor:
  Nielsen, Finn Årup (Intern)
Main Supervisor:
  Hansen, Lars Kai (Intern)

Flow and Colourings
Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Langhede, Rikke Marie (Intern)
Supervisor:
Gertz, Inge Li (Intern)
Rotenberg, Eva (Intern)
Main Supervisor:
Thomassen, Carsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Fluid Structure Interaction for Wind Turbines in Atmospheric Flow
Department of Wind Energy
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Grinderslev, Christian (Intern)
Supervisor:
Horcas, Sergio González (Intern)
Hansen, Anders Melchior (Intern)
Main Supervisor:
Sørensen, Niels N. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Gas liberation in tight porous medium
Department of Chemical and Biochemical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Al-Masri, Wael Fadi (Intern)
Supervisor:
Nielsen, Carsten Møller (Intern)
Nielsen, Sidsel Marie (Intern)
Main Supervisor:
Shapiro, Alexander (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Geodetic measurements of present-day Greenland ice sheet mass balance
National Space Institute
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Dahl-Jensen, Trine S. (Intern)
Supervisor:
Andersen, Ole Baltazar (Intern)
Knudsen, Per (Intern)
Main Supervisor:
Khan, Shfaqat Abbas (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Getting the most out of magnetocaloric materials for high efficiency refrigeration

Department of Energy Conversion and Storage
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
PhD Student:
Erbesdobler, Florian (Intern)
Supervisor:
Bahl, Christian (Intern)
Bjørk, Rasmus (Intern)
Main Supervisor:
Nielsen, Kaspar Kirstein (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Gillnet modifications to reduce by-catch of seabirds and harbour porpoises in the Baltic Sea

National Institute of Aquatic Resources
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
PhD Student:
Kratzer, Isabella (Intern)
Supervisor:
Kindt-Larsen, Lotte (Intern)
Stepputtis, Daniel (Ekstern)
Main Supervisor:
Larsen, Finn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Graphene supported transition metal oxide composites as metal-ion battery electrode materials

Department of Chemistry
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
PhD Student:
cao, Huili (Intern)
Supervisor:
Mossin, Susanne (Intern)
Norby, Poul (Intern)
Main Supervisor:
Chi, Qijin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Identification and characterization of antibiotics biosynthesis pathways
Technical University of Denmark  
Period: 01/01/2018 → 31/12/2020  
Number of participants: 3  
Phd Student:  
Beck, Charlotte (Intern)  
Supervisor:  
Jiang, Xinglin (Intern)  
Main Supervisor:  
Weber, Tilmann (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Fonde  
Project: PhD

III-V Nanowire Selective Area MOVPE Growth for High Efficiency Solar Cell  
Department of Photonics Engineering  
Period: 01/01/2018 → 31/12/2020  
Number of participants: 3  
Phd Student:  
Lebedkina, Elizaveta (Intern)  
Supervisor:  
Canulescu, Stela (Intern)  
Main Supervisor:  
Semenova, Elizaveta (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD

Implementation of electrochemical impedance spectroscopy (EIS) for validation of humidity robustness of PCBA design elements  
Department of Mechanical Engineering  
Period: 01/01/2018 → 31/12/2020  
Number of participants: 4  
Phd Student:  
Lauser, Simone (Intern)  
Supervisor:  
Eckold, Pierre (Ekstern)  
Verdingovas, Vadimas (Intern)  
Main Supervisor:  
Ambat, Rajan (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Ansat eksternt m/virksomhed  
Project: PhD

Lightweight cryptography for tomorrow’s IT landscape  
Technical University of Denmark  
Period: 01/01/2018 → 31/12/2020  
Number of participants: 3  
Phd Student:  
Topsøe, Tine Jarman (Intern)  
Supervisor:  
Tischhauser, Elmar Wolfgang (Intern)  
Main Supervisor:
**Knudsen, Lars Ramkilde (Intern)**

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
Project: PhD  

**Mesoscale modelling of morphologies, charge carrier generation, and charge transport in third generation solar cells**  
Department of Energy Conversion and Storage  
Period: 01/01/2018 → 31/12/2020  
Number of participants: 4  
Phd Student:  
Gertsen, Anders Skovbo (Intern)  
Supervisor:  
Nelson, Jenny (Ekstern)  
Stingelin-Stutzmann, Natalie (Ekstern)  
Main Supervisor:  
Andreasen, Jens Wenzel (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Anden EU-finansiering  
Project: PhD  

**Metabolomics using Dissolution DNP-NMR**  
Department of Electrical Engineering  
Period: 01/01/2018 → 31/12/2020  
Number of participants: 3  
Phd Student:  
Frahm, Anne Birk (Intern)  
Supervisor:  
Jensen, Pernille Rose (Intern)  
Main Supervisor:  
Lerche, Mathilde Hauge (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Grundforskningsfonden  
Project: PhD  

**Monitoring rivers and streams with unmanned aerial systems for determination of ecological status**  
Department of Environmental Engineering  
Period: 01/01/2018 → 31/12/2020  
Number of participants: 4  
Phd Student:  
Köppl, Christian Josef (Intern)  
Supervisor:  
Garcia, Monica (Intern)  
McKnight, Ursula S. (Intern)  
Main Supervisor:  
Bauer-Gottwein, Peter (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD
Neural Abstract Machines and Program Induction
Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Larsen, Rasmus (Intern)
Supervisor:
Hansen, Lars Kai (Intern)
Main Supervisor:
Schmidt, Mikkel Nørgaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Nonlinear Integrated Photonics
Department of Photonics Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Kim, Chanju (Intern)
Supervisor:
Yvind, Kresten (Intern)
Main Supervisor:
Pu, Minhao (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Organic Redox Flow Batteries: Active Materials and Cell Stability
Department of Energy Conversion and Storage
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Hoffmeyer, Doris (Intern)
Supervisor:
Vegge, Tejs (Intern)
Main Supervisor:
Hjelm, Johan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Photopolymerization based Additive Manufacturing Process Chains
Department of Mechanical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Mendez Ribo, Macarena (Intern)
Supervisor:
Islam, Aminul (Intern)
Main Supervisor:
Pedersen, David Bue (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Pig production without the use of antibiotics - impact on the pig resistome and microbiome
National Food Institute
Period: 01/01/2018 → 31/12/2020
Number of participants: 5
Phd Student:
Tams, Katrine Wegener (Intern)
Supervisor:
Angen, Øystein (Intern)
Folkesson, Anders (Intern)
Strube, Mikael Lenz (Intern)
Main Supervisor:
Pedersen, Karl (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Population Genomics of Archived Shark Samples
National Institute of Aquatic Resources
Period: 01/01/2018 → 31/12/2020
Number of participants: 5
Phd Student:
Christensen, Camilla (Intern)
Supervisor:
Bekkevold, Dorte (Intern)
Bennett, Michael B. (Ekstern)
Ovenden, Jennifer (Ekstern)
Main Supervisor:
Eg Nielsen, Einar (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Real time dynamic rating condition monitoring of offshore wind farm export systems
Department of Electrical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Kazmi, Syed Hamza Hasan (Intern)
Supervisor:
Herskind Olesen, Thomas (Ekstern)
Sørensen (fratrådt), Troels (Intern)
Main Supervisor:
Holbøll, Joachim (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD
Solder flux chemistry and climatic reliability of electronics: optimization of flux chemistry for robust performance

Department of Mechanical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Li, Feng (Intern)
Supervisor:
Jellesen, Morten Stendahl (Intern)
Main Supervisor:
Ambat, Rajan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Stochastic Models for Predictive Maintenance

Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Andersen, Jesper Fink (Intern)
Supervisor:
Kulahci, Murat (Intern)
Main Supervisor:
Nielsen, Bo Friis (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Stretched conductive elastomers

Department of Chemical and Biochemical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student:
Shao, Jiang (Intern)
Supervisor:
Skov, Anne Ladegaard (Intern)
Main Supervisor:
Daugaard, Anders Egede (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Surface engineering of aluminium alloys for prosthetics

Department of Mechanical Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 6
Phd Student:
Andersen, Asger Gade (Intern)
Supervisor:
Hansen, Jesper (Ekstern)
Jørgensen, René Schow (Ekstern)
Nielsen, Lars Pleth (Ekstern)
Olafsson, Sigurður (Ekstern)
Main Supervisor: Møller, Per (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

**Surveillance of Network Effects in Antimicrobial Resistance Genes**
National Food Institute
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student: Röder, Timo (Intern)
Supervisor: Petersen, Thomas Nordahl (Intern)
Main Supervisor: Aarestrup, Frank Møller (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**Synthesis, characterization and application of composite phase change humidity control materials**
Department of Civil Engineering
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student: Feng, Xiaoxiao (Intern)
Supervisor: Rode, Carsten (Intern)
Main Supervisor: Qin, Menghao (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**The Data Science of Sleep: Influence of Social and Geographical Factors**
Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 3
Phd Student: Jónasdóttir, Sigriður Svala (Intern)
Supervisor: Hansen, Lars Kai (Intern)
Main Supervisor: Jørgensen, Sune Lehmann (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Fonde
Project: PhD
**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:
Barlas, Athanasios (Intern)

**Consolidating and operationalizing theories of genuine public participation in large-scale engineering projects**

This research project will 1) identify and analyse factors enabling (or impeding) genuine participation of general public in planning, decision making and possibly funding of large-scale engineering projects in Denmark and the associated risks (e.g. in transportation infrastructure, or energy generation and distribution), 2) test how increased public participation can be operationalized through an open-system business model by the means of active collaboration with stakeholders, improved engineering risk management and direct implementation of changes in selected pilot projects, and finally 3) develop detailed guidelines for practitioners to be used for building strong and equal partnerships in major infrastructure projects.

**Department of Management Engineering**

**Engineering Systems**

Period: 01/12/2017 → 01/12/2019
Number of participants: 2
Acronym: COPP
Project Manager, academic:
Oehmen, Josef (Intern)
Project Coordinator:
Witz, Petr (Intern)

**Financing sources**

Source: EU research programme (public)
Name of research programme: Marie Curie / COFUND / HC Oersted

**Advanced Digital Design and Design Automation in the Construction Industry**

The main objective of the project is to conduct research on Advanced Digital Design, in particular Design Automation, in the context of the construction industry. This includes leveraging "Industry 4.0" approaches. The project will leverage digital capabilities to significantly improve engineering design productivity through better design coordination, higher design quality, and reduced risk during construction.

**Department of Management Engineering**

**Engineering Systems**

NCC

**MADE - Manufacturing Academy of Denmark**

Period: 01/12/2017 → 01/12/2019
Number of participants: 3
Project participant:
Thuesen, Christian (Intern)  
Project Manager, academic:  
Oehmen, Josef (Intern)  
Project Coordinator:  
Pikas, Ergo (Intern)  

Financing sources  
Source: Private funding (private)  
Name of research programme: NCC  
Source: Private funding (private)  
Name of research programme: MADE  
Project

**AlGaAs Photonic Chips for 2 μm Optical Communications**  
Department of Photonics Engineering  
Period: 01/12/2017 → 30/11/2020  
Number of participants: 4  
Phd Student:  
Liu, Yong (Intern)  
Supervisor:  
Galili, Michael (Intern)  
Pu, Minhao (Intern)  
Main Supervisor:  
Hu, Hao (Intern)  

Financing sources  
Source: Internal funding (public)  
Name of research programme: Fonde  
Project: PhD

**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 → 06/02/2018
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

Auditory Training Strategies to Improve Speech Intelligibility in Hearing-Impaired Listeners
Department of Electrical Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Koprowska, Aleksandra (Intern)
Supervisor:
Santurette, Sébastien (Intern)
Serman, Maja (Ekstern)
Main Supervisor:
Dau, Torsten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
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
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

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
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: Institut stipendie (DTU)
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 Grünewald (Intern)
Supervisor:
Ankjaergaard, Christina (Intern)
Miller, Ame (Intern)
Main Supervisor:
Lindvold, Lars René (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Ecology of antibiotic resistance genes and mobile genetic elements in microbial communities of the urban water system
Department of Environmental Engineering
Ecology of antibiotic resistance genes and mobile genetic elements in microbial communities of the urban water system

Department of Environmental Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student: Parchen, Camiel (Ekstern)
Supervisor: Dechesne, Arnaud (Intern)
Main Supervisor: Smets, Barth F. (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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: Madzharova, Elizabeta (Ekstern)
Supervisor: Brix, Susanne (Ekstern)
Main Supervisor: auf dem Keller, Ulrich (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Health related effects of quinoa- impact on intestinal permeability and immune responses

National Food Institute
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student: Ballegaard, Anne-Sofie Ravn (Intern)
Supervisor: Pilegaard, Kirsten (Intern)
Main Supervisor: Rasmussen, Peter Have (Intern)
Main Supervisor: Begh, Katrine Lindholm (Intern)
Financing sources
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: Institut stipendie (DTU)
Project: PhD

Intelligent integration of deep urban tunnel systems in energy systems

Technical University of Denmark
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student: Bjerregård, Mathias Blicher (Intern)
Supervisor: Borup, Morten (Intern)
Niyato, Dusit (Ekstern)
Main Supervisor: Christiansen, Lasse Engbo (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
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)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Machine learning techniques applied to optical sensing

Department of Photonics Engineering
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: Grundforskningsfonden
Project: PhD

Methane production and carbon capture through hydrate swapping

Department of Chemical and Biochemical Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
PhD Student: Shi, Meng (Intern)
Supervisor: Woodley, John (Intern)
Main Supervisor: von Solms, Nicolas (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
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
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: Stipendie fra uelandet
Project: PhD

Mucosal adaptive immunity - regulatory properties of mucosal B cells

Department of Micro- and Nanotechnology
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student: Sayal, Imran Akdemir (Intern)
Supervisor: Bekiaris, Vasileios (Intern)
Main Supervisor: Lindbom, Bengt Johansson (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Multiscale assessment of Swelling and Compressibility of Fine Grained Geomaterials

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

Nanoscale Characterisation of Metal Films Adhesion for Plasmonic Applications

Department of Physics
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Heinig, Mario (Intern)
Supervisor:
Jansen, Henri (Intern)
Wagner, Jakob Birkedal (Intern)
Main Supervisor:
Kadkhodazadeh, Shima (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)
Name of research programme: Grundforskningsfonden
Project: PhD

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 Løvstad (Intern)
Jakobsen, Jette (Intern)
Main Supervisor:
Jacobsen, Charlotte (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Omic-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)
Name of research programme: Samfinansieret - Andet
Project: PhD

Omic-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 (Intern)
Supervisor:
Abou Hachem, Maher (Intern)
yang, Fuquan (Ekstern)
Main Supervisor:
Svensson, Birte (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Planning Tools for Stormwater Pollution Management

Department of Environmental Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Jensen, Ditte Marie Reinholdt (Intern)
Supervisor:
Vezzaro, Luca (Intern)
Vezzaro, Luca (Intern)
Main Supervisor:
Mikkelsen, Peter Steen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Production of therapeutic proteins in Lactococcus lactis

National Food Institute
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Xiao, Hang (Intern)
Supervisor:
Bang-Berthelsen, Claus Heiner (Intern)
Solem, Christian (Intern)
Main Supervisor:
Jensen, Peter Ruhdal (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Radiochemical Analysis of Hard-to-measure Radionuclides for Decommissioning and Environmental Trace Studies

Department of Chemistry
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Zhu, Liuchao (Intern)
Supervisor:
Qiao, Jixin (Intern)
Main Supervisor:
Hou, Xiaolin (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: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Saettone, Simone (Intern)
Supervisor:
Steen, Sverre (Ekstern)
Main Supervisor:
Andersen, Poul (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Smooth advanced silicon NEMS devices

DTU Danchip
Period: 01/12/2017 → ...
Number of participants: 1
Project participant:
Jansen, Henri (Intern)
Project
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: Institut stipendie (DTU)
Project: PhD

Study on self-hearing and high-permitivity silicone elastomer/keratin composite materials

Department of Chemical and Biochemical Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 4
Phd Student:
Liu, Xue (Ekstern)
Supervisor:
Nie, Yi (Ekstern)
Zhang, Suo-Jiang (Ekstern)
Main Supervisor:
Skov, Anne Ladegaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Sustainability Assessment of Residual Biomass Resource Management

Department of Environmental Engineering
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Albizzati, Paola Federica (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

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)
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)

Synthesis of TLR agonists for immunotherapy

Department of Micro- and Nanotechnology
Period: 01/12/2017 → 30/11/2020
Number of participants: 2
Phd Student:
Jørgensen, Kira Rapke (Intern)
Main Supervisor:
Andresen, Thomas Lars (Intern)

The influence of the gut microbiome on anti-cancer therapy

Department of Systems Biology
Period: 01/12/2017 → 30/11/2020
Number of participants: 3
Phd Student:
Xu, Liqin (Ekstern)
Supervisor:
Kristiansen, Karsten (Ekstern)
Main Supervisor:
Pedersen, Susanne Brix (Intern)

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 Institute of Aquatic Resources
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 by investigating infectious disease agents and the resistome from ecological niches in Guang don, China 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:
Kirkelund, Gunvor Marie (Intern)
**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**Leak detection in water supply pipes using drone-borne sensor technology**
Identification of water leaks in distribution pipes with UAVs via microwave and thermal monitoring

Department of Environmental Engineering
Water Resources Engineering
National Space Institute
Geodesy
Department of Applied Mathematics and Computer Science
Image Analysis & Computer Graphics
DroneInspektion ApS
Drone Systems ApS
Aarhus Water
Solrød Vandværk
HOFOR A/S

VandCenter Syd
Period: 16/11/2017 → 30/06/2018
Number of participants: 4
Project participant:
Bandini, Filippo (Intern)
Jakobsen, Jakob (Intern)
Bauer-Gottwein, Peter (Intern)
Frisvad, Jeppe Revall (Intern)

**Complexity Management at DSV A/S**
Department of Management Engineering
Period: 15/11/2017 → 14/11/2020
Number of participants: 5
Phd Student:
Schorr, Franziska (Intern)
Supervisor:
Mortensen, Niels Henrik (Intern)
Mortensen, Niels Henrik (Intern)
Rahimi, Fatemeh (Intern)
Main Supervisor:
Hvam, Lars (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Industrial PhD
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)
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: Anden EU-finansiering
Project: PhD

Metal centres for activation of small molecules in porous materials

Department of Chemistry
Period: 15/11/2017 → 14/11/2020
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

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
Villum Center for Advanced Structural and Material Testing

Department of Civil Engineering
Department of Wind Energy
Composites and Materials Mechanics
Section for Structural Engineering
Department of Mechanical Engineering
Solid Mechanics

Wind Turbine Structures and Component Design
Period: 07/11/2017 → …
Number of participants: 17
Acronym: CASMaT

Project participant:
Kleis, Camilla (Intern)
Mikkelsen, Lars Pilgaard (Intern)
Sørensen, Bent F. (Intern)
Toftegaard, Helmuth Langmaack (Intern)
Berggreen, Christian (Intern)
Branner, Kim (Intern)
Michel, Alexander (Intern)
Andreassen, Michael Joachim (Intern)
Luczak, Marcin (Intern)
Chen, Xiao (Intern)
Bjørnbak-Hansen, Jørgen (Intern)
Legarth, Brian Nyvang (Intern)
Waldbjørn, Jacob Paamand (Intern)

Project Manager, organisational:
Stang, Henrik (Intern)
Phd Student:
Bangaru, Ashish Kumar (Intern)
Moncy, Aakash (Intern)
Quinlan, Alex (Intern)

Relations
Related projects:
Fatigue behaviour of polymer matrix at the microstructural scale
Multi-axial fatigue damage laws for composite materials at the macro-scale
Fatigue behaviour of polymer composite materials at the sub-structural and structural scale

Publications:
Fatigue Damage Evolution in Fibre Composites for Wind Turbine Blades
Micromechanical Investigation of Fatigue Damage in Uni-Directional Fibre Composites
Three dimensional fatigue damage evolution in non-crimp glass fibre fabric based composites used for wind turbine blades
Individual fibre segmentation from 3D X-ray computed tomography for characterising the fibre orientation in unidirectional composite materials
Micromechanical Time-Lapse X-ray CT Study of Fatigue Damage in Uni-Directional Fibre Composites
Fatigue damage observed non-destructively in fibre composite coupon test specimens by X-ray CT
Ex-situ X-ray computed tomography data for a non-crimp fabric based glass fibre composite under fatigue loading

Coastal Hazard Risk Reduction and Management
Department of Management Engineering
Value of Uncertainty: Enabling effective strategy deployment in engineering project organizations

In this project, we argue that investigating and improving strategy implementation in engineering organizations through an risk- and uncertainty perspective will add significant value to C-level practitioners. We view strategy implementation, and its operationalization through project, program and portfolio management, as a structured management and reduction of uncertainty. As a “proof of concept” project, the project researches simple rules and visual aids for the management of uncertainty in strategy implementation.

Department of Management Engineering

Engineering Systems

Brightline Initiative
Period: 01/11/2017 → 31/12/2018
Number of participants: 4
Project participant:
Geraldi, Joana (Intern)
Stjerne, Iben (Intern)
Strøm, Line Christiane Lund (Intern)
Project Manager, academic:
Oehmen, Josef (Intern)

Financing sources
Source: Private funding (private)
Name of research programme: Brightline Initiative
Web address: http://www.brightline.org
Project
Two-Photon Selective Plane Illumination Microscopy through Fibres

T-SPIF works towards this by developing a technique to establish Two-Photon Excited Fluorescence, Selective Plane Illumination Microscopy (TPEF-SPIM) through an optical fibre of sufficient length for endoscopic applications, without moving parts.

Department of Photonics Engineering
Diode Lasers and LED Systems
OFS Fitel Denmark ApS
University of St Andrews

Period: 01/11/2017 → 31/10/2020
Number of participants: 5
Acronym: T-SPIF
Number of related Ph.D. students: 1

Project participant:
Andersen, Peter E. (Intern)
Working partner:
Dholakia, Kishan (Ekstern)
Larsen, Christian (Ekstern)

Project Coordinator:
Marti, Dominik (Intern)
Hansen, Anders Kragh (Intern)

Project:
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

Bioinorganic artificial photosynthesis of single cell protein from carbon dioxide.

Department of Environmental Engineering

Period: 01/11/2017 → 31/10/2020
Number of participants: 3
Phd Student:
Xu, Mingyi (Intern)
Supervisor:
Zhang, Yifeng (Intern)
Main Supervisor:
Angelidaki, Irini (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Privatist
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: 3
PhD Student:
Schandel, Christian Bækhøj (Intern)

Supervisor:
Høj, Martin (Intern)
Osmundsen, Christian Mårup (Intern)
Main Supervisor:
Jensen, Anker Degn (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Catalytic methanol synthesis
Department of Chemical and Biochemical Engineering
Period: 01/11/2017 → 31/10/2020
Number of participants: 2
PhD Student:
Nielsen, Niels Dyreborg (Intern)

Supervisor:
Jensen, Anker Degn (Intern)
Christensen, Jakob Munkholt (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
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)
Mellier, 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 Bay Brix (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
Department of Systems Biology
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
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 Robotics

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 Kjærulf (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

Technical University of Denmark
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)
The effect of aging on fire safety of composite materials

Frederiksen, Jens Mejer (Ekstern)
Frettlöhr, Björn (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

Department of Civil Engineering
Period: 01/11/2017 → 29/01/2021
Number of participants: 4
Phd Student: Sandinge, Anna (Intern)
Supervisor: Blomqvist, Per (Ekstern)
Markert, Frank (Intern)
Main Supervisor: Dederichs, Anne Simone (Intern)

Design and Engineering of Nanostructured Halide Perovskites for Light Harvesting and Solar Power Conversion

Liang, mingli (Intern)
Supervisor: Duus, Jens Ølgaard (Intern)
Main Supervisor: Chi, Qijin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Department of Chemistry
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: Stipendie fra udlandet
Project: PhD

High pulse energy supercontinuum for combined florescence and MSOT

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

**Multi-modal microstructure imaging of biological tissue**

Technical University of Denmark  
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
Open-access data platform for behavioural monitoring and visual analytics for mental health

Technical University of Denmark
Period: 15/10/2017 → 06/01/2018
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)
**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)
Bowen, Jacob R. (Intern)

Project Manager, academic:
Sierra Trujillo, José Xavier (Intern)

**Relations**
Related projects:
ESS & MAX IV: Cross border science and society

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**Democratizing energy markets through the introduction of innovative flexibility-based demand response tools and novel business and market models for energy cooperatives**

FLEXCoop aims at introducing a complete automated Demand Response framework and tool suite for residential electricity consumers. The end-to-end interoperable solution will enable consumer flexibility to be valorised in front of a range of possible users in order to fulfill different services to the grid. This framework will enable energy cooperatives to explore demand response business models and take the role of aggregators. The pilot participants are members of two energy cooperatives located in the Netherlands and in Spain.

Department of Applied Mathematics and Computer Science

Dynamical Systems
Period: 01/10/2017 → 30/09/2019
Number of participants: 4
Acronym: FLEXCoop
Project participant:
Azar, Armin Ghasem (Intern)
Relan, Rishi (Intern)
Bacher, Peder (Intern)
Madsen, Henrik (Intern)

**Project**

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**Reservoirværters mulige rolle for persistens af rådyrseyge**

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)
**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  
Acronym: SpotLASE  
Project ID: 71043  
Project participant:  
Thorseth, Anders (Intern)  
Lindén, Johannes (Intern)  
Jensen, Ole Bjarlin (Intern)  
Project Manager, organisational:  
Dam-Hansen, Carsten (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 2017 Mid-term meeting Jeju Island  
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  
Implementation and Performance Management  
International Research Institute of Stavanger  
Period: 01/10/2017 → …  
Number of participants: 1  
Project participant:  
Edwards, Kasper (Intern)  

**3D printing of perfusable hybrid 3D scaffolds- and biomaterials**

Department of Micro- and Nanotechnology  
Period: 01/10/2017 → 30/09/2020  
Number of participants: 3  
Phd Student:  
Gürbüz, Hakan (Intern)  
Supervisor:  
Heiskanen, Arto (Intern)  
Main Supervisor:  
Emnéus, Jenny (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:
Meryo, José M.G. (Intern)

Bacteriophage based technology to control Flavobacterium pathogens in aquaculture

National Institute of Aquatic Resources
Period: 01/10/2017 → 30/09/2020
Number of participants: 4
Phd Student:
Donati, Valentina Laura (Intern)
Supervisor:
Madsen, Lone (Intern)
Middelboe, Mathias (Ekstern)
Main Supervisor:
Dalsgaard, Inger (Intern)

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)

Characterization and Use of Chitinases from Marine Bacteria

Department of Systems Biology
Period: 01/10/2017 → 30/09/2020
Number of participants: 3
Phd Student:
Wang, Xiyan (Intern)
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 (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
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)
Project: PhD

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)
Project: PhD
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
Project: PhD

Energibesparende LED Smart Tube i intelligente løsninger

Department of Photonics Engineering

Diode Lasers and LED Systems

Period: 01/10/2017 → 01/09/2019
Number of participants: 3
Acronym: JensenLED
Project participant: Dam-Hansen, Carsten (Intern)
Thorseth, Anders (Intern)
Project Manager, academic: Corell, Dennis Dan (Intern)

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)
Supervisor: Gotfredsen, Charlotte Held (Intern)
Main Supervisor: Duus, Jens Ølgaard (Intern)
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: Stipendie fra udlandet
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: 4
Phd Student:
   Liu, Zhijia (Intern)
Supervisor:
   Feist, Adam (Intern)
   Marcelo Dragone, Giuliano (Ekstern)
Main Supervisor:
   Mussatto, Solange I. (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
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
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
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
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: Institut stipendie (DTU)
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:  
Dimitrov, Nikolay Krasimirov (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:  
Pedersbæk, 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

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
Department of Micro- and Nanotechnology
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:
Kiærboe, Thomas (Intern)
Mariani, Patrizio (Intern)
Main Supervisor:
Visser, Andre (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
Industrial PhD

Aerodynamic design
Period: 15/09/2017 → 14/09/2020
Number of participants: 2
Supervisor:
Zahle, Frederik (Intern)
Main Supervisor:
Bak, Christian (Intern)

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: Samfinansieret - Andet
Project: PhD
Data driven UX engineering of cognitive interfaces for augmented hearing

Technical University of Denmark
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: 5
Phd Student:
Hicks, Jacob Bjarke Hansen (Intern)
Supervisor:
Engsig-Karup, Allan Peter (Intern)
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
Technical University of Denmark
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
Technical University of Denmark
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
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD
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)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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 Toxvaerd (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:
Psaraftis, Harilaos N. (Intern)
Jensen, Christian D. (Intern)
Sepúlveda Estay, Daniel Alberto (Intern)
Project Manager, organisational:
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

Project Manager, academic:
Dinh, Khuong Van (Intern)

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:
Giarborg, 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)
Recke, Stefan (Intern)
Main Supervisor:
Lusby, Richard Martin (Intern)

**Financing sources**
Source: Internal funding (public)
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

Technical University of Denmark
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

Department of Micro- and Nanotechnology
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

CHO cell line engineering for improved production of challenging therapeutic proteins

Technical University of Denmark
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
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: Fonde
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

Department of Micro- and Nanotechnology
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
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

Deep Metric Learning
Technical University of Denmark
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Detlefsen, Nicki Skafe (Intern)
Supervisor:
Winther, Ole (Intern)
Main Supervisor:
Hauberg, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde

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)
Main Supervisor:
Broberg, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)

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)
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: Institut stipendie (DTU)
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**
Technical University of Denmark
Period: 01/09/2017 → 31/08/2020
Number of participants: 3
Phd Student:
Limkilde, Asger (Intern)
Supervisor:
Evgrafov, Anton (Intern)
Main Supervisor:
Gravesen, Jens (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**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: Forskningsrådsfinansiering
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: Forskningsrådsstipendium
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
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

Functional Polysilazanes for Coating Applications

Department of Chemical and Biochemical Engineering
Period: 01/09/2017 → 31/01/2018
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

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

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 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

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)
Bang, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
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: 3  
Phd Student:  
Savickas, Simonas (Intern)  
Supervisor:  
Svensson, Birte (Intern)  
Main Supervisor:  
auf dem Keller, Ulrich (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)
Supervisor:
Mortensen, Niels Henrik (Intern)
Main Supervisor:
Hvam, Lars (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering m/virksomhed
Project: PhD

**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: Offentlig finansiering
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: Stipendie fra udlandet
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
Project: PhD

Real-Time Multi-Core Communication and Synchronization

Technical University of Denmark
Period: 01/09/2017 → 31/08/2019
Number of participants: 3
Phd Student:
Strøm, Tórur Biskopstø (Intern)
Supervisor:
Sparsø, Jens (Intern)
Main Supervisor:
Schoeberl, 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

Technical University of Denmark
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

Technical University of Denmark
Supporting sustainable mini-grid development and local production of wind turbines using the case of Kenya

With the long-term objective to reduce poverty, stimulate economic growth and increased sustainable energy supply, the project aims to develop a market for low-cost, partly locally produced kW wind turbines for rural electrification. The project will demonstrate the technical, social and economic feasibility of integrating a kW wind turbine into a smart solar-powered mini-grid in Kenya, and aims to develop this concept into a viable business for the private companies involved, having the technical, economic and management capacity to exploit it. The expected long term impact of the project are (i) local jobs in production, installation, O&M of low cost kW turbines in mini-grids; and (ii) reduced cost of electricity provided by minigrids, benefitting disadvantaged communities. The project will bring together communities, public institutions and commercial companies.

Department of Management Engineering
UNEP DTU Partnership
Department of Wind Energy
Integration & Planning
Department of Civil Engineering
Section for Building Energy
Sustainable energy
Kenya Climate Innovation Centre

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, Raphael (Intern)
Supervisor:
Cardenal, Silvio Javier Pereira (Intern)
Kromann, Mikkel Aabenhus (Ekstern)
Strzepek, Kenneth Marc (Ekstern)
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: Industrial PhD
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: Fonde
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)
Main Supervisor:
Andersen, Per Dannemand (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsstipendium
Project: PhD

The stochastic geometry of latent variable models

Technical University of Denmark
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: Fonde
Project: PhD

Topology of Exotic Wakes
Technical University of Denmark
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: Forskningsrådsfinansiering
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 MAX IV.

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)

Relations
Related projects:
ESS & MAX IV: Cross border science and society

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: 
Hougaard, Karin Sørig (Ekstern)  
Sørli, Jorid Birkelund (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  
Technical University of Denmark  
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: 
Kiil, 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)
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 topicalais 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

Technical University of Denmark
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

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**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

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**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

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**Machine Learning for Ultrasonic Fault Detection**

Technical University of Denmark
Period: 15/08/2017 → 14/08/2020
Number of participants: 4
Phd Student:
Jeppesen, Niels (Intern)
Supervisor:
Christensen, Anders Nymark (Intern)
Vesth, Lars (Ekstern)
Main Supervisor:
Dahl, Anders Bjorholm (Intern)

Financing sources
Numerical Modelling of Material Flow in the Resin Infusion Pultrusion Process

Department of Mechanical Engineering
Period: 15/08/2017 → 14/08/2020
Number of participants: 4
Phd Student:
Sandberg, Michael (Intern)
Supervisor:
Baran, Ismet (Intern)
Hattel, Jesper Henri (Intern)
Main Supervisor:
Spangenberg, Jon (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Real-Time Multicore Systems

Department of Applied Mathematics and Computer Science
Period: 15/08/2017 → 14/08/2020
Number of participants: 3
Phd Student:
Baris, Oktay (Ekstern)
Supervisor:
Sparsø, Jens (Intern)
Main Supervisor:
Schoeberl, Martin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
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
Configit 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)

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)

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
Technical University of Denmark
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)

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

Technical University of Denmark

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 Kjaer (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: 
Jensen, Michael Krogh (Intern)
Main Supervisor: 
Nørholm, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
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 (Ekstern)
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:
Szivaras, 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

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: 01/08/2017 → 31/07/2020
Number of participants: 4
PhD Student:
Tang Karlsen, Signe (Intern)
Supervisor:
Bælum, Jacob (Intern)
Henderson, Gemma (Ekstern)
Main Supervisor:
Lund, Ole (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
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
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 → 01/08/2017
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: §15 Re-enrolment
Project: PhD

Immune activation status as predictive marker for cancer progression

Department of Micro- and Nanotechnology
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 ovary (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
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

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:
Soler, José (Intern)
Main Supervisor:
Christiansen, Henrik Lehrmann (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
Technical University of Denmark
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
Technical University of Denmark
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
Project: PhD

Systems Genomic and Transcriptomics aproaches 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)

Related projects:
EMPIR 15SIB07 PhotoLED, Future photometry based on solid-state lighting products
Center for LED metrology
Activities:
Light source characterization and air movement under CIE S 025
Publications:
Light source characterization and air movement under CIE S 025

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
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)

Karacterisering og kvantificering af producerede nanobobler i vand
Department of Environmental Engineering
Urban Water Systems
Water Technologies
CM Aqua Technologies ApS
Water ApS
Brancheorganisationen 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

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

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

Technical University of Denmark  
Period: 01/07/2017 → 30/06/2020  
Number of participants: 4  
PhD Student:  
Krohne, Lærke Karen (Intern)  
Supervisor:  
Hansen, Lars Kai (Intern)  
Hansen, Lars Kai (Intern)  
Main Supervisor:  
Madsen, Kristoffer Hougaard (Intern)  

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

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
Technical University of Denmark
Period: 01/07/2017 → 30/06/2020
Number of participants: 3
Phd Student: Kadeethum, Teeratorn (Intern)
Supervisor: Salimzadeh, Saeed (Intern)
Main Supervisor: Nick, Hamid (Intern)
Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Portable Diagnostic Laboratory to Diagnose Thyroid Gland Related Disorders
Technical University of Denmark
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)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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)
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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:
Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**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 bioreactoris and 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)
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: Institut stipendie (DTU)
Project: PhD

KOMET-projekket (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 (IRSTEA)
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:
Arnbjerg-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)
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: Hüsey, Karin (Intern)

Financing sources
Source: Internal funding (public)

Computer- and Smartphone-based Assessment of Cognitive Functioning in Affective Disorders in Young People

Technical University of Denmark
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)

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

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:
Thormann, Esben (Intern)

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 (Eksterne)
Supervisor:
Jensen, Peter Ruhdal (Intern)
Main Supervisor:
Solem, Christian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
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 (Intern)
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: Pinelo, Manuel (Intern)
Main Supervisor: Kaiser, Andreas (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**

tavel 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
Project

**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


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
AMICa - Advanced Mapping of Industrial Capabilities for Climate

AMICa is a Climate-KIC Pathfinder project developing an advanced, data-driven and system-oriented industrial capability mapping platform. AMICa’s objective is to map worldwide industrial capabilities to support the development of new technologies, products and services with positive climate change impact. We took as an example case the development of sustainable biofuels.

Department of Management Engineering
Engineering Systems
Chalmers University of Technology
MASH Biotech ApS
Nordic Initiative for Sustainable Aviation (NISA)
Novozymes A/S
Climate KIC Nordic

Period: 10/05/2017 → 30/12/2017
Number of participants: 2
climate change, capabilities, Biofuels, Sustainability, Bioenergy
Acronym: AMICa
Project Manager, academic: Maier, Anja (Intern)
Project Coordinator: Parraguez Ruiz, Pedro (Intern)

Financing sources
Source: EU research programme (public)
Name of research programme: Climate-KIC Pathfinder
Web address: http://www.climate-kic.org
Year of approval: 2017
Project

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
Nanoscale design of Ammonia Carriers for Air Pollution Control (NANOCONTROL)
Development of materials and multilayer structures for adsorption of ammonia.

Department of Energy Conversion and Storage
Ceramic Engineering & Science
Period: 01/05/2017 → 30/04/2021
Number of participants: 1
gas adsorption, ceramic processing
Acronym: NANOCONTROL
Number of related Ph.D. students: 1
Project participant:
Kaiser, Andreas (Intern)

Trade in Environmentally Sound Technologies
The project aims to contribute towards sustainable, environmentally credible and inclusive value chain integration and trade in technologies, by providing support to developing countries to objectively assess and understand the opportunities, benefits and challenges of liberalized trade in environmentally sound technologies, including the EGA as an important means of implementation, and to host dialogues with a broad range of stakeholders to discuss EGA and environmental technology trade opportunities and perspectives in developing countries, and to build related capacities of developing country stakeholders.

Department of Management Engineering
UNEP DTU Partnership
African Centre for Technology Studies
University of Malaya
Period: 01/05/2017 → 01/06/2018
Number of participants: 3
Project participant:
Gregersen, Lucy Ellen (Intern)
Project Manager, organisational:
Nygaard, Ivan (Intern)
Project Manager, academic:
Hansen, Ulrich Elmer (Intern)
Documents:
Est trade two pager

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
Period: 01/05/2017 → 30/04/2020
Number of participants: 5
Number of related Ph.D. students: 1
PhD Student:
Kreissig, Katharina Johanna (Intern)
Supervisor:
Jensen, Pernille Erland (Intern)
Holdt, Susan Løvstad (Intern)
Jacobsen, Charlotte (Intern)
Main Supervisor:
Hansen, Lisbeth Truelstrup (Intern)

Barrierer for og potentialer ved at etablere en ræklingeproduktion i Qeqertat 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)

Large scale offshore wake impact on the Danish power system

ForskEL project from 2017: Offshore wind farm clusters are expanding. Considering the expected capacity on the order of 1 – 2 GW, it is important to understand wind power variability caused by neighbouring large wind farm wake (WFW) impact. Here we integrate calculation of WFW and important sea surface conditions to one modeling system to dynamically calculate the flow inside and around the wind farm clusters, as input to power calculation. The outputs serve farm planning and forecasting.
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), bringing 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
• Nanoplasmonic coloring
• Laser engraving on surfaces for data encryption and individual design patterns at the scale of few micrometers

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 ekstern
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
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 Subsustainability 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: Samfinansieret - Andet
Project: PhD

Environmental Sustainability Assessment of Advanced Agricultural Waste Technologies and Agricultural Territories

Department of Management Engineering
Period: 01/05/2017 → 13/08/2020
Number of participants: 4
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
Technical University of Denmark
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student:
Falster, Viggo (Intern)
Supervisor:
Aanæs, 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 → 14/12/2017
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:
Thoppe Rajendran, Sriram (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**  
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: Ardenkjær-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 Asbell (Ekstern)
Riisgaard, Benjamin (Intern)
Toftegaard, Helmuth Langmaack (Intern)
Main Supervisor:
Berggreen, Christian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
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)
Name of research programme: Fonde
Project: PhD

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
Danish seaweed resources - for food, feed and as a helping hand to the marine environment (Tang.nu) (39442)

The overall goal of Tang.nu is to change the flow of nutrient from land to sea from a linear flow where excess nutrients are lost and causes problems with eutrophication, to a circular flow where cultivation and harvest of seaweed will contribute to recapture the nutrients and put them back into the bio-economical system on land.

Seaweed is a valuable resource presently used e.g. in production of food and feed products. Tang.nu will increase the pull and push mechanisms in the seaweed value chain. This will be done by supporting producers (public, commercial, private), and buyers (businesses (feed and food), agriculture, aquaculture, citizens) – partly by documenting the value of seaweed as a bioactive feed additive, and partly by gathering existing knowledge about seaweed legislation and composition and make it publicly assessable.

All part components of the project will be put together in an analysis and a documentation of seaweed cultivation and harvest as a tool to recirculate nutrients from the sea and back on land as a mean of a future sustainable use of bio-resources.

Tang.nu will deliver essential results for future legislation concerning food and feed safety and marine management and will furthermore add to groundwork for the establishment of a balanced and sustainable management of production systems at sea and on land.

This project is coordinated by Aarhus University and funded by the Velux Foundations.

National Food Institute
National Institute of Aquatic Resources
Danish Shellfish Centre
Aarhus University
Roskilde University
Kattegatcentret
Teknologisk Institut
Fødevarestyrelsen
SEGES, Danish Agriculture & Food Council,
Økologisk landsforening
Seaweed Societe
Multidyk
Nordisk Tang
Bisserup Havbrug
Havhaverne i Ebeltoft Vig

Fjordgaverne
Period: 01/04/2017 → 31/12/2020
Number of participants: 2
Research area: Shellfish and seaweed: Biology, production and management
Phd Student:
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
Electric power system, Demand, Frequency control, Electric vehicles, Distributed energy resources, distribution system operation
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)
Zecchino, Antonio (Intern)
Thingvad, Andreas (Intern)
Pedersen, Anders Bro (Intern)
Project Coordinator:
Marinelli, Mattia (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 Ter- minals – 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)

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

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

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: 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

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

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
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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

Technical University of Denmark
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 processchains 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)
Hardar, 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: Industrial PhD
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)
**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:  
Gansukh, Mungunshagai (Intern)  
Supervisor:  
Schou, Jørgen (Intern)  
Main Supervisor:  
Canulescu, Stela (Intern)

**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)

**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)
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:
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)
Main Supervisor: Kiebach, Wolff-Ragnar (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
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 (Ekstem)
Tcherniak, Dmitri (Intern)
Main Supervisor: Thomsen, Jon Juel (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

Wastewater Treatment Textbook revision
Revision of 3’d edition

Department of Environmental Engineering
Period: 01/04/2017 → 31/12/2017
Number of participants: 1
Project participant: Arvin, Erik (Intern)

2-Dimensional Materials as Substrate and base materials for catalytic reactive centers

Department of Physics
**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)

**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**

Technical University of Denmark

**Development of novel drug delivery systems for cancer immunotherapy**

Department of Micro- and Nanotechnology
Main Supervisor: Andresen, Thomas Lars (Intern)

**Financing sources**
- Source: Internal funding (public)
- Name of research programme: Offentlig finansiering
- Project: PhD

**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)
- Name of research programme: Offentlig finansiering
- Project: PhD

**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)
- Name of research programme: Samfinansieret - Andet
- Project: PhD

**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)
- Supervisor: Jensen, Jørgen Arendt (Intern)
- Larsen, Niels Bent (Intern)
- Main Supervisor: Thomsen, Erik Vilain (Intern)

**Financing sources**
- Source: Internal funding (public)
- Name of research programme: Offentlig finansiering
- Project: PhD
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: Samfinansieret - Andet  
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)  
Kristensen, Niels Heine (Ekstern)  
Mayland, Søren (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
**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 participants:**
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 participants:**
Ebert, Ute (Ekstern)
Füllekrug, Martin (Ekstern)
Østgaard, Nikolai (Ekstern)
Nijdam, Sander (Ekstern)
Vazquez, Francisco Gordillo (Ekstern)
Soula, Serge (Ekstern)
Montanya, Joan (Ekstern)
Lorenzo-Prado, Victor P. (Ekstern)
Bennet, Alec (Ekstern)

**Project Coordinator:**
Neubert, Torsten (Intern)

**Project**
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.
Green growth, Regional development, Technological change, Innovation policy, Innovation systems

Acronym: GONST

Project participant:
Tanner, Anne Nygaard (Intern)
Faria, Lourenco (Intern)
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

Department of Micro- and Nanotechnology
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: Institut stipendie (DTU)
Project: PhD

Development of 3-demensional 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:
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: Samfinansieret - Andet
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

Korean Advanced Institute of Science and Technology (KAIST)
Period: 01/03/2017 → 31/03/2023
Number of participants: 15
Acronym: iimena
Project participant:
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)
Theobald, Sebastian (Intern)
Gren, Tetiana (Intern)
Mohite, Omkar Satyavan (Intern)
Project Manager, organisational:
Kjiproski, Darko (Intern)
Lohmann, Ricarda (Intern)
Rasmussen, Birte Kastrup (Intern)
Project Coordinator:
Weber, Tilmann (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
The antiSMASH platform: A comprehensive framework for secondary metabolite genome mining and analysis
Lectures on antibiotics biosynthesis: polyketides, aminoglycosides, RiPPs and others
In silico and experimental approaches to understand and engineer the biosynthesis of antibiotics
Publications:
Recent development of computational resources for new antibiotics discovery
Towards systems metabolic engineering of streptomycetes for secondary metabolites production
antiSMASH 4.0-improvements in chemistry prediction and gene cluster boundary identification
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)
Millions for research into antibiotic resistance and better drugs
Scientists solve 30-year old mystery on how resistance genes spread
Research program on new antibiotics receives 58 M DKK

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
**Optimization of antibiotic therapy in mink - MIC values and consumption**

National Food Institute  
Period: 01/03/2017 → 29/02/2020  
Number of participants: 5  
Phd Student: Nikolaisen, Nanett Kvist (Intern)  
Supervisor: Chriél, Mariann (Intern)  
Larsen, Peter Føged (Intern)  
Struve, Tina (Intern)  
Main Supervisor: Pedersen, Karl (Intern)

**Financing sources**
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
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: Lavrenenko, 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

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, Nickolaj Feldt (Intern)
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
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)

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)

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)

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: PhD

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: PhD

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:
văn Deurs, Mikael (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet

Relations
Activities:
Forvaltning af Tobis i Nordsøen
ICES - Herring Assessment Working Group for the Area South of 62ºN - HAWG
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
Evaluate and Establish Surveillance program of Salmonella in Imported and domestic Poultry Meat in Jordan

National Food Institute
Period: 15/02/2017 → 14/05/2019
Number of participants: 3
Phd Student:
Hantash, Tariq (Ekstern)
Supervisor:
Alali, Walid (Ekstern)
Main Supervisor:
Vigre, Håkan (Intern)

Financing 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 → 14/05/2019
Number of participants: 3
Phd Student:
Hantash, Tariq (Ekstern)
Supervisor:
Alali, Walid (Ekstern)
Main Supervisor:
Vigre, Håkan (Intern)

Financing 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)
Financing 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)
Chtyka, 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

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 (Intern)
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
Project

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)
Project

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
Nurse Rostering, Integer Programming, Scheduling
Project participant:
Bagger, Niels-Christian Fink (Intern)
Project

Environment in Manufacturing
Embedding sustainability metrics in the planning and operation of high volume production lines
Department of Management Engineering
Quantitative Sustainability Assessment
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

SOFC, oxide spinel, SEM-EDS, microstructure, thermal analysis, electrochemistry, Nanofibers, crystallography

Action Model Learning for Multi-agent Systems

Technical University of Denmark

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

Phd Student: Lylloff, Oliver Ackermann (Intern)

Supervisor: Bak, Christian (Intern)

Fernandez Grande, Efren (Intern)

Main Supervisor: Fischer, Andreas (Intern)

Financing sources
Airborne and satellite remote sensing for hydrologic modelling applications

Department of Environmental Engineering
Period: 01/02/2017 → 31/01/2020
Number of participants: 4
PhD Student:
Kittel, Cecile Marie Margaretha (Intern)
Supervisor:
Garcia, Monica (Intern)
Tøttrup, Christian (Ekstern)
Main Supervisor:
Bauer-Gottwein, Peter (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

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: Samfinansieret - Andet
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: Grundforskningsfonden
Project: PhD

CFD Modelling of dynamic microfiltration for application in biotechnology processes

Department of Chemical and Biochemical Engineering
**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:** Marie Curie (EU-stipendium)  
**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)  
**Main Supervisor:** Mijatovic, Nenad (Intern)  

**Financing sources**  
**Source:** Internal funding (public)  
**Name of research programme:** Samfinansieret - Andet  
**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)  
**Main Supervisor:** Kegnæs, Søren (Intern)  

**Financing sources**  
**Source:** Internal funding (public)  
**Name of research programme:** Forskningsrådsfinansiering
**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 Kjaer (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)

Financial 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)

Financial 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)

Financial 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

Technical University of Denmark
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 → 30/04/2017
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:
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
Department of Micro- and Nanotechnology
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

A Biomimetic Learning Control Scheme for control of Modular Robots

Department of Electrical Engineering
Automation and Control
Centre for Playware
Period: 16/01/2017 → 14/01/2019
Number of participants: 1
Acronym: Biomodular
Project applicant: Tolu, Silvia (Intern)

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)
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)

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, Minhao (Intern)
Main Supervisor:
Ou, Haiyan (Intern)

Financing sources
Source: Internal funding (public)

Numerical Uncertainty Quantification for Stochastic Wave Loads

Technical University of Denmark
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)

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
Marine Renewable Infrastructure Network for Enhancing Technologies 2
Integrating activities planned under MaRINET 2 build upon the achievements of the advanced community created in MaRINET FP7. MaRINET 2 will ensure the continued integration and enhancement of all leading European research infrastructure and facilities specialising in research, development and testing of offshore renewable energy systems including electrical sub systems and grid integration through a range of TRLs (1-7).

Department of Wind Energy

Resource Assessment Modelling
Period: 01/01/2017 → 31/12/2020
Number of participants: 1
Offshore Energy, infrastructure
Acronym: MaRINET2
Project participant:
Sempreviva, Anna Maria (Intern)

Relations
Related projects:
EU ORECCA: Off-shore Renewable Energy Conversion platforms – Coordination Action
Integrated Research Programme in Wind Energy
Activities:
MARINET2. A European network of marine renewables infrastructures
Project

Nanofiber structures for efficient enzyme immobilization in membrane applications
International Network Project between DTU and Mahatma Gandhi University (MGU) and other partners from India

Department of Energy Conversion and Storage

Ceramic Engineering & Science
Period: 01/01/2017 → 31/12/2017
Number of participants: 1
Membranes, electrospinning, water filtration, ceramic processing, nanofibers, enzymes
Project ID: 6144-00035A
Project participant:
Kaiser, Andreas (Intern)
Project

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
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 new methods for preventing and treating 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)
Project

Reduktion af risiko for overtemperatur 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
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
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

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

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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)

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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)

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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
University of Copenhagen
Aarhus University
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.

Department of Energy Conversion and Storage

Electrofunctional materials

Period: 01/01/2017 → 31/12/2018
Number of participants: 1
Acronym: NOVELTEC
Project Coordinator:
Van Nong, Ngo (Intern)

Project
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 indispensible 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)
Gömöry, 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, Aleksandr (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 (Ekstern)
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 Drup Development

Technical University of Denmark

Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Matias, Carina Sofia Silva (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
Project: 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:
Hilстрøm, 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 the Life Sciences

Technical University of Denmark
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)

Technical University of Denmark
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)
Olsen, Thomas (Intern)
Main Supervisor:
Jacobsen, Karsten Wedel (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

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
adaptation, innovation, water, sustainability
Acronym: c2c cc
Project participant:
Sørensen, Carlo Sass (Intern)

Relations
Activities:
Kick off Coast to Coast Climate Challenge
Project

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 Cabañeros (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:
Garcia 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 ekstern
Project: PhD

Development of improved neoepitope vaccination through elucidation of patients naïve T-cell repertoire

Department of Micro- and Nanotechnology
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)
Main Supervisor:
Clausen, Mads Hartvig (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**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: Industrial PhD
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)
Relations
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:
New dental applications with LEDs
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)
Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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 São Paulo
Period: 01/01/2017 → 30/06/2019
Number of participants: 2
oligosaccharides, enzymes
Acronym: NOBLE
Project ID: 5133-00006B
Project Coordinator:
Bang-Berthelsen, Iben (Intern)

Financing sources
Source: Public research council
Name of research programme: InnvationsFonden
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 buttery 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

NOPROBLEM - Novel tasty dairy products obtained through intelligent resource management
Diacetyl, an important contributor to the buttery 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

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)
Optimised Combinatorial Construction using Algorithms (OCCA)

Department of Management Engineering
Period: 01/01/2017 → 31/12/2019
Number of participants: 5
Phd Student:
Kollsker, Torkil (Intern)
Supervisor:
Røpke, Stefan (Intern)
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)
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:
García Lastra, Juan Maria (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

The Statistics of Estimated Surfaces
Technical University of Denmark
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
Technical University of Denmark
Period: 01/01/2017 → 31/12/2019
Number of participants: 3
Phd Student:
Rasmussen, Christoffer (Intern)
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:
Stolpe, Mathias (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
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 → 28/02/2018
Number of participants: 6
Project participant:
Pilegaard, Kirsten (Intern)
Ravn-Haren, Gitte (Intern)
Eriksen, Folmer Damsted (Intern)
Olesen, Pelle Thonning (Intern)
Egebjerg, Mikael Mandrup (Intern)
Bredsdorff, Lea (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
Advanced neutron imaging of energy devices in 2D and 3D

Department of Energy Conversion and Storage

Department of Physics

Neutrons and X-rays for Materials Physics
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:
Jennun, 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
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: 5
Phd Student:
Manuzzi, Alice (Intern)
Supervisor:
Bekkevold, Dorte (Intern)
Bennett, Michael B. (Ekstern)
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

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 (Intern)
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)
Supervisor:
Ding, Yunhong (Intern)
Hu, Hao (Intern)
Main Supervisor:
Galili, Michael (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

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:
Caviedes Nozal, Diego (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: Samfinansieret - Andet
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: Forskningsrådsfinansiering
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)  
Project: PhD  

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 → 12/04/2017
Number of participants: 5
Acronym: Hotpep-carbohydrate
Project participant:
Busk, Peter Kamp (Intern)
Pilgaard, Bo (Intern)
Lezyk, Mateusz Jakub (Intern)
Meyer, Anne S. (Intern)
Lange, Lene (Intern)

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

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

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(1/)
Technical University of Denmark  
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:
Andresi Bassi, Susanna (Intern)
Supervisor:
Boldrin, Alessio (Intern)
Main Supervisor:
Astrup, Thomas Fruergaard (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 → 14/08/2020
Number of participants: 3
Phd Student:
Xanthopoulou, Larisa (Intern)
Supervisor:
Baun, Anders (Intern)
Main Supervisor:
Astrup, Thomas Fruergaard (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Computer Vision for Flexible Automation
Technical University of Denmark
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student:
Hannemose, Morten (Intern)
Supervisor:
Savarimuthu, Thiusius 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
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 (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)
Hansen, Lisbeth Truelstrup (Intern)
Main Supervisor:

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Efficient Operation of Energy Grids

Technical University of Denmark
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
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student:
Gary, Magnus (Intern)
Supervisor:
Hansen, Mette Sanne (Intern)
Kreye, Melanie (Intern)
Main Supervisor:
Perunovic, Zoran (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

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
Technical University of Denmark
Period: 01/12/2016 → 05/01/2018
Number of participants: 3
Phd Student:
Birkedal, Rasmus (Intern)
Supervisor:
Lluch Lafuente, Alberto (Intern)
Main Supervisor:
Mödersheim, Sebastian Alexander (Intern)

Financial sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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)
Supervisor:
Lund, Ole (Intern)
Pamp, Sünje Johanna (Intern)
Vigre, Håkan (Intern)
Main Supervisor:
Aarestrup, Frank Møller (Intern)

Financial sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Impact of low-grade inflammation on influenza
Department of Systems Biology
Period: 01/12/2016 → 30/11/2019
Number of participants: 5
Phd Student:
Starbæk, Sofie Maiken Riisgård (Intern)
Supervisor:
Heegaard, Peter Mikael Helweg (Intern)
Jungersen, Gregers (Intern)
Larsen, Lars Erik (Intern)
Main Supervisor:
Skovgaard, Kerstin (Intern)

Financial 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)
Supervisor:
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 → 28/01/2020
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 Institute of Aquatic Resources
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)
Project: PhD

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 Nanotechnology
Period: 01/12/2016 → 30/11/2019
Number of participants: 4
Phd Student:
Lassen, Rasmus Mikkel Münter (Intern)
Supervisor:
Kristensen, Kasper (Intern)
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

Technical University of Denmark
Period: 15/11/2016 → 14/11/2019
Number of participants: 3
Phd Student:
Gawrilowicz, Florian (Intern)
Supervisor:
Dahl, Anders Bjorholm (Intern)
Main Supervisor:
Baarentzen, Jakob Andreas (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

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: Institut stipendie (DTU)
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: Samfinansieret - Andet
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
Project: PhD

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)
Project

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 Roskildes 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

Department of Wind Energy
Meteorology & Remote Sensing
Test and Measurements
Integration & Planning

Musicon
EMD International A/S
Period: 01/11/2016 → 31/01/2018
Number of participants: 7
Acronym: VIROS
Project participant:
Kock, Carsten Weber (Intern)
Clausen, Niels-Erik (Intern)
Kjær, Tyge (Ekstern)
Sander, Mikkel (Ekstern)
Hermansen, Søren (Ekstern)
Project Manager, organisational:
Dellwik, Ebba (Intern)
Project Manager, academic:
Abrahamsen, Asger Bech (Intern)

Financing sources
Source: Other public support (public)
Name of research programme: Klimafonden Roskilde Kommune
Web address: http://roskilde.dk/klimafond
Amount: 110,000.00 Danish Kroner
Year of approval: 2016
Documents:
VindIROSkilde_Informøde_ByensHus_23Jan2018
VindIROSkilde_dk_Abrahamsen_1marts2017_Endelig_kort
VindIROSkilde_Abrahamsen_KMU_4April2017_kort
VindIROSkilde_KlimarådetRoskildeKommune_Abrahamsen_2November2017_omdeling
VindIROSkilde_Klima Og Miljø Udvalget_Abrahamsen_5Dec2017_omdeling
Report_group_8_Roskilde
Report_Group11_RoskildeMunicipality
Invitation_infomøde_VindIROskilde_ByensHus_23Jan2018

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:
vander Laan, Paul (Intern)
Documents:
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
Period: 01/11/2016 → 31/12/2016
Number of participants: 2
Concentrating solar collectors, tracking
Acronym: ABSOLICON
Project participant:
Furbo, Simon (Intern)
Perers, Bengt (Intern)

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)
Fuldautomatisk decentral rensning af partikler i regnbetingede udlødninger

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

Department of Micro- and Nanotechnology
Period: 01/11/2016 → 31/10/2019
Number of participants: 3
Phd Student:
Garcia Lopez, Agnes (Intern)
Supervisor:
Bekiaris, 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
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: Samfinansieret - Andet
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: Marie Curie (EU-stipendium)
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: Institut stipendie (DTU)
Project: PhD

**New approaches to chemical recovery and chelation of underdeveloped radiometals and application of their novel bioconjugates to PET**
Department of Chemistry
Period: 01/11/2016 → 31/10/2019
Number of participants: 3
Phd Student: Pedersen, Kristina Søborg (Intern)
Supervisor: Jensen, Mikael (Intern)
Main Supervisor: Zhuravlev, Fedor (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**New Multi-Modal Registration Methods: Application in Fetal Image Reconstruction**
Technical University of Denmark
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 Bagh (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:
Rensberg, 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
Period: 01/11/2016 → 31/10/2019
Number of participants: 3
Phd Student:
Goodarzi, Farnoosh (Intern)
Supervisor:
Joensen, Finn Høgni (Ekstern)
Main Supervisor:
Kegnæs, Søren (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

**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:
Schuetz, Charlotte (Intern)
Main Supervisor:
Kjeldsen, Peter (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
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: Institut stipendie (DTU)
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
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

4D Seismics for Fracture Characterization
Department of Physics
Period: 15/10/2016 → 14/10/2019
Number of participants: 2
Phd Student:
Søren 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:
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)
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)
Supervisor:
Almdal, Kristoffer (Intern)
Andresen, Thomas Lars (Intern)
Main Supervisor:
Kamaly, Nazila (Intern)

Financing sources
Source: Internal funding (public)

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)

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)

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 (Intern)
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:
Kil, 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)
Supervisor:
Faber, Michael Havbro (Intern)
Sørensen, John Dalsgaard (Intern)
Main Supervisor:
Thöns, Sebastian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
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:
Irman, Arifian Agusta (Intern)
Supervisor:
Faber, Michael Havbro (Intern)
Sørensen, John Dalsgaard (Intern)
Main Supervisor:
Thöns, Sebastian (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Self-regulating integrated ceiling solutions for heating, cooling, ventilation and acoustics in buildings based on renewable energy sources
Department of Civil Engineering
Period: 15/10/2016 → 14/10/2019
Number of participants: 4
Phd Student:
Krusaa, Marie Rugholm (Intern)
Supervisor:
Hviid, Christian Anker (Intern)
Søndergård, Elin (Ekstern)
Main Supervisor:
Kolarik, Jakub (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD
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 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 project 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
**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

**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

**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
Year of approval: 2016

Project

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 Produktions 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
Number of related Ph.D. students: 3
Project participant:
Marti, Dominik (Intern)
Jensen, Ole Bjarlin (Intern)  
Hansen, Anders Kragh (Intern)  
Project Coordinator:  
Andersen, Peter E. (Intern)  

**Relations**  
Related projects:  
Multimodal Biophotonics Imaging of Biomarkers for Bladder Cancer Project  

**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
Integrated omics approach to identifying mechanisms of evolved tolerance to biobased chemical products

We propose to employ EMSL resources to identify the functional mechanisms for chemical tolerance in E. coli isolates that have been evolved to grow in high concentrations of chemicals that are of interest for production as bulk biochemicals or biofuels. The chemical-tolerant strains to be investigated were obtained from a series of adaptive laboratory evolutions performed at the Center for Biosustainability (CFB). In FY2016, we specifically focused on the functional effects of cell wall and membrane-related mutations in a small set of strains. In FY2017, our aim is to characterize additional re-sequenced isolates, including those that do not have obvious cell wall or membrane-related mutations, through compositional profiling of membrane and cytoplasmic proteins, lipids, and intracellular metabolites using mass spectrometry. Additionally, transcriptional profiling of these strains is proposed through RNA sequencing. A further focus will be placed on isolates that exhibit increased endogenous production of the chemical. This information is expected to generate biological knowledge that will close the gap between genotype and phenotype.

Novo Nordisk Foundation Center for Biosustainability

Research Groups

iLoop

Bacterial Cell Factory Optimization
Period: 01/10/2016 → 30/09/2017
Number of participants: 3
Project participant:
Lennen, Rebecca (Intern)
Malla, Sailesh (Intern)
Aragão Börner, Rosa (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

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

Modeling of Large-Scale Electricity Storage Systems based on Pressurized Reversible Solid Oxide Cells
Master of Science Thesis
Department of Mechanical Engineering
Thermal Energy
Risø National Laboratory for Sustainable Energy
Department of Energy Conversion and Storage
Applied Electrochemistry
Period: 01/10/2016 → 28/02/2017
Number of participants: 4
Natural Gas, Electricity Storage, Natural gas grid, Pressurized Solid Oxide Cells, Highly Efficient Storage, Bio-Syngas Upgrade
Project participant:
Butera, Giacomo (Intern)
Supervisor:
Jensen, Søren Højgaard (Intern)
Campanari, Stefano (Ekstern)
Main Supervisor:
Clausen, Lasse Røngaard (Intern)
Documents:
Giacomo_Butera_Master_Thesis_2015_2016

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:
Plósz, Benedek G. (Intern)
Krog, Jesper Schak (Intern)
Larsen, Inge (Ekstern)
Main Supervisor:
Larsen, Lars Erik (Intern)

Financial 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 → 28/02/2018
Number of participants: 3
Phd Student:
Nielsen, Kristian Ege (Intern)
Supervisor:
Mosegaard, Henrik (Intern)
Main Supervisor:
Hüsy, Karin (Intern)

Financial 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)

Financial 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 → 12/01/2020
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)

Financial 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)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

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:
Bidadfar, Ali (Intern)
Supervisor:
Akhmatov, Vladislav (Intern)
Altin, Müfit (Intern)
Cutululis, Nicolaos Antonio (Intern)
Main Supervisor:
Sørensen, Poul Ejnar (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Anden EU-finansiering
Project: PhD

Data analysis methods for process understanding and improvement in injection moulding production

Technical University of Denmark
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)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

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: Marie Curie (EU-stipendium)
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**
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)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

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)

**Financing sources**
- Source: Internal funding (public)
- Name of research programme: Eksternt finansieret virksomhed
- Project: PhD

**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
Technical University of Denmark
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

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 (Intern)
Supervisor:
Clausen, Mads Hartvig (Intern)
Main Supervisor:
Madsen, Robert (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Fonde
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)
Liang, Xiaodong (Intern)
Liang, Xiaodong (Intern)
Main Supervisor:
Kontogeorgis, Georgios (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)
Rindzvevicius, 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

Name of research programme: Institut stipendie (DTU)
Project: PhD
Production performance of radial water-jet drilled wells: a modelling and laboratory study

Technical University of Denmark
Period: 01/10/2016 → 30/09/2019
Number of participants: 4
PhD Student:
Medetbekova, Maiya (Intern)
Supervisor:
Christensen, Helle Torp (Intern)
Salmzadeh, Saeed (Intern)
Main Supervisor:
Nick, Hamid (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Rasonant 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: Samfinansieret - Andet
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: Eksternt finansieret virksomhed
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)
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: Fonde
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: Samfinansieret - Andet
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 → 18/02/2020
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 Sigurdardóttir, 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 → 18/01/2020
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 → 17/08/2020
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

Technical University of Denmark
Period: 15/09/2016 → 14/09/2019
Number of participants: 3
Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

Tool Sets for System Operators in Future Market Setting
Department of Electrical Engineering
Period: 15/09/2016 → 25/04/2020
Number of participants: 3
Phd Student:
Heinrich, Carsten (Intern)
Supervisor:
You, Shi (Intern)
Main Supervisor:
Bindner, Henrik W. (Intern)

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:
Garcia 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)
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 project 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)
Project Manager, academic:
Behrens, Jane (Intern)
Project

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:
Ale, Marcel Tutor (Intern)
Main Supervisor:
Meyer, Anne S. (Intern)
Project

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:
Ale, Marcel Tutor (Intern)
Main Supervisor:
Meyer, Anne S. (Intern)

Relations
Parent project:
Seaweed Biorefinery in Ghana

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:
**Bekæmpelse af ESBL producerende, colistin og multiresistente Salmonella og E. coli**

National Food Institute  
Research Group for Genomic Epidemiology  
University of Copenhagen  
Period: 01/09/2016 → 31/12/2016  
Number of participants: 1  
ESBL, colistin, phage  
Project participant:  
Bortolaia, Valeria (Intern)

**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)  
Physikalisch-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**
**Relations**

**Related projects:**

- Center for LED metrology
- Tests and standards for SSL products - IEA-4E-SSL
- Global Test of SSL Products - IEA-4E-SSL

**Activities:**

- CIE Division 2 Annual Meeting 2017
- 41792 Measurement uncertainty estimation using statistical methods
- CIE Tutorial and Practical Workshop on LED Lamp and Luminaire Testing to CIE S 025
- CIE 2017 Mid-term meeting Jeju Island

Danish national CIE committee (External organisation)

- CIE TC 2-51: Calibration, Characterisation and Use of Array Spectroradiometers (External organisation)
- CIE TC 2-80: Spectroradiometric measurement of light sources (External organisation)

Activities in the standardisation of light sources and spectroradiometer calibration

- CIE TC 2-79: Integrating Sphere Photometry and Spectroradiometry (External organisation)
- CIE TC 2-85: Recommendation on the geometrical parameters for the measurement of the Bidirectional Reflectance Distribution Function (BRDF) (External organisation)

**LED possibilities and challenges**

**Publications:**

- Determination of illuminants representing typical white light emitting diodes sources

**Documents:**

- 15SIB07_Publishable_Summary

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**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)

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**Postdoc**

Department of Micro- and Nanotechnology
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

Abstract Interpretation for Secure Information Flow

Technical University of Denmark

Catalytic Oxidation of CH4

Department of Chemical and Biochemical Engineering

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
Technical University of Denmark
Period: 01/09/2016 → 31/08/2019
Number of participants: 3
Phd Student:
Lindborg, Alma Cornelia (Intern)
Supervisor:
Mørup, Morten (Intern)
Main Supervisor:
Andersen, Tobias (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

**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:
Kirchübel, Denis (Intern)
Supervisor:
Lind, Morten (Intern)
Main Supervisor:
Ravn, Ole (Intern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

**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**
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

**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**
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD
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)
Main Supervisor:
Abildskov, Jens (Ekstern)

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:
Liang, Xiaodong (Intern)
Liang, Xiaodong (Intern)
Main Supervisor:
Kontogeorgis, Georgios (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 → 21/03/2020  
Number of participants: 3  
Phd Student:  
Subko, Karolina (Intern)  
Supervisor:  
Frisvad, Jens Christian (Intern)  
Main Supervisor:  
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
Technical University of Denmark
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Larsen, John Bruntse (Intern)
Supervisor:
Carstens, Niels (Ekstern)
Holst, Carsten Kehler (Ekstern)
Main Supervisor:
Villadsen, Jørgen (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Identification of bacterial functional modules applicable for management of gut homeostasis
Technical University of Denmark
Period: 01/09/2016 → 07/03/2020
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: Fonde
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: Samfinansieret - Andet
Project: PhD

In-situ and Personalized Cognitive Behavioural Therapy for Mental Health
Technical University of Denmark
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Rohani, Darius Adam (Intern)
Supervisor:
Kessing, Lars Vedel (Ekstern)
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:
Fehrman, 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

Technical University of Denmark
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 → 30/09/2017  
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**

Technical University of Denmark  
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
Technical University of Denmark
Period: 01/09/2016 → 31/05/2017
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)
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)

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)

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)

Optimized water distribution using high-resolution data sources and novel data analysis methods

Department of Environmental Engineering
Period: 01/09/2016 → 14/10/2019
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

Technical University of Denmark
Period: 01/09/2016 → 31/08/2019
Number of participants: 4
Phd Student:
Gangstad, Sirin Wilhelmsen (Intern)
Supervisor:
Duun-Henriksen, Jonas (Intern)
Kjaer, 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
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

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-prole technique, i.e. the two-level undercut-prole substrate (2LUPS) concept [1]-[2], used for production of multi-lametary 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 surfaceproles as those achieved by the 2LUPS concept [5], which is based on two levels of plateaus connected via an undercut-prole, is investigated. The undercut-prole should be large enough to enable a shading eect 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-prole 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-prole is sucient, an electrically insulating layer of SiO, simulating the buer 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-proles will also enable lamentation of superconductors produced by PVD processes. A small caveat to these ndings, is the lack of a suitable prole for the use in CC fabrication being manufactured in this project. The adhesive in the masking tape creates bulges or protrusions in the prole, so a further study on thinner adhesive layers or a dierent 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

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**

Department of Energy Conversion and Storage  
Period: 15/08/2016 → 15/08/2017  
Number of participants: 4  
PhD Student:  
Vinkel, Nadja Maria (Intern)  
Supervisor:  
Akhtar, Farid (Ekstern)  
Zhang, Wenjing (Angela) (Intern)  
Main Supervisor:  
Kaiser, Andreas (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Forskningsrådsfinansiering  
Project: PhD

**Co-electrolysis SOEC**

Department of Energy Conversion and Storage  
Period: 15/08/2016 → 14/08/2019  
Number of participants: 3  
PhD Student:  
Rao, Megha (Intern)  
Supervisor:  
Sun, Xiufu (Intern)  
Main Supervisor:  
Hagen, Anke (Intern)  

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Anden EU-finansiering  
Project: PhD

**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
Period: 15/08/2016 → 15/08/2018
Number of participants: 8
Research areas: Ecosystem based Marine Management & Fish Biology & Marine Populations and Ecosystem Dynamics & Population Genetics & Marine Living Resources & Fisheries Management
Project participant:
Storr-Paulsen, Marie (Intern)
Tomkiewicz, Jonna (Intern)
Hansen, Jakob Hemmer (Intern)
Neuenfeldt, Stefan (Intern)
Christensen, Asbjørn (Intern)
Kindt-Larsen, Lotte (Intern)
Berg, Casper Willestofte (Intern)
Project Coordinator:
Eero, Margit (Intern)

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
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)
Project

**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)
Project

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)
Project

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)
Project

Agil stage-gate: Ny innovationsmodel for mellemstore danske produktionsvirksomheder
Department of Management Engineering
Management Science
Implementation and Performance Management
Dansk Industri
Gemba Innovation A/S
Period: 01/08/2016 → 31/05/2018
Number of participants: 2
Acronym: Agile Stage-Gate
Project participant:
Nardelli, Giulia (Intern)
Project Manager, organisational:
Edwards, Kasper (Intern)

Relations
Publications:
Værktøjskasse til Agil Stage-Gate®: Ny model for udviklingsprojekter i mellemstore virksomheder
Agil Stage-Gate®: ny model for udviklingsprojekter i mellemstore virksomheder
Project
**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)
Sørensen, 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
Project: PhD

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)
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

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 (Intern)
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 → 30/11/2017
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
Technical University of Denmark
Period: 01/08/2016 → 31/07/2019
Number of participants: 3
Phd Student:
Lyngsie, Kasper Szabo (Intern)
Supervisor:
Gertz, 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
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 Elmeekilde (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**
Technical University of Denmark
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**
Technical University of Denmark
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)

**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:
Identification of virulence markers in two Novirhabdoviruses causing serious diseases in fish

National Institute of Aquatic Resources
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

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

SDE-modelling in CITIES

Technical University of Denmark
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:
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

Project

**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:

García, Monica (Intern)

Vicente-Serrano, Sergio (Ekstern)

Project

**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)

Project

**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 nº 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)

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)

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)
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)
Thøns, 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:
Morales Vicente, Alvaro (Intern)
Main Supervisor:
Tafur Monroy, Idelfonso (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Marie Curie (EU-stipendium)
Project: PhD

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: Offentlig finansiering
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: Forskningsrådsfinansiering
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:
Ciacetich, 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

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
Technical University of Denmark
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 Manno-oligosaccharides 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 Manno-oligosaccharides 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)
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

Optimized real-time management of interacting water systems for a smarter city
Department of Environmental Engineering
Period: 01/07/2016 → 28/07/2019
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: Samfinansierede - Virksomhed
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)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansierede - Virksomhed
Project: PhD

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
**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)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Samfinansieret - Andet  
Project: PhD

**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)  
Hansen, Lisbeth Truelstrup (Intern)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Institut stipendie (DTU)  
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)

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Unknown  
Project: PhD
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)

**Project**

**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:
  Stolfi, Alessandro (Intern)

**Project**

**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 fishderived 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
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

Period: 01/06/2016 → 31/05/2019
Number of participants: 2
Acronym: MetAMMI
Project participant:
Stolfi, Alessandro (Intern)
Project Manager, academic:
De Chiffre, Leonardo (Intern)

Relations
Publications:
MetAMMI - Metrology for additively manufactured medical implants
Project

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
Period: 01/06/2016 → 06/09/2019
Number of participants: 5
nanophotonics, Metamaterials, Hyperbolic Metamaterials, Biophotonics, imaging, microscopy
Acronym: DarkSILD
Project ID: 70943
Number of related Ph.D. students: 1
Project participant:
Novitsky, Andrey (Intern)
Takayama, Osamu (Intern)
Shkondin, Evgeniy (Intern)
Phd Student:
Repän, Taavi (Intern)
Project Manager, academic:
Lavrinenko, Andrei (Intern)

Relations
Publications:
Highly doped InP as a low loss plasmonic material for mid-IR region
Operator approach to effective medium theory to overcome a breakdown of Maxwell Garnett approximation
Dark-field hyperlens: Super-resolution imaging of weakly scattering objects
Dark-field hyperlens for high-contrast sub-wavelength imaging

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 be 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
Electric power systems
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
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

NordForsk topical network on Engineering, processes and real-space imaging

3D image analysis methods for security X-ray screening
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**
Technical University of Denmark
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: Borghi, 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
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

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: Marie Curie (EU-stipendium)
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:
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: Samfinansieret - Andet
Project: PhD

Development and characterisation of two animal models (osteomyelitis and exudative epidermitis) for testing a MRSA vaccine
Department of Systems Biology
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: Forskningsrådsfinansiering
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
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: Oxenløwe, Leif Katsuo (Intern)
Yankov, Metodi Plamenov (Intern)
Zibar, Darko (Intern)
Main Supervisor: Forchhammer, Søren (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU)
Project: PhD

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)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

Modelling of the load carrying capacity of concrete bridges in conjunction with in-situ monitoring
Department of Civil Engineering
Period: 01/06/2016 → 31/05/2019
Number of participants: 4
Phd Student:
Jensen, Thomas Westergaard (Intern)
Supervisor:
Hoang, Linh Cao (Intern)
Schmidt, Jacob Wittrup (Intern)
Main Supervisor:
Poulsen, Peter Noe (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Industrial PhD
Project: PhD

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

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**Social Spreading in Complex Networks**  
Technical University of Denmark  
Period: 01/06/2016 → 31/05/2019  
Number of participants: 3  
Phd Student:  
**Mønsted, Bjarke March (Intern)**  
Supervisor:  
**Mørup, Morten (Intern)**  
Main Supervisor:  
**Jørgensen, Sune Lehmann (Intern)**

**Financing sources**  
Source: Internal funding (public)  
Name of research programme: Forskningsrådsfinansiering  
Project: PhD

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**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

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**Typing for Secure Composition of Distributed Systems**  
Technical University of Denmark  
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)
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 (Ekstern)
Jensen, Anker Degn (Intern)
Sarup, Bent (Ekstern)
Main Supervisor:
Sin, Gürkan (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
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)
Project Manager, academic:
Chi, Qijin (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Ansat eksternt
Project: PhD

Datadriven models for energy advising leading to behavioural changes in SMEs and residences

Technical University of Denmark
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:
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)

Establishing sampling- and analytical procedures for the quantification of nanoparticles in aerosols and condensing conditions

Department of Micro- and Nanotechnology
Period: 15/05/2016 → 14/05/2019
Number of participants: 4
Phd Student:
Bluhme, Anders Brostrøm (Intern)
Supervisor:
Kling, Kirsten Inga (Intern)
Kling, Kirsten Inga (Intern)
Main Supervisor:
Mølhave, Kristian (Intern)

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, Hjörtur (Intern)
Main Supervisor:
Nielsen, Arne Hejde (Intern)
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)

**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)

**Related event**
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

**Related journal**
Cerâmica
0366-6913
Scopus rating (2016): CiteScore 0.24 SJR 0.165 SNIP 0.226
Indexed in DOAJ
Local database
Activity: Research › Journal editor

**Facilities (Journal)**
Period: 2018 → …
Giulia Nardelli (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related journal
Facilities
0263-2772
BFI (2018): BFI-level 1, Scopus rating (2016): CiteScore 1.06 SJR 0.421 SNIP 1.217, ISI indexed (2013): ISI indexed no,
Web of Science (2018): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

Ocean Dynamics (Journal)
Period: 2018
David R. Fuhrman (Reviewer)
Department of Mechanical Engineering
Fluid Mechanics, Coastal and Maritime Engineering

Description
Guest Editor (Special Issue on Coastal Dynamics)
Degree of recognition: International

Related journal
Ocean Dynamics
1616-7341
BFI (2018): BFI-level 1, Scopus rating (2016): CiteScore 1.74 SJR 0.987 SNIP 0.998, ISI indexed (2013): ISI indexed yes,
Web of Science (2018): 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

Related event
5th International Vitamin Conference
08/08/2018 → 10/08/2018
Sydney, Australia
Activity: Attending an event › Participating in or organising a conference

DTU CEE Summer School 2018: Modern Optimization in Energy Systems
Period: 25 Jun 2018 → 29 Jun 2018
Jalal Kazempour (Organizer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electricity markets and energy analytics

Description
DTU CEE Summer School 2018: Modern Optimization in Energy Systems

Related event
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

PHD Defence (Event)
Period: 13 Apr 2018
Morten Otto Alexander Sommer (Chairman)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology

Description
PhD Committee for PhD student Kang Kang from University of Hong Kong
Degree of recognition: International

Related event
PHD Defence: PHD Defence
13/04/2018 → 13/04/2018
Activity: Membership › Membership in review committee

Annual Design Society Board of Management and Advisory Board Meeting
Period: 13 Mar 2018 → 16 Mar 2018
Anja Maier (Participant)
Department of Management Engineering
Engineering Systems
Degree of recognition: International
Links:
http://www.designsociety.org

Related event
Annual Design Society Board of Management and Advisory Board Meeting
13/03/2018 → 16/03/2018
Karlsruhe, Germany
Activity: Attending an event › Participating in or organising a conference

Et skridt tættere på personlig antibiotikabehandling
Period: 27 Feb 2018
Morten Otto Alexander Sommer (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology
Degree of recognition: National

Related event

IDA event: IDA event
27/02/2018 → 27/02/2018
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Innovation in FM and stakeholder interactions
Period: 27 Feb 2018
Giulia Nardelli (Invited speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: National

Related event

CFM Forskning i 10 år: De vigtigste resultater og perspektiver
27/02/2018 → …
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Integrating operational knowledge in building design
Period: 27 Feb 2018
Helle Lohmann Rasmussen (Speaker)
Department of Management Engineering
Systems Analysis
Documents:
Helr Presentation

Related event

CFM Forskning i 10 år: De vigtigste resultater og perspektiver
27/02/2018 → …
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Probabilistic Gossip
Period: 27 Feb 2018
Anders Stockmarr (Invited speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Degree of recognition: National
Documents:
DSTS 27022018 ANST

Related event

Dansk Selskab for Teoretisk Statistik: Generalforsamling 2018
27/02/2018 → 27/03/2018
Copenhagen, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

4th Engineering Systems Design & Data Science: EuroTech Alliance DTU-TUM Workshop in Copenhagen
Period: 26 Feb 2018 → 27 Feb 2018
An automated flow-injection enzyme-linked immunosorbent assay for the detection of Zearalenone

Period: 7 Feb 2018 → 9 Feb 2018

Jongjit Jantra (Other)
Kinga Zor (Other)
Martin Hedström (Other)
Bo Mattiasson (Other)

Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics
Department of Micro- and Nanotechnology
Nanoprobes

Description
Pure and Applied Chemistry International Conference 2018 (PACCON 2018), Hat Yai, Songkhla, Thailand, 7th-9th February 2018
Degree of recognition: International

Reproduction of multi-hierarchical structural surfaces by vat-photopolymerization

Period: 7 Feb 2018

Macarena Mendez Ribo (Speaker)

Department of Mechanical Engineering
Manufacturing Engineering

Description
This study investigates the intersection of bio-inspired surfaces and additive manufacturing (AM), with the aim of determining the feasibility and viability of leveraging 3D printing technologies to replicate surfaces that mirror those found in nature. These surfaces, like metamaterials, are constituted by arrays of microstructures arranged at multiple hierarchical levels. The ability to rapidly and inexpensively reproduce microstructures using AM at micro scale would thus serve to enable the scientific community to conduct optimization of 3D surface model designs. This would allow for improved forecasting of surface properties and behaviors before investment in other micromanufacturing methods. The investigation was carried out using a state-of-the-art vat photopolymerization AM machine-tool suitable for precision manufacturing at the micro dimensional range developed, built and validated at the Technical University of Denmark. It was shown that it was possible to reproduce multihierarchical micro features inspired by the surface of the Tokay gecko toe. Ultimately, voxel resolution of 7.6 μm was visualized. Moreover, two more intricate designs were fabricated with the same parameters, yet showing higher hydrophobicity with a water contact angle of 124°±0.10°, due to their increased density and decreased feature size, not due to its material properties. These results indicate the possibility of using precision AM for a rapid, easy and reliable fabrication of working functional surfaces, which can also be applied to the design and fabrication of metamaterials.

Related event

Anja Maier (Organizer)
Department of Management Engineering
Engineering Systems

Related event

4th Engineering Systems Design & Data Science: EuroTech Alliance DTU-TUM Workshop in Copenhagen
26/02/2018 → 27/02/2018
Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

An automated flow-injection enzyme-linked immunosorbent assay for the detection of Zearalenone

Period: 7 Feb 2018 → 9 Feb 2018

Jongjit Jantra (Other)
Kinga Zor (Other)
Martin Hedström (Other)
Bo Mattiasson (Other)

Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics
Department of Micro- and Nanotechnology
Nanoprobes

Description
Pure and Applied Chemistry International Conference 2018 (PACCON 2018), Hat Yai, Songkhla, Thailand, 7th-9th February 2018
Degree of recognition: International

Related event

Pure and Applied Chemistry International Conference 2018
07/02/2018 → 09/02/2018
Hat Yai, Thailand
Activity: Talks and presentations › Conference presentations

Reproduction of multi-hierarchical structural surfaces by vat-photopolymerization

Period: 7 Feb 2018

Macarena Mendez Ribo (Speaker)

Department of Mechanical Engineering
Manufacturing Engineering

Description
This study investigates the intersection of bio-inspired surfaces and additive manufacturing (AM), with the aim of determining the feasibility and viability of leveraging 3D printing technologies to replicate surfaces that mirror those found in nature. These surfaces, like metamaterials, are constituted by arrays of microstructures arranged at multiple hierarchical levels. The ability to rapidly and inexpensively reproduce microstructures using AM at micro scale would thus serve to enable the scientific community to conduct optimization of 3D surface model designs. This would allow for improved forecasting of surface properties and behaviors before investment in other micromanufacturing methods. The investigation was carried out using a state-of-the-art vat photopolymerization AM machine-tool suitable for precision manufacturing at the micro dimensional range developed, built and validated at the Technical University of Denmark. It was shown that it was possible to reproduce multihierarchical micro features inspired by the surface of the Tokay gecko toe. Ultimately, voxel resolution of 7.6 μm was visualized. Moreover, two more intricate designs were fabricated with the same parameters, yet showing higher hydrophobicity with a water contact angle of 124°±0.10°, due to their increased density and decreased feature size, not due to its material properties. These results indicate the possibility of using precision AM for a rapid, easy and reliable fabrication of working functional surfaces, which can also be applied to the design and fabrication of metamaterials.

Documents:
Abstract

Related event
Dedicated manufacturing and experimental techniques for acoustic metamaterials and acoustic treatments
06/02/2018 → 07/02/2018
Leuven, Belgium
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 (Other)
Martin Drews (Speaker)
Stefan Petrovic (Other)
Kenneth Bernard Karlsson (Other)
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

Bryghuset - Svendborg Demensby
Period: 2 Feb 2018
Anders Stockmarr (Guest lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Documents:
Bryghuset - Svendborg Demensby

Related event
Robotter på Tværs: Workshop om robotter, Innovationsfonden
02/02/2018 → 02/02/2018
Odense, Denmark
Activity: Talks and presentations › Conference presentations

Chalmers University of Technology (External organisation)
Period: 2 Feb 2018
Tilmann Weber (Member)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds

Description
External member of the PhD evaluation committee for Jens. C. Nielsen: Systems Biology of the Secondary Metabolism in Filamentous Fungi

Related external organisation
Chalmers University of Technology
Sweden
Activity: Membership › Membership in review committee

PACE – Proactive Care for Elderly People with Dementia
Period: 2 Feb 2018
Anders Stockmarr (Guest lecturer)
Related event

Robotten på Tvaers: Workshop om robotter, Innovationsfonden
02/02/2018 → 02/02/2018
Odense, Denmark
Activity: Talks and presentations › Conference presentations

Applied Thermal Engineering (Journal)
Period: Jan 2018
Toke Rammer Nielsen (Reviewer)
Department of Civil Engineering
Section for Building Energy
Degree of recognition: International

Related journal

Applied Thermal Engineering
1359-4311
Web of Science (2018): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

Nanyang Technological University
Period: Jan 2018 → Apr 2018
Florence Alexia Bohnes (Visiting researcher)
Department of Management Engineering
Quantitative Sustainability Assessment

Description
Collaboration with NAFTEC NTU in the framework of the Joint PhD program
Activity: Visiting an external institution › Visiting another research institution

Monitoring the state of a nuclear fusion plasma - the role of energetic ions
Period: 30 Jan 2018
Jesper Rasmussen (Speaker)
Department of Physics
Plasma Physics and Fusion Energy

Description
Rydberg Seminar at Univ. of Lund, Sweden

Related external organisation

Lund University
Lund, Sweden
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Nordic Food Lab, KU: Invited presentation on safety and quality at 'Monday Aperitivo - Squid s of the north'
Period: 29 Jan 2018
Paw Dalgaard (Panel member)
National Food Institute
Research Group for Analytical and Predictive Microbiology

**Description**
Nordic Food Lab, KU: Invited presentation on safety and quality at ‘Monday Aperitivo - Squid s of the north’
Degree of recognition: National
Links:
http://nordicfoodlab.org/ (Nordic Food Lab)

**Related event**
Nordic Food Lab, KU: Invited presentation on safety and quality at ‘Monday Aperitivo - Squid s of the north’
29/01/2018 → 29/01/2018
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Polarization noise study in all-normal dispersion fiber supercontinuum generation**
Period: 29 Jan 2018
Ivan Bravo Gonzalo (Speaker)
Rasmus Dybbro Engelsholm (Other)
Andreas Falkenstrøm Mieritz (Other)
Mads Peter Sørensen (Other)
Ole Bang (Other)
Department of Photonics Engineering
Fiber Sensors and Supercontinuum Generation
Department of Applied Mathematics and Computer Science
Dynamical Systems
Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics

**Related event**
29/01/2018 → ...
Activity: Talks and presentations › Conference presentations

**Ultra-low noise supercontinuum source for ultra-high resolution optical coherence tomography at 1300 nm**
Period: 28 Jan 2018
Ivan Bravo Gonzalo (Speaker)
Michael Maria (Other)
Rasmus Dybbro Engelsholm (Other)
Thomas Feuchter (Other)
Lasse Leick (Other)
Peter Morten Moselund (Other)
Adrian Podoleanu (Other)
Ole Bang (Other)
Department of Photonics Engineering
Fiber Sensors and Supercontinuum Generation

**Related event**
SPIE Photonics West 2018: SPIE BIOS: Design and Quality for Biomedical Technologies XI
27/01/2018 → ...
Activity: Talks and presentations › Conference presentations
Review of environmental sustainability assessments of aquaculture systems: main findings and outlook
Period: 27 Jan 2018
Florence Alexia Bohnes (Guest lecturer)
Department of Management Engineering
Quantitative Sustainability Assessment
Documents:
Abstract ICSGA 2018 - flbo ORBIT pre print

Related event
International Conference on Sustainable Global Aquaculture
24/01/2018 → 26/01/2018
Bangkok, Thailand
Activity: Talks and presentations › Conference presentations

SPIE Photonics West 2018
Period: 27 Jan 2018 → 1 Feb 2018
Dominik Marti (Speaker)
Department of Photonics Engineering
Diode Lasers and LED Systems
Description
Simple fibre based dispersion management for two-photon fluorescence imaging
Degree of recognition: International

Related event
SPIE Photonics West 2018: Multiphoton Microscopy in the Biomedical Sciences XVIII
27/01/2018 → 01/02/2018
San Francisco, United States
Activity: Talks and presentations › Conference presentations

IEEE Transactions on Image Processing (Journal)
Period: 26 Jan 2018
Tommi Olavi Brander (Reviewer)
Department of Applied Mathematics and Computer Science
Scientific Computing

Related journal
IEEE Transactions on Image Processing
1057-7149
Central database
Activity: Research › Peer review of manuscripts

Innovationsfondens Prisuddeling 2018
Period: 26 Jan 2018
Anders Stockmarr (Organizer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Description
invited participation
Links:
https://innovationsfonden.dk/da/priser
Related event

Innovationsfondens Prisuddeling 2018
26/01/2018 → 26/01/2018
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

63rd Pacific Conference on Spectroscopy and Dynamics
Period: 25 Jan 2018 → 28 Jan 2018
René Wugt Larsen (Participant)
Department of Chemistry
Degree of recognition: International

Related event

63rd Pacific Conference on Spectroscopy and Dynamics
25/01/2018 → 28/01/2018
San Diego, United States
Activity: Attending an event › Participating in or organising a conference

Collaborative process innovation for new process development
Period: 25 Jan 2018
Giulia Nardelli (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related event

Implementation and Performance Management (IPM) Research Seminar
26/01/2017 → …
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Consistency and Main Differences Between European Regional Climate Downscaling Intercomparison Results: From PRUDENCE and ENSEMBLES to CORDEX
Period: 25 Jan 2018 → 28 Jan 2018
Morten Andreas Dahl Larsen (Other)
Martin Drews (Other)
Department of Management Engineering
Systems Analysis
Degree of recognition: International

Related event

6th EURO-CORDEX General Assembly
25/01/2018 → 28/01/2018
Hamburg, Germany
Activity: Talks and presentations › Conference presentations

MARINERG-I Stakeholders Meeting AAU 25. jan 2018
Period: 25 Jan 2018
Torben Krogh Mikkelsen (Organizer)
Department of Wind Energy
Meteorology & Remote Sensing
Description
MARINERG-I Stakeholders Meeting
Degree of recognition: International
Documents:
MARINERG-i Stakeholder meeting Science Case: Real time measurements of wind using lidars

Related event
MARINERG-I Stakeholders Meeting AAU 25. jan 2018
25/01/2018 → 25/01/2018
Ålborg, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

The antiSMASH platform: A comprehensive framework for secondary metabolite genome mining and analysis
Period: 24 Jan 2018
Tilmann Weber (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International

Related event
2nd International Conference on Natural Product Discovery and Development in the Genomic Era
21/01/2018 → 24/01/2018
Clearwater Beach, Florida, United States
Activity: Talks and presentations › Conference presentations

Hong Kong Polytechnic University
Period: 22 Jan 2018 → 26 Jan 2018
Harilaos N. Psaraftis (Visiting researcher)
Department of Management Engineering
Management Science
Transport DTU
Operations Management

Description
My final visit as Departmental Academic Advisor, Department of Logistics and Maritime Studies. Term was 2012 to 2018.
Degree of recognition: International
Activity: Visiting an external institution › Visiting another research institution

Hybrid data tomography
Period: 22 Jan 2018 → 26 Jan 2018
Tommi Olavi Brander (Organizer)
Kim Knudsen (Organizer)
Bjørn Christian Skov Jensen (Organizer)
Ekaterina Sherina (Organizer)
Department of Applied Mathematics and Computer Science
Scientific Computing

Related event
Hybrid data tomography
22/01/2018 → 26/01/2018
Kongens Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
2nd International Conference on Natural Product Discovery and Development in the Genomic Era  
Period: 21 Jan 2018 → 24 Jan 2018  
Helene Lunde Robertsen (Participant)  
Novo Nordisk Foundation Center for Biosustainability  
New Bioactive Compounds  
Degree of recognition: International  

Related event  
2nd International Conference on Natural Product Discovery and Development in the Genomic Era  
21/01/2018 → 24/01/2018  
Clearwater Beach, Florida, United States  
Activity: Attending an event › Participating in or organising a conference  

Impact on wind turbine loads from different down regulation control strategies EERA DeepWind 2018  
Period: 17 Jan 2018 → 19 Jan 2018  
Christos Galinos (Other)  
Department of Wind Energy  
Wind turbine loads & control  
Degree of recognition: International  
Documents:  
DeepWind2018_Poster_Galinos_et_al_A4_v2  

Related external organisation  
EERA DeepWind’18  
Trondheim Norway, Trondheim , Norway  
Activity: Talks and presentations › Conference presentations  

Co-developing agile stage-gate in Danish SMEs  
Period: 11 Jan 2018 → 13 Jan 2018  
Giulia Nardelli (Speaker)  
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  

Factors contributing to Bicycle accidents in Denmark - a study based on medical records  
Period: 10 Jan 2018  
Mette Møller (Speaker)  
Kira Hyldekaer Janstrup (Other)  
Department of Management Engineering  
Technology and Innovation Management  
Transport DTU
Transport Modelling

**Description**
Presentation at IRTAD/NHTSA Session at TRB conference in Washington DC

**Related event**

**TRB 97th Annual Meeting: Analysis of International Road Safety Data**
07/01/2018 → 11/01/2018
United States
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)
Kirsten Halsnæs (Other)
Department of Management Engineering
Systems Analysis
Degree of recognition: International

**Related event**

**33rd Nordic Geological Winter Meeting**
10/01/2018 → 12/01/2018
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

**Smart Nanomaterials for Biomedical Applications**
Period: 5 Jan 2018
Arnab Halder (Invited speaker)
Department of Micro- and Nanotechnology
Degree of recognition: International

**Related external organisation**

**Centre for Development of Advanced Computing (C-DAC, Kolkata)**
Plot - E-2/1, Block-GP, Sector-V, Salt Lake Electronics Complex, Bidhannagar, 700091, Kolkata, India
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

**Boundary determination with interior data**
Period: 4 Jan 2018
Tommi Olavi Brander (Speaker)
Department of Applied Mathematics and Computer Science
Scientific Computing
Degree of recognition: International

**Related event**

**Finnish mathematical days 2018: Joint EMS-FMS-ESMTB Mathematical Weekend**
04/01/2018 → 05/01/2018
Joensuu, Finland
Activity: Talks and presentations › Conference presentations

**LED possibilities and challenges**
Period: 2 Jan 2018
Anders Thorseth (Guest lecturer)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: National

Related event

33480 High-Tech Entrepreneurship
02/01/2018 → 21/01/2018
Lyngby, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Special 3-week PhD/MSc level course at DTU on "Large-scale optimization problems in energy systems: Applications of decomposition techniques"
Period: 2 Jan 2018 → 22 Jan 2018
Jalal Kazempour (Lecturer)
Department of Electrical Engineering
Center for Electric Power and Energy
Electricity markets and energy analytics

Related organisation

Special 3-week PhD/MSc level course at DTU on "Large-scale optimization problems in energy systems: Applications of decomposition techniques"
Kazempour, J. (Lecturer)
2 Jan 2018 → 22 Jan 2018
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Statistical Genetics (02938)
Period: 2 Jan 2018 → 29 Jan 2018
Anders Stockmarr (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
phd course
Degree of recognition: Local
Activity: Other

Statistical Genetics (02950)
Period: 2 Jan 2018 → 15 Jan 2018
Anders Stockmarr (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
phd course
Degree of recognition: Local
Activity: Other

38th International Conference on Information Systems (Event)
Period: 2017 → …
Giulia Nardelli (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management
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 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
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

Advanced meteorological modelling cross scales
Period: 2017 → 2020
Xiaoli Guo Larsén (Main supervisor)
Department of Wind Energy
Resource Assessment Modelling

Description
PhD project
Degree of recognition: International
Activity: Examinations and supervision › Supervisor activities

Advances in Science and Research (Journal)
Period: 2017 → …
Patrick Volker (Reviewer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International
Links:
https://www.adv-sci-res.net/14/227/2017/ (links to published article)

Related journal
Advances in Science and Research
1992-0628
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts
Atmospheric Science Letters (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)
Department of Wind Energy
Degree of recognition: International

Related journal
Atmospheric Science Letters
1530-261X
BFI (2018): BFI-level 1, Scopus rating (2016): CiteScore 1.75 SJR 1.159 SNIP 0.689, ISI indexed (2013): ISI indexed yes,
Web of Science (2018): Indexed yes
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

Biosustainable production in living cell factories
Period: 2017 → …
Morten Nørholm (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Microbial Evolution and Synthetic Biology

Related external organisation
Scienctalent Academy
Søre, Denmark
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 commitees, commissions, boards, councils, associations, organisations, or similar

Boundary-Layer Meteorology (Journal)
Period: 2017
Jake Badger (Reviewer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International

Related journal
Boundary-Layer Meteorology
0006-8314
BFI (2018): BFI-level 1, Scopus rating (2016): CiteScore 2.65 SJR 1.517 SNIP 1.315, ISI indexed (2013): ISI indexed yes,
Web of Science (2018): Indexed yes
Central database
Boundary-Layer Meteorology (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)
Department of Wind Energy

Related journal
Boundary-Layer Meteorology
0006-8314
Central database
Activity: Research › Peer review of manuscripts

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

Climate Dynamics (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)
Department of Wind Energy
Degree of recognition: International

Related journal

Climate Dynamics
0930-7575
Central database
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

DANS CATT Annual meeting 2017
Period: 2017
Martin Meedom Nielsen (Organizer)
Department of Physics
Neutrons and X-rays for Materials Physics

Related event

DANS CATT 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 Brinke'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

EGU General Assembly 2017
Period: 2017 → …
Anna Maria Sempreviva (Organizer)
Department of Wind Energy
Resource Assessment Modelling

Description
Convener Energy meteorology and spatial modelling of renewable energies
Links:
http://meetingorganizer.copernicus.org/EGU2017/session/22846 (Wind and solar power are the predominant new sources of electrical power in recent years. Solar power reached a milestone of providing 50% of demand in Germany during one hour in 2012, and wind power during one hour in 2015 exceeded 140% of demand in Denmark. By their very nature, wind and solar power, as well as hydro, tidal, wave and other renewable forms of generation are dependent on weather and climate. Modelling and measurement for resource assessment, site selection, long-term and short term variability analysis and operational forecasting for horizons ranging from minutes to decades are of paramount importance. The success of wind power means that wind turbines are increasingly put in sites with complex terrain or forests, with towers extending beyond the strict logarithmic profile, and in offshore regions that are difficult to model and measure. Major challenges for solar power are notably accurate measurements and the short-term prediction of the spatiotemporal evolution of the effects of cloud field and aerosols. For both solar and wind power, the integration of large amounts of renewable energy into the grid is another critical research problem due to the uncertainties linked to their forecast and to patterns of their spatio-temporal variabilities. Of particular interest these days is the relatively new field of urban meteorology applied to the renewable energy sector. There are several "Smart Cities" and "Smart Grids" projects in Europe focusing on urban measurement development for forecasts or high resolution resource mapping. Geographic information systems are well established tools for the identification of potentials and location selection of renewable energies. There is a high and increasing number of studies concerning indicators of resource availability such as the amount of available biomass, average wind speed, cumulated solar radiation and soil temperature. These studies range from the determination of merely theoretical resources potentials to combined technical, economic, environmental and social studies of the suitability of energy generation technologies (e.g. wind parks, photovoltaic installations and biogas/biomass facilities). However, the consideration of the temporal variability of the energy demand and of highly fluctuating sources, such as wind and solar

radiation, is a fundamental element that has been addressed only marginally in GIS-based procedures especially considering the temporal dimension. The consideration of these fluctuations would allow the evaluation and design of spatially distributed energy systems with a high share of renewable sources. We invite contributions on all following aspects of weather dependent renewable power generation: • Wind conditions (both resources and loads) on short and long time scales for wind power development, especially in complex environments (e.g. mountains, forests, coastal or urban). • Long term analysis of inter-annual variability of solar resource • Typical Meteorological Year and probability of exceedance for wind and solar power development. • Wind and solar resource and atlases. • Wake effect models and measurements, especially for large wind farms and offshore. • Performance and uncertainties of forecasts of renewable power at different time horizons and in different external conditions. • Forecast of extreme wind events and wind ramps. • Local, regional and global impacts of renewable energy power plants or of large-scale integration. • Dedicated wind measurement techniques (SODARS, LIDARS, UAVs etc.). • Dedicated solar measurement techniques (pyranometric sensors, sun-photometer, ceilometer, fish-eye cameras, etc.) from ground-based and space-borne remote sensing. • Tools for urban area renewable energy supply strategic planning and control. • dimension distributed renewable energy systems such as virtual power plants • analyse interaction and proportions of renewable energy power plants in distributed renewable energy systems • calculate peak load offsetting and/or output variability reduction alternatives for grid connected and off-grid renewable energy systems • size and locate decentralized storage facilities • plan multicarrier systems (heat-electricity, heat-cooling-electricity).)

Related event

EGU General Assembly 2017: European GEosciences Union 2017
24/04/2017 → 28/04/2017
Vienna, Austria
Activity: Attending an event › Participating in or organising a conference

Energies (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)
Department of Wind Energy
Degree of recognition: International

Related journal
Energies
1996-1073
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

Energy for Sustainable Development (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)
Department of Wind Energy
Degree of recognition: International

Related journal
Energy for Sustainable Development
0973-0826
Central database
Activity: Research › Peer review of manuscripts

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  
Central database  
Activity: Research › Peer review of manuscripts

**Energy Procedia (Journal)**  
Period: 2017  
Anna Maria Sempreviva (Peer reviewer)  
Department of Wind Energy  
Resource Assessment Modelling

**Description**  
Guest Editor Energy Meteorology session  
Degree of recognition: International

**Related journal**

**Energy Procedia**  
1876-6102  
Central database  
Activity: Research › Journal editor

**Environmental Research Letters (Journal)**  
Period: 2017  
Andrea N. Hahmann (Reviewer)  
Department of Wind Energy  
Resource Assessment Modelling

**Description**  
Manuscript review

**Related journal**

**Environmental Research Letters**  
1748-9326  
Central database  
Activity: Research › Peer review of manuscripts

**Environmental Research Letters (Journal)**  
Period: 2017  
Andrea N. Hahmann (Reviewer)  
Department of Wind Energy
Resource Assessment Modelling

Description
Manuscript review

Related journal

Environmental Research Letters
1748-9326
Indexed in DOAJ
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 committees, 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

Description
EUREKA Expert (invited member of the EUREKA expert database) to evaluate project proposals
Degree of recognition: International

Related external organisation

EUREKA expert
Activity: Membership › Membership in review committee

European inorganic chemistry conference
Period: 2017 → …
Susanne Mossin (Organizer)
Center for Hyperpolarization in Magnetic Resonance
Department of Chemistry
Centre for Catalysis and Sustainable Chemistry
Organic Chemistry

Description
Organizer of international conference
Degree of recognition: International

Related event
Examination of wave effect in the Wind-Wave-Wake coupled modeling for offshore wind farm
Period: 2017 – 2019
Xiaoli Guo Larsen (Main supervisor)
Department of Wind Energy
Resource Assessment Modelling
Description
Post Doc Task
Degree of recognition: International
Activity: Examinations and supervision › Supervisor activities

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

From Molecular to Synthetic Biology
Period: 2017
Morten Nørholm (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Microbial Evolution and Synthetic Biology

Related external organisation
Sciencetalent Academy
Søren, 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
16th Fundamental Research Symposium: Advances in Pulp and Paper Research
03/09/2017 → 08/09/2017
Oxford, United Kingdom
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
Lausanne, Switzerland
Activity: Talks and presentations › Conference presentations

*Impact of the sea breeze on the vertical wind profile in coastal areas: Comparison between a Mediterranean and a North Sea site
Period: 2017
Anna Maria Sempreviva (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International
Links:
http://wesc2017.org/

Related event
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

International Conference on Future Technologies for Wind Energy WindTech 2017
Period: 2017
Anna Maria Sempreviva (Panel member)
Department of Wind Energy
Resource Assessment Modelling

Description
Member of the International Advisory Board, Key Note speaker
Degree of recognition: International
Links:
International Conference on Future Technologies for Wind Energy
WindTech 2017
24-26 Oct. 2017
24/10/2017 → 26/10/2017
Boulder, United States
Activity: Attending an event › Participating in or organising a conference

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

International Journal of Food Microbiology
0168-1605
Web of Science (2018): Indexed yes
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

Inverse Problems and Imaging
1930-8337
BFI (2018): BFI-level 1, Scopus rating (2016): CiteScore 1.33 SJR 0.771 SNIP 1.053, ISI indexed (2013): ISI indexed yes,
Web of Science (2018): Indexed yes
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

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 Sympsium, 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 King Saud University - Science (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)
Department of Wind Energy
Degree of recognition: International

Related journal
Journal of King Saud University - Science
Local 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 the Air and Waist Management Association (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)
Department of Wind Energy
Degree of recognition: International

Related journal
Journal of the Air and Waist Management Association
1096-2247
Scopus rating (2016): CiteScore 1.73 SJR 0.669 SNIP 0.826, Web of Science (2018): Indexed yes
Local database
Activity: Research › Peer review of manuscripts

**Journal of the Atmospheric Sciences (Journal)**
*Period: 2017 → …*
Sven-Erik Gryning (Reviewer)
Department of Wind Energy

**Related journal**

**Journal of the Atmospheric Sciences**
0022-4928
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

**Journal of Wind Engineering & Industrial Aerodynamics (Journal)**
*Period: 2017 → …*
Xiaoli Guo Larsén (Reviewer)
Department of Wind Energy
Resource Assessment Modelling

**Related journal**

**Journal of Wind Engineering & Industrial Aerodynamics**
0167-6105
Central database

Activity: Research › Peer review of manuscripts

**Journal of Wind Engineering & Industrial Aerodynamics (Journal)**
*Period: 2017 → …*
Sven-Erik Gryning (Reviewer)
Department of Wind Energy
Degree of recognition: International

**Related journal**

**Journal of Wind Engineering & Industrial Aerodynamics**
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
Eurotox 2017: 53rd Congress of the European Societies of Toxicology
10/09/2017 → 13/09/2017
Bratislava, Slovakia
Activity: Talks and presentations › Conference presentations

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

MARINET2. A European network of marine renewables infrastructures
Period: 2017
Anna Maria Sempreviva (Speaker)
Department of Wind Energy
Resource Assessment Modelling

Description
PO224
Degree of recognition: International

Links:
https://windeurope.org/confex2017

Related event
WindEurope 2017
28/11/2017 → 30/11/2017
Amsterdam, Netherlands
Activity: Talks and presentations › Conference presentations
Meteorological Applications (Journal)
Period: 2017
Jake Badger (Reviewer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International

Related journal
Meteorological Applications
1350-4827
Central database
Activity: Research › Peer review of manuscripts

Meteorology and Atmospheric Physics (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)
Department of Wind Energy
Degree of recognition: International

Related journal
Meteorology and Atmospheric Physics
0177-7971
BFI (2018): BFI-level 1, Scopus rating (2016): CiteScore 1.28 SJR 0.659 SNIP 0.67, Web of Science (2018): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

Modeling rough weather over the North Sea - using COAWST for offshore wind energy applications
Period: 2017 → …
Xiaoli Guo Larsén (Main supervisor)
Department of Wind Energy
Resource Assessment Modelling

Description
Master Project
Activity: Examinations and supervision › Supervisor activities

Monthly Weather Review (Journal)
Period: 2017
Andrea N. Hahmann (Reviewer)
Department of Wind Energy
Resource Assessment Modelling

Description
Manuscript review

Related journal
Monthly Weather Review
0027-0644
Central database
Activity: Research › Peer review of manuscripts
**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

**Nature Energy (Journal)**
Period: 2017
Jake Badger (Reviewer)

Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International

**Related journal**

**Nature Energy**
2058-7546
Central database
Activity: Research › Peer review of manuscripts

**Norwegian University of Science and Technology (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**

**Norwegian University of Science and Technology**
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 (2018): BFI-level 1, Scopus rating (2016): CiteScore 3.11 SJR 1.201 SNIP 1.092, ISI indexed (2013): ISI indexed yes,
Web of Science (2018): 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

Proceedings of the International Symposium on Auditory and Audiological Research (Journal)
Period: 2017 → …
Sébastien Santurette (Editor)
Torsten Dau (Editor)
Department of Electrical Engineering
Hearing Systems

Description
Proceedings of ISAAR: International Symposium on Auditory and Audiological Research
Degree of recognition: International
Links:
https://proceedings.isaar.eu

Related journal

Proceedings of the International Symposium on Auditory and Audiological Research
Local database
Activity: Research › Series editor

Production of alkali from cocoa husk ash and biological extraction of hydrocolloid from Sargassum sp.
Period: 2017
Marcel Tutor Ale (Other)
Production of alkali from cocoa husk ash for extraction of hydrocolloid from biologically pretreated red seaweed

Period: 2017

Department of Chemical and Biochemical Engineering

Description
Coordinated by Marcel Tutor Ale
Activity: Other

Remote Sensing (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)

Department of Wind Energy
Degree of recognition: International

Related journal
Remote Sensing
2072-4292
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

Renovering på Dagsordenen (External organisation)
Period: 2017 → …
Per Anker Jensen (Member)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
Følgegruppe 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
Royal Meteorological Society. Quarterly Journal (Journal)
Period: 2017 → …
Sven-Erik Gryning (Reviewer)
Department of Wind Energy
Degree of recognition: International

Related journal
Royal Meteorological Society. Quarterly Journal
0035-9009
Web of Science (2018): Indexed yes
Central database
Activity: Research › 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
BFI (2018): BFI-level 1, Scopus rating (2016): CiteScore 4.63 SJR 1.625 SNIP 1.401, ISI indexed (2013): ISI indexed yes,
Web of Science (2018): Indexed yes
Indexed in DOAJ
Central database
Activity: Research › Journal editor

Synbio2.0: engineering the evolution of living systems
Period: 2017
Morten Nørholm (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Microbial Evolution and Synthetic Biology

Description
Winter school Molecular Engineering of Synthetic Biological Systems
Synbio2.0: engineering the evolution of living systems
Period: 2017
Morten Nørholm (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Microbial Evolution and Synthetic Biology

The CRISPR revolution
Period: 2017
Morten Nørholm (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Microbial Evolution and Synthetic Biology

Uvildige Ekspertpanel Deponering af radioaktivt affald i DK (External organisation)
Period: 2017 → …
Steffen Foss Hansen (Chairman)
Department of Environmental Engineering
Environmental Chemistry

Wind energy open data web portal: Metadata and Taxonomy for data search
Period: 2017
Anna Maria Sempreviva (Keynote speaker)
Abstract
We present the conceptual scheme for a Wind Energy data portal intended to make data Findable, Accessible, Inter-operable and Re-usable, FAIR, adhering to the Open Data strategy of the European Commission H2020 Programme. As a first step, metadata have been suggested and taxonomies for the wind Energy topics and related data have been developed to be used as a common vocabulary for tagging data in the metadata card describing datasets. This effort is within the Open Data roadmap of the European Energy Research Alliance, the Joint Programme on Wind Energy, EERA JP Wind Energy.

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 Energy Science Discussions (Journal)
Period: 2017
Andrey Sogachev (Reviewer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International

Related journal
Wind Energy Science Discussions
2366-7621
Central database
Activity: Research › Peer review of manuscripts

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**
*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* (Journal)
2245-0157
Web of Science (2018): Indexed yes
Indexed in DOAJ
Local database
Activity: Research › Journal editor

**Managing innovation processes through value co-creation**
Period: 19 Dec 2017
Giulia Nardelli (Invited speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
Presentation at Center for Facilities Management Research Forum
Degree of recognition: Local

**Related organisation**
*Managing innovation processes through value co-creation*
Nardelli, G. (Invited speaker)
19 Dec 2017
Activity: Talks and presentations › Conference presentations

**Extensional flow and structure in branched model polymer (polystyrene) melts**
Period: 18 Dec 2017
Kristoffer Almdal (Invited speaker)
Department of Micro- and Nanotechnology

Description
Seminar at the Department of Chemistry and Chemical Biology, Rensselaer Polytechnic Institute
Documents:
Rensselaer_abstract_Extensional flow and structure in branched model polymer

Related external organisation
Rensselaer Polytechnic Institute
United States
Activity: Talks and presentations › Conference presentations

KTH - Royal Institute of Technology (External organisation)
Period: 18 Dec 2017
Mattia Marinelli (Chairman)
Department of Electrical Engineering
Center for Electric Power and Energy
Distributed energy resources

Description
PhD defence of Mikel Armendariz, KTH, Stockholm, Sweden.
PhD thesis: Cost-effective Communication and Control Architectures for Active Low Voltage Grids
Degree of recognition: International
Documents:
Thesis with papers

Related external organisation
KTH - Royal Institute of Technology
Drottning Kristinas Väg 51, SE-10044, Stockholm, Sweden
Activity: Membership › Membership in review committee

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

Applied nurse rostering at Danish hospitals in Region Zealand
Period: 15 Dec 2017
Niels-Christian Fink Bagger (Guest lecturer)
Department of Management Engineering
Management Science
Operations Research

Related event
Healthcare logistics: balancing between practice and theory
13/12/2017 → 15/12/2017
Activity: Talks and presentations › Conference presentations

Multidisciplinary Design Optimization with HAWTOpt2
Period: 15 Dec 2017
Michael McWilliam (Invited speaker)
Frederik Zahle (Other)
Department of Wind Energy
Aerodynamic design
Degree of recognition: Local
Documents: HAWTOpt2_Dec_15_2017

Related external organisation
Ørsted
Teknikerbyen 25, 2830, Virum, Denmark
Activity: Talks and presentations › Conference presentations

Coastal Effects on Offshore Wind Calculation
Period: 14 Dec 2017
Xiaoli Guo Larsén (Keynote speaker)
Department of Wind Energy
Resource Assessment Modelling

Related event
Coastal Effects on Wind Resources and Wind Farm Production
14/12/2017 → …
Activity: Talks and presentations › Conference presentations

Asia Pacific Carbon Forum 2018
Period: 13 Dec 2017 → 15 Dec 2017
Susanne Konrad (Organizer)
Fatima-Zahra Taibi (Organizer)
Department of Management Engineering
UNEP DTU Partnership
Degree of recognition: International

Related event
Asia Pacific Carbon Forum 2018 : TOWARDS A REGIONAL ACTION AGENDA FOR ASIA-PACIFIC: COOPERATIVE CLIMATE ACTION & SPURRING INVESTMENT
13/12/2017 → 15/12/2017
Bangkok, Thailand
Activity: Attending an event › Participating in or organising a conference

Bæredygtighedsmål – hot or not?
Period: 13 Dec 2017
Ivan Nygaard (Panel member)
Department of Management Engineering
UNEP DTU Partnership

Description
Paneldeltager på konferencen, Energi på toppen: Hvad koster bæredygtighed ? afholdt I anledning af Dansk Fjernvarme's 60 års jubilæum, Berlinske Media, København
Degree of recognition: National

Documents:
Program - Energi på Toppen - 13-12-2017

Related external organisation
Dansk Fjernvarme Forening
Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

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 (Speaker)
Martin Drews (Other)
Stefan Petrovic (Other)
Kenneth Bernard Karlsson (Other)
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

Mathematical modeling of neurons: Perspectives for the treatment of epilepsy
Period: 13 Dec 2017
Dimitri Boiroux (Guest lecturer)
Department of Applied Mathematics and Computer Science
Scientific Computing

Related external organisation
University of Rostock
Germany
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

The value of DCIP geophysical surveys for contaminated site investigations
Period: 13 Dec 2017
Characterization of additive manufacturing processes for polymer micro parts productions using direct light processing (DLP) method
Period: 12 Dec 2017
Ali Davoudinejad (Speaker)
Department of Mechanical Engineering
Manufacturing Engineering

Description
The process capability of additive manufacturing (AM) for direct production of miniaturized polymer components with micro features is analyzed in this work. The consideration of the minimum printable feature size and obtainable tolerances of AM process is a critical step to establish a process chains for the production of parts with micro scale features. A specifically designed direct light processing (DLP) AM machine suitable for precision printing has been used. A test part is designed having features with different sizes and aspect ratios in order to evaluate the DLP AM machine capability to fabricate polymer micro scale features geometries. Four different factors are evaluated for the AM process analysis: printing layer thickness, exposure time, film thickness and geometry. The process optimization of the workpiece quality features is carried out to highlight potential and challenges of the micro AM process.

Degree of recognition: International
Documents:
2017-PPS-Characterization of additive manufacturing processes for polymer micro parts productions using direct light processing (DLP) method

Related event
33rd Annual Meeting of the Polymer Processing Society (PPS33)
10/12/2017 → 14/12/2017
Cancun, Mexico
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
Dimensional accuracy of Acrylonitrile Butadiene Styrene injection molded parts produced in a pilot production with an additively manufactured insert

**Period:** 12 Dec 2017

Ali Davoudinejad (Speaker)

Department of Mechanical Engineering
Manufacturing Engineering

**Description**
Injection molding inserts manufactured additively by vat photopolymerization have become a serious option for significantly faster and more economical prototyping and pilot production due to technological progress and advancements in photopolymer materials in the recent years. 10 000 parts of a geometry including micro-features have been injection-molded in Acrylonitrile Butadiene Styrene (ABS) with a single 20x20x2.5 mm³ injection molding insert manufactured in a photopolymer composite material. This research investigates the dimensional accuracy of the injection molded parts as a function of inserts wearing and deformation with increasing shot number.

**Degree of recognition:** International

**Related event**

33rd Annual Meeting of the Polymer Processing Society (PPS33)
10/12/2017 → 14/12/2017
Cancun, Mexico

Implementation of enclosure method for p-Laplacian

**Period:** 12 Dec 2017

Tommi Olavi Brander (Speaker)

Department of Applied Mathematics and Computer Science
Scientific Computing

**Degree of recognition:** International

**Related event**

Inverse days
12/12/2017 → 14/12/2017
Oulu, Finland

Mapping offshore winds in the New European Wind Atlas

**Period:** 12 Dec 2017

Ioanna Karagali (Guest lecturer)
Andrea N. Hahmann (Guest lecturer)
Merete Badger (Guest lecturer)
Charlotte Bay Hasager (Guest lecturer)
Jakob Mann (Guest lecturer)

Department of Wind Energy
Meteorology & Remote Sensing

**Degree of recognition:** International

**Related event**

2017 AGU Fall Meeting
11/12/2017 → 15/12/2017
New Orleans, United States
Operation of real landfill gas fueled solid oxide fuel cell (SOFC) using internal dry reforming

Period: 12 Dec 2017 → 15 Dec 2017
Hendrik Langnickel (Guest lecturer)
Anke Hagen (Guest lecturer)

Department of Energy Conversion and Storage
Applied Electrochemistry

Description
It is generally agreed that due to the increasing amount of renewable energy in the electricity production different energy conversion and storage technologies are needed to ensure a 100% availability of electricity.

Considering biomass as renewable source, fuel derived from landfill appears as attractive option. Landfill gas consists of carbon dioxide, methane and impurities as for example sulfur containing compounds. Combustion engines are often used to convert landfill gas into electricity and heat with the disadvantages of low efficiencies. Furthermore, most landfill gases are unattractive for combustion engines due to their low heating values.

One option to utilize landfill gases with a low heating value and to increase the electrical efficiency is the solid oxide fuel cell (SOFC). With SOFCs it is possible to convert hydrogen or carbon containing fuels, as for example landfill gas, directly into electricity and the side product heat in a highly efficient way.

To convert the landfill gas directly into electricity and heat in an SOFC, a reforming agent is needed to prevent carbon formation. Beside steam, it is possible to use carbon dioxide as a reforming agent (dry reforming). The advantage is that landfill gas already contains a certain amount of the needed carbon dioxide.

In the present work a planar 16 cm² SOFC cell was operated with a real landfill gas from one of the largest Danish waste dump sites and additional carbon dioxide reforming agent at 750 °C, both with gas cleaning through an active carbon filter and without. The tests showed an electric efficiency up to 60%. It was found that the active carbon filter was necessary to prevent poisoning and thereby to decrease the degradation rate.

Degree of recognition: International
Links:

Related event
7th European Fuel Cell Piero Lunghi Conference
12/12/2017 → 16/12/2017
Naples, Italy
Recent theoretical studies show that reversible electrochemical conversion of H2O and CO2 to CH4 inside novel pressurized solid oxide cells (SOCs) combined with subsurface storage of the produced gasses can facilitate seasonal electricity storage with a round-trip efficiency 70-80% and a storage cost below 3 ¢/kWh. Here we show test results from a 30-cell SOC stack operated with carbonaceous gasses at 18.7 bar at 700 °C in both electrolysis and fuel cell mode. The GC data from the electrolysis test results show 18% methane in the dry outlet gas, i.e. substantial methane formation inside the SOC stack. Further we observed degradation rates comparable to that of ambient pressure operation with H2/H2O gas mixtures.

Links:

7th European Fuel Cell Piero Lunghi Conference
12/12/2017 → 16/12/2017
Naples, Italy
Activity: Talks and presentations › Conference presentations

The Østerild Balconies Experiment
Period: 12 Dec 2017
Ioanna Karagali (Guest lecturer)
Jakob Mann (Guest lecturer)
Ebba Dellwik (Guest lecturer)
Guillaume Lea (Guest lecturer)
Elliot Simon (Guest lecturer)
Nikola Vasiljevic (Guest lecturer)

Department of Wind Energy
Meteorology & Remote Sensing

Test and Measurements
Degree of recognition: International

2017 AGU Fall Meeting
11/12/2017 → 15/12/2017
New Orleans, United States
Activity: Talks and presentations › Conference presentations

Attenuation of a discharging chlorinated ethene (CE) plume: use of streambed point velocity probes (SBPVP), streambed passive flux meters (SBPFM) and contaminant mass discharge (CMD)
Period: 11 Dec 2017
Vinni Kampman Rønde (Guest lecturer)
Ursula S. McKnight (Guest lecturer)
Michael Annable (Guest lecturer)
J.F. Devlin (Guest lecturer)
Mackenzie Cremeans (Guest lecturer)
Anne Thobo Sonne (Guest lecturer)
Poul Løgstrup Bjerg (Guest lecturer)

Department of Environmental Engineering
Water Resources Engineering

Description
Chlorinated ethenes (CE) are abundant groundwater contaminants and pose risk to both groundwater and surface water bodies, as plumes can migrate through aquifers to streams. After release to the environment, CE may undergo attenuation. The hyporheic zone is believed to enhance CE attenuation, however studies contradicting this have also been reported. Since dilution commonly reduces contaminant concentrations in streams to below quantification limits, use of mass balances along the pathway from groundwater to stream is unusual.

Our study is conducted at the low-land Grindsted stream, Denmark, which is impacted by a contaminant plume. CE have been observed in the stream water; hence our study site provides an unusual opportunity to study attenuation processes in a CE plume as it migrates through the groundwater at the stream bank, through the stream bed and further to the point of fully mixed conditions in the stream.

The study undertook the determination of redox conditions and CE distribution from bank to stream; streambed contaminant flux estimation using streambed Passive Flux Meters (SBPFM); and quantification of streambed water fluxes using streambed Point Velocity Probes (SBPVP). The advantage of the sPFM is that it directly measures the contaminant flux without the need for water samples, while the advantage of the SBPVP is its ability to measure the vertical seepage velocity without the need for additional geological parameters. Finally, a mass balance assessment along the plume pathway was conducted to account for any losses or accumulations.

The results show consistencies between contaminant mass discharge estimates at the bank, through the streambed and in the stream channel. Furthermore, parent-metabolite compound ratios indicate limited degradation between the bank and the point of fully mixed stream water, leaving the dominant attenuation process to be mixing in the stream channel. Since the plume at the bank mainly consists of cis-DCE and vinyl chloride, this implies high and persistent stream water concentrations of these compounds. Finally, this study demonstrates the usefulness and complementary nature of SBPFM and SBPVP measurements for assessing the attenuation processes through mass balance calculations.

Degree of recognition: International
Documents: 2017-11-30 AGU_poster_vinni

Related event
2017 AGU Fall Meeting
11/12/2017 → 15/12/2017
New Orleans, United States
Activity: Talks and presentations › Conference presentations

Extensional flow and structure in branched model polymer (polystyrene) melts
Period: 11 Dec 2017
Kristoffer Almdal (Invited speaker)
Department of Micro- and Nanotechnology

Description
Seminar at ExxonMobile Corporate Research Center, Annandale, New Jersey, USA
Documents: ExxonMobile_abstract Extensional flow and structure in branched model polymer.docx

Related external organisation
ExxonMobile Corporate Research Center, Annandale, New Jersey, USA
1545 Route 22 East, 08801, Annandale, United States
Activity: Talks and presentations › Conference presentations

High-throughput knockout of CHO host cell proteins to create a clean CHO cell
Period: 11 Dec 2017
Stefan Kol (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
CHO Core
Degree of recognition: International

Related event
P4EU: Protein for life
11/12/2017 → 12/12/2017
Integrated Optimisation for Public Transport System with Joint Schedule- and Frequency-based Services
Period: 11 Dec 2017
Yu Jiang (Speaker)
Department of Management Engineering
Transport DTU
Transport Modelling

Description
22nd HKSTS Conference
Degree of recognition: International

Related external organisation
Hong Kong Society for Transportation Studies
Hong Kong
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

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 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

Model-based optimization of a full-scale industrial anaerobic reactor producing biogas
Period: 10 Dec 2017 → 13 Dec 2017
Hannah Feldman (Speaker)
Related event

8th International Young Water Professionals Conference
10/12/2017 → 13/12/2017
Cape Town, South Africa
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

Optical Coherence Tomography, General aspects and use in Laryngology
Period: 8 Dec 2017
Niels Møller Israelsen (Lecturer)
Deepak Jain (Other)
Ole Bang (Other)
Department of Photonics Engineering
Fiber Sensors and Supercontinuum Generation
Degree of recognition: International

Related event

WORLD VOICE CONSORTIUM CONGRESS 2017: VII World Voice Consortium Congress is a multidisciplinary voice meeting held in Copenhagen, DK, targeting voice professionals: artists, clinicians, coaches, teachers and scientists.
08/12/2017 → 10/12/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

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
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

Description
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
Sheflife-Mejeriprodukter
07/12/2017 → 07/12/2017
Billund, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

See continuing education as disruption
Period: 7 Dec 2017
Merete Badger (Speaker)
Department of Wind Energy
Meteorology & Remote Sensing
Degree of recognition: Local

Related event
DTU Efteruddannelsesworkshop
07/12/2017 → 07/12/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

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
Bedre uheldsdata
Period: 6 Dec 2017 → 7 Dec 2017
Kira Hyldekar Janstrup (Other)
Mette Møller (Speaker)
Mikkel Bøg Clemmensen (Other)
Department of Management Engineering
Transport DTU
Transport Modelling
Technology and Innovation Management
Documents:
Bedre trafikuheldsdata

Related event

Vejforum 2005
01/01/2005 → …
Nyborg Strand, Danmark
Activity: Talks and presentations › Conference presentations

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 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

DTU Sustain 2017
Period: 6 Dec 2017
Steffen Foss Hansen (Organizer)
Kristian Melhave (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 → 06/12/2017
Kgs. Lyngby, Denmark
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 Kaern (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 → 06/12/2017
Kgs. Lyngby, Denmark
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 Kaern (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 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

DTU Sustain 2017
Period: 6 Dec 2017
Marlene Mark Jensen (Organizer)
Department of Environmental Engineering
Water Technologies
Degree of recognition: National

Related event

DTU Sustain 2017
06/12/2017 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
Natural antioxidants derived from seaweed material
Period: 6 Dec 2017
Ditte Baun Hermund (Other)
National Food Institute
Research Group for Bioactives – Analysis and Application
Degree of recognition: Local

Related event
DTU Sustain 2017
06/12/2017 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Other

On the importance of including a life cycle perspective in assessing the environmental performances of renewable energies
Period: 6 Dec 2017
Monia Niero (Speaker)
Department of Management Engineering
Quantitative Sustainability Assessment
Degree of recognition: National

Related event
Sustain 2017
06/12/2017 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

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

Related event
Sustain 2017
06/12/2017 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Smart campus data and analysis sustain 2017
Period: 6 Dec 2017
Ole Schultz (Lecturer)
Department of Electrical Engineering
Center for Bachelor of Engineering Studies
Afdelingen for Informatik

Description
Big Data platform for Analytics and energy monitoring
Degree of recognition: International
Documents:
Smart campus data and analysis sustain 2017

Related event

DTU Sustain 2017
06/12/2017 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

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

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
Solange I. Mussatto (Participant)
Novo Nordisk Foundation Center for Biosustainability
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)
Kirsten Halsnæs (Other)
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 → 06/12/2017
Kgs. Lyngby, Denmark
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 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Toward more sustainable biochemical: Applying techno-economic and life-cycle assessments to target substances
Period: 6 Dec 2017
Ólafur Ógmundarson (Speaker)
Sumesh Sukumara (Panel member)
Peter Fantke (Panel member)
Novo Nordisk Foundation Center for Biosustainability
Quantitative Sustainability Assessment
Global Econometric Modeling
Department of Management Engineering

Related event
Sustain 2017
06/12/2017 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Vejens skadespoint og trafiksikkerhed - Er der behov for et nyt skadespoint, som kan benyttes som trafiksikkerhedsindikator?
Period: 6 Dec 2017 → 7 Dec 2017
Kira Hyldekær Janstrup (Speaker)
Mette Møller (Other)
Ninette Pilegaard (Other)
Department of Management Engineering
Transport DTU
Related event

Vejforum 2005
01/01/2005 → …
Nyborg Strand, Danmark
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

AlgaEurope 2017
Period: 5 Dec 2017 → 7 Dec 2017
Alireza Naseri (Speaker)
National Food Institute
Research Group for Bioactives – Analysis and Application

Description
Multiextraction of bioactive compounds from red seaweed
Eucheuma denticulatum (spinosum)
Degree of recognition: International

Related event

AlgaEurope 2017
05/12/2017 → 07/12/2017
Berlin, Germany
Activity: Talks and presentations › Conference presentations

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
Trade in Environmentally Sound Technologies
Period: 5 Dec 2017
Ivan Nygaard (Speaker)
Department of Management Engineering
UNEP DTU Partnership
Description
Presentation at Stakeholder Workshop on Trade in Environmentally Sound Technologies in the East African Region, ACTS Kenya.
Degree of recognition: International
Related event
Stakeholder Workshop on Trade in Environmentally Sound Technologies in the East African Region
05/12/2017 → 05/12/2017
Nairobi, Kenya
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
DTU Sustain 2017
06/12/2017 → 06/12/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

Spatio-temporally resolved in situ transmission electron microscopy of the dynamics of nanostructured materials
Period: 4 Dec 2017
Thomas Willum Hansen (Guest lecturer)
Center for Electron Nanoscopy
Center for Nanostructured Graphene
DTU Danchip
Degree of recognition: National

Related external organisation

SynCat Beijing
China
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

Training course on the application of HRAMS in routine for pesticide residues in food of plant origin– EURL/NRL training course
Period: 4 Dec 2017 → 5 Dec 2017
Susan Strange Herrmann (Organizer)
Mette Erecius Poulsen (Organizer)
National Food Institute
Research Group for Analytical Food Chemistry
Degree of recognition: International

Related event

Training course on the application of HRAMS in routine for pesticide residues in food of plant origin– EURL/NRL training course: HRSMS training course
04/12/2017 → 05/12/2017
Almeria, Spain
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Wind Energy Master - a new online programme
Period: 4 Dec 2017
Merete Badger (Speaker)
Department of Wind Energy
Meteorology & Remote Sensing
Degree of recognition: Local

Related event

DTU Undervisningsseminar
04/12/2017 → 04/12/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

WIND ENERGY DENMARK 2017
Period: 2 Dec 2017
Jake Badger (Chairman)
Department of Wind Energy
Resource Assessment Modelling

Description
Session Chair
Wind Meteorology
Talents of Tomorrow
Degree of recognition: National

Related event

WIND ENERGY DENMARK 2017
2017 MRS fall meeting & Exhibition
Period: 1 Dec 2017
Stela Canulescu (Participant)
Department of Photonics Engineering
Photovoltaic Materials and Systems
Degree of recognition: International

Related event
2017 MRS fall meeting & Exhibition
26/11/2017 → 01/12/2017
Boston, United States
Activity: Attending an event › Participating in or organising a conference

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
Technische Universität 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
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
Activity: Talks and presentations › Conference presentations

Period: 30 Nov 2017 → 3 Dec 2017
Liguan Li (Participant)
Department of Environmental Engineering
Water Technologies
Degree of recognition: International

Related event

30/11/2017 → 03/12/2017
Shenzhen, China
Activity: Attending an event › Participating in or organising a conference

Lighweight rotor design for 10-20 MW Wind turbines
Period: 30 Nov 2017
Flemming Rasmussen (Lecturer)
Department of Wind Energy
Degree of recognition: International

Related event

WindEurope 2017
28/11/2017 → 30/11/2017
Amsterdam, Netherlands
Activity: Talks and presentations › Conference presentations

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

**Spatio-temporally resolved in situ transmission electron microscopy of the dynamics of nanostructured materials**
Period: 30 Nov 2017
Thomas Willum Hansen (Guest lecturer)
Center for Electron Nanoscopy
Center for Nanostructured Graphene
DTU Danchip
Degree of recognition: National

**Related external organisation**

*CAS - Dalian Institute of Chemical Physics*
China

Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

**Tracking and understanding AMR dynamics across European urban water systems**
Period: 30 Nov 2017 → 3 Dec 2017
Barth F. Smets (Guest lecturer)
Arnaud Dechesne (Other)
Liguan Li (Other)
Jonas Stenlække Madsen (Other)
Joseph Nesme (Other)
Søren J. Sørensen (Other)
Marcos Quintela-Baluja (Other)
David Graham (Other)
Department of Environmental Engineering
Water Technologies
Documents:
ISARE1_BFSM

**Related event**

*International Symposium on Antimicrobial Resistance in the Environment (ISARE 2017)*
30/11/2017 → 03/12/2017
Shenzhen, China

Activity: Talks and presentations › Conference presentations

**E-learning: Wind Energy Master**
Period: 29 Nov 2017
Merete Badger (Other)
Niels-Erik Clausen (Speaker)
Department of Wind Energy
Meteorology & Remote Sensing
Integration & Planning
Degree of recognition: International

Related event

Wind Europe Conference and Exhibition 2018
28/11/2017 → 30/12/2017
Amsterdam, Netherlands
Activity: Talks and presentations › Conference presentations

Kuren mod klimaproblemet - Et bud på løsningen fra et teknisk-videnskabeligt vindenergi-synspunkt
Period: 29 Nov 2017
Mac Gaunaa (Guest lecturer)
Department of Wind Energy
Aerodynamic design

Description
Two presentation for gymnasium-pupils on what we can do to avoid a catastrophic climate... and a bit on what kind of research we do at DTU wind energy
Degree of recognition: Local

Related external organisation

Rysensteen Gymnasium
Tietgensgade 74, 1704, København, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

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 Löschner (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
**Building wind energy taxonomy for FAIR data: how to organize and find web distributed data**

**Period:** 28 Nov 2017  
Anna Maria Sempreviva (Guest lecturer)  
Department of Wind Energy  
Resource Assessment Modelling  
Degree of recognition: International  
Links:  
https://windeurope.org/confex2017/conference/

**Related event**

**Wind Europe Conference and Exhibition 2018**  
28/11/2017 → 30/12/2017  
Amsterdam, Netherlands  
Activity: Talks and presentations › Conference presentations

**Hvad spærrer 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 spærrer 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

**Online teaching and MOOCs**

**Period:** 28 Nov 2017  
Merete Badger (Guest lecturer)
Related event

Universitetspædagogik for erfane undervisere, UP
27/11/2017 → 29/11/2017
Gentofte, Denmark
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
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

The Poul la Cour Tunnel: A new aerodynamic and aeroacoustic wind tunnel dedicated to wind energy
Period: 28 Nov 2017 → 30 Nov 2017
Christian Bak (Other)
Andreas Fischer (Other)
Robert Flemming Mikkelsen (Other)
Anders Smærup Olsen (Other)
Mac Gaunaa (Other)
Efren Fernandez Grande (Other)
Witold Robert Skrzypinski (Other)
Department of Wind Energy
Aerodynamic design
Fluid Mechanics
Department of Electrical Engineering
Acoustic Technology
Description
Poster
Degree of recognition: International
Related event

WindEurope 2017
28/11/2017 → 30/11/2017
Amsterdam, Netherlands
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 DANSKE BRINT- OG BRÆNDSELSCELLEDAG 2017
28/11/2017 → 28/11/2017
Odense, Denmark
Activity: Talks and presentations › Conference presentations

Tuning transcription factor-based biosensors to screen and select optimal cell factory design
**Period:** 28 Nov 2017
Tim Snoek (Other)
Novo Nordisk Foundation Center for Biosustainability
Synthetic Biology Tools for Yeast

**Description**
Poster presentation

**Related event**

Synthetic Biology UK 2017
27/11/2017 → 28/11/2017
Manchester, United Kingdom
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
Period: 27/11/2017 → 29/11/2017
Trondheim, Norway
Activity: Research › Peer review of manuscripts

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)
Period: 27 Nov 2017
Christine Ipsen (Reviewer)
Department of Management Engineering
Management Science
Implementation and Performance Management

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

Spatio-temporally resolved in situ transmission electron microscopy of the dynamics of nanostructured materials
Period: 27 Nov 2017
Thomas Willum Hansen (Guest lecturer)
Center for Electron Nanoscopy
Center for Nanostructured Graphene
DTU Danchip
Degree of recognition: National

Related external organisation
Suzhou Institute of Nano-tech and Nano-bionics, CAS
China
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

International Symposion on Future I&C for Nuclear Power Plants
Period: 26 Nov 2017 → 29 Nov 2017
Denis Kirchhübel (Speaker)
Department of Electrical Engineering
Automation and Control
Degree of recognition: International

Related external organisation
IAEA
Activity: Talks and presentations › Conference presentations

On the challenges for Life Cycle Assessment in a Circular Economy: from single to multiple life cycles modelling
Period: 24 Nov 2017
Monia Niero (Invited speaker)
Department of Management Engineering
Quantitative Sustainability Assessment
Degree of recognition: National

Related event
Spanish LCA Network workshop
24/11/2017 → 24/11/2017
Santander, Spain
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
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 turbine 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 Energinet.

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
International Conference on the Network of the Future  
*Period:* 22 Nov 2017 → 24 Nov 2017  
*Angelos Mimidis Kentis (Participant)*  
Department of Photonics Engineering  
Networks Technology and Service Platforms  

**Related event**  
*International Conference on the Network of the Future*  
22/11/2017 → 24/11/2017  
London, United Kingdom  
Activity: Attending an event › Participating in or organising a conference

**Transformation of India's Transport Sector under global warming of 2oC and 1.5oC scenario**  
*Period:* 22 Nov 2017  
*Subash Dhar (Invited speaker)*  
Department of Management Engineering  
Transport DTU  
UNEP DTU Partnership  
Degree of recognition: International  
Documents:  
Paris Agreement and Transport Scenarios Subash Dhar  

**Related event**  
*Annual Chair Conference: Prospective for Energy-Climate Issues*  
22/11/2017 → 22/11/2017  
Paris, France  
Activity: Talks and presentations › Conference presentations

**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

**Mesh Dependence on Shear Driven Boundary Layers in Stable Stratification Generated by Large Eddy-Simulation**  
*Period:* 21 Nov 2017  
*Jacob Berg (Guest lecturer)*  
Department of Wind Energy  
Resource Assessment Modelling
Related event

American Physical Society : Division of Fluid Mechanics
19/11/2017 → 21/11/2017
Denver , United States
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 le lait de chamelle

Related event

3ème MGBR Workshop International : "Le lait: Production, Conservation et Valorisation"
20/11/2017 → 20/11/2017
Tlemchen, Algeria
Activity: Talks and presentations › Conference presentations

Extensional flow and structure in branched model polymer (polystyrene) melts.
Period: 20 Nov 2017 → 23 Nov 2017
Kristoffer Almdal (Invited speaker)
Department of Micro- and Nanotechnology

Description
Simons Program Conference States of Matter. Niels Bohr Institute, Copenhagen, November 20th-23rd, 2017
Degree of recognition: International

Related external organisation

Niels Bohr Institute
Copenhagen, Denmark
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
Participation 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.

Performance and Equivalent Loads of Wind Turbines in Large Wind Farms
Period: 20 Nov 2017
Søren Juhl Andersen (Speaker)
Department of Wind Energy
Fluid Mechanics
Documents:
AP2017_Presentation

Related external organisation
American Physical Society
United States
Activity: Talks and presentations › Conference presentations

Talk at the Science Talent Center, Sorø Academy
Period: 20 Nov 2017
Ida Lauritsen (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Microbial Evolution and Synthetic Biology

Related external organisation
Science Talent Center, Sorø Academy, Sorø
Akademigrunden 18, 4180, Sorø, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

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

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
Quantitative Sustainability Assessment

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

Current topics in Protein Chemistry
Period: 17 Nov 2017
Folmer Fredslund (Participant)
Novo Nordisk Foundation Center for Biosustainability
Enzyme Engineering & Structural Biology

Links:
http://www1.bio.ku.dk/english/research/bms/research/lkc/events/lkcsymposium/

Related event
Current topics in Protein Chemistry
17/11/2017 → …
København, Denmark
Activity: Attending an event › Participating in or organising a conference

**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*

**Related event**

**PEGS Europe: protein and antibody engineering summit**  
*02/11/2015 → 06/11/2015*  
*Lisbon, Portugal*

Activity: Talks and presentations › Conference presentations

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**In-operando observation of microstructural evolution in a solid oxide cell electrolyte operating at high polarisation**

*Period*: 17 Nov 2017  
*José Xavier Sierra Trujillo (Speaker)*  
*Department of Energy Conversion and Storage*

**Description**

Oral presentation about some of the results of the PhD project.  
*Degree of recognition: Local*

**Documents:**

*DTU PhD Symposium JXST 2017*

**Related event**

**DTU Energy’s annual PhD symposium 2017**  
*17/11/2017 → 17/11/2017*  
*Kgs. Lyngby, Denmark*

Activity: Talks and presentations › Conference presentations

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**learnT DTU Conference 2017 - The 2nd Conference on Digital Learning Technology**

*Period*: 17 Nov 2017  
*Charlotte Lærke Weitze (Organizer)*  
*Helle Rootzén (Organizer)*  
*Department of Applied Mathematics and Computer Science*

**Statistics and Data Analysis**  
*Degree of recognition: National*

**Related event**

**learnT DTU Conference 2017 - The 2nd Conference on Digital Learning Technology**  
*17/11/2017 → …*  
*2800 Kgs. Lyngby, Denmark*

Activity: Attending an event › Participating in or organising a conference

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**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**
DTU 23205 Fighting Infectious Diseases

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

Seminar at University of California - Berkeley @ Ocean Engineering.
Documents:
Response prediction and SSE (UCB Nov. 2017)

The student as a game designer – What professional learning can students achieve when designing digital learning games?
Period: 17 Nov 2017
Charlotte Lærke Weitze (Guest lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Degree of recognition: Local

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

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
Workshop: Create a concept for a learning game in one hour
Period: 17 Nov 2017
Charlotte Lærke Weitze (Guest lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Degree of recognition: National

Related event

learnT DTU Conference 2017 - The 2nd Conference on Digital Learning Technology
17/11/2017 → …
2800 Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Developing an advanced bioeconomy through industrial biotechnology
Period: 16 Nov 2017
Solang 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

Italian Space Agency (External organisation)
Period: 16 Nov 2017
Søren Brandt (Member)
Carl Budtz-Jørgensen (Member)
National Space Institute
Astrophysics and Atmospheric Physics

Description
Projects on future scientific space missions, ASI, Italian Space Agency. Peer review of project proposals
Degree of recognition: International

Related external organisation

Italian Space Agency
Italy
Activity: Membership › Membership in review committee

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 stormåde November 2017: Vandkvalitet
16/11/2017 → 16/11/2017
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

Accident Analysis & Prevention (Journal)
Period: 15 Nov 2017 → …
Kira Hyldekær Janstrup (Reviewer)
Department of Management Engineering
Transport DTU
Transport Modelling

Description
Reviewer
Degree of recognition: International

Related journal
Accident Analysis & Prevention
0001-4575
Web of Science (2018): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

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
**DANMAP seminar: I anledning af Europæisk Antibiotikage 2017**
Period: 15 Nov 2017
Annette Nygaard Jensen (Participant)
National Food Institute
Research Group for Microbial Food Safety

**Related event**

**DANMAP seminar: I anledning af Europæisk Antibiotikage 2017**
15/11/2017 → 15/11/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**Engineering CHO Cells**
Period: 15 Nov 2017
Bjørn Gunnar Voldborg (Keynote speaker)
Novo Nordisk Foundation Center for Biosustainability
CHO Core
Degree of recognition: International
Links:
http://www.pegsummit europe.com/optimising-protein-expression/

**Related event**

**PEGS Europe 2017: Protein and Antibody Engineering summit**
13/11/2017 → 17/11/2017
Activity: Talks and presentations › Conference presentations

**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 → 15/11/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

**Wind Energy in Denmark & introduction to DTU Wind Energy**
Period: 15 Nov 2017
Xiaoli Guo Larsén (Invited speaker)
Department of Wind Energy
Resource Assessment Modelling

**Related event**
Introduction of DTU WIND to the Chinese Embassy in Copenhagen
15/11/2017 → …
Activity: Talks and presentations › Conference presentations

Basic Technologies in a Protein Production Lab
Period: 14 Nov 2017
Bjørn Gunnar Voldborg (Panel member)
Novo Nordisk Foundation Center for Biosustainability
CHO Core
Degree of recognition: International
Links:
http://www.pegsummiteurope.com/managing-expression/

Related event
PEGS Europe 2017: Protein and Antibody Engineering summit
13/11/2017 → 17/11/2017
Activity: Talks and presentations › Conference presentations

Emulsion Formation for EOR Applications
Period: 14 Nov 2017 → 15 Nov 2017
Muhammad Waseem Arshad (Speaker)
Department of Chemical and Biochemical Engineering
CERE – Center for Energy Resources Engineering
Center for Energy Resources Engineering
Description
DHRTC Technology Conference 2017
14-15 November, Kolding, Denmark
Documents:
Final-Programme

Related external organisation
Danish Hydrocarbon Research and Technology Centre
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
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  
Activity: Hosting a guest lecturer

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  
Copenhagene, Denmark  
Activity: Talks and presentations › Conference presentations

DNA and RNA SIP reveal ammonium and nitrite oxidizers in groundwater fed biofilters  
Period: 13 Nov 2017 → 15 Nov 2017  
Arda Gülay (Speaker)  
Barth F. Smets (Other)  
Jane Fowler (Other)  
Hans-Jørgen Albrechtsen (Other)  
Karolina Tatari (Other)  
Department of Environmental Engineering  
Water Technologies  
Degree of recognition: International  

Related event  
Nordic Environmental Nucleotide Network,: NENUN 2017  
13/11/2017 → 15/11/2017  
Denmark
**Activity: Talks and presentations › Conference presentations**

**DNA and RNA SIP reveal nitrifiers in groundwater fed biofilters**
Period: 13 Nov 2017
Arda Gülay (Other)
Jane Fowler (Other)
Barth F. Smets (Other)
Hans-Jørgen Albrechtsen (Other)
Department of Environmental Engineering
Water Technologies

_Description_
Poster presentation
Degree of recognition: National

_Related event_
**Danish Microbiological Society: DMS Congress 2017**
13/11/2017 → 13/11/2017
Copenhagen, Denmark

**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
**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 Folkeersen (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.

**Forvaltning af Tobis i Nordsøen**  
Period: 12 Nov 2017  
Ole Henriksen (Guest lecturer)  
National Institute of Aquatic Resources  
Section for Marine Living Resources

**Related event**

**DanFish International**  
11/10/2017 → 13/10/2017  
Aalborg, Denmark  
Activity: Talks and presentations › Conference presentations

**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
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

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

Go with the flow into spectroscopy: Selective reduction and oxidation of nitric oxide.
Period: 9 Nov 2017
Susanne Mossin (Invited speaker)
Center for Hyperpolarization in Magnetic Resonance
Department of Chemistry
Centre for Catalysis and Sustainable Chemistry
Organic Chemistry
Description
Invited talk a the annual assembly
Related external organisation
 Danish Chemical Society, Inorganic Section
Universitetsparken 5, 2100, KBH Ø, Denmark
Activity: Talks and presentations › Conference presentations

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 → 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
Manufacturing 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
euspen Special Interest Group Meeting: Micro/Nano Manufacturing
IDA Sundhed
Period: 8 Nov 2017
Christine Ipsen (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

Description
På dette gå-hjem-møde skal vi bl.a. høre eksempler på mulighederne inden for Industri 4.0 samt hvordan det bruges til udvikling af nye komponenter til sundhedssektoren, Big Data mv.
Degree of recognition: National

Related event
IDA Sundhed - Industri 4.0 inden for Sundhedssektoren
08/11/2017 → 08/11/2017
Copenhagen, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

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

Key findings of the 2017 Adaptation Gap Report
Period: 8 Nov 2017
Anne Olhoff (Guest lecturer)
Department of Management Engineering
UNEP DTU Partnership

Description
Presentation at the official joint UNFCCC and UN Environment Adaptation Gap Report launch event. UNFCCC COP 23, Bonn, Germany, November 2017.
Degree of recognition: International
Documents:
The Adaptation Gap 2017_Presentation

Related external organisation
UNFCCC
Activity: Talks and presentations › Conference presentations

Muligheder ved digitalisering og Industri 4.0
Period: 8 Nov 2017
Christine Ipsen (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
Præsentation om overvejelser i relation til
Valg af strategi
Ændringer i organisationen
Fokus på implementeringen
Samt erfaringer med digital ledelse vha. tele-presence robotter
Degree of recognition: National

**Related external organisation**
IDA Sundhedsteknologi
Copenhagen, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

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Mohsen Rezaei (Speaker)
Department of Mechanical Engineering
Solid Mechanics

**Description**
On November 8th 2017, CASMaT held the second annual symposium on Multi-Scale Experimental Mechanics. The symposium will be held every year and focus on relevant research and technology in the field of experimental mechanics.
Degree of recognition: International
Documents:
Abstract-CASMAT_MR2017

**Related event**
2nd International Symposium on Multiscale Experimental Mechanics was Multiscale Fatigue.
08/11/2017 → 09/11/2017
Kongens Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

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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
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

8th International Symposium on Recent Advances In Food Analysis
Period: 7 Nov 2017 → 10 Nov 2017
Susan Strange Herrmann (Participant)
National Food Institute
Research Group for Analytical Food Chemistry

Description

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: Attending an event › Participating in or organising workshops, courses, seminars etc.

Asfaltindustriens valgmøde i Aarhus
Period: 7 Nov 2017
Kira Hyldekær Janstrup (Invited speaker)
Department of Management Engineering
Transport DTU
Transport Modelling

Related event

Asfaltindustriens valgmøder
25/10/2017 → 07/11/2017
Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Engineering CHO Cells For Improved Medium Catabolism – A Network Approach
Period: 7 Nov 2017
Mikael Rørdam Andersen (Invited speaker)
Department of Biotechnology and Biomedicine
Network Engineering of Eukaryotic Cell factories
Degree of recognition: International

Related event

Annual Cell Culture & Bioprocessing Congress
07/11/2017 → …
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 Danvd 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
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)
Inge Lise Kristensen (Other)
Julien Maillard (Other)
Anders Johansen (Other)
Daniel Hunkeler (Other)
Mette Broholm (Other)
Department of Environmental Engineering
Water Resources Engineering
Degree of recognition: International
Documents:
ISSM_2017_Murray_OralAbstract

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

Large-scale wake effects of wind turbines
Period: 7 Nov 2017
Patrick Volker (Participant)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International

Related event
Large-scale wake effects of wind turbines
07/11/2017 → 07/11/2017
Berlin, Germany
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

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:
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

The Emissions Gap Report 2017: overview of key issues and findings.
Period: 7 Nov 2017
Anne Olhoff (Guest lecturer)
Department of Management Engineering
UNEP DTU Partnership

Description
Degree of recognition: International

Related external organisation

UNFCCC
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.

Comparison of measured lattice rotations of individual grains with crystal plasticity simulations
Period: 5 Nov 2017 → 11 Nov 2017
Nicolai Ytterdal Juul (Speaker)
Jette Oddershede (Other)
Grethe Winther (Guest lecturer)
Department of Mechanical Engineering
Materials and Surface Engineering

Description
Oral presentation
Degree of recognition: International
Documents:
Abstract_Nicolai_Ytterdal_Juul_v2

Related event
18th International Conference on Textures of Materials (ICOTOM 18)
05/11/2017 → 11/12/2017
St. George, Utah, United States
Activity: Talks and presentations › Conference presentations

Measured resolved shear stresses and active slip systems in austenitic steel
Period: 5 Nov 2017 → 11 Nov 2017
Grethe Winther (Invited speaker)
Nicolai Ytterdal Juul (Other)
Jette Oddershede (Other)
Department of Mechanical Engineering
Materials and Surface Engineering

Description
Invited oral presentation
Degree of recognition: International
Documents:
Abstract_Grethe_Winther

Related event
18th International Conference on Textures of Materials (ICOTOM 18)
05/11/2017 → 11/12/2017
St. George, Utah, United States
Activity: Talks and presentations › Conference presentations

10th Urban Mobility Conference and Expo 2017
Period: 4 Nov 2017
Subash Dhar (Organizer)
Department of Management Engineering
Transport DTU
UNEP DTU Partnership

Description
A Study of Electric Mobility for City of Hyderabad
Degree of recognition: International
Documents:
UMI - Electric Mobility Hyderabad Final

Related event
10th Urban Mobility Conference and Expo 2017
04/11/2017 → 06/11/2017
Hyderabad, India
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
DeepLoc: Prediction of protein subcellular localization using deep learning
Period: 3 Nov 2017
Henrik Nielsen (Guest lecturer)
Jose Juan Almagro Armenteros (Guest lecturer)
Department of Bio and Health Informatics
Disease Intelligence and Molecular Evolution
Department of Applied Mathematics and Computer Science

Related external organisation
Intomics A/S
Denmark
Activity: Talks and presentations › Conference presentations

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

Development of Oxygen Electrodes for High Temperature and Pressure Alkaline Electrolysis Cells (HTP-AEC)
Period: 3 Nov 2017
Jens Quitzau Adolphsen (Guest lecturer)
Department of Energy Conversion and Storage
Ceramic Engineering & Science

Description
Oral Presentation given on the conference
Documents:
DEF2017_jenqui

Related event
Electrochemical Science and Technology Conference 2017
02/11/2017 → 03/11/2017
Kgs. Lyngby, 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: Gut, Metabolism and Brain in Health and Disease
02/11/2017 → 03/11/2017
Sønderborg, Denmark
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

Perspectives in alkaline water electrolysis using membranes
Period: 3 Nov 2017
Mikkel Rykær Kraglund (Speaker)
Department of Energy Conversion and Storage
Proton conductors
Degree of recognition: National
Documents:
DEF_PorouZ_JOEL_LTalk-projects

Related event

DEF Annual Meeting 2017
02/11/2017 → 03/11/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

TCS and PAM seminar
Period: 3 Nov 2017
Anders Schlichtkrull (Participant)
Department of Applied Mathematics and Computer Science
Algorithms and Logic

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.

Related event

TCS and PAM seminar
03/11/2017 → …
Amsterdam, Netherlands
Security at chemical facilities – overview of different regulatory approaches taken in EU Member States

**Period:** 2 Nov 2017

Frank Huess Hedlund (Speaker)

Department of Applied Mathematics and Computer Science

Dynamical Systems

Statistics and Data Analysis

**Description**

It is a European Union policy goal to enhance high-risk chemical facility security. This presentation presents some results of a study carried out for the European Commission, DG Home Affairs.

The study aimed to provide an overview of existing provisions and measures that help to enhance security at chemical facilities. These provisions and measures may for instance have their background in safety legislation or non-regulatory initiatives implemented by industry or in specific legislative provisions targeting security aspects implemented by individual Member States.

This presentation briefly reviews: 1) the concept of a high-risk chemical facility; 2) the analytical framework developed to identify security elements relevant for a chemical facility; and 3) possible synergies, the extent to which safety measures can be expected also to improve security. The study found that Member States have taken three distinct regulatory approaches: 1) folding security into Seveso safety legislation; 2) enlarging the scope of existing national security provisions; and 3) encouraging partnerships with industry associations to promote voluntary initiatives such as the security addendum to the Responsible Care programme.

Denmark has recently taken the first approach, adding security to Seveso (III) safety reporting. The presentation briefly reviews some of the resulting challenges.

**Degree of recognition:** International

**Documents:**

SRA Nordic Chapter 2017

**Related event**

**SRA 2017. Society for Risk Analysis (SRA) Nordic Chapter Conference: SRA 2017**

02/11/2017 → 03/11/2017

Espoo, Finland

Activity: Talks and presentations » Conference presentations
Better but is it good enough? Absolute sustainability requirements and how they challenge the food sector
Period: 1 Nov 2017 → 2 Nov 2017
Yan Dong (Guest lecturer)
Michael Zwicky Hauschild (Guest lecturer)
Department of Management Engineering
Quantitative Sustainability Assessment

Description
In a world with a rapidly growing population, increasing standards of living and pressing needs to reduce human impacts on environment and climate UN’s member states have agreed on a global sustainable development agenda towards 2030. A sustainable development calls for vast improvements in the eco-efficiency of our food production systems (more people fed with considerably less environmental impact), and Life cycle assessment (LCA) is introduced as a tool to measure eco-efficiency and help gauge the environmental dimension of sustainability. The presentation gives an introduction to life cycle assessment as a tool to determine eco-efficiency of our technologies and help optimizing their functionality and minimizing their negative environmental impacts. It discusses the sustainability challenge that faces food production in the future and demonstrates the need to go beyond eco-efficiency, and goes on to discuss absolute boundaries for environmental sustainability, metrics for gauging our solutions against these boundaries. Possible conflicts between food safety and sustainability are discussed together with ways to address them based on a combined assessment of risk and sustainability

Related event
China International Food Safety & Quality Conference
01/11/2017 → 02/11/2017
Beijing, China
Activity: Talks and presentations › Conference presentations
Department of Wind Energy
Resource Assessment Modelling

**Description**
manuscript ERL-104523, reject to resubmit
Degree of recognition: International

**Related journal**

*Environmental Research Letters*
1748-9326
Web of Science (2018): Indexed yes
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

**ITPA Diagnostics Topical Group (External organisation)**

Period: 1 Nov 2017
Søren Bang Korsholm (Vice-chairman)
Department of Physics
Plasma Physics and Fusion Energy

**Description**
Microwave Working Group (MWG) of the ITPA Diagnostics Topical Group
Degree of recognition: International

**Related external organisation**

**ITPA Diagnostics Topical Group**
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

**Keramiske membraner til iltbæst 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 BIOBÆNDSTOFFER OG GRØN ENERGI**
01/11/2017 → …
Aarhus, Denmark
Activity: Talks and presentations › Conference presentations

**Real-time monitoring of a fermentation process: linking yeast morphology to insulin production by image analysis**

Period: 1 Nov 2017
Katrin Pontius (Guest lecturer)
Department of Chemical and Biochemical Engineering
PROSYS - Process and Systems Engineering Centre
PILOT PLANT

Description
Fermentation production processes are often the most complex step within bio-manufacturing. Nevertheless, due to a highly challenging environment inside the bioreactor, industrial fermentation processes are presently rather limited regarding analytical tools for process control. There is a deficit in suitable monitoring devices that can cope with the complexity of the dynamic fermentation environment without compromising the integral success of the process. Therefore, we want to take advantage of the recent advances in microscopy image analysis and evaluate its potential for on-/at-line monitoring of yeast physiology. In yeast cultures, cell size (distribution) has been shown to be correlated with cell viability (dead/alive, osmotically stressed) and growth rate. Furthermore, the cell size was recently correlated to the accumulation of an internal product (fatty acids) in microalgae. Consequently, image analysis seems to be a promising tool for getting a snapshot of the physiological state of a yeast culture during a production process. The lately developed oCelloScope instrument enables rapid imaging and image analysis of a growing yeast culture. By analyzing images over the cultivation time we investigate the distribution dynamics of single cells, budding cells and cell aggregates, aiming at correlations between morphological features and process performance. Ideally, we want to develop a real-time monitoring tool that may be used in industrial bioprocess setups. Within this approach, methodologies for automatic distinction between image objects (single cells, budding cells, cell aggregates) are developed and first time trends of the morphology dynamics of an insulin production process are discussed. 1. Tibayrenc, P., Preziosi-Bello, L., Roger, J. M. & Ghommidh, C. Assessing yeast viability from cell size measurements? J. Biotechnol. (2010). doi:10.1016/j.jbiotec.2010.06.019 2. Camisard, V., Brienne, J. P., Baussart, H., Hammann, J. & Suhr, H. Inline characterization of cell concentration and cell volume in agitated bioreactors using in situ microscopy: Application to volume variation induced by osmotic stress. Biotechnol. Bioeng. (2002). doi:10.1002/bit.10178 3. Tyson, C. B., Lord, P. G. & Wheals, A. E. Dependency of Size of Saccharomyces cerevisiae Cells on Growth Rate. J. Bacteriol. 138, 92–98 (1979). 4. Marbà-Ardévol, A.-M., Emmerich, J., Neubauer, P. & Junne, S. Single-cell-based monitoring of fatty acid accumulation in Cryptophycocyanin (c)ohii with three-dimensional holographic and in situ microscopy. Process Biochem. 52, 223–232 (2017). 5. Fredborg, M. et al. Real-time optical antimicrobial susceptibility testing. J. Clin. Microbiol. 51, 2047–2053 (2013).

Related event
RAFT 12
29/10/2017 → 01/11/2017
Bonita Springs, United States
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
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.
Role of Energy Efficiency for Low Carbon Transformation of India
Period: 1 Nov 2017 → 3 Nov 2017
Subash Dhar (Guest lecturer)
Department of Management Engineering
Transport DTU
UNEP DTU Partnership
Degree of recognition: International
Documents:
Role of EE LCT India _01Nov

Related event
3rd International Conference of Low Carbon Asia & Beyond,
01/11/2017 → 03/11/2017
Bangkok, Thailand
Activity: Talks and presentations › Conference presentations

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
Web of Science (2018): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

European Commission (External organisation)
Period: Oct 2017 → Nov 2017
Andrea N. Hahmann (Participant)
Department of Wind Energy
Resource Assessment Modelling

Description
Evaluation of Research Proposals
Degree of recognition: International

Related external organisation
European Commission
Belgium
Activity: Membership › Membership in review committee

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  
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 (2018): Indexed yes  
Indexed in DOAJ  
Central database  
Activity: Research › Peer review of manuscripts

**Journal of Applied Meteorology and Climatology (Journal)**  
Period: Oct 2017 → …  
Mark C. Kelly (Reviewer)  
Department of Wind Energy  
Resource Assessment Modelling  
Degree of recognition: International

**Related journal**

**Journal of Applied Meteorology and Climatology**  
1558-8424  
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
Tools for improved genome engineering of CHO cell factories, KAIST, Korea  
Period: 31 Oct 2017  
Helene Fastrup Kildegaard (Guest lecturer)  
Novo Nordisk Foundation Center for Biosustainability  
CHO Cell Line Engineering and Design  

Related external organisation  
Korean Advanced Institute of Science and Technology (KAIST)  
Daejeon, Korea, Democratic People's Republic of  
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  

buildingSMART: International Standard Summit  
Period: 30 Oct 2017 → 2 Nov 2017  
Jan Karlshøj (Organizer)  
Department of Civil Engineering  
Section for Building Design  

Description  
Organizer of Building Room activities  
buildingSMART Summit London, UK  

Related event  
buildingSMART: International Standard Summit  
30/10/2017 → 02/11/2017  
London, United Kingdom  
Activity: Attending an event › Participating in or organising a conference  

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

**E-learning: Wind Energy Master**

**Period:** 30 Oct 2017

Merete Badger (Invited speaker)

Nina Juhi Madsen (Invited speaker)

Department of Wind Energy

Meteorology & Remote Sensing

Degree of recognition: National

**Related event**

**Administrativ Efteruddannelse for Universitetsansatte**

30/10/2017 → 31/10/2017

Vejle, Denmark

Activity: Talks and presentations › Conference presentations

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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. 30-31 October 2016, Florianopolis, Brazil (60 participants).

Degree of recognition: International

**Related event**

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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.

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**CFD application as a tool for designing industrial fermenters**

**Period:** 29 Oct 2017 → 1 Nov 2017

Ines Pereira Rosinha Grundtvig (Speaker)

Krist V. Gernaey (Other)

Department of Chemical and Biochemical Engineering

PROSYS - Process and Systems Engineering Centre

Degree of recognition: International

Documents:

Abstract - Ines Grundtvig

**Related event**

Recent Advances in Fermentation Technology

29/10/2017 → 01/11/2017

Activity: Talks and presentations › Conference presentations

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**Dynamics of physiological adaptation of Saccharomycoses cerevisiae to biomass hydrolysates: a single cell analysis approach.**

**Period:** 29 Oct 2017 → 2 Nov 2017

Pau Cabañeros Lopez (Other)
Chuen Tao Peng (Other)
Niels Arneborg (Other)
Anna Eliasson Lantz (Other)
Krist V. Gernaey (Other)

Department of Chemical and Biochemical Engineering
PROSYS - Process and Systems Engineering Centre
PILOT PLANT
Degree of recognition: International

Related event

Recent Advances in Fermentation Technology (RAFT 2017)
29/10/2017 → 01/11/2017
Florida, United States
Activity: Talks and presentations › Conference presentations

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

Strategy for characterizing microbial physiology across scales in fermentation processes
Period: 29 Oct 2017
Gisela Nadal Rey (Other)
Sjef Cornelissen (Other)
Anna Eliasson Lantz (Other)
Krist V. Gernaey (Other)

Department of Chemical and Biochemical Engineering
PROSYS - Process and Systems Engineering Centre
PILOT PLANT

Description
Poster presentation at RAFT 2017.
Degree of recognition: International

Related event

Recent Advances in Fermentation Technology (RAFT 2017)
29/10/2017 → 01/11/2017
Florida, United States
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

Asfaltindustriens valgmøde i Køge
Period: 26 Oct 2017
Kira Hyldekær Janstrup (Invited speaker)
Department of Management Engineering
Transport DTU
Transport Modelling

Related event

Asfaltindustriens valgmøder
25/10/2017 → 07/11/2017
Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

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

Modelling Illicit Drug Fate in Sewers for Wastewater-Based Epidemiology
Period: 26 Oct 2017 → 27 Oct 2017
Pedram Ramin (Speaker)
Peter Steen Mikkelsen (Guest lecturer)
Benedek G. Plósz (Guest lecturer)
Department of Chemical and Biochemical Engineering
PROSYS - Process and Systems Engineering Centre
Department of Environmental Engineering
Urban Water Systems
Degree of recognition: International
Links:

Related organisation

Modelling Illicit Drug Fate in Sewers for Wastewater-Based Epidemiology
Ramin, P. (Speaker), Mikkelsen, P. S. (Guest lecturer), Plósz, B. G. (Guest lecturer)
26 Oct 2017 → 27 Oct 2017
Activity: Talks and presentations › Conference presentations

Reference Material Review Panel (RMRP) for European Commission Joint Research Centre (JRC/F/06) (External organisation)
Period: 26 Oct 2017 → 30 Sep 2020
Katrin Löschner (Member)
National Food Institute
Research Group for Nano-Bio Science
Description
Expert Contract with European Commission as expert for particle characterisation in Reference Material Review Panel (RMRP)
Degree of recognition: International

Related external organisation

Reference Material Review Panel (RMRP) for European Commission Joint Research Centre (JRC/F/06)
Geel, Belgium
Activity: Membership › Membership of research networks or expert groups

AN INSTRUMENT FOR THE MEASUREMENT OF ROAD SURFACE REFLECTION PROPERTIES
Period: 25 Oct 2017
Dennis Dan Corell (Invited speaker)
Department of Photonics Engineering
Diode Lasers and LED Systems
Related event

**CIE Midterm Meeting 2017**
23/10/2017 → 25/10/2017
Jeju, Korea, Republic of
Activity: Talks and presentations › Conference presentations

**Asfaltindustriens valgmøde i Odense**
Period: 25 Oct 2017
Kira Hyldekær Janstrup (Invited speaker)
Department of Management Engineering
Transport DTU
Degree of recognition: National

**Asfaltindustriens valgmøder**
25/10/2017 → 07/11/2017
Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

**PhD censor**
Period: 25 Oct 2017
Jake Badger (External examiner)
Department of Wind Energy
Resource Assessment Modelling
Description
Managing the Risks of Wind Farms in Forested Areas: Design Principles for Northern Europe
Industrial PhD dissertation: 4135-00033B
Peter Enevoldsen
Degree of recognition: National
Activity: Examinations and supervision › External examination

**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 University**
Roskilde, Denmark
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities
sisl + TBtrans + TranSiesta workshop
Nick Rübnner 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 starts 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.

To what extent can Corporate Social Responsibility be seen as a guaranty for a company’s social responsibility?
Period: 25 Oct 2017
Kåre Hendriksen (Guest lecturer)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Degree of recognition: International

Related event
PhD Course: Sustainability, extractives industries, communities and social responsibility: Greenland and be-yond
22/10/2017 → 27/10/2017
Sisimiut, Greenland
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

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
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 Chillventa
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)
Satellite SAR wind maps are used to determine wakes and coastal wind speed gradients at the Anholt wind farm.

Degree of recognition: International

Documents:
Presentation_WindTech2017_3

WindTech 2017 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:
Extended 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/
Documents:
GSTIC_pbau

Related event
G-STIC
23/10/2017 → …
Activity: Talks and presentations › Conference presentations

Exploring oleaginous yeast Yarrowia lipolytica as a cell factory for isoprenoids
Period: 23 Oct 2017
Irina Borodina (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Yeast Metabolic Engineering
Degree of recognition: International

Related event
2017 Metabolic Engineering Summit
22/10/2017 → 24/10/2017
Beijing, China
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 Vilsbøll (Speaker)
Hasler S. W. Hasler (Guest lecturer)
L. D. L. Duchstein (Guest lecturer)
Jens E. Wilhjelm (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

Greenland - A historical view - from a socio technical perspective
Period: 22 Oct 2017
Kåre Hendriksen (Guest lecturer)

Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Degree of recognition: International

Related event
PhD Course: Sustainability, extractives industries, communities and social responsibility: Greenland and beyond
22/10/2017 → 27/10/2017
Sisimiut, Greenland
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

PhD Course: Sustainability, extractives industries, communities and social responsibility: Greenland and beyond
Kåre Hendriksen (Organizer)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Degree of recognition: International

Related event

University of the Arctic Thematic Network Arctic Sustainable Resources and Social Responsibility
Kåre Hendriksen (Organizer)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Degree of recognition: International

Related event

University of the Arctic Thematic Network
Arctic Sustainable Resources and Social Responsibility
21/10/2017 → 29/10/2017
Sisimiut, Greenland
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

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

Institute of Engineering Thermophysics Chinese Academy of Sciences
Period: 19 Oct 2017
Xiaoli Guo Larsén (Visiting lecturer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International
Activity: Visiting an external institution › Visiting another research institution

Modeling wind conditions for offshore wind farms: implications of layout for wind resource, design conditions and integration
Period: 19 Oct 2017
Xiaoli Guo Larsén (Invited speaker)
Department of Wind Energy
Resource Assessment Modelling

Related external organisation

Chinese Meteorological Administration
Beijing China
Activity: Talks and presentations › Conference presentations

Applications of Network Biology to Fungal Biotechnology
Period: 18 Oct 2017
Mikael Rørdam Andersen (Invited speaker)
Department of Biotechnology and Biomedicine
Network Engineering of Eukaryotic Cell factories
Degree of recognition: International

Related event

Central European Forum for Microbiology
18/10/2017 → 20/10/2017
Activity: Talks and presentations › Conference presentations

Latin American and Caribbean Carbon Conference
Period: 18 Oct 2017 → 20 Oct 2017
Susanne Konrad (Organizer)
Fatima-Zahra Taibi (Organizer)
Department of Management Engineering
UNEP DTU Partnership

Description
The Latin American and Caribbean Carbon Forum (LACCF) is a unique, free of charge regional conference and exhibition platform established in 2006 to promote knowledge and information sharing while facilitating business opportunities among main climate finance and emission market stakeholders. This annual Conference and Exhibition is jointly organized by the World Bank Group, the Latin American Energy Organization (OLADE), the International Emissions Trading Association (IETA), the UN Environment and the UNEP DTU Partnership, the Inter-American Development Bank (IDB),
the United Nations Framework Convention (UNFCCC) secretariat, the United Nations Development Program (UNDP) and the Development Bank of Latin America (CAF). The LACCF and the annual workshop of the Low Emission Development Strategies-LEDS-LAC were held back-to-back, becoming the largest climate mitigation event in the region in 2017.

Degree of recognition: International

Related event

Latin American and Caribbean Carbon Conference: Advancing the Paris Agreement: From Targets to Action
18/10/2017 → 20/10/2017
Mexico City, Mexico
Activity: Attending an event › Participating in or organising a conference

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
Research Group for Nano-Bio Science
Degree of recognition: International
Documents:
ANNIC2017_Book_Of_Abstracts

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

Calibration and Validation of an Anaerobic Digestion Model for Process Optimization of an Industrial Granular Sludge Reactor
Hannah Feldman (Speaker)
Xavier Flores Alsina (Other)
Pedram Ramin (Other)
Kasper Kjellberg (Other)
Ulf Jeppsson (Guest lecturer)
Damien J. Batstone (Guest lecturer)
Krist V. Gernaey (Guest lecturer)
Department of Chemical and Biochemical Engineering
PROSYS - Process and Systems Engineering Centre
Degree of recognition: International

Related event

The 15th IWA World Conference on Anaerobic Digestion
17/10/2017 → 20/10/2017
Beijing, China
Activity: Talks and presentations › Conference presentations

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

presentation on Qilu Youth Forum Shandong University
Period: 17 Oct 2017
Xinglin Jiang (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds

Description
The Qilu Youth Forum was held during the anniversary celebration of SDU. It aims to serve as a platform for outstanding young scholars from all over the world to conduct academic exchanges as well as to promote academic cooperation amongst these scholars through academic reports and seminars.
Degree of recognition: International
Links:
http://www.en.sdu.edu.cn/info/1018/2032.htm (about the forum)

Related external organisation
Shandong University
Jinan, China
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

Shandong University
Period: 16 Oct 2017 → 24 Oct 2017
Xinglin Jiang (Visiting researcher)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds

Description
visiting the State Key Laboratory of Microbial Technology
Activity: Visiting an external institution › Visiting another research institution

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

Chinese Meteorological Administration
Period: 13 Oct 2017
Xiaoli Guo Larsén (Visiting researcher)
Department of Wind Energy
Resource Assessment Modelling
Activity: Visiting an external institution › Visiting another research institution

Modeling wind conditions for offshore wind farms: implications of layout for wind resource, design conditions and integration
Period: 13 Oct 2017
Xiaoli Guo Larsén (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling

Related external organisation
Institute of Engineering Thermophysics Chinese Academy of Sciences
China
Activity: Talks and presentations › Conference presentations

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
Supercapacitive bioelectrochemical solar cells using thylakoid membranes and carbon nanotubes
Period: 13 Oct 2017
Dmitri 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

4'th Nordic RAS workshop and field trip
Period: 12 Oct 2017 → 14 Oct 2017
Erik Arvin (Participant)
Department of Environmental Engineering
Degree of recognition: International

Related event
4'th Nordic RAS workshop and field trip
12/10/2017 → 14/10/2017
Aalborg
Activity: Attending an event › Participating in or organising a conference

A decision support framework for circular economy implementation in the packaging sector. Lessons from the Carlsberg Circular Community
Period: 12 Oct 2017
Monia Niero (Invited speaker)
Department of Management Engineering
Quantitative Sustainability Assessment
Degree of recognition: National

Related event
Circular Economy Conference 2017
Enhancing the role of EVs as grid proactive DER - The Danish experience

Period: 12 Oct 2017
Mattia Marinelli (Guest lecturer)

Department of Electrical Engineering
Center for Electric Power and Energy
Energy resources, services and control

Description
Workshop organized at North China Electric Power University (NCEPU), Beijing on 12-10-2017
title: 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

Related external organisation

North China Electric Power University
China
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

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
Activity: Talks and presentations › Conference presentations

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.

**7th NORDIC SEAWEED CONFERENCE, SEaweED AND SUSTAINABILITY**
Period: 11 Oct 2017 → 12 Oct 2017
Alireza Naseri (Speaker)
National Food Institute
Research Group for Bioactives – Analysis and Application

**Description**
Enzymatic extraction and characterization of protein from Eucheuma denticulatum (Eucheuma Spinosum)

**Related event**
7th Nordic seaweed conference: Seaweed and sustainability
11/10/2017 → 12/10/2017
Grenaa, Denmark
Activity: Talks and presentations › Conference presentations

**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

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**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**
**Integret produktudvikling i fødevareindustrien**
11/10/2017 → ...
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

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**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

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**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. Willhjem (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)
National Food Institute
Research Group for Gut Microbiology and Immunology
Degree of recognition: International

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 Ammitssøe (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

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**3rd ImpARAS Conference**
Period: 10 Oct 2017 → 12 Oct 2017
Charlotte Bernhard Madsen (Organizer)
Katrine Lindholm Bøgh (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

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**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
Warsaw, 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 Kiln Flames
Period: 10 Oct 2017 → 11 Oct 2017
Morten Nedegaard 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
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

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

Related organisation
Improving CHO cell factories with CRISPR-mediated genome engineering. 4th Annual BioProNET Science Symposium, University of Warwick, UK
Kildegaard, H. F. (Invited speaker)
10 Oct 2017
Activity: Talks and presentations › Conference presentations

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)

Workshop on Fundamental Aspects of X-ray Spectroscopies

09/10/2017 → 11/10/2017
Utrecht, Netherlands
Activity: Talks and presentations › Conference presentations

NORDIWA Nordic Wastewater Conference 2017

Period: 10 Oct 2017 → 12 Oct 2017
Pelletization of torrefied biomass: a modelling approach
Period: 10 Oct 2017
Maria Puig Arnavat (Speaker)
Marvin Masche (Speaker)
Jesper Ahrenfeldt (Speaker)
Ulrik Birk Henriksen (Speaker)
Department of Chemical and Biochemical Engineering
CHEC Research Centre

Description
The present study aims to apply and validate a simple model for biomass pelletization to describe the pelletization process of wet and dry torrefied biomass (giant reed and willow, respectively). The goal is to allow for a fast estimation of important pelletization parameters by combining a theoretical background with the use of a single pellet press. For this reason, pelletization tests at different die temperatures and compression ratios were carried out and the model was applied to explain the experimental data obtained. The model proved to be a good tool to better understand and describe the pelletizing behaviour of torrefied biomass material.

Degree of recognition: International
Documents:
Pelletization torrefied biomass - Maria Puig - Extended abstract

Related event
Nordic Flame Days
10/10/2017 → 11/10/2017
Stockholm, Sweden
Activity: Talks and presentations › Conference presentations

Pitch me
Period: 10 Oct 2017 → 11 Oct 2017
Christian Bak (Panel member)
Department of Wind Energy
Aerodynamic design

Description
Judge in a competition about new innovations within blade inspection
Degree of recognition: International

Related event
Blade Inspection Damage and Repair 2017
10/10/2017 → 12/10/2017
Brussels, Belgium
Activity: Talks and presentations › Conference presentations

Progress in Photovoltaic Research in Denmark 2017
Period: 9 Oct 2017
Peter Behrensdorff 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

**SS Corporate Garage: Automation with a Human Touch Design Sprint**
Period: 9 Oct 2017
Christine Ipsen (Participant)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: National

**Related event**
*SS Corporate Garage: Automation with a Human Touch Design Sprint*
09/10/2017 → 09/10/2017
Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

‘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
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

Consistancy 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

**European Commission (External organisation)**  
Period: 5 Oct 2017 → 23 Dec 2017  
Susanne Brix Pedersen (Chairman)  
Department of Biotechnology and Biomedicine  
Disease Systems Immunology  
Degree of recognition: International

**Related external organisation**

**European Commission**  
Belgium  
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

**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**  
1368-2156  
BFI (2018): BFI-level 2, Scopus rating (2016): CiteScore 0.27 SJR 0.13 SNIP 0.058, Web of Science (2018): Indexed yes  
Central database  
Activity: Research › Peer review of manuscripts

**Operational monitoring of phosphate and ammonium for an industrial fermentation process using infrared (IR) and near-infrared (NIR) spectroscopy**  
Period: 5 Oct 2017  
Katrin Pontius (Speaker)  
Department of Chemical and Biochemical Engineering  
PROSYS - Process and Systems Engineering Centre  
PILOT PLANT  

**Description**  
In the context of protein production via fermentation processes, proteases produced by Bacillus species are a billion dollar business and set nearly 60 % of the global enzyme market. Manufacturers continuously search for new and improved proteases to meet stability and performance demands and robust production processes are important for economically viable production. Thereby, developing robust and generic on-line monitoring techniques is important to meet the need for monitoring and controlling the process at optimal conditions. Phosphorus and ammonium are central nutrients in media for Bacillus fermentations and need to be present in relevant levels to promote growth and enzyme production. Besides, both species impose additional costs on downstream wastewater treatment if more is added to the medium during the fermentation than needed by the microorganism. Hence, there are also major challenges associated with phosphate and
ammonium. Note that, fermentation processes usually operate under mild conditions and the products are rather diluted. Therefore, a large amount of wastewater containing nutrients is generated that needs to be treated. On-line monitoring of phosphate and ammonium during fermentation processes would facilitate development of feeding strategies of phosphate and ammonium during protein production ensuring that the nutrients are kept at the correct level. On-line monitoring tools would also provide a better understanding of bioprocess dynamics over the entire line from upstream to downstream.

In this work, a case study focusing on the determination of concentration of phosphate and ammonium in a Bacillus protein production process is considered. Both IR and NIR in combination with partial least square regression (PLS) are being employed in this work. This combined approach provides the means for measuring phosphate and ammonium concentrations in a semi-defined culture medium through real-time/on-line monitoring. The present approach is applied on a lab-scale fermentation setup adjusting the operating conditions to mimic the real operation for an industrial application. To minimize the complexity associated with spectroscopy measurements on fermentation broth and decouple natural correlations of parameters, synthetic samples spiked with phosphate or ammonium in addition to real fermentation samples were applied in the model development process. Thereby, regions of IR and NIR spectra corresponding to phosphate and ammonium were appropriately identified and selected. One major advantage associated with this approach is its selectivity due to the appropriateness of the selection criteria (different wavelengths as variables) that are uniquely tied to the target species. Another advantage lies within the versatility of the (N)IR probe itself that can be used in various bioprocess settings. This generic method development strategy will be presented. Furthermore, the application of the on-line monitoring strategies for phosphate and ammonium during a fed-batch, protein production process will be discussed.

Related event

ECAB 4
01/10/2017 → 05/01/2018
Barcelona, Spain
Activity: Talks and presentations › Conference presentations

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
03/10/2017 → 04/10/2017
State College, United States
Activity: Talks and presentations › Conference presentations

Reflective, Creative and Computational Thinking Strategies Used When Students Learn Through Making Games
Period: 5 Oct 2017
Charlotte Lærke Weitze (Guest lecturer)
ECGBL 2017: 11th European Conference on Games Based Learning, ACPI. FH JOANNEUM University of Applied Science, Graz, Austria, 5-6 October 2017
05/10/2017 → 06/10/2017
Graz, Austria
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

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 (Participant)
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)

Deactivation of a Cu-CHA NH₃-SCR Catalyst by SO₂ and SO₃
Period: 4 Oct 2017
Peter Sams Hammershøi (Speaker)
Department of Chemical and Biochemical Engineering
CHEC Research Centre

2017 CLEERS Workshop
03/10/2017 → 05/10/2017
Activity: Talks and presentations › Conference presentations
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

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

Digging deep into central carbon metabolism: Level-3 metabolic engineering of environmental bacteria
Period: 3 Oct 2017
Pablo Ivan Nikel (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability

Research Groups

Systems Environmental Microbiology
Degree of recognition: International

Related event

BioMania
03/10/2017 → 03/10/2017
Brno, Czech Republic
Activity: Talks and presentations › Conference presentations

Gæsteforelæser 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.

WIND ENERGY DENMARK 2017
Period: 3 Oct 2017
Flemming Rasmussen (Organizer)
Department of Wind Energy
Aerodynamic design
Degree of recognition: National

Related event

WIND ENERGY DENMARK 2017
02/10/2017 → 03/10/2017
Herning, Denmark
Activity: Attending an event › Participating in or organising a conference

Advanced fabrication of porous ceramic multilayers for membrane applications
Period: 2 Oct 2017
Andreas Kaiser (Keynote speaker)
Wenjing (Angela) Zhang (Invited speaker)
Manuel Pinelo (Invited speaker)
Michela Della Negra (Other)
Department of Energy Conversion and Storage
Ceramic Engineering & Science
Proton conductors
Department of Chemical and Biochemical Engineering
Center for BioProcess Engineering
Degree of recognition: International
Documents:
Icm 2017 - abstract - Andreas Kaiser

Related organisation

Advanced fabrication of porous ceramic multilayers for membrane applications
Kaiser, A. (Keynote speaker), Zhang, W. (. (Invited speaker), Pinelo, M. (Invited speaker), Della Negra, M. (Other)
2 Oct 2017
Activity: Talks and presentations › Conference presentations

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
Epidemiology

Related event

ECVPH AGM & Annual Scientific Conference 2017
02/10/2017 → 04/10/2017
Liege, Belgium
Activity: Attending an event › Participating in or organising a conference

Extreme variance vs. turbulence: What can the IEC cover?
Period: 2 Oct 2017
Ásta Hannesdóttir (Speaker)
Mark C. Kelly (Other)
Nikolay Krasimirov Dimitrov (Other)
Department of Wind Energy
Resource Assessment Modelling

Wind Turbine Structures and Component Design

**Description**
Here we demonstrate the effect of extreme variance events on wind turbine loads. From ten years of data, we analyze periods with variance exceeding the IEC extreme turbulence prescription. The variance is mainly due to coherent gust-like events, and not turbulence, and these events additionally incur extreme shear. Loads from simulations of these events are compared with the extreme turbulence design load case of the IEC standard, with the latter generally giving higher loads.

**Links:**
http://www.windenergydenmark.dk/program/presentations.aspx

**Related event**

**WIND ENERGY DENMARK 2017**
02/10/2017 → 03/10/2017
Herning, Denmark
Activity: Talks and presentations › Conference presentations

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 Løgstrup Bjerg (Other)**
**Magnus Rohde (Other)**
**Henriette Kern-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
Global Wind Atlas 2.0: Aiming for best value out of high resolution
Period: 2 Oct 2017
Jake Badger (Speaker)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: National

Related event

WIND ENERGY DENMARK 2017
02/10/2017 → 03/10/2017
Herning, Denmark
Activity: Talks and presentations › Conference presentations

Global Wind Atlas 2.0: Aiming for best value out of high resolution global datasets
Period: 2 Oct 2017
Jake Badger (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: National

Related event

WIND ENERGY DENMARK 2017
02/10/2017 → 03/10/2017
Herning, Denmark
Activity: Talks and presentations › Conference presentations

How can we stimulate and exploit a market in Africa for small wind turbines?
Period: 2 Oct 2017
Ivan Nygaard (Invited speaker)
Department of Management Engineering
UNEP DTU Partnership

Description
Presentation in the session: Visionary projects in wind energy
Degree of recognition: International
Documents:
wind energy denmark Ivan Nygaard 3

Related event

WIND ENERGY DENMARK 2017
02/10/2017 → 03/10/2017
Herning, Denmark
Activity: Talks and presentations › Conference presentations

Optimization of jacket design for large wind turbines
Period: 2 Oct 2017
Mathias Stolpe (Invited speaker)
Department of Wind Energy
Wind Turbine Structures and Component Design
Degree of recognition: International
Links:
http://www.windenergydenmark.dk/
Related event

**WIND ENERGY DENMARK 2017**
Period: 02/10/2017 → 03/10/2017
Herning, Denmark
Activity: Talks and presentations › Conference presentations

**RDTU - Kompetenceudvikling i forskningsbaseret rådgivning**
Period: 02/10/2017 → 30/10/2017
Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**The New European Wind Atlas: Exploring new methods for user access and analysis**
Period: 02/10/2017
Jake Badger (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: National

**The Poul la Cour Tunnel & the DTU Research Turbine**
Period: 02/10/2017
Christian Bak (Guest lecturer)
Department of Wind Energy
Aerodynamic design
Description
Presentation of two aerodynamic and aeroelastic research facilities at DTU
Degree of recognition: National

**WIND ENERGY DENMARK 2017**
Period: 02/10/2017 → 03/10/2017
Herning, Denmark
Activity: Talks and presentations › Conference presentations

**WIND ENERGY DENMARK 2017**
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

**WIND ENERGY DENMARK 2017**
Period: 02/10/2017 → 03/10/2017
Herning, Denmark
Activity: Talks and presentations › Conference presentations

**WIND ENERGY DENMARK 2017**
Period: 02/10/2017 → 3 Oct 2017
Mathias Stolpe (Participant)
Department of Wind Energy
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
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/
Degree of recognition: International

Related journal

Scientific Reports
2045-2322
Indexed in DOAJ
Central database
Activity: Communication › Journal editor

Topology optimization as a tool for designing microbioreactors
Period: 1 Oct 2017 → 5 Oct 2017
Ines Pereira Rosinha Grundtvig (Speaker)
Anders Egede Daugaard (Other)
John Woodley (Other)
Ulrich Krühne (Other)
Department of Chemical and Biochemical Engineering
PROSYS - Process and Systems Engineering Centre
The Danish Polymer Centre
Degree of recognition: International
Documents:
Abstract_WCCE_Ines_Grundtvig_1

Related event

10th World Congress of Chemical Engineering (WCCE10)
01/10/2017 → 05/10/2017
Barcelona, Spain
Activity: Talks and presentations › Conference presentations

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

Leonardo Aquino
Start date: Sep 2017 → Dec 2017
Andrea N. Hahmann (Host)
Department of Wind Energy
Resource Assessment Modelling

Description
Visit related to thesis research topic - downscaling for wind energy
Activity: Hosting a guest lecturer

Micro 3D Additive Manufacturing and metrological methods
Period: Sep 2017 → Dec 2017
Ali Davoudinejad (Supervisor)
Department of Mechanical Engineering
Manufacturing Engineering

Description
visiting PhD student researcher at the Technical University of Denmark (DTU)
Degree of recognition: International
Activity: Examinations and supervision › Supervisor activities

Theoretical and Applied Climatology (Journal)
Period: Sep 2017 → …
Mark C. Kelly (Reviewer)
Department of Wind Energy
Resource Assessment Modelling
Related journal

**Theoretical and Applied Climatology**
0177-798X
Central database
Activity: Research › Peer review of manuscripts

**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

**An extended test battery for characterizing hearing deficits**
Period: 29 Sep 2017
Raul Sanchez Lopez (Speaker)
Federica Bianchi (Other)
Michal Fereczkowski (Other)
Sébastien Santurette (Other)
Torsten Dau (Other)

Department of Electrical Engineering
Hearing Systems

Related event

Dansk Teknisk Audiologisk Selskab årsmøde 2017
29/09/2017 → 30/09/2017
Activity: Talks and presentations › Conference presentations

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
Activity: Talks and presentations › Conference presentations
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

**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.

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 2017 on Biology Producing Natural Products
Period: 27 Sep 2017 → 29 Sep 2017
Helene Lunde Robertsen (Lecturer)
Novo Nordisk Foundation Center for Biosustainability
New Bioactive Compounds
Degree of recognition: International
Links:
http://vaamworkshop2017.ziemertlab.com

Related external organisation

Eberhard-Karls-Universität Tübingen
Germany
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
10th International Conference on Predictive Modelling in Food: ICPMF10
26/09/2017 → 29/09/2017
Cordoba, Spain
Activity: Research › Peer review of manuscripts

Energetic particles in burning plasmas
Period: 26 Sep 2017 → 28 Sep 2017
Jesper Rasmussen (Lecturer)
Department of Physics
Plasma Physics and Fusion Energy

Description
PhD lectures given at the 8th Sino-Danish Autumn School on Fusion Plasma Physics and Technology, Beijing, China

Related event
8th Sino-Danish Autumn School on Fusion Plasma Physics and Technology
26/09/2017 → 28/09/2017
Beijing, China
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

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.

Land surface parametrizations for CFD models and WAsP in complex forested terrain
Period: 26 Sep 2017
Ebba Dellwik (Invited speaker)
Department of Wind Energy
Meteorology & Remote Sensing

Related event

Expert meeting at OX2, Stockholm
26/09/2017 → 26/09/2017
Stockholm, Sweden
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

‘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

10th International Conference on Predictive Modelling in Food: ICPMF10
26/09/2017 → 29/09/2017
Cordoba, Spain
Activity: Talks and presentations › Conference presentations

New insight on the effect of lactate on the Listeria monocytogenes growth in high pressure processed cooked ham.
Abstract and oral presentation at 10th International Conference on Predictive Modelling in Food, 26-29 September 2017, Cordoba, Spain.
Period: 26 Sep 2017 → 29 Sep 2017
Paw Dalgaard (Other)
National Food Institute
Research Group for Analytical and Predictive Microbiology

Description

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 → 29/09/2017
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 Faustrup Kildegaard (Organizer)
Novo Nordisk Foundation Center for Biosustainability
CHO Cell Line Engineering and Design

Description
Organizing Committee Member, 13th PEACE conference, Valencia, Spain
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
The school will consist of 16 lectures in total, given by 8 speakers (90'+60' each), contributed talks, poster sessions and other activities.

**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
Bacterial hosts for production of bioactive phenolics from berry fruits (BacHBerry): a strawberry in a pill?
Period: 21 Sep 2017
Alexey Dudnik (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Microbial Evolution and Synthetic Biology
Applied Metabolic Engineering
Degree of recognition: Local

Related external organisation

UNF Aarhus
Ny Munkegade 12, 8000, Aarhus, Denmark
Activity: Talks and presentations › Conference presentations

Digitalisering, Industri 4.0 og distanceledelse
Period: 21 Sep 2017
Christine Ipsen (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: Local

Related event

Centet for Ledelse - Direktørnetværksmøde: Digitalisering og Distanceledelse
21/09/2017 → 21/09/2017
Helsingør, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

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

E-learning master and continuing education
Period: 21 Sep 2017
Merete Badger (Invited speaker)
Department of Wind Energy
Meteorology & Remote Sensing
Degree of recognition: Local

Related event

DTU Wind Energy Department Day
21/09/2017 → 21/09/2017
Roskilde, Denmark
Activity: Talks and presentations › Conference presentations

Innovation workshop on lake restoration for project Vand i Mølleåen.
Period: 21 Sep 2017
Erik Arvin (Panel member)
Department of Environmental Engineering
Degree of recognition: National

Related event

Innovation workshop on lake restoration for project Vand i Mølleåen.
21/09/2017 → 21/09/2017
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

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
Meteorology & Remote Sensing
Related journal

Remote Sensing of Environment
0034-4257
Web of Science (2018): Indexed yes
Central database
Activity: Research › Peer review of manuscripts
**Active-subspace analysis of speckle-based particle measurements**  
*Period: 20 Sep 2017*  
Mirza Karamehmedovic (Guest lecturer)  
Department of Applied Mathematics and Computer Science  
Scientific Computing  
Degree of recognition: International

**Related event**

**Inverse Problems from Theory to Application**  
19/09/2017 → 21/09/2017  
Cambridge, United Kingdom  
Activity: Talks and presentations › Conference presentations

**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

Universita 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.
Jan Karlshøj (Organizer)
Department of Civil Engineering
Section for Building Design

Description
Building track
Degree of recognition: National

Related event

High Tech Summit
20/09/2017 → 21/09/2017
Kongnes Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

Miniature converters
Period: 20 Sep 2017
Michael A. E. Andersen (Invited speaker)
Department of Electrical Engineering
Electronics
Degree of recognition: National
Links:
https://hightechsummit.dk/

Related event

High Tech Summit
20/09/2017 → 21/09/2017
Kongnes Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Parallel evolution of deformation textures and dislocation boundaries
Period: 20 Sep 2017 → 22 Sep 2017
Grethe Winther (Guest lecturer)
Department of Mechanical Engineering
Materials and Surface Engineering
Degree of recognition: International
Documents:
Parallel evolution of deformation textures and dislocation boundaries

Related organisation

Parallel evolution of deformation textures and dislocation boundaries
Winther, G. (Guest lecturer)
20 Sep 2017 → 22 Sep 2017
Activity: Talks and presentations › Conference presentations

Re-designing metabolism in environmental bacteria
Period: 20 Sep 2017
Pablo Ivan Nikel (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Systems Environmental Microbiology
Degree of recognition: International

Related external organisation
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- och vetenskapshistoriska dagar 2017
20/09/2017 → 22/09/2017
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

3rd 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
Degree of recognition: International

Related event
3rd 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

IEC 61400-15 meeting/workshop 12 (Event)
Period: 19 Sep 2017 → 22 Sep 2017
Mark C. Kelly (Member)
Department of Wind Energy
Resource Assessment Modelling

Description
IEC 61400-15 workshop and creation of standard for uncertainty in resource assessment. I am an active author of drafts; wrote/edited more of uncertainty-combination section, and modified/augmented vertical-extrapolation section in this meeting.
Degree of recognition: International

Related event
IEC 61400-15 meeting/workshop 12
19/09/2017 → 22/09/2017
Madrid, Spain
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar
**Langsigtede strategiske partnerskab**

_Per Anker Jensen (Invited speaker)_

*Department of Management Engineering*

*Management Science*

*Implementation and Performance Management*

**Description**

_Per Anker Jensen, Christian Thuesen og Jakob Brinkø Berg medvirkede i planlægning af og holdt indlæg ved debatmøde om Langsigtede strategiske partnerskab arrangeret af projekt REBUS i Dome of Vision i Aarhus den 19. september 2017*

_Degree of recognition: National_

**Related event**

**REBUS debatmøde**

*20/10/2017 → …*  
_Aarhus_

_Activity: Talks and presentations › Conference presentations_

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**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_

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**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_

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**Synthetic biology for yeast cell factories: genetic tools, automation, and applications**

_Period: 19 Sep 2017_

_Irina Borodina (Invited speaker)_

*Novo Nordisk Foundation Center for Biosustainability*

*Research Groups*
Yeast Metabolic Engineering
Degree of recognition: International

Related event

Synthetic Biology at Molecular, Cellular and Multicellular levels
19/09/2017 → 21/09/2017
Venice, Italy
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

43rd International conference on Micro and Nano Engineering
Period: 18 Sep 2017 → 22 Sep 2017
Mikkel Rønne Lotz (Participant)
Department of Micro- and Nanotechnology
Polymer Micro & Nano Engineering

Description
Oral Presentation
Degree of recognition: International

Related event

43rd International conference on Micro and Nano Engineering
18/09/2017 → 21/09/2017
Braga, Portugal
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

Gert-Jan Steeneveld
Start date: 18 Sep 2017 → 13 Oct 2017
Jake Badger (Host)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International
Activity: Hosting a guest lecturer

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

Journal of Renewable and Sustainable Energy (Journal)
Period: 18 Sep 2017 → 14 Nov 2017
Ole Steen Rathmann (Reviewer)
Department of Wind Energy
Resource Assessment Modelling

Description
Peer-review of paper
Degree of recognition: International

Related journal

Journal of Renewable and Sustainable Energy
1941-7012
Central database
Activity: Research › Peer review of manuscripts

Malardalen University
Period: 18 Sep 2017 → 13 Oct 2017
Christina Villefrance Møller (Visiting researcher)
**Organic ice resists: condensed small molecules as spin-free volatile E-beam resists**

**Period:** 18 Sep 2017 → 22 Sep 2017

William Tiddi (Speaker)

DTU Danchip

**Description**

We developed a novel technique using frozen alcohols and other simple organic molecules for lithography applications. The desired chemical (e.g. anisole, nonane) is condensed from vapor phase at cryogenic temperature to form a frozen thin film demonstrating resist-like capabilities. Arbitrary patterns are defined into this organic ice resist (OIR) as in conventional e-beam lithography; exposed areas are stable in air at ambient condition while unexposed ice vanishes, sublimating away once the sample returns to room temperature. No spin coating or development steps are needed: everything happens in a single tool, while remaining compatible with other processing and characterization techniques. As an example, we demonstrate silicon nanowires fabrication using OIR as a protective mask for plasma etch, transferring the line features into the underlying silicon substrate.

**Degree of recognition:** International

**Related event**

*43rd International conference on Micro and Nano Engineering*

**Period:** 18 Sep 2017 → 22 Sep 2017

Braga, Portugal

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*

**Period:** 18 Sep 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*

**Period:** 18/09/2017 → 20/09/2017
SynBio supports deep Metabolic Engineering of Pseudomonas putida
Period: 18 Sep 2017
Pablo Ivan Nikel (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Systems Environmental Microbiology
Degree of recognition: International
Related external organisation
Technical University of Munich
Munich, Germany
Activity: Talks and presentations › Conference presentations

Challenges in Achieving Controlled Structure and Function Simultaneously.
Period: 17 Sep 2017 → 23 Sep 2017
Kristoffer Almdal (Invited speaker)
Department of Micro- and Nanotechnology
Description
Invited talk
Related event
International Symposium on Ionic Polymerization 2017
17/09/2017 → 23/09/2017
Durham, United Kingdom
Activity: Talks and presentations › Conference presentations

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
Bus and Passenger Simulation within a Combined Agent-Based Multi-Modal Assignment Model
Period: 16 Sep 2017
Mads Paulsen (Speaker)
Department of Management Engineering
Transport DTU
Transport Modelling
Degree of recognition: International

Related event
hEART 2016: 5th Symposium of the European Association for Research in Transportation
14/09/2016 → 16/09/2016
Delft, Netherlands
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

Metabolic engineering for new-to-Nature bioreactions
Period: 15 Sep 2017
Pablo Ivan Nikel (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Systems Environmental Microbiology
Degree of recognition: International

Related external organisation
Centro Nacional de Biotecnología
Spain
Activity: Talks and presentations › Conference presentations

UVB irradiation has a greater efficacy than photodynamic therapy on Enterococcus Faecalis
Period: 15 Sep 2017
Merete Markvart (Speaker)
Aikaterini Argyraki (Other)
Paul Michael Petersen (Other)
Thomas Bjarnsholt (Other)
Lars Bjørndal (Other)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International
Documents:
UVB irradiation has greater efficacy than photodynamic therapy on Enterococcus Faecalis_ESE_final
Related event

18th Biennial European Society of Endodontontology (ESE) Congress - Brussels, Belgium
14/09/2017 → …
Activity: Talks and presentations › Conference presentations

Bevilling - A.N. Neergaard og Hustrus Fond
Period: 14 Sep 2017
Ditte Baun Hermund (Other)
National Food Institute
Research Group for Bioactives – Analysis and Application
Activity: 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)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Degree of recognition: Local

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

NORA studietur om vandforsyning og udfordringer i Sydgrønland
Period: 14 Sep 2017 → 21 Sep 2017
Kåre Hendriksen (Organizer)
Department of Civil Engineering
ARTEK, Section for Arctic Engineering and Sustainable Solutions
Degree of recognition: International

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
Related event

5th International Workshop on LED and Solar Applications
13/09/2017 → 14/09/2017
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

4th Biennial System Engineering Workshop
Period: 13 Sep 2017 → 15 Sep 2017
Michael McWilliam (Chairman)
Frederik Zahle (Chairman)
Katherine Dykes (Chairman)
Department of Wind Energy
Aerodynamic design
Degree of recognition: International
Links:
http://www.vindenergi.dtu.dk/english/kalender/2017/09/4th-bi-annual-workshop-on-system-engineering?id=c4d8a6e0-106d-4154-be81-d261588b4f87

Related event

4th Biennial System Engineering Workshop
13/09/2017 → 15/09/2017
Roskilde, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Blind Results for The Aerodynamic Wind Turbine Design Optimization Case Study for the IEA Task 37 on Wind Energy Systems Engineering
Period: 13 Sep 2017
Michael McWilliam (Invited speaker)
Frederik Zahle (Other)
Katherine Dykes (Other)
Department of Wind Energy
Aerodynamic design
Degree of recognition: International
Documents:
Aero_Opt_Presentation_Sys_Workshop

Related event

4th Biennial System Engineering Workshop
13/09/2017 → 15/09/2017
Roskilde, 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
Design considerations for integration of two 5 MW vapour compression heat pumps in the Greater Copenhagen district heating system
Period: 13 Sep 2017
Torben Schmidt Ommen (Speaker)
Department of Mechanical Engineering
Thermal Energy
Degree of recognition: International
Documents:
SVAF_4DH_1

Higher Fidelity Analysis in Wind Turbine Multi-disciplinary Design Optimization
Period: 13 Sep 2017
Michael McWilliam (Invited speaker)
Department of Wind Energy
Aerodynamic design
Degree of recognition: International
Documents:
System_Engineering_Workshop_2017_Higher_Fidelity_in_Optimization

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 Moll (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 (2018): 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
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

**Energetic Evolution of Transportomes**
*Period: 12 Sep 2017*
Irina Borodina (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability

Research Groups
Yeast Metabolic Engineering

Degree of recognition: International

**Related event**
**CBMNet: Import and Export of Small Molecules for Biocatalysis**
12/09/2017 → 13/09/2017
Edinburg, United Kingdom
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.

Degree of recognition: International

Documents:
20170912-4DH evaluation parameters-DMS
3rd International Conference on Smart Energy Systems and 4th Generation District Heating
12/09/2017 → 13/09/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

HEART 2017: 6th Symposium of the European Association for Research in Transportation
Period: 12 Sep 2017 → 14 Sep 2017
Haifa, Israel
Activity: Attending an event › Participating in or organising a conference

Nye - Assessing the environmental and economic sustainability
Period: 12 Sep 2017
Department of Environmental Engineering
Urban Water Systems

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
Department of Mechanical Engineering
Thermal Energy
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

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

Characterization of scintillator-based gamma spectrometers for determination of sample dose rate in OSL dating applications
Period: 11 Sep 2017 → 15 Sep 2017
Minqiang Bu (Other)
Andrew Sean Murray (Other)
Myung Ho Kook (Other)
Louise Maria Helsted (Other)
Jan-Pieter Buylaert (Other)
Kristina Jørkov Thomsen (Other)
Center for Nuclear Technologies
Radiation Physics
Degree of recognition: International

Related organisation
Characterization of scintillator-based gamma spectrometers for determination of sample dose rate in OSL dating applications
Bu, M. (Other), Andrew Sean Murray (Other), Kook, M. H. (Other), Helsted, L. M. (Other), Buylaert, J. (Other), Thomsen, K. J. (Other)
11 Sep 2017 → 15 Sep 2017
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
Software Engineering

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.

MATSim User Meeting: Special Session @ hEART 2017
Period: 11 Sep 2017
Mads Paulsen (Participant)
Department of Management Engineering
Transport DTU
Transport Modelling

Description
User meeting on the latest development of MATSim from users around the world.
Degree of recognition: International

Related event
MATSim User Meeting: Special Session @ hEART 2017
11/09/2017 → 11/09/2017
Haifa, Israel
Activity: Attending an event › Participating in or organising a conference

Open BIM: Focusing on buildingSMART standards
Period: 11 Sep 2017
Jan Karlshøj (Lecturer)
Department of Civil Engineering
Section for Building Design

Description
Lecture on buildingSMART standards: IDM, MVD, IFC, BCF, bsDD at Aalborg University.

Related external organisation
Unknown external organisation
Activity: Talks and presentations › Conference presentations

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.

J A S A Express Letters (Journal)
Period: 10 Sep 2017
Oliver Ackermann Lylloff (Reviewer)
Acoustic Technology
Department of Wind Energy
Aerodynamic design
Degree of recognition: International

Related journal

*JA S A Express Letters*
1529-7853
Central database
Activity: Research › Peer review of manuscripts

**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

**Phase estimation for global defocus correction in optical coherence tomography**
Period: 8 Sep 2017
Mikkel Jensen (Speaker)
Niels Møller Israelsen (Guest lecturer)
Ole Bang (Guest lecturer)
Adrian Podoleanu (Guest lecturer)
Department of Photonics Engineering
Fiber Sensors and Supercontinuum Generation
Degree of recognition: International
Documents:
Phase estimation for global defocus correction in optical coherence tomography

Related event

2nd Canterbury Conference on Optical Coherence Tomography: Emphasis on broadband sources
06/09/2017 → 08/09/2017
Canterbury, United Kingdom
Activity: Talks and presentations › Conference presentations

**Versatile hand-held master-slave optical coherence tomography instrument for non-destructive testing**
Period: 8 Sep 2017
Manual Marques (Other)
Adrian Bradu (Lecturer)
Sylvain Rivet (Other)
Ramona Cernat (Other)
Niels Møller Israelsen (Other)
Ole Bang (Other)
Adrian Podoleanu (Other)
Department of Photonics Engineering
Fiber Sensors and Supercontinuum Generation
Related event

2nd Canterbury Conference on Optical Coherence Tomography: Emphasis on broadband sources
06/09/2017 → 08/09/2017
Canterbury, United Kingdom
Activity: Talks and presentations › Conference presentations

DTU Sector Development Project on the Bioeconomy (Event)
Period: 7 Sep 2017 → 29 Jun 2018
Solange I. Mussatto (Member)
Novo Nordisk Foundation Center for Biosustainability
Biomass Conversion and Bioprocess Technology

Description
DTU Sector Development Project on the Bioeconomy
Degree of recognition: National

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
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
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
Vattuniemanranta 2, 4.krs , 00210, Helsinki, Finland
Activity: Public and private sector consultancy › Consultancy

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: comittee meeting
07/09/2017 → 07/09/2017
Hillerød, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Patho-metabolic adaptation of Pseudomonas aeruginosa during long term infection
Period: 7 Sep 2017
Ruggero La Rosa (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Infection Microbiology

Related event

16TH INTERNATIONAL CONFERENCE ON PSEUDOMONAS
05/09/2017 → 09/09/2017
Liverpool, United Kingdom
Activity: Talks and presentations › Conference presentations

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 → 07/09/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Resolution dependence on phase extraction by the Hilbert transform in phase calibrated and dispersion compensated ultrahigh resolution spectrometer based OCT
2nd Canterbury Conference on Optical Coherence Tomography: Emphasis on broadband sources
06/09/2017 → 08/09/2017
Canterbury, United Kingdom
Activity: Talks and presentations › Conference presentations

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

2nd International Symposium on microbial resource management : MRM2
07/09/2017 → 08/09/2017
Gent, Belgium
Activity: Talks and presentations › Conference presentations

CFB Annual Seminar
Period: 6 Sep 2017 → 7 Sep 2017
Behrooz Darbani Shirvanehdeh (Participant)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Yeast Metabolic Engineering

CFB annual seminar 2017
Period: 6 Sep 2017 → 7 Sep 2017
Abida Sultan (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Signal Transduction
Bacterial phosphoproteomics
Degree of recognition: International

Related event

CFB Annual Seminar
06/09/2017 → 07/09/2017
Helsingør, 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

EMS Annual Meeting: European Conference for Applied Meteorology and Climatology 2017 (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
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 Potgiiese (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

**Noise study of all-normal dispersion supercontinuum sources for potential application in optical coherence tomography**
Period: 6 Sep 2017 → 9 Sep 2017
Ivan Bravo Gonzalo (Speaker)
Rasmus Dybbro Engelsholm (Other)
Ole Bang (Other)

Department of Photonics Engineering

**Fiber Sensors and Supercontinuum Generation**
Degree of recognition: International

**Related event**
2nd Canterbury Conference on Optical Coherence Tomography: Emphasis on broadband sources
06/09/2017 → 08/09/2017
Canterbury, United Kingdom
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.

**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

**A decision support framework for circular economy implementation in the packaging sector. Lessons from the Carlsberg Circular Community**

**Period:** 5 Sep 2017

Monia Niero (Invited speaker)

Department of Management Engineering

Quantitative Sustainability Assessment

**Description**
Invited presentation at discussion panel on "LCM approaches to support Circular Economy"

Degree of recognition: International

**Related event**

**8th International Conference on Life Cycle Management : Designing sustainable technologies, products and policies: from science to innovation**
From scientific knowledge to business practice: how to bridge the Life Cycle Assessment (LCA) reporting strategy gap?

**Period:** 5 Sep 2017

Monia Niero (Speaker)
Alexandra Bonou (Other)
Stig Irving Olsen (Other)

Department of Management Engineering
Quantitative Sustainability Assessment

**Description**
Poster presentation
Degree of recognition: International

**Related event**
8th International Conference on Life Cycle Management: Designing sustainable technologies, products and policies: from science to innovation
03/09/2017 → 06/12/2017
Luxembourg City, Luxembourg
Activity: Talks and presentations › Conference presentations

Key note presentation: The link between transparency and ambition / UNEP Emissions Gap Report.

**Period:** 5 Sep 2017

Anne Olhoff (Keynote speaker)

UNEP DTU Partnership
Degree of recognition: International
Links:
https://www.transparency-partnership.net/

**Related external organisation**
GIZ
Germany
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

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
Glostrup, 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 Hirskiko (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
04/09/2017 → 08/09/2017
Dublin, Ireland
Doppler lidar horizontal wind retrievals from a meteorological perspective
Period: 4 Sep 2017 → 8 Sep 2017
Ewan O'Connor (Speaker)
Anne Hiristikko (Other)
Christos Halios (Other)
Sven-Erik Gryning (Other)
Ronny Leinweber (Other)
Antti Manninen (Other)
Tobias Marke (Other)
Guðrún Nína 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
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
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

Performance of four PBL schemes in WRF at Villum 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

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
04/09/2017 → 08/09/2017
Dublin, Ireland
Activity: Talks and presentations › Conference presentations

Statistical Genetics (02586)
Period: 4 Sep 2017 → 9 Dec 2017
Anders Stockmarr (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
course at master level
Degree of recognition: Local
Activity: Other

The effect of dietary fatty acid content on rainbow trout fry robustness towards Flavobacterium psychrophilum
Period: 4 Sep 2017
Nikolaj Reducha Andersen (Guest lecturer)
Ivar Lund (Guest lecturer)
Alfred Jokumsen (Guest lecturer)
Lone Madsen (Guest lecturer)
National Veterinary Institute
Fish Diseases
National Institute of Aquatic Resources
Section for Aquaculture
Degree of recognition: International

Related event

18th International Conference on Diseases of Fish and Shellfish: 18th International Conference on Diseases of Fish and Shellfish
04/09/2017 → 08/09/2017
Belfast, United Kingdom
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 (2018): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

Geoscientific Model Development (Journal)
Period: 1 Sep 2017 → 1 Dec 2017
Patrick Volker (Reviewer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International
Links:
https://www.geosci-model-dev.net/10/4229/2017/gmd-10-4229-2017-discussion.html (Review discussion)

Related journal
Geoscientific Model Development
1991-959X
Web of Science (2018): Indexed yes
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

Life cycle assessment and its application in decision analysis
Period: 1 Sep 2017 → 2 Sep 2017
Yan Dong (Guest lecturer)
Department of Management Engineering
Quantitative Sustainability Assessment

Related event
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 that 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 straits 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
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

**Description**
Review of research application

**Related external organisation**

**Austrian Science Fund / Der Wissenschaftsfonds**
Wien, Austria
Activity: Membership › Membership in review committee

**Differentiating between exchange sites in small-pore zeolites by in-situ EPR**
Period: Aug 2017 → …
Susanne Mossin (Other)
Center for Hyperpolarization in Magnetic Resonance
Department of Chemistry
Centre for Catalysis and Sustainable Chemistry
Organic Chemistry

**Description**
Poster Contribution

**Related event**

**13th European Congress on Catalysis (EUROPACAT 2017)**
27/08/2017 → 31/08/2017
Florence, Italy
Activity: Talks and presentations › Conference presentations

**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 (2018): 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

**Influence of Promotor, H2O and H2S on the Hydrodeoxygenation of Biomass Pyrolysis Vapor over MoS2 Catalysts**
Period: Aug 2017
Trine Marie Hartmann Dabros (Guest lecturer)
Department of Chemical and Biochemical Engineering
CHEC Research Centre

**Description**
Oral presentation
Documents:
EuropaCat2017_TrineArndal_Abstract

**Related event**
**13th European Congress on Catalysis (EUROPACAT 2017)**
27/08/2017 → 31/08/2017
Florence, Italy
Activity: Talks and presentations › Conference presentations

**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 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 (2018): 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 commitees, 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
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)

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

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

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)
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

CFM workshop om FM værktøjer
Period: 30 Aug 2017
Giulia Nardelli (Participant)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: Local

Related event
CFM workshop om FM værktøjer
22/05/2017 → 30/08/2017
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

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
d-DNP-NMR as an emerging real time analytical method
Period: 30 Aug 2017
Peter Andreas Boeg (Guest lecturer)
Center for Hyperpolarization in Magnetic Resonance
Department of Chemistry
Centre for Catalysis and Sustainable Chemistry
Organic Chemistry

Related event
13th European Congress on Catalysis (EUROPACAT 2017)
27/08/2017 → 31/08/2017
Florence, Italy
Activity: Talks and presentations › Conference presentations

Girls' Day in Science event. Mærsk Mc-Kinney Møller Science Center, Sørø, Denmark.
Period: 30 Aug 2017
Helene Fastrup 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 an 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

**DeepLoc: Prediction of protein subcellular localization using deep learning**  
**Period:** 29 Aug 2017  
Henrik Nielsen (Guest lecturer)  
Department of Bio and Health Informatics  
Disease Intelligence and Molecular Evolution

**Related external organisation**  
Stockholm University  
Sweden  
Activity: Talks and presentations › Conference presentations

**Hierarchical microstructures in metals due to dislocation-mediated plasticity**  
**Period:** 29 Aug 2017 → 31 Aug 2017  
Grethe Winther (Invited speaker)  
Department of Mechanical Engineering  
Materials and Surface Engineering  
Documents:  
Abstract Grethe Winther

**Related event**  
International Symposium on Multiscale Computational Analysis of Complex Materials  
29/08/2017 → 31/08/2017  
Lyngby, Denmark  
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 (2018): BFI-level 1, Scopus rating (2016): CiteScore 0.59 SJR 0.268 SNIP 0.582, ISI indexed (2013): ISI indexed yes, Web of Science (2018): 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

Cyklistuælhed – hvilken betydning har vejen, køretøjet og trafikanten
Period: 28 Aug 2017 → 29 Aug 2017
Kira Hyldekær Janstrup (Speaker)
Mette Møller (Other)
Ninette Pilegaard (Other)
Department of Management Engineering
Transport DTU
Transport Modelling
Technology and Innovation Management
Systems Analysis

Related event

Trafikdage
01/01/2010 → ...
Aalborg, Denmark
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.
Preliminary results from the project “Slow On the Bottle – Enjoy the Road (SOBER)”: Instruments to measure implicit associations towards drunkdriving and to change implicit drunk-driving associations
Period: 28 Aug 2017
Laila Marianne Martinussen (Speaker)
Department of Management Engineering
Technology and Innovation Management
Transport DTU
Degree of recognition: International
Documents:
62_LailaMartinussen

Related event
Aalborg Trafikdage 2009
01/01/2009 → …
Activity: Talks and presentations › Conference presentations

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
Eukaryotic Molecular Cell Biology
Description
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

European School on Nanosciences & Nanotechnologies
Period: 27 Aug 2017 → 16 Sep 2017
Mikkel Rønne Lotz (Participant)
Department of Micro- and Nanotechnology
Polymer Micro & Nano Engineering
Description
ESONN Summer School 2017
Degree of recognition: International

Related event
European School on Nanosciences & Nanotechnologies
27/08/2017 → 16/09/2017
Grenoble, France
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

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 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: 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

DeepLoc: Prediction of protein subcellular localization using deep learning
Period: 25 Aug 2017
Henrik Nielsen (Guest lecturer)
Department of Bio and Health Informatics
Disease Intelligence and Molecular Evolution
Related event
Annual Danish Bioinformatics Conference 2017: Elixir
23/08/2017 → 25/08/2017
Odense, Denmark
Activity: Talks and presentations › Conference presentations

"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
21/08/2017 → 25/08/2017
Annual Danish Bioinformatics Conference 2017
Period: 23 Aug 2017 → 24 Aug 2017
Lasse Westergaard Folkesen (Organizer)
Department of Bio and Health Informatics

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

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
NOVEL MATERIALS FOR MORE ROBUST SOLID OXIDE FUEL CELLS IN SMALL SCALE APPLICATIONS
Period: 21 Aug 2017
Peter Holtappels (Invited speaker)
Department of Energy Conversion and Storage
Degree of recognition: International
Documents:
IMRC24_2017_Holtappels_Novel materials for SOFC anodes_rev

Related event
24th International Materials Research Congress 2017
20/08/2017 → 25/08/2017
Cancun, Mexico
Activity: Talks and presentations › Conference presentations

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
Degree of recognition: International

Related event
25th Colloquium on High Resolution Molecular Spectroscopy
20/08/2017 → 26/08/2017
Helsini, Finland
Activity: Attending an event › Participating in or organising a conference

Auditory profiling through computational data analysis
Period: 19 Aug 2017
Raul Sanchez Lopez (Other)
Federica Bianchi (Other)
Michal Fereczkowski (Other)
Sébastien Santurette (Other)
Torsten Dau (Other)
Department of Electrical Engineering
Hearing Systems

Description
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.

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 Electro catalysis 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

**Digital Manufacturing in the Extrusion Process Chain by Additively Manufacturing Soft Tooling for Extrusion Dies**
Period: 15 Aug 2017 → 30 Jan 2018
Ali Davoudinejad (Supervisor)
Department of Mechanical Engineering
Manufacturing Engineering
Degree of recognition: International
Activity: Examinations and supervision › Supervisor activities

**University of California Berkeley, Department of Civil and Environmental Engineering**
Period: 15 Aug 2017 → 28 Feb 2018
Martin Rygaard (Visiting researcher)
Department of Environmental Engineering
Urban Water Systems

**Description**
Sabbatical
Degree of recognition: International
Activity: Visiting an external institution › Visiting another research institution

**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)
Department of Chemistry
Degree of recognition: International
Activity: Hosting a guest lecturer

Plasmid Host Range (Permisiveness) 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
Documents: EDAR2017_BFSM

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
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

**Ekaterina Batchvarova**
Start date: 8 Aug 2017 → 16 Aug 2017
Sven-Erik Gryning (Host)
Department of Wind Energy

Degree of recognition: International
Activity: Hosting a guest lecturer

**Tutorial at ITEC Asia-Pacific 2017: "Advanced bidirectional dc-dc converters with emerging wide-bandgap semiconductor devices"**
Period: 7 Aug 2017
Zhe Zhang (Invited speaker)
Department of Electrical Engineering
Electronics
Degree of recognition: International

Related event

**Tutorial at ITEC Asia-Pacific 2017: "Advanced bidirectional dc-dc converters with emerging wide-bandgap semiconductor devices"**
07/08/2017 → 07/08/2017
Activity: Talks and presentations › Conference presentations

**10th BioMedical Transporters Conference**
Period: 6 Aug 2017 → 10 Aug 2017
Behrooz Darbani Shirvanehehdeh (Participant)
Novo Nordisk Foundation Center for Biosustainability
Yeast Metabolic Engineering

Related event

**10th BioMedical Transporters Conference**
08/08/2007 → 10/08/2017
Lausanne, Switzerland
Activity: Attending an event › Participating in or organising a conference

**Observing beam effects and their thresholds in the environmental transmission electron microscope**
Period: 6 Aug 2017
Thomas Willum Hansen (Guest lecturer)
Center for Electron Nanoscopy
Center for Nanostructured Graphene
Related event

Microscopy and Microanalysis 2017
06/08/2017 → 10/08/2017
St. Louis, United States
Activity: Talks and presentations › Conference presentations

Spatio-temporally resolved in situ transmission electron microscopy of the dynamics of nanostructured materials
Period: 6 Aug 2017 → 10 Aug 2017
Thomas Willum Hansen (Invited speaker)
Pei Liu (Other)
Jacob Madsen (Other)
Philomena Schlexer (Other)
Béla Sebök (Other)
Jakob Schiøtz (Other)
Jakob Birkedal Wagner (Other)
Center for Electron Nanoscopy
Center for Nanostructured Graphene
DTU Danchip
Department of Physics
Theoretical Atomic-scale Physics

Related event

Microscopy and Microanalysis 2017
06/08/2017 → 10/08/2017
St. Louis, United States
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

77th Annual meeting of the Academy of Management (Event)
Period: 3 Aug 2017
Pernille Rydén (Participant)
Center for Bachelor of Engineering Studies
Afdelingen for Forretningsudvikling
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 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

Energies (Journal)
Period: 1 Aug 2017 → 1 Sep 2017
Patrick Volker (Reviewer)
Department of Wind Energy
Resource Assessment Modelling

Description
Manuscript energies-232250, rejected
Degree of recognition: International

Related journal

Energies
1996-1073
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts
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

Reviewer for the Swedish Research Council FORMAS (External organisation)
Period: 1 Aug 2017 → 15 Sep 2017
Ivan Nygaard (Member)
Department of Management Engineering
UNEP DTU Partnership

Description
Member of evaluation panel for the Swedish Research Council for development research. Natural, engineering and environmental sciences (UF-3)
Degree of recognition: International
Links:
https://www.vr.se/inenglish/researchfunding/assessment/reviewpanels/developmentresearch/uf3naturalengineeringandenvironmentalsciences.4.7e727b6e141e9ed702b141c9.html

Reviewer for the Swedish Research Council FORMAS
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar

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 (2018): BFI-level 1, Scopus rating (2016): CiteScore 1.43 SJR 0.74 SNIP 0.816, ISI indexed (2013): ISI indexed yes, Web of Science (2018): Indexed yes
Central database
Activity: Research › Peer review of manuscripts

Journal of Fluid Mechanics (Journal)
Period: Jul 2017 → Nov 2017
Mark C. Kelly (Reviewer)
Department of Wind Energy
Resource Assessment Modelling
Degree of recognition: International

Related journal
Journal of Fluid Mechanics
0022-1120
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
Hollywood, United States
Activity: Talks and presentations › Conference presentations

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**

**25th International Congress of History of Science and Technology (ICHST)**

23/07/2017 → 29/07/2017  
Rio de Janeiro, Brazil

Activity: Talks and presentations › Conference presentations

**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
Operations Research
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
Related event

Method 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)
Department of Energy Conversion and Storage
Mixed Conductors
Description
Poster presentation.
Degree of recognition: International

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

Comparison Between Young Male Drivers' Self-assessed and Objectively Measured Driving Skills
Period: 21 Jul 2017
Laila Marianne Martinussen (Speaker)
Department of Management Engineering
Technology and Innovation Management
Transport DTU
Self-assessment of skills is a self-generated feedback process that contributes to confidence in one’s skills. The higher one’s self-assessed skills, the more likely one is to feel competent a particular domain thereby influencing the related behaviors. Drivers’ self-assessed driving skills are not always accurate, which may cause serious problems such as underestimation of risk, reckless driving and accidents. Most previous research on self-assessment of driving skills did not compare self-reported skills to objectively measured driving skills, so the aim of this study was to test the accuracy of young male drivers’ self-assessments of driving skills using a driving simulator, and to examine whether self-assessment accuracy varied with driving skill, experience or sensation-seeking propensity. Results showed that the drivers’ self-assessments were inconsistent with their driving performance, and this inconsistency varied with driving skill, driving experience and sensation-seeking propensity in a safety-critical way.

Degree of recognition: International
Links: https://link.springer.com/chapter/10.1007/978-3-319-60441-1_75

Related event

AHFE: International Conference on Applied Human Factors and Ergonomics
17/07/2017 → 21/07/2017
Los Angeles, California, 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

Description
Oral presentation at panel session in International practices in smart grid for smart city

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

Description
Panel speaker

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
Degree of recognition: International

Related event

18th International Congress of Mucosal Immunology
19/07/2017 → 22/07/2017
Washington DC, United States
Activity: Talks and presentations › Conference presentations

WAsP-ForestGALES: a merged tool for improved forest wind damage prediction
Period: 19 Jul 2017
Ebba Dellwik (Guest lecturer)
Ducan Heathfield (Guest lecturer)
Barry Gardiner (Guest lecturer)

Department of Wind Energy
Meteorology & Remote Sensing

Description
Conference presentation, talk
Degree of recognition: International
Documents:
WAsP-ForestGALES_final

Related event

IUFRO Wind and trees conference 2017
17/07/2017 → 20/07/2017
Boulder, 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

Related event

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

Initial results from the Single Tree Experiment
Period: 17 Jul 2017
Ebba Dellwik (Guest lecturer)
Jakob Mann (Guest lecturer)
Nikolas Angelou (Guest lecturer)
Andrey Sogachev (Guest lecturer)
Niels Troldborg (Guest lecturer)
Barry Gardiner (Guest lecturer)
Timothy Newson (Guest lecturer)
Horia Hangan (Guest lecturer)

Department of Wind Energy
Meteorology & Remote Sensing
Resource Assessment Modelling
Aerodynamic design

Description
Conference presentation, talk
Degree of recognition: International
Documents:
Initial results from the single tree experiment_nofilms

Related event
IUFRO Wind and trees conference 2017
17/07/2017 → 20/07/2017
Boulder, United States
Activity: Talks and presentations › Conference presentations

Initial results from the Single-Tree Experiment
Period: 17 Jul 2017
Ebba Dellwik (Speaker)
Jakob Mann (Other)
Nikolas Angelou (Other)
Andrey Sogachev (Other)
Niels Troldborg (Other)
Barry Gardiner (Other)
Timothy Newson (Other)
Horia Hangan (Guest lecturer)

Department of Wind Energy
Meteorology & Remote Sensing
Resource Assessment Modelling
Aerodynamic design

Description
Conference presentation, Talk
Degree of recognition: International

Related event
IUFRO Wind and trees conference 2017
17/07/2017 → 20/07/2017
Boulder, United States
Activity: Talks and presentations › Conference presentations

Long-term measurements of the dynamic wind loads on an open-grown oak tree
Period: 17 Jul 2017
Nikolas Angelou (Guest lecturer)
Jakob Mann (Guest lecturer)
Ebba Dellwik (Guest lecturer)

Department of Wind Energy
Meteorology & Remote Sensing
**Description**
Conference presentation, talk
Degree of recognition: International

**Related event**

IUFRO Wind and trees conference 2017
17/07/2017 → 20/07/2017
Boulder, United States
Activity: Talks and presentations › Conference presentations

**Materials Optimization Using Advanced Computational Methods**
Period: 17 Jul 2017
Heine Anton Hansen (Invited speaker)
Department of Energy Conversion and Storage
Atomic scale modelling and materials
Degree of recognition: International

**Related event**

16/07/2017 → 21/12/2017
Easton, United States
Activity: Talks and presentations › Conference presentations

**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

**Related event**

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)
Department of Photonics Engineering
Diode Lasers and LED Systems

**Related external organisation**

**OSA**
Activity: Talks and presentations › Conference presentations

**Borohydride for Batteries**
Period: 16 Jul 2017 → 21 Jul 2017
Didier Blanchard (Panel member)
Department of Energy Conversion and Storage
Degree of recognition: International

**Related event**

16/07/2017 → 21/07/2017
Easton, United States
Activity: Talks and presentations › Conference presentations

**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)**
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
Mostafa M Hashim Ellabaan (Participant)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Bacterial Synthetic Biology
Degree of recognition: International

Related event

**The Genetic and Evolutionary Computation Conference (2017)**
15/07/2017 → 19/07/2017
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.

Development of Porous LaNi0.6Fe0.4O3 Electrodes with Tailored Microstructure for High Temperature and Pressure Alkaline Electrolysis Cells
Period: 12 Jul 2017
Jens Quitzau Adolphsen (Guest lecturer)
Department of Energy Conversion and Storage
Ceramic Engineering & Science

Description
Oral Presentation during the conference.
Degree of recognition: International
Documents:
ECerS2017 presentation 20170713-JensQAdolphsen

Related event
ECerS 2017 - 15th Conference & Exhibition of the European Ceramic Society
09/07/2017 → 13/07/2017
Budapest, Hungary
Activity: Talks and presentations › Conference presentations

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
**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 confernce. Fimpart2017

**Related event**

**Frontiers in Materials Processing Applications, Research and Technology: Enabling innovation**  
09/07/2017 → 12/07/2017
**Microbial Population Biology**
Period: 11 Jul 2017
Morten Otto Alexander Sommer (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability

**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

**Advanced manufacturing of porous ceramic structures for use in energy applications**
Period: 10 Jul 2017
Andreas Kaiser (Invited speaker)
Department of Energy Conversion and Storage
Ceramic Engineering & Science
Degree of recognition: International
Documents: ecers2017-abstract-Andreas Kaiser

**Related event**
**ECerS 2017 - 15th Conference & Exhibition of the European Ceramic Society**
09/07/2017 → 13/07/2017
Budapest, Hungary
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**
**Friedrich-Schiller-Universität Jena**
Germany
Activity: Membership › Membership in review committee

**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)
Related event

The Federation of European Microbiological Societies
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

The Federation of European Microbiological Societies
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

Revisiting the Central Dogma: Lessons learnt from environmental bacteria
Period: 9 Jul 2017 → 14 Jul 2017
Pablo Ivan Nikel (Guest lecturer)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
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

On multivariate Wilson bases
Period: 6 Jul 2017
Jakob Lemvig (Invited speaker)
Department of Applied Mathematics and Computer Science
Mathematics

Description
Invited talk at the 12th International conference on Sampling Theory and Applications in Tallinn, Estonia.
Degree of recognition: International

2017 International Conference on Sampling Theory and Applications
03/07/2017 → 07/07/2017
Tallinn, Estonia
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
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

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

dDNP as an emergent real time analytical method for catalytic reactions

Period: 4 Jul 2017
Peter Andreas Boeg (Guest lecturer)
Center for Hyperpolarization in Magnetic Resonance
Department of Chemistry
Centre for Catalysis and Sustainable Chemistry
Organic Chemistry
Documents:
Abstract_PANBO_Euromar 17

Related event
EUROMAR 2017
02/07/2017 → 06/07/2017
Warsaw, Poland
Activity: Talks and presentations › Conference presentations

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) Geralidine 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

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

Poster presentation
Period: 3 Jul 2017
Jacopo Tattini (Other)
Department of Management Engineering
Systems Analysis
Degree of recognition: International
Documents:
Improving the representation of modal choice into bottom-up optimization energy system models

Links:
http://www.wholesem.ac.uk/wholesem-events-repository/annual-conf-2017

Related event
03/07/2017 → 04/07/2017
London, United Kingdom
Activity: Talks and presentations › Conference presentations

19th European Carbohydrate Symposium
Period: 2 Jul 2017 → 6 Jul 2017
Anders Holmgaard Hansen (Participant)
Novo Nordisk Foundation Center for Biosustainability
CHO in Silico Engineering of Glycosylation and Protein Quality (CiSe)
CHO Core
iLoop
CHO Cell Line Engineering and Design
CFB - Core Flow

Description
Carbohydrate Structures, Analytical Tools, and Glycotechnology: advanced analytical and structural tools, glycomics, integrative databases, and computational methods.
Glycobiology and Glycobiology: carbohydrate active enzymes, cellular and molecular biology of glycans, glycomicrobiology and metagenomics
Applied Glycosciences in medicine, nutrition, and biotechnology: glycans in health and disease (cancer, immunity, vaccination, rare diseases, etc), in food science, in the emerging bioeconomy, and industrial biotech.
Degree of recognition: International
Links:

Related event
19th European Carbohydrate Symposium
02/07/2017 → 06/07/2017
Barcelona, Spain
Activity: Attending an event › Participating in or organising a conference

A narrow line UV-induced non-persistent radical in view of generating highly polarized transportable glucose solid samples
Period: 2 Jul 2017 → 6 Jul 2017
Andrea Capozzi (Guest lecturer)
Alessandro Coi (Panel member)
S Patel (Panel member)
Olivier Ouari (Panel member)
Magnus Karlsson (Guest lecturer)
Mathilde Hauge Lerche (Guest lecturer)
Arnaud Comment (Panel member)
Jan Henrik Ardenkjær-Larsen (Panel member)
Center for Hyperpolarization in Magnetic Resonance
Department of Electrical Engineering
Center for Magnetic Resonance
Degree of recognition: International
Documents:
Euromar-2017_abstract-Capozzi_HP-glucose
Electrochemical Catalysis of Inorganic Complex $\text{K}_4[\text{Fe(CN)}_6]$ by \textit{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 \textit{Shewanella oneidensis} MR-1 can transfer intracellular electrons to minerals\textsuperscript{1}. This ability is attributed to the redox proteins localized to the outer-membrane, for example, the MtrC, MtrB, MtrA and CymA\textsuperscript{2}. 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([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
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[(NH₃)₆]Cl₃ 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: 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
Preparation of Radical-Free Hyperpolarized Water using Photo-induced non-persistent Radicals on a "SpinLab-like" dissolution-DNP Polarize
Period: 2 Jul 2017 → 6 Jul 2017
Andrea Capozzi (Speaker)
Alessandro Coi (Panel member)
Magnus Karlsson (Panel member)
Mathilde Hauge Lerche (Guest lecturer)
Jan Henrik Ardenkjær-Larsen (Guest lecturer)
Center for Hyperpolarization in Magnetic Resonance
Department of Electrical Engineering
Center for Magnetic Resonance
Degree of recognition: International
Documents:
Euromar-2017_abstract-Capozzi_HP-water

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

Reportering af nationale overvågningsdata til den Europæiske Fødevaresikkerhedsautoritet, EFSA
Period: 1 Jul 2017
Julia Christensen (Other)
National Food Institute
Division of Risk Assessment and Nutrition

Description
Editor
Degree of recognition: International
Activity: Other

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

Symposium on Geometry Processing 2017
Period: 1 Jul 2017 → 5 Jul 2017
Jakob Andreas Bærentzen (Organizer)
Department of Applied Mathematics and Computer Science
Image Analysis & Computer Graphics

Description
Papers co-chair
Degree of recognition: International

Related event
Symposium on Geometry Processing 2017
01/07/2017 → 05/07/2017
London, United Kingdom
Activity: Attending an event › Participating in or organising a conference
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
Activity: Other

Influence of Promotor, H2O and H2S on the Hydrodeoxygenation of Biomass Pyrolysis Vapor over MoS2 Catalysts
Period: Jun 2017
Trine Marie Hartmann Dabros (Guest lecturer)
Anker Degn Jensen (Guest lecturer)
Department of Chemical and Biochemical Engineering
CHEC Research Centre

Description
Oral presentation
Documents:
Nam25_TrineArndal_Abstract

Related event

25th North American Catalysis Society Meeting
04/06/2017 → 09/06/2017
Denver, United States
Activity: Talks and presentations › Conference presentations

Konstantin Klemm
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 Ghafarnejad Parto (Speaker)
Jakob Munkholt Christensen (Other)
Lars Saaby Pedersen (Other)
Esben Taarning (Other)
Freddy Tjosås (Other)
Anker Degn Jensen (Other)
Department of Chemical and Biochemical Engineering
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)

3rd International Conference on Tomography of 3D Materials and Structures
26/06/2017 → 30/06/2017
Lund, Sweden
Activity: Talks and presentations › Conference presentations

University of Southern Denmark (External organisation)
Period: 30 Jun 2017
Susanne Mossin (Member)
Center for Hyperpolarization in Magnetic Resonance
Department of Chemistry
Centre for Catalysis and Sustainable Chemistry
Organic Chemistry

Description
Opponent at PhD defense

Related external organisation
University of Southern Denmark
Odense, Denmark
Activity: Membership › Membership in review committee

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

Related journal
Annual Report on Zoonoses in Denmark
1600-3837
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

Related event
inVALUABLE project meeting
Period: 29 Jun 2017 → 30 Jun 2017
Annette Nygaard Jensen (Speaker)
National Food Institute
Research Group for Microbial Food Safety

Master/slave: a better tool for Gabor filtering optical coherence tomography imaging instruments
Period: 29 Jun 2017
Ramona Cernat (Other)
Adrian Bradu (Lecturer)
Niels Møller Israelsen (Other)
Ole Bang (Other)
Sylvain Rivet (Other)
David-Garway Heath (Other)
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
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Yeast Metabolic Engineering
Degree of recognition: International

Related event

The Federation of European Microbiological Societies
09/07/2017 → 13/07/2017
Valencia, Spain
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
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

African Carbon Forum 2017
Period: 28 Jun 2017 → 30 Jun 2017
Susanne Konrad (Organizer)
Denis DR Desgain (Organizer)
Department of Management Engineering
UNEP DTU Partnership

Description
The 9th Africa Carbon Forum (ACF) will focus on how engagement between State and non-State actors can be further strengthened in the key sectors for Africa (energy, agriculture and human settlements), including the role of future carbon markets to achieve enhanced climate action, towards the goals of sustainable development
Degree of recognition: International

Related event
African Carbon Forum 2017: Collaborative climate action for sustainable development in Africa
28/06/2017 → 30/06/2017
Cotonou, Benin
Activity: Attending an event › Participating in or organising a conference

An Engineering 2D Vortex-based Model for VAWT Aerodynamics
Period: 28 Jun 2017
Mac Gaunaa (Guest lecturer)
Department of Wind Energy
Aerodynamic design

Description
Presentation of a new vortex-based 2D aerodynamic model for Vertical-Axis Wind Turbines
Degree of recognition: International
Links:
http://www.eawe.eu/index.php/wescdocs/

Related event
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
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

Improved Roughness Model for 2D Viscous-Inviscid Panel Methods
Period: 28 Jun 2017
Anders Smærup Olsen (Speaker)
Néstor Ramos García (Other)
Christian Bak (Other)
Mac Gaunaa (Other)
Department of Wind Energy
Aerodynamic design
Fluid Mechanics
Degree of recognition: International
Links:
http://www.eawe.eu/index.php/wescdocs/ (Link to presentation)

Related event
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Activity: Talks and presentations › Conference presentations

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
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

CFD prediction of airfoil deep stall performance using Improved Delayed Detached Eddy Simulations
Period: 27 Jun 2017
Niels N. Sørensen (Guest lecturer)

Department of Wind Energy
Aerodynamic design

Related organisation

CFD prediction of airfoil deep stall performance using Improved Delayed Detached Eddy Simulations
Sørensen, N. N. (Guest lecturer)
27 Jun 2017
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

International Conference on Energy & Meteorology
27/06/2017 → 29/06/2017
Bari, Italy
Activity: Talks and presentations › Conference presentations

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)
25/06/2017 → 30/06/2017
Budapest, Hungary
Activity: Talks and presentations › Conference presentations

Inflow conditions and wake effects for wind turbines in forested terrain
Period: 27 Jun 2017
Ebba Dellwik (Invited speaker)
Alkistis Papetta (Other)
Johan Arqvist (Other)
Morten Nielsen (Other)
Torben J. Larsen (Other)
Department of Wind Energy
Meteorology & Remote Sensing
Resource Assessment Modelling

Wind turbine loads & control
Documents:
abstract - WESC2017-final

Related event

27/06/2017 → 27/06/2017
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Interaction between turbine wakes and complex terrain in large-eddy simulations
Period: 27 Jun 2017
Jacob Berg (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling

Related event

Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
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

Predicting free-stream wind speed in complex terrain with lidar measurements
Period: 27 Jun 2017
Alexander Raul Meyer Forsting (Speaker)
Department of Wind Energy
Aerodynamic design
Degree of recognition: International
Documents:
Wesc17_alrf_presentation

Related event

Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Activity: Talks and presentations › Conference presentations
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

TOPFARM: framework for coupling models to address wind farm optimization challenges
Period: 27 Jun 2017
David Robert Verelst (Speaker)
Frederik Zahle (Other)
Pierre-Elouan Réthoré (Other)
Jennifer Rinker (Other)
Department of Wind Energy
Wind turbine loads & control
Aerodynamic design
Resource Assessment Modelling

Related event

Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Activity: Talks and presentations › Conference presentations

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)
The IEC 61400-1 standards for wind turbines prescribe a set of requirements to ensure that wind turbines are designed to defined reliability levels. These standards take into consideration extreme wind conditions and various operational turbine load regimes, and specify the damage a wind turbine may withstand over its lifetime. The standards include an extreme turbulence model (ETM), which gives the 50-year extreme ten-minute standard deviation of wind speed as function of ten-minute wind speed at hub height. Herein observations of high wind speed variance events, where the variance exceed the ETM level are analysed.

Inspection of these specific events shows that the measurements often include a sharp increase in wind speed, a ramp or a coherent gust-like structure. These structures give rise to the observed high wind speed variance, which is not resulting from extreme turbulence. The aim of this analysis is to answer the questions:

1. How are the wind-turbine loads affected by these events?
2. What atmospheric parameters give rise to the highest loads?

The data used for the analysis is from a 160 m tall lighting tower in Høvsøre, which is a measurement site approximately 2 km from the west coast of Denmark. The data consists of wind speed measurements from cup anemometers and directional data from wind vanes at 60 m, 100 m and 160 m.

A ten-year period with measurements from the western sector is used to identify events of high wind speed variance that exceed the ETM for a given 10-minute mean wind speed. The events are analysed and factors that might possibly contribute to extreme wind turbine loads, like wind-velocity jump, directional change and wind shear, are identified and quantified.

The wind speed measurements are low pass filtered and simulated with HAWC2, which is an aeroelastic software used to simulate wind turbine response in time domain. The simulations are made for the DTU 10 MW reference wind turbine.

Load analysis shows that the maximum tilt moment on the tower yaw bearing correlates well with the wind shear of the measurements. When these loads are compared with the extreme wind shear load case of the IEC standards, it is seen that they are of similar magnitude and in one case even higher.

Documents:
A_Hannesdottir_abstract_WESC2017

Links:
http://www.wesc2017.org/

Related event

Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

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

Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

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

Related event

13th Coatings Science International Conference 2017
26/06/2017 → 30/06/2017
Noordwijk, Netherlands
Activity: Talks and presentations › Conference presentations
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

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

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

Large scale wind farm wakes and a wind-wave-wake coupled mesoscale modeling system
Period: 26 Jun 2017
Patrick Volker (Guest lecturer)
Jake Badger (Guest lecturer)
Xiaoli Guo Larsén (Guest lecturer)
Jianting Du (Guest lecturer)
Poul Ejnar Sørensen (Guest lecturer)
Jesper Nielsen Nissen (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling
Integration & Planning
Degree of recognition: International
Documents:
260617-13:00-M01

Related event
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Large scale wind farm wakes and a wind-wave-wake coupled mesoscale modeling system  
Period: 26 Jun 2017  
Patrick Volker (Speaker)  
Jake Badger (Guest lecturer)  
Xiaoli Guo Larsén (Guest lecturer)  
Jianting Du (Guest lecturer)  
Jesper Nielsen Nissen (Guest lecturer)  
Poul Ejnar Sørensen (Guest lecturer)  
Department of Wind Energy  
Resource Assessment Modelling  
Integration & Planning  
Degree of recognition: International  
Documents:  
260617-13:00-M01  

Related event  
Wind Energy Science Conference 2017  
26/06/2017 → 29/06/2017  
Activity: Talks and presentations › Conference presentations  

Modelling of high cycle fatigue of coated high strength steel bolts  
Period: 26 Jun 2017 → 29 Jun 2017  
Philipp Ulrich Haselbach (Other)  
Martin Alexander Eder (Other)  
Oleg Mishin (Other)  
Department of Wind Energy  
Wind Turbine Structures and Component Design  
Materials science and characterization  
Degree of recognition: International  

Related event  
Wind Energy Science Conference 2017  
26/06/2017 → 29/06/2017  
Activity: Talks and presentations › Conference presentations  

Non-destructive testing of layer-to-layer fusion of a 3D print using ultrahigh resolution optical coherence tomography  
Period: 26 Jun 2017  
Niels Møller Israelsen (Lecturer)  
Michael Maria (Other)  
Thomas Feuchter (Other)  
Adrian Podoleanu (Other)  
Ole Bang (Other)  
Department of Photonics Engineering  
Fiber Sensors and Supercontinuum Generation  
Degree of recognition: International  

Related event  
SPIE Optical Metrology, Internationales Congress Center Munich, Germany, 25 - 29 June 2017  
25/06/2016 → 29/06/2016
München, Germany
Activity: Talks and presentations › Conference presentations

**Offshore winds from a new generation of European satellites**
Period: 26 Jun 2017
Merete Badger (Speaker)
Ioanna Karagali (Other)
Tobias Torben Ahsbahs (Other)
Charlotte Bay Hasager (Other)
Department of Wind Energy
Meteorology & Remote Sensing

**Related event**
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

**Optimal wind turbine aeroelastic rotor design with active flaps**
Period: 26 Jun 2017 → 29 Jun 2017
Michael McWilliam (Speaker)
Athanasios Barlas (Other)
Helge Aagaard Madsen (Other)
Frederik Zahle (Other)
Department of Wind Energy
Aerodynamic design
Degree of recognition: International
Documents:
WESC_2017_Flap_CoDesign_Smart_Blade

**Related event**
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Activity: Talks and presentations › Conference presentations

**Parameter Uncertainty Reduction of the Re-calibrated Larsen Wake Model**
Period: 26 Jun 2017 → 29 Jun 2017
Tuhfe Göçmen (Speaker)
Gregor Giebel (Other)
Department of Wind Energy
Integration & Planning

**Description**
Presentation at the Wind Energy Science Conference (WESC)
Degree of recognition: International
Documents:
Parameter Uncertainty Reduction of the Re-calibrated Larsen Wake Model

**Related event**
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
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

Preliminary Results for The Aerodynamic Wind Turbine Design Optimization Case Study for the IEA Task 37 on Wind Energy Systems Engineering
Period: 26 Jun 2017 → 29 Jun 2017
Michael McWilliam (Speaker)
Frederik Zahle (Other)
Katherine Dykes (Other)
Department of Wind Energy
Aerodynamic design
Degree of recognition: International
Documents:
Aero_Opt_Presentation_WESC_2017

Related event
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
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
**Quantitative analysis of pigment dispersion taking into account the full agglomerate size distribution**

**Period:** 26 Jun 2017 → 30 Jun 2017

Søren Kiil (Lecturer)

Department of Chemical and Biochemical Engineering

CHEC Research Centre

The Hempel Foundation Coatings Science and Technology Centre (CoaST)

Degree of recognition: International

Documents:

Abstract COSI 2017 (Søren Kiil)

**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

**Test possibilities in the Poul la Cour Tunnel**

**Period:** 26 Jun 2017

Christian Bak (Speaker)

Andreas Fischer (Other)

Robert Flemming Mikkelsen (Other)

Anders Smærup Olsen (Other)

Mac Gaunaa (Other)

Witold Robert Skrzypinski (Other)

Efren Fernandez Grande (Other)

Department of Wind Energy

Aerodynamic design

Fluid Mechanics

Department of Electrical Engineering

Acoustic Technology

**Description**

Oral presentation

Degree of recognition: International

**Related event**

Wind Energy Science Conference 2017

26/06/2017 → 29/06/2017

Activity: Talks and presentations › Conference presentations
The industrial dynamics of water innovation: A comparison of China and Europe
Period: 26 Jun 2017
Mariú Abritta Moro (Speaker)
Department of Environmental Engineering
Water Technologies
Department of Management Engineering
Technology and Innovation Management
Degree of recognition: International

Related event
International Conference on Innovation Studies
26/06/2017 → 27/06/2017
Beijing, China
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

Wind Energy Science Conference 2017
Period: 26 Jun 2017 → 29 Jun 2017
Michael McWilliam (Organizer)
Department of Wind Energy
Aerodynamic design
Degree of recognition: International

Related event
Wind Energy Science Conference 2017
26/06/2017 → 29/06/2017
Lyngby, Denmark
Activity: Attending an event › Participating in or organising a conference

Working in a broad partnership in the Kenya MiniWind project
Period: 26 Jun 2017
Ivan Nygaard (Invited speaker)
Department of Management Engineering
UNEP DTU Partnership
Integrating environmental impacts into cost-benefit analysis: The value of environmental pollutants

Period: 25 Jun 2017 → 29 Jun 2017

Yan Dong (Guest lecturer)
Stefano Manzo (Guest lecturer)
Michael Zwicky Hauschild (Guest lecturer)

Department of Management Engineering
Quantitative Sustainability Assessment
Transport DTU
Transport Modelling

Description

Sustainable Development Goals (SDGs) have raised the attention of the global society to apply environmental friendly solutions to solve problems. Cost Benefit Analysis (CBA) has been broadly used in different contexts and disciplines to facilitate decision makers in choosing among alternatives. CBA assumes that for each alternative there is a set of consequences, divided between costs and benefits that can be expressed in monetary terms. The preferred alternative is the one with the higher benefit cost ratio or Net Present Value (NPV). The considered consequences vary depending on the decision context. For example, the consequences that are covered in conventional transport projects include, among others, financial costs, travel time savings, variation in distance traveled, and the so called externalities, including number of accidents, noise impacts and some air pollutants (e.g. CO2, NOx, SOx, CO and HC from fuel consumption). With respect to the air pollutants, monetary values are provided by CBA guidelines for transport as well as for other disciplines. However, CBA overlooks the full life cycle of infrastructures and vehicles, and the full set of environmental impacts, due to the lack of methodology to quantify the comprehensive impacts and the lack of monetary values of those impacts.

Life Cycle Assessment (LCA) is a robust methodology that assesses environmental profiles of products and services through their whole life cycles. For a given solution to a decision problem, LCA can quantify environmental pollutants and resource consumptions that are associated with the physical elements in the solution (e.g. infrastructures and vehicles). Note that LCA provides an inventory that covers a comprehensive list of pollutants and resource consumptions, which can also be translated into damages on the protected area, namely ecosystem health, human health and resources availability, via life cycle impact assessment (LCIA). This gives possibilities of monetizing environmental impacts either on the inventory level, or on the damage level. Nevertheless, the monetizing values of different pollutants and resources should be consistent with the damages (and thus the monetizing values of the damages) that they may cause on the protected area.

This research aims to 1) investigate the monetary values of environmental pollutants in the chosen application disciplines; 2) understand if those values are consistent with the monetized damages calculated by LCA methods and; 3) compare CBA with and without LCA, considering the uncertainty, using a transport case study.

Our study shows that the monetized damages calculated by LCA methods lie within the range of values reviewed in transport and waste treatment studies. The variation of pollutant prices can vary up to 2-3 orders of magnitude depending
on the chosen methodology. The results from the transport case study show that including the monetized LCA result in the traditional CBA doubles the NPV. This suggests that the price assigned to particularly CO2 can change the NPV dramatically, which can influence the decision when more options are available. In sum, integrating monetized LCA results into current CBA is a feasible way of including environmental impacts in decision making, increasing the environmental relevance of the decision support.

Degree of recognition: International

Links:
http://isie-issst2017.uic.edu/

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

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.

Related event

Strategidag for kemi mellem DTU Food og FVST fredag den 23. juni
23/06/2017 → 23/06/2017
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

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
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

Description
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.

Degree of recognition: International

Documents:
SSI21 abstract DJTRI

Links:
http://www.chimica.unipd.it/ssi21/ (The official conference website)
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)
Department of Management Engineering
Technology and Innovation Management
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
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
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
Degree of recognition: International

Related event
New Frontiers in Electron Correlation
20/06/2017 → 24/06/2017
Telluride, United States
Activity: Attending an event › Participating in or organising a conference

Antioxidant composition and activity of seaweed Saccharina latissima: a seasonal perspective
Period: 19 Jun 2017
Goncalo Silva Marinho (Speaker)
Ann-Dorit Moltke 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

Related external organisation
University of Nantes
France
Fractional factorial design to assess zinc speciation in Atlantic salmon (Salmo salar) feeds
Period: 19 Jun 2017 → 22 Jun 2017
Jens Jørgen Sloth (Other)
National Food Institute
Research Group for Nano-Bio Science

Description
Poster
Degree of recognition: International

Related event
15th Scandinavian Symposium on Chemometrics
19/06/2017 → 22/06/2017
Naantali, Finland
Activity: Talks and presentations › Conference presentations

Global opvarmning for 56 millioner år siden – og i dag
Period: 19 Jun 2017
Jens Olaf Pepke Pedersen (Speaker)
National Space Institute
Innovation and Research-based consultancy
Degree of recognition: Regional
Links:
https://www.facebook.com/events/1688366071459512/?acontext=%7B%22ref%3A%22%2C%22%2C%22ref_newsfeed_story_type%22%3A%22regular%22%2C%22action_history%22%3A%22null%22%7D

Related event
Møde i Selskabet for Naturlærens Udbredelse
13/05/2002 → …
København, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

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
Links:
http://www.chimica.unipd.it/ssi21/Symposium_II_1.html

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

21st INTERNATIONAL CONFERENCE ON SOLID STATE IONICS
Period: 18 Jun 2017 → 23 Jun 2017
Didier Blanchard (Guest lecturer)
Department of Energy Conversion and Storage

Description
The International Conference on Solid State Ionics is a major event in the field, which is held every two years and attracts a world-wide audience.
Degree of recognition: International
Documents:
Abstract-Didier-Blanchard

Related event
21st International Conference on Solid State Ionics
18/06/2017 → 23/06/2017
Padova, Italy
Activity: Talks and presentations › Conference presentations

High ionic conductivity in confined heterostructures
Period: 18 Jun 2017 → 23 Jun 2017
Simone Sanna (Speaker)
The charge transport in oxide thin films could be tuned by the lattice strain engineering resulting in a new class of materials that can be considered fundamental bricks of new generation of devices for energy storage, conversion, and information [1-5].

In particular oxide heterostructures are a very promising type of artificial materials owing to possibility to manipulate the ionic and electronic properties at the interfaces by controlling the properties of the different layers, e.g. epitaxial strain. In these heterostructures, size effects of the layers can lead to enhanced conductivity of the charge carries at the interfaces when, for example, the number of interfaces is increased and/or the thickness of the individual layers decrease.

High conductivity in thin heterostructures is often attributed either to the presence of a high density of defects, strain at the interface or space charge effects [1-2]. The latter is the case for heterostructure made of alternate layers of doped Ceria (SDC) and stabilized Zirconia (YSZ) where the ionic conductivity can increase about two order of compared to bulk [2]. However we have demonstrated that the heterostructures could be engineered in order to preserve materials with high ionic conductivity but usually, unstable by confining in more stable materials. This is the case for heterostructures based on bismuth-oxide-based materials.

Indeed δ-Bi2O3 with the fluorite structure can be confined at room temperature by depositing alternating layers of bismuth-based oxide material stacked between fluorite materials as Gadolinium-doped Ceria (CGO) or YSZ [4-5]. As consequence, the heterostructures based on bismuth-oxide remain stable without degradation under oxidizing and reducing conditions for a wide range of temperatures, and maintain the high ionic conductivity characteristic of the typical bismuth oxide.

References

Degree of recognition: International
Documents:
II-1-20170203-124311-U4CH-ORAL
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

**Ocean & Coastal Management (Journal)**

Period: 16 Jun 2017 → 6 Jul 2017

Morten Nielsen (Reviewer)

Department of Wind Energy

Resource Assessment Modelling

**Description**

Review of manuscript for the journal

Editors reference: OCMA_2017_56

Title: Selecting sites for co-located wave and wind farms – a more sustainable use of the marine resource

Conclusion: Paper rejected

**Related journal**

**Ocean & Coastal Management**

0964-5691


Central database

Activity: Research › Peer review of manuscripts

**SAR for Wind Energy**

Period: 16 Jun 2017

Merete Badger (Lecturer)

Charlotte Bay Hasager (Other)

Ioanna Karagali (Other)

Tobias Torben Ahshbahs (Guest lecturer)

Xiaoli Guo Larsén (Other)

Alfredo Peña (Other)

Andrea N. Hahmann (Other)

Patrick Volker (Other)

Alessandro Di Bella (Other)

Department of Wind Energy
Meteorology & Remote Sensing
Resource Assessment Modelling
National Space Institute
Geodynamics
Links:
http://www.vindenergi.dtu.dk/english/education/phd/phd-summer-school/charlotte-bay-hasager/phd-summer-school-2017

Related event

PhD Summer School: Remote Sensing for Wind Energy
12/06/2017 → 16/06/2017
Roskilde, Denmark
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.

**Lund University (External organisation)**
Period: 15 Jun 2017
Susanne Mossin (Chairman)
Center for Hyperpolarization in Magnetic Resonance
Department of Chemistry
Centre for Catalysis and Sustainable Chemistry
Organic Chemistry

**Description**
Opponent at PhD defense

**Related external organisation**

**Lund University**
Lund, Sweden
Activity: Membership › Membership in review committee

**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  

**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  

**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 Electrolyte 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
Samfundsøkonomiske konsekvenser af trafiksikkerhed
Period: 14 Jun 2017
Kira Hyldekær Janstrup (Invited speaker)
Department of Management Engineering
Transport DTU
Transport Modelling

Related external organisation
Brancheforeningen Sikre Veje
Lautrupvej 2, 2750, Ballerup, Denmark

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

"Evacuation in day-care centres: Fire safety aspect of staff-to-child ratios"
Period: 13 Jun 2017
Anne Simone Dederichs (Other)
Zeshan Ali (Other)
Department of Civil Engineering
Section for Building Design

Description
Poster
Degree of recognition: International

Related event
12th IAFSS International Symposium on Fire Safety Science
12/07/2017 → 16/02/2018
Lund, Sweden
Lectures on antibiotics biosynthesis: polyketides, aminoglycosides, RfPPs 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

SynBio-assisted metabolic engineering of environmental bacteria
Period: 13 Jun 2017 → 16 Jun 2017
Pablo Ivan Nikel (Speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Systems Environmental Microbiology
Degree of recognition: International

Related event
SB7.0: The seventh international meeting on Synthetic Biology
13/06/2017 → 16/09/2017
Singapore, Singapore
Activity: Talks and presentations › Conference presentations

Tar Removal from Biomass Producer Gas by Using Biochar
Period: 13 Jun 2017
Giulia Ravenni (Guest lecturer)
Department of Chemical and Biochemical Engineering
CHEC Research Centre

Description
Oral presentation
Degree of recognition: International
Documents:
2BO.14.2_presentation_25th_2017

Related event
25th European Biomass Conference and Exhibition
12/06/2017 → 15/06/2017
Stockholm, Sweden
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
Solange 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
Solange 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
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

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)
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: International

Related event

25th European Biomass Conference and Exhibition
12/06/2017 → 15/06/2017
Stockholm, Sweden
Activity: Talks and presentations › Conference presentations

Development of novel High Temperature and Pressure Alkaline Electrolysis Cells (HTP-AEC)
Period: 12 Jun 2017 → 15 Jun 2017
Jens Quitzau Adolphsen (Guest lecturer)
Department of Energy Conversion and Storage
Ceramic Engineering & Science
Description
Poster presentation during the conference
Documents:
HTP-AEC Poster for ICE 2017 - JensQAdolphsen

Related event

International Conference on Electrolysis
12/06/2017 → 15/06/2017
Copenhagen, Denmark
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
IEC 61400-15 meeting/workshop 11 (Event)
Period: 12 Jun 2017 → 16 Jun 2017
Mark C. Kelly (Member)
Department of Wind Energy
Resource Assessment Modelling

Description
IEC 61400-15 workshop and creation of standard for uncertainty in resource assessment. I am an active author of drafts; wrote/edited more of uncertainty-combination section, and modified/augmented vertical-extrapolation section in this meeting.
Degree of recognition: International

PhD Summer School: Remote Sensing for Wind Energy
Period: 12 Jun 2017 → 16 Jun 2017
Merete Badger (Organizer)
Department of Wind Energy
Meteorology & Remote Sensing

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

BioREFINE-2G: Utilisation of Waste Streams for Bioproducts and Bioenergy: workshop within the 25th European Biomass Conference and Exhibition
Period: 12/06/2017 → 12/06/2017
Stockholm, Sweden
Activity: Talks and presentations › Conference presentations

Trafiksikkerhed som grundlag for bedre prioritering af vejvedligehold
Period: 12 Jun 2017 → 13 Jun 2017
Kira Hyldekær Janstrup (Invited speaker)
Utilization of Waste Streams for Bioproducts and Bioenergy
Period: 12 Jun 2017
Irina Borodina (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Research Groups
Yeast Metabolic Engineering
Degree of recognition: International

25th European Biomass Conference and Exhibition
12/06/2017 → 15/06/2017
Stockholm, Sweden
Activity: Talks and presentations › Conference presentations

9th International Conference on Advanced Vibrational Spectroscopy
Period: 11 Jun 2017 → 17 Jun 2017
René Wugt Larsen (Participant)

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)
Marelt Viehrig (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
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 Rindzевичius (Guest lecturer)
Onur Durucan (Guest lecturer)
Michael Stenbaek Schmidt (Guest lecturer)
Roman Slipets (Other)
Lidia Morelli (Guest lecturer)
Anja Boisen (Guest lecturer)
Department of Micro- and Nanotechnology

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 Rindzевичius (Guest lecturer)
Michael Stenbaek Schmidt (Guest lecturer)
Roman Slipets (Guest lecturer)
Onur Durucan (Guest lecturer)
Lidia Morelli (Guest lecturer)
Anja Boisen (Guest lecturer)
Department of Micro- and Nanotechnology

Related event

9th International Conference on Advanced Vibrational Spectroscopy
11/06/2017 → 17/06/2017
Victoria, Canada
Activity: Talks and presentations › Conference presentations

7th International SpectroRadiometer Comparison (ISRC 2017)
Period: 10 Jun 2017 → 14 Jun 2017
Anders Thorseth (Participant)
Nicholas Riedel (Participant)
Peter Behrensedorff Poulsen (Participant)
Department of Photonics Engineering
Diode Lasers and LED Systems

Description
Instrument comparison of outdoor spectroradiometers
Degree of recognition: International
Links:

Related event

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)
Peter E. Andersen (Organizer)
Stefan Anderson-Engels (Organizer)
Department of Photonics Engineering
Diode Lasers and LED Systems
Degree of recognition: International
Links:
http://www.biop.dk/Biophotonics17/

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

Biophotonics 17: International Graduate Summer School on Biophotonics
Period: 10 Jun 2017 → 17 Jun 2017
Richard Levenson (Keynote speaker)
Jes Broeng (Keynote speaker)
Kishan Dholakia (Lecturer)
Wolfgang Drexler (Lecturer)
Emilia Entcheva (Lecturer)
Steven Jacques (Lecturer)
Juergen Popp (Lecturer)
Eric Potma (Lecturer)
Katarina Svanberg (Lecturer)
Sune Svanberg (Keynote speaker)
Roy Taylor (Lecturer)
Lihong Wang (Lecturer)
Department of Photonics Engineering
Degree of recognition: International
Links:
http://www.biop.dk/Biophotonics17/

Related event
Biophotonics 17: International Graduate Summer School on Biophotonics
10/06/2017 → 17/06/2017
Ven, Sweden
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

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
Creating proximity across distances – Management tools to support performance and employee well-being
Period: 9 Jun 2017
Christine Ipsen (Guest lecturer)
Signe Poulsen (Speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management
Degree of recognition: International

Related organisation
Creating proximity across distances – Management tools to support performance and employee well-being
Ipsen, C. (Guest lecturer), Poulsen, S. (Speaker)
9 Jun 2017
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
Activity: Talks and presentations › Conference presentations

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

Metabolic Engineering of Yeast Cell Factories for Sustainable Chemicals
Period: 9 Jun 2017
Irina Borodina (Guest lecturer)

Novo Nordisk Foundation Center for Biosustainability
Research Groups
Yeast Metabolic Engineering

Related event

13th International Conference on Renewable Resources and Biorefineries
07/06/2017 → 09/06/2017
Wroclaw, Poland
Activity: Talks and presentations › Conference presentations

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
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
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
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

The Role of Managers in Organizational Interventions and Non-Interventions – at Intra and Inter-Organizational Work Places
Period: 9 Jun 2017
Christine Ipsen (Guest lecturer)
Department of Management Engineering
Management Science
Implementation and Performance Management
Description
Presenting some key trends and discussions of the role of managers in interventions focusing on distance work and management
Degree of recognition: International
Related organisation
THE ROLE OF MANAGERS IN ORGANIZATIONAL INTERVENTIONS AND NON-INTERVENTIONS – AT INTRA AND INTER-ORGANIZATIONAL WORK PLACES
Ipsen, C. (Guest lecturer)
9 Jun 2017
Activity: Talks and presentations › Conference presentations
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

Related event

International Congress on Arctic Social Sciences
07/06/2017 → 12/06/2017
Activity: Talks and presentations › Conference presentations

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 byggeløsninger 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
Deactivation of a Cu-SSZ-13 NH3-SCR Catalyst by SO2 and SO3
Period: 8 Jun 2017
Peter Sams Hammershøi (Speaker)
Department of Chemical and Biochemical Engineering
CHEC Research Centre

Related event
North American Catalysis Society Meeting 2017
04/06/2017 → 09/06/2017
Denver, United States
Activity: Talks and presentations › Conference presentations

How Much of the Human Genome is Functional?
Period: 8 Jun 2017
Henrik Nielsen (Guest lecturer)
Department of Bio and Health Informatics
Disease Intelligence and Molecular Evolution
Documents:
Abstract

Related event
Seventeenth Annual Gatherings in Biosemiotics
06/06/2017 → 10/06/2017
Lausanne, Switzerland
Activity: Talks and presentations › Conference presentations

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
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
**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

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**Numerical studies and experimental validation of topology-optimised aluminium heat sinks manufactured by additive manufacturing**

*Period: 8 Jun 2017*

Joe Alexandersen (Speaker)

Department of Mechanical Engineering

**Solid Mechanics**

**Description**

Session presentation at the 12th World Congress of Structural and Multidisciplinary Optimization.

**Related event**

**12th World Congress of Structural and Multidisciplinary Optimisation**

*05/06/2017 → 09/06/2017*

Braunschweig, Germany

Activity: Talks and presentations › Conference presentations

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**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*
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

Documents:
paperID62_KristianE

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

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

12th World Congress of Structural and Multidisciplinary Optimisation
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

9th International Congress of 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**
9th International Congress of Arctic Social Sciences: ICASS IX
08/06/2017 → 12/06/2017
Umeå, Sweden
Activity: Attending an event › Participating in or organising a conference

Coastal extreme winds and waves from COAWST-WBLM modelling system
Period: 7 Jun 2017
Jake Badger (Speaker)
Xiaoli Guo Larsén (Other)
Jianting Du (Other)
Andrea N. Hahmann (Other)
Jacob T. Sørensen (Other)
Patrick Volker (Other)
Marc Imberger (Other)
Rodolfo Bolanos (Other)
Mark C. Kelly (Other)
Merete Badger (Other)
Henrik Kofoed-Hansen (Other)
Ioanna Karagali (Other)
Søren Ejling Larsen (Other)
Ole Svenstrup Petersen (Other)
Department of Wind Energy
Resource Assessment Modelling
Meteorology & Remote Sensing
Degree of recognition: International

**Related event**
WindEurope Offshore 2017
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

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
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: 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
**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**


**Degree of recognition:** International

**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)**

**Kasper Sandal (Other)**

**Susana Rojas Labanda (Other)**

**Mathias Stolpe (Other)**

Department of Wind Energy

Wind Turbine Structures and Component Design

**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

FM innovation – Can touchpoints stand alone?
Period: 6 Jun 2017
Giulia Nardelli (Invited speaker)
Department of Management Engineering
Management Science
Implementation and Performance Management

**Description**
Presentation at Center for Facilities Management Research Forum
Degree of recognition: Local

**Related organisation**

**FM innovation – Can touchpoints stand alone?**
Nardelli, G. (Invited speaker)
6 Jun 2017
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 Ralph Floors (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
London, United Kingdom
Activity: Talks and presentations › Conference presentations
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
Systems Analysis
Degree of recognition: International
Documents:
EEM17 - presentation - Regulatory barriers for activating flexibility in the Nordic-Baltic
Conference proceeding-Regulatory barriers to flexibility in the nordic baltic electricity market - EEM17 (2)

Related event
International Conference on the European Energy Market
06/06/2017 → 09/06/2017
Dresden, Germany
Activity: Talks and presentations › Conference presentations

Topology optimisation of passive coolers for light-emitting diode lamps
Period: 6 Jun 2017
Joe Alexandersen (Invited speaker)
Department of Mechanical Engineering
Solid Mechanics
Description
Recap presentation for receiving the 2015 ISSMO/Springer prize for Young Scientist.
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

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
Wind Turbine Structures and Component Design

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 Optimization
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

Bounds on the stably recoverable information for the Helmholtz equation in R^2
Period: 2 Jun 2017
Mirza Karamehmedovic (Guest lecturer)
Department of Applied Mathematics and Computer Science
Scientific Computing
Degree of recognition: International
Documents:
AIP_Abstract

Related event

Applied Inverse Problems
29/05/2017 → 02/06/2017
Hangzhou, China
Activity: Talks and presentations › Conference presentations

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, Denmark.
Period: 2 Jun 2017
Helene Fastrup 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

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

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
Activity: Talks and presentations › Conference presentations
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
Activity: Attending an event › Participating in or organising a conference

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
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.

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
Eric van der Helm (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology

Description
see https://evdh0.github.io/ASMworkshop/
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 preform 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.

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
Mostafa M Hashim Ellabaan (Invited speaker)
Novo Nordisk Foundation Center for Biosustainability
Bacterial Synthetic Biology
Research Groups

**Description**
Functional Metagenomic Selections for Antibiotic Resistance Gene Profiling

**Links:**
https://evdh0.github.io/ASMworkshop/ (This workshop introduces 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.)

**Related event**

**Functional Metagenomic Selections for Antibiotic Resistance Gene Profiling**
01/06/2017 → 05/06/2017
New Orleans, United States
Activity: Talks and presentations › Conference presentations

Large-Eddy Simulation of turbine wake in complex terrain
Period: 1 Jun 2017
Jacob Berg (Guest lecturer)
Department of Wind Energy
Resource Assessment Modelling

**Related event**

**Wake Conference 2017**
30/05/2017 → 01/06/2017
Visby, Sweden
Activity: Talks and presentations › Conference presentations

Outsourcing seen in perspective of Industry 4.0
Period: 1 Jun 2017
Zaza Nadja Lee Herbert-Hansen (Speaker)
Department of Management Engineering
Management Science
Operations Management

**Description**
Presentation for DFK conference: "Hvordan Sikrer Du Kvalitet i Leverancer"
Degree of recognition: National

**Related event**

**DFK Conference: Hvordan Sikrer Du Kvalitet i Leverancer**
01/06/2017 → 01/06/2017
Denmark
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

Related event

WindFarms 2017, Madrid
31/05/2017 → 02/06/2017
Madrid, Spain
Activity: Talks and presentations › Conference presentations

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

AEG Elektron prisen
Ole Schultz (Recipient)
Center for Bachelor of Engineering Studies, Afdelingen for Informatik

Description
For forsking indenfor bæredygtighed og netværk

Details
Awarded date: 13 Sep 2016
Degree of recognition: National
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

annual best publication of CFB
Xinglin Jiang (Recipient)
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds

Details
Awarded date: 6 Sep 2017
Degree of recognition: Local
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 A/S
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
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 Harrild Sørensen (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 Master Thesis - Idea Category
Mathilde Jørgensen Hedegaard (Recipient)
Department of Environmental Engineering, Urban Water Systems

Description
Grøn Dyst 2014 - second prize

Details
Awarded date: 2014
event: Green Challenge (Grøn Dyst) 2014
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
Prize: Prizes, scholarships, distinctions
**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

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**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

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**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

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**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

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**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

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**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 Ph.D. presentation award
Dorte Skaarup Østergaard (Recipient)
Department of Civil Engineering, Section for Building Energy

Details
Awarded date: 26 Aug 2015
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 44th 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)
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 Presentation Award in senior category
Svend Svendsen (Recipient)
Department of Civil Engineering, Section for Building Energy

Details
Awarded date: 13 Sep 2017
Degree of recognition: International
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 E-Poster Award (First Prize)
Lin Fan (Recipient)
Department of Electrical Engineering, Electronics

Description
First Prize Award from IEEE PELS

Details
Awarded date: 4 Oct 2016
Degree of recognition: International
Granting Organisations: IEEE Power Electronics Society
event: 5th International Workshop on Power Supply On Chip
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
Prize: Prizes, scholarships, distinctions

Best talk at DFS 2016
Jesper Rasmussen (Recipient)
Department of Physics, Plasma Physics and Fusion Energy

Description
Award for "Best talk" (DKK 2500) at the Annual Meeting of the Danish Physical Society 2016

Details
Awarded date: 7 Jun 2016
Degree of recognition: National
Granting Organisations: Danish Physical Society
Prize: Prizes, scholarships, distinctions

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
Prize: Prizes, scholarships, distinctions

buildingSMART Fellow
Jan Karlshøj (Recipient)
Department of Civil Engineering, Section for Building Design

Description
The contribution must have been substantial and of a quality that brought buildingSMART considerably forward.

Details
Awarded date: 3 Apr 2017
Degree of recognition: International
Granting Organisations: buildingSMART International Council
event: buildingSMART: International Standard Summit
Prize: Prizes, scholarships, distinctions

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
Prize: Prizes, scholarships, distinctions

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
Prize: Prizes, scholarships, distinctions

Civilingeniør 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
Prize: Prizes, scholarships, distinctions

Corning Student Paper Competition
Rafael Puerta Ramírez (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
Degree of recognition: International
event: The Optical Networking and Communication Conference & Exhibition
Prize: Prizes, scholarships, distinctions
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

Details
Awarded date: 13 Jun 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
Prize: Prizes, scholarships, distinctions
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
Kira Hyldekræn Janstrup (Recipient)
Department of Management Engineering, Transport DTU, Transport Modelling

Details
Awarded date: 30 Sep 2016
Granting Organisations: Technical University of Denmark
event: PhD graduation ceremony
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's Young Researcher Award 2017
Joe Alexandersen (Recipient)
Department of Mechanical Engineering, Solid Mechanics

Description
For my Ph.D. research work, one of six awarded.

Details
Awarded date: 27 Oct 2017
Degree of recognition: Local
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)
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 Hårstedt Jørgensen, DTU Space og Jonas Bækby Bjarnø, DTU Space

Prismodtagere; Andreas Hårstedt Jørgensen, DTU Space og Jonas Bækby Bjarnø, DTU Space

Details
Awarded date: 16 Apr 2012
Granting Organisations: Ingeniørforeningens Elektrofond
Prize: Prizes, scholarships, distinctions

E-kandidatprisen
Kristian Høeg Madsen (Recipient)
Department of Photonics Engineering, Quantum Photonics

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.

Details
Awarded date: 1 Jun 2010
Granting Organisations: Copenhagen, Denmark
Prize: Prizes, scholarships, distinctions

EliteForsk-rejsestipendierne 2017
Aikaterini Spiliotopoulou (Recipient)
Department of Environmental Engineering, Water Technologies

Description
The Elite Research Prize is awarded to outstanding researchers under 45 years of international excellence. The Ministry for Higher Education and Science annually distributes five prizes. Each prize is 1.2 million. 200,000 is a personal award and 1,000,000 goes to research. The Elite Research travel grant is DKK 200,000 and helps very talented PhD students to perform longer-term studies in some of the best research environments in the world. The Ministry of Higher Education and Science annually distributes up to 20 Elite Research travel grants. Recipients of Elite Research prices are presented and honoured at the annual Elite Research Conference.
Details
Awarded date: 23 Feb 2017
Degree of recognition: National
Granting Organisations: The Ministry for Higher Education and Science (Danish)
event: EliteForsk-konferencen
Prize: Prizes, scholarships, distinctions

EliteForsk-rejsestipendium
Rie Beck Hansen (Recipient)
Center for Hyperpolarization in Magnetic Resonance, Department of Electrical Engineering, Center for Magnetic Resonance

Details
Awarded date: 23 Feb 2017
Degree of recognition: National
Granting Organisations: Uddannelses- og Forskningsministeriet
event: EliteForsk-konferencen
Prize: Prizes, scholarships, distinctions

Elite-Forsk-rejsestipendium (EliteForsk travel grant)
Dominik Franjo Dominkovic (Recipient)
Department of Energy Conversion and Storage, Centre for IT-Intelligent Energy Systems in Cities

Description
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 Reseacher 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 subpopulations 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**

**coauthor**

**Details**
Awarded date: 16 Sep 2013
Granting Organisations: DTU Fotonik
Prize: Prizes, scholarships, distinctions

**Fabriksejer, Cevilingenier 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
**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**
Kryptografiske hash-funktioner er et af de vigtigste redskaber til design af effektive kryptografiske protokoller som for eksempel digitale signaturer, der gør sikker kommunikation over internettet mulig. Kryptografiske protokoller viser sig ofte at være sikre, forudsat at de bagvedliggende hash-funktioner er sikre. Lige siden hash-funktionen SHA-1 blev taget i brug som den Føderale Informationsprocesseringsstandard (FIPS) af National Institute of Standards and Technology (NIST) i USA, er den blevet anvendt i mange bevisligt sikre kryptografiske protokoller. Sikkerhedssårbarhederne, der er blevet blidotlagt i SHA-1 og andre almindeligt anvendte hash-funktioner, har dramatisk mindsket vores tryghed i brugen af aktuelle hash-funktioner som sikre mekanismer i de kryptografiske protokoller. I deres søgen efter en sikker hash-funktion lancerede NIST i USA en verdensomspændende konkurrence i 2007 om at vælge en ny hash-funktion, der skal

**Details**
Awarded date: 27 Jan 2010
Granting Organisations: Ny Carlsberg Glyptotek
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 Challenge 2014**
Malene Hovgaard Vested (Recipient)
Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering

**Description**
First prize

**Details**
Awarded date: 27 Jun 2014
Degree of recognition: Local
event: Green Challenge (Grøn Dyst) 2014
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

Honorary Mention
Behnaz Pirzamanbein (Recipient)
Department of Applied Mathematics and Computer Science

Description
My paper "Modelling Spatial Compositional Data: Reconstructions of past land cover and uncertainties" recognized with an Honorary Mention in the Section on Statistics and the Environment (ENVR), in the student paper competition at the joint statistical meeting, ASA, 2016.

Details
Awarded date: Aug 2016
Degree of recognition: International
Granting Organisations: American Statistical Association
event: Joint Statistical meeting
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.

### Details
- **Awarded date:** 2016
- **Degree of recognition:** International
- **Granting Organisations:** European Commission
- **Prize:** Prizes, scholarships, distinctions

### Human Factors Engineering and Systems Design with Federal University of Rio de Janeiro/COPPE: International Network Program
- **Ole Broberg** (Recipient)
- Copenhagen Center for Health Technology, Department of Management Engineering, Engineering Systems

### Details
- **Awarded date:** Jun 2013
- **Granting Organisations:** Danish Agency for Science, Technology and Innovation
- **Prize:** Prizes, scholarships, distinctions

### Idella Fonden Travelling Grant
- **Erika Buonansegna** (Recipient)
- Department of Management Engineering, Technology and Innovation Management

### Description
- Travel scholarship of DKK 40,000 granted for research stay

### Details
- **Awarded date:** 2011
- **Prize:** Prizes, scholarships, distinctions

### Idella Foundation
- **Danilo Quagliotti** (Recipient)
- Department of Mechanical Engineering, Manufacturing Engineering

### Description
- Awarded with a research grant to support external stay at The University of Nottingham

### Details
- **Awarded date:** 20 Jun 2016
- **Prize:** Prizes, scholarships, distinctions

### Idella foundation, Denmark research travel grant
- **Amit Kumar Prasad** (Recipient)
- Center for Nuclear Technologies, Radiation Physics

### Details
- **Awarded date:** 2015
- **Degree of recognition:** International
- **Granting Organisations:** Foundation Idella
- **Prize:** Prizes, scholarships, distinctions
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

Inactivation of biofilms with UV LEDs
Aikaterini Argyraki (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Description
Danish Optical Society (DOPS) best poster award 2016, November 24-25

Details
Awarded date: 25 Nov 2016
Degree of recognition: National
Granting Organisations: NKT Photonics A/S
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
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

**Innovationsfonden Prize 2018**
Sara Shafiee (Recipient)
Department of Mechanical Engineering, Engineering Design and Product Development, Operations Management

**Description**
Erhvervsforsker Prisen Honors the most talented Business PhDs or Business Postdocs from the Innovation Fund's talent program, which has combined a high level of research, with strong business understanding and has created a business impact for a company.

**Details**
- Awarded date: 2018
- Degree of recognition: National
- 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

ISSMO/Springer Prize for Young Scientist 2015
Joe Alexandersen (Recipient)
Department of Mechanical Engineering, Solid Mechanics

Description
For the presentation and paper "Topology optimisation of passive coolers for light-emitting diode lamps" at the 11th World Congress of Structural and Multidisciplinary Optimization.

Details
Awarded date: 2015
Degree of recognition: International
Granting Organisations: International Society of Structural and Multidisciplinary Optimization (ISSMO)
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 Committee
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

**Kriton Curi Award**  
Sandra Roxana Aparcana Robles (Recipient)  
Department of Management Engineering, UNEP DTU Partnership

**Description**  
Award for the best paper on developing country waste management issues

**Details**  
Awarded date: 6 Oct 2017  
Degree of recognition: International  
Granting Organisations: International Waste Working Group (IWWG)  
event: Sardinia 2017, 16th International Waste Management and Landfill Symposium  
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 Mønsteds 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

**Details**  
Awarded date: 2014  
Granting Organisations: The Danish Industry Foundation  
Prize: Prizes, scholarships, distinctions

**MNE 2013 Micro Nano Graph Contest, honorable mention**  
Aikaterini Argyraki (Recipient)  
Department of Photonics Engineering, Diode Lasers and LED Systems

**Details**  
Awarded date: 16 Sep 2013  
Prize: Prizes, scholarships, distinctions
Molecular Ecology best reviewer 2013
Gilles Guillot (Recipient)
Department of Applied Mathematics and Computer Science, Cognitive Systems

Details
Awarded date: Jan 2013
Granting Organisations: Molecular Ecology
Prize: Prizes, scholarships, distinctions

Most downloaded article in the year 2015 - 2016
Maumita Chakrabarti (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Description
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.

Details
Awarded date: 1 Apr 2015
Granting Organisations: OSA Publishing
Prize: Prizes, scholarships, distinctions

MSc: Graduation with distinction
Robert Bitsche (Recipient)
Department of Wind Energy, Wind Turbines

Details
Awarded date: 2005
Granting Organisations: Vienna University of Technology, Austria
Prize: Prizes, scholarships, distinctions

MSD Animal Health names 2018 High Quality Pork Ph.D. award
Ana Carolina Lopes Antunes (Recipient)
National Veterinary Institute, Epidemiology

Details
Awarded date: 2018
Degree of recognition: International
Prize: Prizes, scholarships, distinctions

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

Description
Best Poster Prize

Details
Awarded date: 18 Aug 2016
Granting Organisations: Royal Society of Chemistry
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 Biosustainability best paper award 2014**
Carlotta Ronda (Recipient)  
Novo Nordisk Foundation Center for Biosustainability

**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

On the list of the 8 outstanding editorial board members of International Transactions on Electrical Energy Systems (Wiley) for 2017
Jalal Kazempour (Recipient)
Department of Electrical Engineering, Center for Electric Power and Energy, Electricity markets and energy analytics

Details
Awarded date: 2017
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 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
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 Bayesian research applied to climate science**
Behnaz Pirzamanbein (Recipient)
Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics

**Description**
Outstanding Bayesian research applied to climate science in the Section on Bayesian Statistical Science (SBSS), and also recognized with an Honorary Mention in the Section on Statistics and the Environment (ENVR), in the student paper competition at the joint statistical meeting, ASA, 2016.

**Details**
Awarded date: Aug 2016
Degree of recognition: International
Granting Organisations: American Statistical Association
Event: Joint Statistical meeting
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**
Jane Lind Nybo Rasmussen (Recipient)
Department of Biotechnology and Biomedicine, Network Engineering of Eukaryotic Cell factories

**Details**
Awarded date: 19 Mar 2017
Degree of recognition: International
Granting Organisations: Genetics Society of America
event: 29th Fungal Genetics Conference
Prize: Prizes, scholarships, distinctions

**Poster prize**
Jane Lind Nybo Rasmussen (Recipient)
Department of Biotechnology and Biomedicine, Network Engineering of Eukaryotic Cell factories

**Details**
Awarded date: 6 Apr 2016
Degree of recognition: International
event: 13th European Conference on Fungal Genetics
Prize: Prizes, scholarships, distinctions

**Poster prize**
Kanchana Rueksomtawin Kildegaard (Recipient)
Novo Nordisk Foundation Center for Biosustainability, Research Groups, Yeast Metabolic Engineering

**Details**
Awarded date: 29 Jun 2017
Degree of recognition: International
event: The 33rd International Specialised Symposium on Yeast (ISSY33)
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

**Details**
Awarded date: 12 May 2016
Granting Organisations: Engineering Conferences International
Prize: Prizes, scholarships, distinctions
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.

Details
Awarded date: 29 Feb 2016
Granting Organisations: Technical University of Denmark
Prize: Prizes, scholarships, distinctions

Power of Programming Conference 2014 Poster Prize
Amalie Ribel-Madsen (Recipient)
Department of Systems Biology

Description
Munich, Germany, 13-15 March 2014

Details
Awarded date: 13 Mar 2014
Prize: Prizes, scholarships, distinctions

Presentation Award: Prize for an excellent presentation at Novo Scholarship Symposium 2013
Henrik Munch Roager (Recipient)
National Food Institute, Division of Food Microbiology

Details
Awarded date: 22 Jan 2013
Prize: Prizes, scholarships, distinctions

Professor P. H. Bendtsen's Trafikforskningspris
Michael Bruhn Barfod (Recipient)
Department of Transport, Decision Modelling

Details
Awarded date: 2012
Degree of recognition: National
Prize: Prizes, scholarships, distinctions

Prof. P.H. Bendtsens Transport Research Award
Mikkel Thorhauge (Recipient)
Department of Management Engineering, Transport DTU, Transport Modelling

Details
Awarded date: 22 Aug 2016
Degree of recognition: National
event: Trafikdage 2016
Prize: Prizes, scholarships, distinctions

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

Description
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.
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

Description
Research project

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

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

Description
Financial Support of the External Research Stay

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

Description
Poster presented at the ECVPH AGM & Annual Scientific Conference 2017

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

Description
Visiting Researcher Stanford University: Center for Design Research

Details
Awarded date: 1 Sep 2009
Granting Organisations: Danish Agency for Science, Technology and Innovation
Prize: Prizes, scholarships, distinctions
Evandro Malanski (Recipient)
National Institute of Aquatic Resources, Centre for Ocean Life

**Description**
PhD scholarship

**Details**
Awarded date: 1 Dec 2012
Granting Organisations: Technical University of Denmark
Prize: Prizes, scholarships, distinctions

**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.

**Details**
Awarded date: Aug 2014
Granting Organisations: Descience
Prize: Prizes, scholarships, distinctions

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.

**Details**
Awarded date: Sep 2015
Granting Organisations: ASM - Applied Environmental Microbiology
Prize: Prizes, scholarships, distinctions

Louise Helene Søgaard Jensen (Recipient)
Center for Electron Nanoscopy, DTU Danchip

**Details**
Awarded date: 16 Dec 2013
Prize: Prizes, scholarships, distinctions

Carsten Dam-Hansen (Recipient), Dennis Dan Corell (Recipient), Anders Thorseth (Recipient) & Peter Behrensdorf 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 2017 EIPBN Best Overall Poster Paper Award
Mikkel Rønne Lotz (Recipient)
Department of Micro- and Nanotechnology, Polymer Micro & Nano Engineering

Description
For the poster titled: "Thermal Nanoimprinting of Mid-IR Antireflective Moth-eye Nanostructures on Chalcogenide Glass Windows"

Details
Awarded date: 31 May 2017
Degree of recognition: International
Prize: Prizes, scholarships, distinctions

The 2nd Annual Ted Brown and Hai 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
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

Details
Awarded date: 20 Oct 2016
Degree of recognition: International
event: 13th International Symposium on the Genetics of Industrial Microorganisms
Prize: Prizes, scholarships, distinctions

The Capital Region of Denmark PhD Study Grant, Copenhagen, Denmark, 1 October 2014
Amalie Ribel-Madsen (Recipient)
Department of Systems Biology

Details
Awarded date: 1 Oct 2014
Prize: Prizes, scholarships, distinctions

The Danish Lighting Innovation Network travel grant 2013
Anders Thorseth (Recipient)
Department of Photonics Engineering, Diode Lasers and LED Systems

Details
Awarded date: 25 Sep 2013
Prize: Prizes, scholarships, distinctions

The Director Gorm-Petersen memorial grant to young scientist in promising development
Steffen Foss Hansen (Recipient)
Department of Environmental Engineering, Environmental Chemistry

Details
Awarded date: 2009
Degree of recognition: National
Granting Organisations: Direktør P. Gorm-Petersens og Hustrus Legat
event: PhD graduation ceremony
Prize: Prizes, scholarships, distinctions

The Idella Foundation Travel Scholarship
Pedro Parraguez Ruiz (Recipient)
Engineering Systems Group, Department of Management Engineering, Production and Service Management

Description
Awarded Idella's travel scholarship to finance research abroad period at MIT.

Details
Awarded date: 1 Apr 2013
Granting Organisations: Idella
Prize: Prizes, scholarships, distinctions

The Idella Foundation Travel Scholarship
Frederik Ancker Agergaard (Recipient)
Department of Civil Engineering, Section for Geotechnics and Geology, Arctic Technology Centre, ARTEK

Description
Travel scholarship of DKK 30,000 granted for research stay at Laval University, Quebec, Canada hosted by Professor Guy Doré.

Visiting phd-student at Laval University during the autumn semester 2011.
Details
Awarded date: 5 Sep 2011
Prize: Prizes, scholarships, distinctions

The NIRAS award
Mathilde Jørgensen Hedegaard (Recipient)
Department of Environmental Engineering, Urban Water Systems

Description
The NIRAS Award of 10,000 DKK is given to a young researcher or student, who through her/his studies or research has contributed with new and ground-breaking research

Details
Awarded date: 30 Jan 2018
Granting Organisations: NIRAS A/S
event: 12th annual meeting of DWF
Prize: Prizes, scholarships, distinctions

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: 77th Annual meeting of the Academy of Management
Prize: Prizes, scholarships, distinctions

Third best paper and presentation at ECTRI-FERSI Young Researchers Seminar
Kira Hyldekær Jansstrup (Recipient)
Department of Management Engineering, Transport DTU, Transport Modelling

Details
Awarded date: 7 Jun 2013
Granting Organisations: Forum of European Road Safety Institutes (FERSI)
event: FERSI Young Researchers' Seminar
Prize: Prizes, scholarships, distinctions

Third Price EFC17 Best Paper Awards
Søren Højgaard Jensen (Recipient), Hendrik Langnickel (Recipient), Nils Hintzen (Recipient), Ming Chen (Recipient), Xiufu Sun (Recipient), Anne Hauch (Recipient), Giacomo Butera (Recipient) & Lasse Rengaard Clausen (Recipient)
Department of Energy Conversion and Storage, Applied Electrochemistry, Mixed Conductors, Department of Mechanical Engineering, Thermal Energy

Description
Third price for the paper: "Reversible Operation using Carbonaceous Gasses of a 30-cell Solid Oxide Cell Stack"

The awards are given to the best papers submitted to the EFC17 conference and that report the most important insights and progress within the broad field of hydrogen and fuel cell technologies. The awards are sponsored by the EFC17
conference. All nominations are judged by an independent Best Paper Selection Committee.

**Details**
Awarded date: 13 Dec 2017  
Degree of recognition: International  
event: 7th European Fuel Cell Piero Lunghi Conference  
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**  
Kanchana Rueksomtawin Kildegaard (Recipient)  
Novo Nordisk Foundation Center for Biosustainability, Research Groups, Yeast Metabolic Engineering

**Description**  
Travel grant to support the expenses for attending Metabolic engineering 11 conference in Japan.

**Details**
Awarded date: 26 May 2016  
Degree of recognition: National  
Granting Organisations: Otto Mønsteds Fond  
Prize: Prizes, scholarships, distinctions

**Travel grant**  
Kanchana Rueksomtawin Kildegaard (Recipient)  
Department of Biotechnology

**Description**  
Grant supporting the travel expenses in attending the Natural Products Discovery and Production conference in Santa Fe, New Mexico, USA.

**Details**
Awarded date: 7 Apr 2006  
Degree of recognition: National  
Granting Organisations: Otto Mønsteds Fond  
Prize: Prizes, scholarships, distinctions
Received FEMS Young Scientist Meeting Grant to attend 10th International Symposium on the Genetics of Industrial Microorganisms (GIM 2006), Prague, Czech Republic.

**Details**
Awarded date: 18 Jun 2006  
Degree of recognition: Internationa  
Granting Organisations: Federation of European Microbiological Societies  
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 Mansted 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)
National Food Institute, Research Group for Risk-Benefit

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
Three year research project

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

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

Awarded date: 24 Sep 2014
Prize: Prizes, scholarships, distinctions

Young Scientist Award
Andrea Crovetto (Recipient)
Department of Micro- and Nanotechnology, Silicon Microtechnology

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

For his contribution:
Prediction of internal strains during curing, post-curing and demoulding of thick glass/epoxy composite – Analysis of different constitutive models

Awarded date: 4 Jul 2012
Prize: Prizes, scholarships, distinctions

Press clippings:

An Overview of 3D X-ray Microscopy
Lars Pilgaard Mikkelsen
19/02/2018

Customer profiles: Dr. Lars Pilgaard Mikkelsen with online interview
Department of Wind Energy, Composites and Materials Mechanics, Department of Applied Mathematics and Computer Science
Media contribution (1)

An Overview of 3D X-ray Microscopy
19/02/2018
Microscopy And Analysis, Denmark
Wiley
4:13
https://microscopy-analysis.com/zeiss-xrm-overview
Lars Pilgaard Mikkelsen
Department of Applied Mathematics and Computer Science, Department of Wind Energy, Composites and Materials Mechanics
Press / Media

Artikel på DR.dk om fusionsenergi
Søren Bang Korsholm
30/01/2018
Department of Physics, Plasma Physics and Fusion Energy

Media contribution (1)

En kunstig sol og helium fra Månen: Sådan vil forskerne revolutionere energiproduktion
30/01/2018
Danmarks Radio (National), Denmark, Web
JEPPE KYHNE KNUDSEN, JONAS PETRI OG LASSE FROM, DR Viden
Webartikel (~2-3 A4 sider) samt video
Søren Bang Korsholm
Press / Media

Ny software kan forudsige listeria I oste
Paw Dalgaard
24/01/2018

Description
On-line article by Ulla Kjer, Landbrug & Fødevare, vedr. Dairy-Predict projektet der er støttet af Mejeribrugets Forskningsfond og udføres at DTU Fødevareinstituttet i samarbejde med Arla Foods National Food Institute, Research Group for Analytical and Predictive Microbiology

Media contribution (1)

Ny software kan forudsige listeria I oste.
24/01/2018
mejeri.dk (National), Denmark, Web
Ulla Kjer, Landbrug & Fødevare
Paw Dalgaard
Press / Media

Interview til Ren og evig energi: Kunstig intelligens skal hjælpe med at lave en sol på Jorden
Søren Bang Korsholm
30/12/2017
Department of Physics, Plasma Physics and Fusion Energy

Media contribution (1)

Ren og evig energi: Kunstig intelligens skal hjælpe med at lave en sol på Jorden
30/12/2017
Politiken (National), Denmark, Print
Mathias Glistrup, Politiken
1 full page in print and online
https://politiken.dk/viden/art6271411/Kunstig-intelligens-skal-hj%C3%A6lpe-med-at-lave-en-sol-p%C3%A5-Jorden
Søren Bang Korsholm
Press / Media
Mød kunder og samarbejdspartner digitalt
Christine Ipsen
27/12/2017

Description
Den teknologiske udvikling har flyttet såvel kunder som samarbejdspartnere over på de digitale platforme, og det giver nye muligheder og udfordringer til virksomhederne. Det er nødvendigt at møde kunderne hvor de er, fortæller eksperter.

Department of Management Engineering, Management Science, Implementation and Performance Management

Media contribution (1)

Berlingske Business
27/12/2017
Denmark, Web
https://www.business.dk/annonce/moed-kunder-og-samarbejdspartner-digitalt
Christine Ipsen
Press / Media

Millions for research into antibiotic resistance and better drugs
Tilmann Weber, Pep Charusanti, Sang Yup Lee & Bernhard Palsson
26/01/2017 → 26/12/2017

Description
DTU Press release on NNF Challenge grants, including IIMENA
Network Reconstruction in Silico Biology, Novo Nordisk Foundation Center for Biosustainability, Big Data 2 Knowledge, New Bioactive Compounds

Media coverage (2)

Novo-millioner skal gøre lægemidler bedre
26/12/2017
medwatch.dk (National), Denmark, Web
LONNI PARK LYNGE
http://medwatch.dk/secure/Medicinal___Biotek/article9319828.ece
Tilmann Weber, Pep Charusanti, Sang Yup Lee & Bernhard Palsson
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds, Big Data 2 Knowledge, Network Reconstruction in Silico Biology

GODT NYT I KAMPEN MOD ANTIBIOTIKARESISTENS
30/01/2017
Dansk Kemi (National), Denmark, Web
http://www.kemifokus.dk/godt-nyt-i-kampen-mod-antibiotikaresistens/
Tilmann Weber, Pep Charusanti, Sang Yup Lee & Bernhard Palsson
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds, Big Data 2 Knowledge, Network Reconstruction in Silico Biology

Media contributions (2)

Millions for research into antibiotic resistance and better drugs
26/01/2017
DTU Homepage (International), Denmark, Web
Viebeke Hempler
http://www.dtu.dk/english/news/nyhed?id=39201475-593e-41c9-b63e-08c790731768
Tilmann Weber, Pep Charusanti, Sang Yup Lee & Bernhard Palsson
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds, Big Data 2 Knowledge, Network Reconstruction in Silico Biology

SPILDEVAND FRA 100 LANDE SKAL BIDRAGE TIL AT BEGRÆNSE ANTIBIOTIKA-RESISTENS
26/01/2017
NNF Homepage (International), Denmark, Web
http://novonordiskfonden.dk/da/content/spildevand-fra-100-lande-skal-bidrage-til-begraense-antibiotika-resistens
Press release on 2017 NNF Challenge Grants by Novo Nordisk Foundation
Tilmann Weber, Sang Yup Lee, Pep Charusanti & Bernhard Palsson
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds, Big Data 2 Knowledge, Network Reconstruction in Silico Biology

**Relations**

**Projects:**
Integration of Informatics and Metabolic Engineering for the discovery of Novel Antibiotics

**Press / Media**

**Kosmisk kollision var årets største videnskabelige gennembrud**
Søren Brandt
26/12/2017
National Space Institute, Astrophysics and Atmospheric Physics

**Media coverage (1)**

**Kosmisk kollision var årets største videnskabelige gennembrud**
26/12/2017
Ekstra Bladet, Denmark
https://ekstrabladet.dk/nyheder/videnskab_og_teknik/kosmisk-kollision-var-aarets-stoerste-videnskabelige-gennembrud/6971874
Søren Brandt

**Relations**

**Projects:**
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

**Press / Media**

**Årets 10 største videnskabelige opdagelser**
Søren Brandt
24/12/2017
National Space Institute, Astrophysics and Atmospheric Physics

**Media coverage (1)**

**Årets 10 største videnskabelige opdagelser**
24/12/2017
Politiken (National), Denmark, Web
Lasse Foghsgaard
https://politiken.dk/viden/Viden/art6264429%C3%B8rets-10-st%C3%B8rste-videnskabelige-opdagelser
Søren Brandt

**Relations**

**Projects:**
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

**Press / Media**

**Science: Neutronstjerners sammenstød er årets videnskabelige gennembrud**
Søren Brandt
21/12/2017
National Space Institute, Astrophysics and Atmospheric Physics

**Media contribution (1)**

**Science: Neutronstjerners sammenstød er årets videnskabelige gennembrud**
21/12/2017
Videnskab.dk (National), Denmark, Web
Henrik Bendix
https://videnskab.dk/naturvidenskab/science-neutronstjerners-sammenstod-er-aarets-videnskabelige-gennembrud
Søren Brandt

**Relations**

**Research outputs:**
GCN CIRCULAR 21672, LIGO/Virgo G298048: INTEGRAL pointed follow-up observations
Global Wind Atlas 2.0
Jake Badger
04/12/2017

Description
Radio interview on DR P1 Morgen

Subject
The launch of the new global wind atlas (Global Wind Atlas 2.0) was discussed during a 5 minute long live telephone on the P1 national morning new radio program.
Department of Wind Energy, Resource Assessment Modelling

Media contribution (1)
Global Wind Atlas 2.0 radio interview
04/12/2017
DR P1 (National), Denmark, Radio
5 minutes
A live telephone interview was conducted on DR P1 Morgen, national news program, do talk about the new Global Wind Atlas 2.0.
Jake Badger
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-Jespersen 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

Brug af kosttilskud
Anja Pia Biltoft-Jensen
28/11/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)
En sund kost kan ikke erstattes af kosttilskud uden sundhedsmæssige konsekvenser
28/11/2017
Women (National), Denmark, Print
Maria Denise Christoffersen
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Eeffekten af kaloriemærkning af retter i restauranter
Anne Dahl Lassen
27/11/2017
National Food Institute, Division of Risk Assessment and Nutrition
Media coverage (1)

**Effekten af kalorimærkning af retter i restauranter**
27/11/2017
Videnskab.dk (National), Denmark, Web
Mads Molten
Anne Dahl Lassen
National Food Institute, Division of Risk Assessment and Nutrition

**Glyphosat**
Annette Petersen
27/11/2017
National Food Institute, Division of Risk Assessment and Nutrition

**Video and Blog-post / interview at sciencenews.dk on iimena project (NNF Challenge Grant)**
Tilmann Weber
24/11/2017

**Description**
Video on the 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

**Helårsrapport for pesticidrester i fødevarer**
Bodil Hamborg Jensen
23/11/2017
National Food Institute, Division of Risk Assessment and Nutrition
Media coverage (1)

Helårsrapport for pesticidrester i fødevarer
23/11/2017
BT, Metroxpress, Denmark
Simone Lundt
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Når gulvvarme 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

Risikovurdering af tilsætningsstoffer
Lea Bredsdorff
16/11/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Risikovurdering af tilsætningsstoffer
16/11/2017
www.emulsifiersforgood.com, Denmark, Web
Pha Khem
Lea Bredsdorff
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Faldende sædkvalitet og stigende forekomst af kryptorkisme i hunde
Anne Marie Vinggaard
16/11/2017
National Food Institute, Copenhagen Center for Health Technology, Research Group for Molecular and Reproductive Toxicology

Media coverage (1)

Faldende sædkvalitet og stigende forekomst af kryptorkisme i hunde
16/11/2017
Videnskab.dk (National), Denmark, Web
Mads Molten
Anne Marie Vinggaard
Copenhagen Center for Health Technology, National Food Institute, Research Group for Molecular and Reproductive Toxicology
Press / Media

Health Innovation: System Design for Behaviour Change
Anja Maier
16/11/2017
Department of Management Engineering, Copenhagen Center for Health Technology, Engineering Systems

Conference on Health Innovation : Innovation som drivfraft for fremtidens sundhedssektor
Event: Conference
Media contribution (1)

**Health Innovation: System Design for Behaviour Change**

16/11/2017  
Video (International), Denmark, Web  
Copenhagen Health Innovation  
ca 4 minutes  
http://copenhagenhealthinnovation.dk/sundhed17/  
Anja Maier  
Press / Media

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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)

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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-raekkevidde-208620  
Tejs Vegge  
Press / Media

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Researchers hunt for tomorrow's antimicrobial agents in the Christiania topsoil

Pep Charusanti  
13/11/2017

**Description**  
Description of research activities carried out by the New Bioactive Compounds (NBC) section.  
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds

Media contribution (1)

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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

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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.

**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 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

**Tjek din kommune: Så meget har kommunerne brugt på at renovere og bygge nye skoler**

12/11/2017

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

**Masser af nedslidte skoler i hele landet**

Per Anker Jensen
11/11/2017
Masser af nedslidte skoler i hele landet
11/11/2017
Denmark
Per Anker Jensen
Press / Media

Effekterne af en fuldkornskost på sundhed og tarmbakterier
Henrik Munch Roager
10/11/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

Effekterne af en fuldkornskost på sundhed og tarmbakterier
Tine Rask Licht
08/11/2017
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Effekterne af en fuldkornskost på sundhed og tarmbakterier
Tine Rask Licht
03/11/2017
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Nyt projekt skal hjælpe områder, der er truet af oversvømmelse
Morten Andreas Dahl Larsen
03/11/2017
Department of Management Engineering, Systems Analysis
Nyt projekt skal hjælpe områder, der er truet af oversvømmelse
03/11/2017
dr.dk (National), Denmark, Web
Morten Andreas Dahl Larsen
Press / Media

Græsprotein som fødevarer
Daniel Stender Nørgaard
01/11/2017
National Food Institute, Research Group for Microbial Biotechnology and Biorefining

Græsprotein som fødevarer
01/11/2017
Ingeniøren (National), Denmark, Web
Hanne Kokkegaard
Daniel Stender Nørgaard
National Food Institute, Research Group for Microbial Biotechnology and Biorefining
Press / Media

Udvikling af standard for brug af alger i kosmetik
Susan Løvstad Holdt
01/11/2017
National Food Institute, Research Group for Bioactives – Analysis and Application

Udvikling af standard for brug af alger i kosmetik
01/11/2017
Dansk Standard nyhedsbrev, Denmark, Other
Nina Vindel
Susan Løvstad Holdt
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

Effekterne af en fuldkornskost på sundhed og tarmbakterier
Tine Rask Licht
01/11/2017
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Effekterne af en fuldkornskost på sundhed og tarmbakterier
01/11/2017
Ritzau (National), Denmark, Other
Ida Meyer
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Platform Technologies Improve Protein Expression
Bjørn Gunnar Voldborg
01/11/2017
Novo Nordisk Foundation Center for Biosustainability, CHO Core

Platform Technologies Improve Protein Expression
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

Danskernes forbrug af convenience food
Sisse Fagt
26/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Danskernes forbrug af convenience food
26/10/2017
Jyllands Posten (National), Denmark, Print
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Økologisk vs. konventionelt dyrkede fødevarer
Bodil Hamborg Jensen
26/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Økologisk vs. konventionelt dyrkede fødevarer
26/10/2017
Mandag Morgen (National), Denmark, Web
Mads Due Hansen
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition

Dårlige veje i Odense kommune kan betyde flere uheld
Kira Hyldekær Janstrup
25/10/2017
Department of Management Engineering, Transport Modelling, Transport DTU

Media contribution (1)

Dårlige veje i Odense Kommune kan betyde flere uheld
25/10/2017
DR, Denmark, Web
https://www.dr.dk/nyheder/regionale/fyn/daarlige-veje-i-odense-kommune-kan-betyde-flere-uheld
Kira Hyldekær Janstrup
Department of Management Engineering, Transport DTU, Transport Modelling

Superfood
Sisse Fagt
25/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Alternativer til superfoods
25/10/2017
DR Madmagasinet (National), Denmark, Television
Mikael Ladegaard Laursen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Overfølsomhed over for laktose og gluten**
Charlotte Bernhard Madsen
24/10/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

**Media coverage (1)**

**Overfølsomhed over for laktose og gluten**
24/10/2017
TV2 Nyhederne (National), Denmark, Television
Annemette Tofte
Charlotte Bernhard Madsen
National Food Institute, Research Group for Gut Microbiology and Immunology
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

**Udviklingen i antibiotikaforbrug over tid**
Flemming Bager
23/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

**Media coverage (1)**

**Udviklingen i antibiotikaforbrug over tid**
23/10/2017
DR Detektor (National), Denmark, Television
Jakob Bang Schmidt
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Mikroplastik**
Kit Granby
23/10/2017
National Food Institute, Research Group for Analytical Food Chemistry

**Media coverage (1)**

**Mikroplast i havmiljøet**
23/10/2017
Videnskab.dk (National), Denmark, Web
May Bach Madsen
Kit Granby
National Food Institute, Research Group for Analytical Food Chemistry
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

Den perfekte morgenmad
Sisse Fagt
23/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Den perfekte morgenmad
23/10/2017
Radio Nova (Regional), Denmark, Radio
Casper Hjorth
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Naturlighed
Pelle Thonning Olesen
20/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Naturlige vs. syntetiske stoffer
20/10/2017
Videnskab.dk (National), Denmark, Web
Malene Sommer Christiansen
Pelle Thonning Olesen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Konventionelle vs. økologiske fødevarer
Annette Petersen
20/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Er det sundere at spise økologiske end konventionelle fødevarer?
20/10/2017
Videnskab.dk (National), Denmark, Web
Energidrikke
Jeppe Matthiessen
20/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Energidrik og sportsudøvelse
20/10/2017
Tonsser, Denmark, Web
Alfred Winther Groth
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Kostråd og vægttab
Sisse Fagt
20/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Kostråd og vægttab
20/10/2017
Videnskab.dk (National), Denmark, Web
Thomas Hofmann
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
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

Æg
Jeppe Matthiessen
18/10/2017
DTU researchers involved in historic discovery in outer space
Søren Brandt
18/10/2017

Subject
Gravitational waves
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

DTU researchers involved in historic discovery in outer space
18/10/2017
DTU News (International), Denmark, Web
Morten Garly Andersen
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.
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
Gravitational Waves and Gamma-Rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

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
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

Sensationelt fund: 59 kvadrillioner kg guld
Søren Brandt
17/10/2017
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Sensationelt fund: 59 kvadrillioner kg guld
17/10/2017
Ekstra Bladet, Denmark
Benjamin Krog
https://ekstrabladet.dk/nyheder/samfund/sensationelt-fund-59-kvadrillioner-kg-guld/6873193
Søren Brandt

Relations
Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO
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
Press / Media

'Menneskeheden har aldrig set noget lignende': Forskere afslører banebrydende observationer
Søren Brandt & Allan Hornstrup
16/10/2017
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (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
Press / Media

Sensationel tyngdebølgemåling åbner nyt kapitel i udforskningen af rummet
Søren Brandt
16/10/2017
National Space Institute, Astrophysics and Atmospheric Physics

Media coverage (1)

Sensationel tyngdebølgemåling åbner nyt kapitel i udforskningen af rummet
16/10/2017
Videnskab.dk, Denmark
http://videnskab.dk/naturvidenskab/sensationel-tyngdeboelgemaaeling-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

Projects:
INTEGRAL follow-up observations of gravitational wave event candidates from LIGO and VIRGO

Press / Media

Risikovurdering af bog (frugt fra bøgetræer)
Kirsten Pilegaard
16/10/2017
National Food Institute, Research Group for Risk-Benefit

Media coverage (1)

Risikovurdering af bog (frugt fra bøgetræer)
16/10/2017
Ritzau (National), Denmark, Other
Christina Råbæk
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit

Press / Media

Astronomer jubler over den første observation af sammenstød mellem to neutronstjener
Søren Brandt
16/10/2017
National Space Institute, Astrophysics and Atmospheric Physics, Niels Bohr Institute

Media contribution (1)

Astronomer jubler over den første observation af sammenstød mellem to neutronstjener
16/10/2017
Ingeniøren (National), Denmark, Web
Jens Ramskov
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
The JEM-X X-ray monitor on INTEGRAL

Press / Media

DTU researchers involved in historic discovery in outer space
Søren Brandt & Jérôme Chenevez
16/10/2017

Description
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
DTU researchers involved in historic discovery in outer space
16/10/2017
DTU (International), Denmark, Web
Morten Garly Andersen
http://www74.sitecore.dtu.dk/nyheder/Nyhed?id={DBA47A51-37F0-44C1-B161-63EAEDCB6EB3}
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.
Søren Brandt & Jérôme Chenevez
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
Activities:
INTEGRAL 2017
Press / Media

Hummere i Lillebælt
Mads Christoffersen
16/10/2017

description
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
16/10/2017
TV2/Fyn (Regional), Denmark, Television
Sofie Myhre
3:02
Mads Christoffersen
Press / Media

Antibiotikaforbruget i tal
Birgitte Borck Høg
13/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Antibiotikaforbruget i tal
13/10/2017
DR Fakta (National), Denmark, Television
Britt Godske
Birgitte Borck Høg
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Den perfekte morgenmad
Sisse Fagt
11/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)
Den perfekte morgenmad
11/10/2017
Ritzau Fokus (National), Denmark, Other
Nanna Frank
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fakta om koffein
Lea Bredsdorff
11/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Fakta om koffein
11/10/2017
I Form (National), Denmark, Print
Maria Albeg Jespersen
Lea Bredsdorff
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Sundhedsværdi af dansk makrel på dåse
Charlotte Jacobsen
06/10/2017
National Food Institute, Research Group for Bioactives – Analysis and Application

Media coverage (1)

Test af makrel på dåse
06/10/2017
Politiken (National), Denmark, Print
Katrine Nadia Jørgensen
Charlotte Jacobsen
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

Pesticidrester i fødevarer
Bodil Hamborg Jensen
06/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Pesticidrester i fødevarer
06/10/2017
Politiken (National), Denmark, Print
Charlotte Branner
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Brug af nyheder fra food.dtu.dk
Heidi Kornholt
06/10/2017
National Food Institute

Media coverage (1)

Brug af nyheder fra www.food.dtu.dk
06/10/2017
Denmark
Brug af nyheder fra food.dtu.dk
Heidi Kornholt
06/10/2017
National Food Institute

Media coverage (1)

Brug af nyheder fra food.dtu.dk
06/10/2017
Danish Food Cluster (National), Denmark
Line Kohsel
Heidi Kornholt
National Food Institute
Press / Media

Antibiotikaforbrug til svin
Flemming Bager
05/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Antibiotikaforbrug til svin
05/10/2017
P1 Orientering (National), Denmark, Radio
Karin Hjulmand
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Spiselige blomster
Kirsten Pilegaard
04/10/2017
National Food Institute, Research Group for Risk-Benefit

Media coverage (1)

Spiselige blomster
04/10/2017
Freelancer, Denmark
Marianne Steffensen
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit
Press / Media

DANMAP
Flemming Bager
04/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Udvikling antibiotikaforbrug forbrug
04/10/2017
DR P1 (National), Denmark, Radio
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Pesticidrester i fødevarer
Bodil Hamborg Jensen
04/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Pesticidrester i fødevarer
Bodil Hamborg Jensen
04/10/2017
Radio 24/7 (National), Denmark, Radio
Tinne Hjersing Knudsen
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Pesticidrester i fødevarer
Bodil Hamborg Jensen
03/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Artikel i Samvirke om pesticidrester i fødevarer
03/10/2017
Radio 24/7 (National), Denmark, Radio
Oliver Bærentsen
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Pesticider i fødevarer
Bodil Hamborg Jensen
02/10/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

 Hvordan man kan reducere indholdet af pesticider i sine fødevarer?
02/10/2017
Radius Kommunikation, Denmark, Other
Katrine Lerche
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Wind farms: harvesting energy on shaky grounds and in stormy seas
Evangelos Katsanos & Sebastian Thöns
02/10/2017
Department of Civil Engineering, Section for Structural Engineering

Media contribution (1)

 Moving on dangerous grounds – wind power and earthquake exposures in China
02/10/2017
Denmark
Evangelos Katsanos & Sebastian Thöns
Department of Civil Engineering, Section for Structural Engineering
Press / Media

Smoothies til børn
Sisse Fagt
28/09/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Sundheden af smoothies til børn
28/09/2017
Ritzau Folkus (National), Denmark, Other
Mathias Sinius Mølgaard
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Distanceledelse: Konsulenter uden for kontoret kan true produktiviteten
Christine Ipsen
27/09/2017

Description
Dårligt arbejdsmiljø blokerer for at yde en god indsats. Det skaber frustration – i særdeleshed, når man ikke deler adresse med chefen, og han tilmed ignorerer problemet
Department of Management Engineering, Management Science, Implementation and Performance Management

Media contribution (1)

Ingeniøren
27/09/2017
Ingeniøren (National), Denmark, Web
Lene Wessel
Christine Ipsen
Press / Media

Tangs uudnyttede potientiale
Susan Løvstad Holdt
27/09/2017
National Food Institute, Research Group for Bioactives – Analysis and Application

Media coverage (1)

Tangs uudnyttede potientiale
27/09/2017
Science Report (National), Denmark, Web
Klaus Eriksen
http://sciencereport.dk/ny-viden/kan-ligge-milliarder-gemt-danske-tang/
Susan Løvstad Holdt
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

Kemiske stoffer i fødevarekontaktmaterialer af pap og papir
Gitte Alsing Pedersen
19/09/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Kilder til forureninger i returbaseret pap og papir
19/09/2017
Ingeniøren (National), Denmark, Web
Henrik Winther
Gitte Alsing Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Sundhedsskadelige stoffer i fødevarekontaktmateriale
Anne Marie Vinggaard
19/09/2017
National Food Institute, Copenhagen Center for Health Technology, Research Group for Molecular and Reproductive Toxicology

Media coverage (1)

Strategi til at teste for sundhedsskadelige stoffer i fødevarekontaktmateriale
19/09/2017
Ingeniøren (National), Denmark, Web
Henrik Winther
Anne Marie Vinggaard
Copenhagen Center for Health Technology, National Food Institute, Research Group for Molecular and Reproductive Toxicology
Press / Media

Mikroplastik i drikkevand
Annette Petersen
19/09/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Er mikroplastik i drikkevand farligt for mennesker?
19/09/2017
Videnskab.dk (National), Denmark, Web
Eskild Heinemeier
Annette Petersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Insuring wind power in China against typhoons and earthquakes
Evangelos Katsanos & Sebastian Thöns
14/09/2017

Description
Les Rendez-Vous de Septembre 2017 (Monte Carlo, Monaco)
Department of Civil Engineering, Section for Structural Engineering

Media contribution (1)

Moving on dangerous grounds – wind power and earthquake exposures in China
14/09/2017
Evangelos Katsanos & Sebastian Thöns
Department of Civil Engineering, Section for Structural Engineering
Press / Media

Tarmbakterier og vægttab
Tine Rask Licht
12/09/2017
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media coverage (1)

Tarmbakterier og vægttab
12/09/2017
Politiken (National), Denmark, Print
Lars Dahlager
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media
Conceptual Modelling for Product Configuration Systems - Defence
Sara Shafiee
11/09/2017

Description
Ph.D. Defence
https://www.youtube.com/watch?v=XLebQfHXNSM&t

Subject
https://www.youtube.com/watch?v=XLebQfHXNSM&t
Department of Mechanical Engineering, Department of Management Engineering

Media contribution (1)

Conceptual Modelling for Product Configuration Systems - Defence
11/09/2017
Conceptual Modelling for Product Configuration Systems - Defence (International), Denmark, Web
DTU
38:12
https://www.youtube.com/watch?v=XLebQfHXNSM&t
PhD defence by Sara Shafiee
Sara Shafiee
Department of Mechanical Engineering, Department of Management Engineering
Press / Media

Fedt i kosten
Heddie Mejborn
11/09/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Man behøver ikke at undgå fedt i kosten
11/09/2017
Ritzau Fokus, Denmark
Anna Raabæk
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Sundhedsskadelige stoffer i fødevarekontaktmateriale
Anne Marie Vinggaard
07/09/2017
National Food Institute, Copenhagen Center for Health Technology, Research Group for Molecular and Reproductive Toxicology

Media coverage (1)

Strategi til at teste for sundhedsskadelige stoffer i fødevarekontaktmateriale
07/09/2017
Videnskab.dk (National), Denmark, Web
Kristian Sjøgren
Anne Marie Vinggaard
Copenhagen Center for Health Technology, National Food Institute, Research Group for Molecular and Reproductive Toxicology
Press / Media

Insekter som fødevare og allergi
Charlotte Bernhard Madsen
06/09/2017
National Food Institute, Research Group for Gut Microbiology and Immunology
**Media coverage (1)**

**Insekter som fødevare og allergi**
06/09/2017
Asthma Allergi bladet (National), Denmark, Print
Henriette Baun Gautier
Charlotte Bernhard Madsen
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

**Tarmbakterier**
Tine Rask Licht
06/09/2017
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

**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

**Pesticider i fødevarer**
Jens Hinge Andersen
30/08/2017
National Food Institute

**Media coverage (1)**

**Pesticider i fødevarer**
30/08/2017
Samvirke (National), Denmark, Print
Christian Garde Myggen
Jens Hinge Andersen
National Food Institute
Press / Media
Pesticides in food
Bodil Hamborg Jensen
30/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Pesticides in food
30/08/2017
Samvirke (National), Denmark, Print
Kristian Herlufsen
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Intestinal transit time, digestion and health
Henrik Munch Roager
24/08/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Food's transit time
24/08/2017
The Telegraph, Denmark, Print
Helen Foster
Henrik Munch Roager
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Danish meat consumption
Sisse Fagt
24/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Danish meat consumption
24/08/2017
Ritzau (National), Denmark, Other
Malou Alsing
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Worn-out fats
Heddie Mejborn
24/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Worn-out fats
24/08/2017
Ritzau Fokus (National), Denmark, Web
Anna Raabæk
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Worn-out fats
Heddie Mejborn
23/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Skær ned på mættede fedtsyrer
23/08/2017
Ritzau Fokus (National), Denmark, Other
Anna Raabæk
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Danskernes kødforbrug
Sisse Fagt
22/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Tal for danskernes kødforbrug
22/08/2017
TV2 (National), Denmark, Other
Gitte Petersen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Danskernes interesse for croissanter og hindbærsnitter
Sisse Fagt
21/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Danskernes interesse for croissanter og hindbærsnitter
21/08/2017
Politiken (National), Denmark, Print
Katrine Nadia Jørgensen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Måltidssalaters næringsindhold
Sisse Fagt
21/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Måltidssalaters næringsindhold
21/08/2017
Politiken, Denmark
Line Felholt
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Pesticider i fødevarer
Bodil Hamborg Jensen
18/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)
**Pesticider i fødevarer**
18/08/2017
Ugeavisen Tønder, Denmark
Betina Skjønnemand
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Superfoods**
Anja Pia Biltoft-Jensen
17/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

**Superfoods - er de pengene værd?**
17/08/2017
Ritzau Fokus (National), Denmark, Other
Bettine Romme Andersen
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Mulige hormonforstyrrende effekter af fipronil i æggeprodukter**
Max Hansen
16/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

**Mulige hormonforstyrrende effekter af fipronil i æggeprodukter**
16/08/2017
Berlingske (National), Denmark, Print
Flemming Steen Pedersen
Max Hansen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Tarmbakterier og hjertesundhed**
Tine Rask Licht
15/08/2017
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media coverage (1)

**Tarmbakterier og hjertesundhed**
15/08/2017
Videnskab.dk, Denmark, Other
Sussi Boberg Baech
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

**Pesticider i fødevarer**
Bodil Hamborg Jensen
14/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

**Pesticider i fødevarer**
Superfoods
Sisse Fagt
14/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Superfoods
14/08/2017
DR P3 (National), Denmark, Radio
Sine Pam
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Hvilken kost der er god for hår og negle?
Sisse Fagt
11/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Hvilken kost der er god for hår og negle
11/08/2017
Ritzau Fokus (National), Denmark, Other
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fipronil i æggeprodukter
Max Hansen
10/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Fipronil i æggeprodukter
10/08/2017
DR (National), Denmark, Radio
Alexander Hecklen
Max Hansen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fipronil i æggeprodukter
Max Hansen
10/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Fipronil i æggeprodukter
10/08/2017
TV2 Nyhederne (National), Denmark, Television
Max Hansen
National Food Institute, Division of Risk Assessment and Nutrition
Fipronil i æggeprodukter
Max Hansen
10/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Fipronil i æggeprodukter
10/08/2017
Politiken (National), Denmark, Print
Max Hansen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fipronil i æggeprodukter
Max Hansen
10/08/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Fipronil i æggeprodukter
10/08/2017
Jyllands Posten (National), Denmark, Print
Max Hansen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Insekter til foder og fødevarer
Dorte Lau Baggesen
09/08/2017
National Food Institute

Media coverage (1)

Perspektiver for insektør til foder og fødevarer
09/08/2017
Magasinet Udvikling (National), Denmark, Print
Anna Petersen Nedergaard
Dorte Lau Baggesen
National Food Institute
Press / Media

Three challenges facing managers
Christine Ipsen
08/08/2017

Description
The fourth industrial revolution and the changes it requires of companies place considerable demands on management
Department of Management Engineering, Management Science, Implementation and Performance Management

Media contribution (1)

Dynamo
08/08/2017
Dynomo (National), Denmark, Print
http://www.dtu.dk/english/news/2017/08/dynamo-theme-6-three-challenges-facing-managers?id=f02b6739-6e17-417f-a853-0a26603f5ef6
Christine Ipsen
Press / Media
Hormonforstyrrende stoffer og kvindelig fertilitet
Julie Boberg
07/08/2017
National Food Institute, Research Group for Molecular and Reproductive Toxicology

Media coverage (1)

Kokosolie
Sisse Fagt
31/07/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Bornholm: Flere bassiner har problemer med vandkvalitet
Henrik Rasmus Andersen
24/07/2017
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
Henrik Rasmus Andersen
19/07/2017

Description

Subject
swimming pool; chlorine
Department of Environmental Engineering, Water Technologies

Media contribution (1)
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 slugе poolvandet? Og hvad er det egentlig, der svier sådan i øjnene?

Henrik Rasmus Andersen
Press / Media

**Kosttilskud**
Anja Pia Biltoft-Jensen
10/07/2017
National Food Institute, Division of Risk Assessment and Nutrition

**Media coverage (1)**

**Danskernes forbrug af kosttilskud**
10/07/2017
JP FINANS (National), Denmark, Print
Benjamin Werner Christensen
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Handlingsplan for antibiotikaforbrug**
Birgitte Borck Heg
06/07/2017
National Food Institute, Division of Risk Assessment and Nutrition

**Media coverage (1)**

**Handlingsplan for antibiotikaforbrug**
06/07/2017
Ingeniøren (National), Denmark, Web
Magnus Bredsdorff
Birgitte Borck Heg
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Handlingsplan for antibiotikaforbrug**
Birgitte Borck Heg
05/07/2017
National Food Institute, Division of Risk Assessment and Nutrition

**Media coverage (1)**

**Handlingsplan for Antibiotika forbrug**
05/07/2017
Jyllands Posten (National), Denmark, Print
Tea Krogh Sørensen
Birgitte Borck Heg
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

**Spis varieret**
Sisse Fagt
04/07/2017
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Danskernes forståelse af kostrådet om at spise varieret**
04/07/2017
BT (National), Denmark, Print
Line Felholt
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
**Vilde planter**  
Kirsten Pilegaard  
04/07/2017  
National Food Institute, Research Group for Risk-Benefit  

*Media coverage (1)*  

**Risikovurdering af wilde planter**  
04/07/2017  
DTU Avisen, Denmark, Print  
Marianne Vang Ryde  
Kirsten Pilegaard  
National Food Institute, Research Group for Risk-Benefit  

**Grill og madlavning ved bål.**  
Anoop Kumar Sharma  
03/07/2017  
National Food Institute, Division of Risk Assessment and Nutrition  

*Media coverage (1)*  

**Forbehold man skal tage, når man griller/laver mad over bål**  
03/07/2017  
dr.dk/viden (National), Denmark, Web  
Morten Greve  
Anoop Kumar Sharma  
National Food Institute, Division of Risk Assessment and Nutrition  

**Møbelgenbrug**  
Heidi Kornholt  
29/06/2017  
National Food Institute  

*Media coverage (1)*  

**Genbrug af møbler i forbindelse med flytning fra Mørkhøj**  
29/06/2017  
Politiken (National), Denmark, Print  
Thomas Flensburg  
Heidi Kornholt  
National Food Institute  

**Campylobacter**  
Birgitte Borck Høg  
28/06/2017  
National Food Institute, Division of Risk Assessment and Nutrition  

*Media coverage (1)*  

**Annual Report on Zoonoses 2016 om campylobacter**  
28/06/2017  
Ritzau (National), Denmark, Other  
Anders A. Jepsen  
Birgitte Borck Høg  
National Food Institute, Division of Risk Assessment and Nutrition  

Press / Media
Campylobacter i Danmark
Birgitte Borck Høg
28/06/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Om Annual Report on Zoonoses 2016 og campylobacter
28/06/2017
DR Radioavisen (National), Denmark, Radio
Elle Kindt
Birgitte Borck Høg
National Food Institute, Division of Risk Assessment and Nutrition

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/nyhederinnovation/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

Vilde planter
Kirsten Pilegaard
22/06/2017
National Food Institute, Research Group for Risk-Benefit

Media coverage (1)

Processen for risikovurdering af vilde planter
22/06/2017
Ingeniøren, Denmark
Hanne Kokkegaard
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit

Press / Media

Sikkerhedsvurdering af tilsætningsstoffer
Pelle Thonning Olesen
22/06/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Sikkerhedsvurdering af tilsætningsstoffer
22/06/2017
Samvirke (National), Denmark, Print
Inger Houman Abildgaard
Pelle Thonning Olesen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Energidrikke
Marta Axelstad Petersen
20/06/2017
National Food Institute, Research Group for Molecular and Reproductive Toxicology

Media coverage (1)

Risici ved indtag af energidrikke
20/06/2017
Zetland.dk (National), Denmark, Web
Marie Carsten Petersen
Marta Axelstad Petersen
National Food Institute, Research Group for Molecular and Reproductive Toxicology
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 Ejlertsen
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

Scientists solve 30-year old mystery on how resistance genes spread
Description
Press release on our Nature Communication paper on the dissemination of antibiotic resistance genes; Press release / article covered by multiple news outlets, blogs and individual tweeters
(https://www.nature.com/articles/ncomms15784/metrics)
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds, Research Groups, Bacterial Synthetic Biology, Department of Biotechnology and Biomedicine

Media contribution (1)

Scientists solve 30-year old mystery on how resistance genes spread
15/06/2017
DTU Biosustain Homepage (International), Denmark, Web
Anne Wärme Lykke
http://www.biosustain.dtu.dk/english/nyhedsbase/2017/06/antibiotic-genes?id=9b924680-693f-47e2-8d7f-03c6cecfe473
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds, Department of Biotechnology and Biomedicine, Bacterial Synthetic Biology, Research Groups

Relations
Research outputs:
Dissemination of antibiotic resistance genes from antibiotic producers to pathogens
Projects:
Integration of Informatics and Metabolic Engineering for the discovery of Novel Antibiotics
Press / Media

GMO
Jan W. Pedersen
15/06/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Hvad kan GMO bruges til og hvordan sikkerhedsvurderes det?
15/06/2017
DR Syd (Regional), Denmark, Radio
Jan W. Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

SLÄPP Taget!
Kasper Edwards
14/06/2017
Department of Management Engineering, Management Science, Implementation and Performance Management

Media coverage (1)

SLÄPP 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

Forskningsprojektet ALLEVIATE
Katrine Lindholm Bøgh
13/06/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

**Media coverage (1)**

*Uddybning af og status på forskningsprojektet Alleviate*
13/06/2017
Allergia.se, Denmark, Web
Susanne Rosén
Katrine Lindholm Bøgh
National Food Institute, Research Group for Gut Microbiology and Immunology
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 Driveholm
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

**Reproduktionsskadelige effekter af plastblødøgeren DINP**
Julie Boberg
07/06/2017
National Food Institute, Research Group for Molecular and Reproductive Toxicology

**Media coverage (1)**

*Reproduktionsskadelige effekter af plastblødøgeren DINP*
07/06/2017
Chemical Watch (International), Denmark, Web
Emma Davies
Julie Boberg
National Food Institute, Research Group for Molecular and Reproductive Toxicology
Press / Media

**Nanosatellitter sætter dansk rumforskning på verdenskortet**
Jens Olaf Pepke Pedersen
06/06/2017
Water may prevent holes in teeth.
Erik Arvin
01/06/2017

Description
Interview with journalist Sidsel Boye from the news magazine "Danish communes" on Erik Arvin's research on the significance of water quality on caries among school children. In particular the significance of calcium and fluoride in drinking water and family income.
The article is published in the magazine "Danske Kommuner" No. 17 from 2017. The article is based on the interview with Erik Arvin.
Department of Environmental Engineering

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

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

Er animalsk gelatine usundt?
Heddie Mejborn
01/06/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Er animalsk gelatine usundt?
01/06/2017
BT, Denmark
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
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
KNR TV Qanoroq (National), Greenland, Television
http://knr.gl/da/tv/qanoroq-daily-news/qanoroq-30052017
Kåre Hendriksen
Press / Media
Resistensovervågning
Rene S. Hendriksen
30/05/2017
National Food Institute, Research Group for Genomic Epidemiology

Media coverage (1)

Resistensovervågning i Danmark
30/05/2017
Politikens Forlag, Denmark, Other
Andreas Lindqvist
Rene S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

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 råbe op, mener forfatteren Tor Nørretranders.
Anders Thorseth & Carsten Dam-Hansen
Department of Photonics Engineering, Diode Lasers and LED Systems

Relations
Projects:
Global Test of SSL Products - IEA-4E-SSL
Center for LED metrology
Warm or Cold, Lights influence on thermal comfort
Activities:
LED Conference 2016
Press / Media

Danskernes forbrug af usunde fødevarer
Sisse Fagt
24/05/2017
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)

Forbrug af usunde fødevarer og faktorer, der spiller ind på vores valg
24/05/2017
Politiken (National), Denmark, Print
Rasmus Straka
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Er der forskel på mærkevarer og private labels?
Sisse Fagt
23/05/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Forskels i næringsindhold på mærkevarer vs private labels
23/05/2017
DR Pengenmagasinet (National), Denmark, Television
Dorte Fals
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Pesticidrester i fødevarer
Bodil Hamborg Jensen
22/05/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Kan man vaske/koge/bage sig til mindre gift i maden?
22/05/2017
Danmarks Naturfredningsforening (National), Denmark, Web
Sanne Liv Lembrecht Buggeskov
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Pesticidrester i frugt og grønt
Bodil Hamborg Jensen
22/05/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kan man skylle pesticidrester af frugt og grønt
22/05/2017
Magasinet Økologisk (National), Denmark, Print
Mette Truelsen
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Is there too little control with direct-to-consumer genetics tests (Danish language only)
Lasse Westergaard Folkesten
19/05/2017

Description
Debate between Lasse Folkesen 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
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

ENGAGE project
Rene S. Hendriksen
19/05/2017
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Idéen bag ENGAGE
19/05/2017
EFSA (International), Denmark, Other
Christian Dominic
Rene S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology
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
Press / Media

Rumforskning: Han skal sikre astronauter en returbillet fra Mars
17/05/2017
Jyllands Posten (National), Denmark, Print
Lars Dalsgaard
Christopher R. Graves
Press / Media

Børn, fuldkorn og sundhed
Anja Pia Biltoft-Jensen
16/05/2017
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fuldkorn - hvorfor er det godt for os?
16/05/2017
Ritzau Fokus (National), Denmark, Other
Anna Raabæk
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Gourmet fast food
Sisse Fagt
16/05/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Kalorieindhold i gourmet- vs standardburgere
16/05/2017
DR Madmagasinet (National), Denmark, Television
Lotte Jahnsen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

LC-ESI-MS paper
Eelco Nicolaas Pieke
15/05/2017
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Use of novel methods in safety assessments
15/05/2017
Chemical Watch (International), Denmark, Web
Emma Davies
Eelco Nicolaas Pieke
National Food Institute, Research Group for Analytical Food Chemistry

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-nordsoeen
Charlotte Bay Hasager

Kühle Folgen der Schmelze
Jens Olaf Pepe 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
Melamin
Pelle Thonning Olesen
12/05/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Er melamin skadeligt i de doser, der kan migrere fra melaminplastprodukter?
12/05/2017
Ingenuity (National), Denmark, Print
Rebecca Fauling
Pelle Thonning Olesen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Energidrikke
Jeppe Matthiessen
11/05/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Udviklingen i salg af energidrikke
11/05/2017
TV2 MIDTVEST, Denmark
Alexandra Lysgaard
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Danskernes forbrug af grøntsager gennem tiderne
Sisse Fagt
09/05/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Danskerne forbrug af grøntsager gennem tiderne
09/05/2017
DR (National), Denmark, Television
Sara Kring
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
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)

Kontroversiel hjemmeside afslører, hvilke sygdomme du er disponeret for
08/05/2017
Videnskab-dk, Denmark
Anne Ringgaard
Ugens Podcast: Årets Danske Forskningsresultat
Jens Olaf Pepke Pedersen
05/05/2017

Description
I denne uges podcast kan du høre dialekter 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

Fremtidige kompetencebehov for laboranter
Jørn Smedsgaard
05/05/2017
National Food Institute, Research Group for Analytical Food Chemistry

Er det ok at spise pasta?
Heddie Mejborn
04/05/2017
National Food Institute, Division of Risk Assessment and Nutrition

Batterirevolutionen lader vente på sig
Tejs Vegge
03/05/2017
Atomic scale modelling and materials, Department of Energy Conversion and Storage
Kostvaner, sundhedsadfærd og vægtstatus hos 56-64-årige og 65-75-årige danskere
Agnes N. Pedersen
02/05/2017
National Food Institute

Media coverage (1)

Ældre danskeres kostvaner, sundhedsadfærd og vægtstatus
02/05/2017
Ritzau (National), Denmark, Other
Christian Rantorp
Agnes N. Pedersen
National Food Institute
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.
Department of Electrical Engineering, Electronics

Media contribution (1)

Europractice Activity Report 2016
01/05/2017
Denmark
Pere Llimos Muntal
Press / Media

Vindmøller kløver skyerne over Nordøen
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
After being displaced from their native village, a Greenlandic Inugguit community faces a new threat: climate change
Kåre Hendriksen
Press / Media

In Greenland's northernmost village, a melting Arctic threatens the age-old hunt
Kåre Hendriksen
30/04/2017

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

Forskningsens døgn - forskning for fremtiden
Lars Pilgaard Mikkelsen
29/04/2017

Description
Forskningsens døgn er en årlig tilbagevendende begivenhed, der afholdes over hele landet. I Roskilde har forskellige uddannelsesinstitutioner og foreninger opslået en række teltet, og viser eksempler på, hvad de arbejder med.
Department of Wind Energy, Composites and Materials Mechanics, Department of Applied Mathematics and Computer Science

Forskningsens døgn i Roskilde 2017
Event: Exhibition

Media coverage (1)

Forskningsens døgn i Roskilde
29/04/2017
Kanal Roskilde (Local), Denmark, Television
29 min.
https://www.youtube.com/watch?v=hVh8FwWcy-k&time=880s
Lars Pilgaard Mikkelsen
Press / Media

Kvantemekanik skal være allemandseje
Ulrich Busk Hoff
29/04/2017
Quantum Physics and Information Technology, 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

Biodynamiske fødevarer og sundhed
Heddie Mejborn
27/04/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Er biodynamisk dyrkede fødevarer sundere end konventionelle?
27/04/2017
GELB Kommunikation ApS, Denmark, Other
Marie Vestergaard Magni
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
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

Media contribution (1)

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

**Media contribution (1)**

**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

**Media coverage (1)**

**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

**Media contribution (1)**

**Klimaforskeren Jens Olaf Pepke er skeptisk overfor om konsekvenserne af klimaforandringerne er så store, som mange af hans kolleger mener.**
26/04/2017
DR (National), Denmark, Web
DR Viden
2 min
Jens Olaf Pepke Pedersen
Press / Media

**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
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

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

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
Kristoffer Frøkjær
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

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 Søgaard Kristensen
19:54
http://videnskab.dk/naturvidenskab/ugens-podcast-kan-du-forstaa-kvantefysik
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
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

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
Press / Media
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
Press / Media

Scientists discover how to make 'click-on' antibiotics
Tilmann Weber, Sang Yup Lee & Ewa Maria Musiol-Kroll
04/04/2017

Description
DTU Biosustain Press release on our ACS Paper
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds

Media contribution (1)

Scientists discover how to make 'click-on' antibiotics
04/04/2017
DTU Biosustain homepage (International), Denmark, Web
Anne Wärme Lykke
http://www.biosustain.dtu.dk/english/Nyhedsbase/Nyhed?id=31da9c88-321c-4f81-90c6-fe07951d5708
Tilmann Weber, Sang Yup Lee & Ewa Maria Musiol-Kroll
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds

Relations
Research outputs:
Polyketide Bioderivatization Using the Promiscuous Acyltransferase KirCII
Projects:
Engineering of polyketide synthases
Press / Media

 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
http://www.byg.dtu.dk/nyheder/Nyhed?id=cb4fecfd-877d-40c4-997b-8aef8c2826ed&utm_source=newssubscription&utm_media@mail&utm_campaign=www.byg.dtu.dk-Nyheder-2017-04-05
Alfred Heller
Centre for IT-Intelligent Energy Systems in Cities
Press / Media
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
Helene Fastrup Kildegaard
Press / Media

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
Press / Media

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
Press / Media

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
Press / Media

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
Press / Media

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
Press / Media

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
Press / Media

Interview i DR2 Dagen om fusionsenergi, CPH|DOX og Let there be light
Søren Bang Korsholm
27/03/2017
Department of Physics, Plasma Physics and Fusion Energy
Media contribution (1)

Interview i DR2 Dagen om fusionsenergi, CPH|DOX og Let there be light
27/03/2017
Danmarks Radio DR2 (National), Denmark, Television
15 minutter
http://www.dr.dk/tv/se/dr2-dagen-tv/dr2-dagen-2017-03-27#!/
Søren Bang Korsholm
Press / Media

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
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
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

Should we power ahead with very large wind farms?
Patrick Volker, Andrea N. Hahmann, Jake Badger & Hans Ejsing Jørgensen
17/03/2017
Department of Wind Energy, Meteorology & Remote Sensing, Resource Assessment Modelling

Big can be best when it comes to wind farms
Patrick Volker, Andrea N. Hahmann, Jake Badger & Hans Ejsing Jørgensen
17/03/2017
Department of Wind Energy, Meteorology & Remote Sensing, Resource Assessment Modelling

Webinar: Recovery of Operations From Hacker Attacks: A Structure for Response
Daniel Alberto Sepúlveda Estay & James Blanley Rice
15/03/2017

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=zsmpjNRclfI&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. Daniel Alberto Sepúlveda Estay & James Blanley Rice
Center for Transportation and Logistics at the Massachusetts Institute of Technology

Press / Media

Sundhedsmæssige bekymringer ved mineralolie i læbepomade
Pelle Thonning Olesen
15/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media coverage (1)

Sundhedsmæssigt 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
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 lide 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

Zink i leverpostej
Flemming Bager
10/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

Danskernes brug af kosttilskud
Anja Pia Biltoft-Jensen
09/03/2017
National Food Institute, Division of Risk Assessment and Nutrition

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 Biltoft-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 Kaaalund 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
Information (National), Denmark, Print
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Fysiker vil hverve unge til kvanteforskningen
Ulrich Busk Hoff
06/03/2017
Quantum Physics and Information Technology, Department of Physics
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

OECD nanomaterials programme 'of little value' for risk assessment
Steffen Foss Hansen
02/03/2017

Holdbarhed af fødevarer
Jens Kirk Andersen
28/02/2017
National Food Institute, Research Group for Microbial Food Safety

WHO's prioriteringliste for R&D
Frank Møller Aarestrup
28/02/2017
National Food Institute, Research Group for Genomic Epidemiology
WHO's prioriteringsliste for R&D
28/02/2017
Videnskab.dk (National), Denmark, Web
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

MRSA ekspertgruppe
Frank Møller Aarestrup
28/02/2017
National Food Institute, Research Group for Genomic Epidemiology

Media coverage (1)

MRSA ekspertgruppe
28/02/2017
BT (National), Denmark, Print
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

MRSA
Frank Møller Aarestrup
24/02/2017
National Food Institute, Research Group for Genomic Epidemiology

Media coverage (1)

MRSA
24/02/2017
Forskerforum (National), Denmark, Web
Mads Ølgaard
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

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)

Five Questions for Steffen Foss Hansen
23/02/2017
UNDARK (International), Web
Fabio Turone
https://undark.org/article/five-questions-steffen-foss-hansen/
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 Abdigdaard
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
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

Media contribution (1)

Fælles platform for smart city-løsninger lanceret på DTU: Smart City Hub
22/02/2017
News letter, Web
DTU Byg
Alfred Heller
Department of Civil Engineering
Press / Media

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

Media coverage (1)

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
Press / Media

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

Media contribution (1)

Ny kemi i batterier øger muligheden for at lagre grøn energi
20/02/2017
Ingeniøren, Denmark, Web
https://ing.dk/artikel/ny-kemi-batterier-øeger-muligheden-at-lagre-groen-energi-193977
Tejs Vegge
Press / Media

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**


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

**Blødt vand i hovedstaden skal spare husstande for millioner**

Camilla Tang

14/02/2017

Department of Environmental Engineering, Urban Water Systems

**Media contribution (1)**

**Blødt vand i hovedstaden skal spare husstande for millioner**

14/02/2017

*Politiken (National)*, Denmark, Web

Anna Belling-Ladegaard

http://politiken.dk/indland/art5833405/Bi%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

Media contribution (1)

DANMAP opgørelse af zink forbrug – hvordan undgåes fejl fremover?
14/02/2017
Ingeniøren, Web
Magnus Bredsdorf
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Udvinding af naturlige antioxidanter fra tang
Ditte Baun Hermund
14/02/2017
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

Udvinding af naturlige antioxidanter fra tang
14/02/2017
Berlingske, Print
Agnete Christiansen
Ditte Baun Hermund
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

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

Media contribution (1)

Risiko ved at erstatte hvede med ris i en glutenfri kost
14/02/2017
Videnskab.dk, Web
Anne Ringgaard
Max Hansen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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

Media contribution (1)

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 eksperter 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 gevinsten ved regulering i forhold til omkostninger ved reguleringen,” skriver Henrik Klinge Jacobsen i et svar til Altinget.
Department of Management Engineering, Systems Analysis

Media contribution (1)

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

Media contribution (1)

Nordisk Monitorering – svær overvægt i Danmark
08/02/2017
DR Deadline, Television
Katrine Overgaard
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Danskeres indtag af sodavand
Sisse Fagt
07/02/2017

Subject
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
Zinkforbrug i svin
Frank Møller Aarestrup
05/02/2017
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Zinkforbrug i svin
05/02/2017
Ingeniøren, Web
Magnus Bredsdorf
Frank Møller Aarestrup
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

Media contribution (1)

Danskernes alkohol og rygevaner - data fra den nordiske monitorering
Sisse Fagt
02/02/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Fuldkorn og havregryn til unge
Sisse Fagt
01/02/2017

Subject
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

Media contribution (1)
Danskernes alkohol og rygevaner - data fra den nordiske monitorering
Sisse Fagt
01/02/2017

Subject
Nyhed og radioindsig om resultaterne fra Det nordiske monitoreringsystem vedr. alkohol og rygning
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes alkohol og rygevaner - data fra den nordiske monitorering
01/02/2017
Ritzau, Print
Susanne Andersen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Fuldkorn og havregryn til unge
Sisse Fagt
01/02/2017

Subject
Fuldkornspartnerskabet har startet kampagne for at få unge til at spise morgenmad med havregryn.
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Æg og kolesterol
Heddie Mejborn
30/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Udvikling i zinkforbrug til svin
Flemming Bager
27/01/2017

Subject
Udvikling i zinkforbrug til svin
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)

Udvikling i zinkforbrug til svin
27/01/2017
Ingeniøren, Print
Magnus Bredsdorff
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition

Danskernes kødforbrug
Sisse Fagt
27/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Fremtidens fødevarer
Sisse Fagt
27/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

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

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
Press / Media

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
Press / Media

Forskellige kaffetypers koffeinindhold
Anja Pia Biltoft-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 Biltoft-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
Frank Huess Hedlund
Department of Applied Mathematics and Computer Science, Dynamical Systems, Statistics and Data Analysis

Research outputs:
Erfaringer frem for ansvar.
Kraftig eksplosion efter sammenblanding af salpetersyre og 2-propanol
Støveksplosion ødelægger dansk træpillefabrik - igen

Research program on new antibiotics receives 58 M DKK
Tilmann Weber
26/01/2017

Description
DTU Biosustain Press release on NNF iimena Challenge Grant
Novo Nordisk Foundation Center for Biosustainability, New Bioactive Compounds

Research program on new antibiotics receives 58 M DKK
26/01/2017
DTU Biosustain homepage (International), Denmark, Web
Anne Wärme Lykke
Tilmann Weber

Relations
Projects:
Integration of Informatics and Metabolic Engineering for the discovery of Novel Antibiotics

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

Vitamintab i frugt og grønt ved opbevaring
Sisse Fagt
25/01/2017
Nordisk Monitorering – overvægt og fysisk aktivitet med fokus på status og udvikling i Danmark
Jeppe Matthiessen
25/01/2017

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
Jeppe Matthiessen
25/01/2017

TV Avisen, Television
Katrine Overgaard
Jeppe Matthiessen
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
Jeppe Matthiessen
25/01/2017

Nova FM - Bauer Media, Radio
Jeppe Matthiessen
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
Jeppe Matthiessen
25/01/2017

Radio VLR, Jysk Fynske Medier, Radio
Ole B. Berstrup
Jeppe Matthiessen
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
Jeppe Matthiessen
25/01/2017

Berlingske Tidende, Print
Eva M. Østergaard Jensen
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
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/risikoekshperthvormangeskladjovilaeremoget
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
24/01/2017
DR P1 Morgen, Radio
Jesper Christiansen
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Hvordan bruger man light produkter fornuftigt?
Heddie Mejborn
24/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Hvordan bruger man light produkter fornuftigt?
24/01/2017
Ritzau Fokus, Print
Anne Lavendt
Heddie Mejborn
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
24/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Fremtidens fødevarer
Heidi Kornholt
24/01/2017

Subject
Givet kontaktinformation på medarbejdere, som kan udtale sig om fremtidens fødevarer
National Food Institute

Media contribution (1)

Fremtidens fødevarer
24/01/2017
TV2 (Nordisk Film TV), Television
Jesper Danielsen
Heidi Kornholt
National Food Institute
Press / Media
DTU's ingredienssektorudviklingsrapport
Egon Bech Hansen
20/01/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

DTU's ingredienssektorudviklingsrapport
20/01/2017
Food Navigator, Web
Niamh Michail
Egon Bech Hansen
National Food Institute, Research Group for Gut Microbiology and Immunology

Zinkforbrug til svin
Flemming Bager
20/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Zinkforbrug til svin
20/01/2017
Ingeniøren, Web
Magnus Bredsdorff
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition

Innovationsfondsprojektet ALLEVIATE
Katrine Lindholm Bøgh
19/01/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Innovationsfondsprojektet ALLEVIATE
19/01/2017
Astma-Allergi Danmarks hjemmeside og medlemsblad, Print
Henriette Baun Gautier
Katrine Lindholm Bøgh
National Food Institute, Research Group for Gut Microbiology and Immunology

Nordisk Monitorering - med fokus på kosten
Sisse Fagt
19/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Nordisk Monitorering - med fokus på kosten
19/01/2017
DR P4 Sjælland, Radio
Morten Raage
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Press / Media
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
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 Nyhederne, Radio
Sine Pam
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

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 Plantægningsværktøj til prioritering af klimatilpasning og Skybrudsløsninger indenfor urban afstrømning)

Subject
Innovationsprojekter
Department of Management Engineering, Systems Analysis

Media contribution (1)

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

Media contribution (1)

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
Politiken, Print
Line Felholt
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Hvorfor er måltidskasser populære?
Sisse Fagt
13/01/2017
National Food Institute, Division of Risk Assessment and Nutrition

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

Produktudvikling til modermælkserstatninger
Katrine Lindholm Bøgh
12/01/2017
National Food Institute, Research Group for Gut Microbiology and Immunology

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
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

Tarmbakterier og kostomsætning
Tine Rask Licht
11/01/2017
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Media contribution (1)

Tarmbakterier og kostomsætning
11/01/2017
Årstidernes Podcast, Denmark, Radio
Mads Malik Fuglsang Holm
Tine Rask Licht
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology
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
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

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

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-skyggejægere-i-laboratoriet
Ulrich Busk Hoff & Christian Scheffmann Jacobsen
Department of Physics, Quantum Physics and Information Technology

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
DTU-forskere: Forsyningsstrategi er risikabel for samfundsekonomien
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 samfundsekonomien
03/01/2017
Altinget.dk (National), Denmark, Web
http://www.altinget.dk/energi/artikel/dtu-forskere-forsyningsstrategi-er-risikabel-for-samfundseokonomien
Daniel Møller Sneum & Marie Münster
Department of Management Engineering, Systems Analysis, Energy Systems Analysis

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
Nyhedsbrev, Web
DTU Byg
http://www.dtu.dk/nyheder/nyhed?id=d8406fe4-da56-4a92-a98a-2cb1e76e12a7
Alfred Heller
Department of Civil Engineering, Centre for IT-Intelligent Energy Systems in Cities

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

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
Fakta om fødevareallergi
Charlotte Bernhard Madsen
22/12/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Fakta om fødevareallergi
22/12/2016
Faktalink, Web
Thomas Møller Larsen
Charlotte Bernhard Madsen
National Food Institute, Research Group for Gut Microbiology and Immunology

Med livet som indsats - Fatalt fald
René Fléron
21/12/2016

Description
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
28min
Danish Radio Link to the program expires 19/1-17
René Fléron
National Space Institute, Measurement and Instrumentation Systems

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

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

Press / Media
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
Press / Media

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 Samuelson
http://fagbladet3f.dk/artikel/kaempe-kalorieforskel-paa-fastfoodburgere
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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
Press / Media

Bisphenol A, BPF og BADGE i dåsesodavand
Sofie Christiansen
12/12/2016
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Bisphenol A, BPF og BADGE i dåsesodavand
12/12/2016
Søndagsavisen, Print
Niels Philip Kjeldsen
Sofie Christiansen
National Food Institute, Research Group for Reproductive Toxicology
Press / Media
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

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
Samvirke, Print
Morten Thorsboe
Marta Axelstad Petersen
National Food Institute, Research Group for Reproductive Toxicology

Mælk og laktose intolerans
Inge Tetens
08/12/2016
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)
Mælk og laktose 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
Tarmbakterier, fedme, mus
t
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

Universiteter: Vi skal uddanne Big data-ekspertter
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-ekspertter
06/12/2016
Børsen, Print
Ernst Poulsen
Helle Rootzén
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis

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
Sandagsavisen, Print
Louise A Poulsen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Universiteter: Vi skal uddanne Big data-ekspertener
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-ekspertener
06/12/2016
Børsen, Print
Ernst Poulsen
Helle Rootzén
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Press / Media

Universiteter: Vi skal uddanne Big data-ekspertener: -
Helle Rootzén
06/12/2016
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Media contribution (1)

Er High Fructose Corn Sirup (HFCS) skadeligt?
Heddie Mejborn
05/12/2016
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)

Er High Fructose Corn Sirup (HFCS) skadeligt?
05/12/2016
DR Kontant, Television
Thomas Lemke
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Danskernes indtag af frugt og grønt og kosttilskud
Sisse Fagt
05/12/2016
National Food Institute, Division of Risk Assessment and Nutrition
Media contribution (1)

Danskernes indtag af frugt og grønt og kosttilskud
05/12/2016
Samvirke, Print
Ny forskning: Underbevidstheden sender dig fuld ud i trafikken
Laila Marianne Martinussen
02/12/2016

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)

2015 tal for forekomsten af zoonoser
Birgitte Helwigh
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)

Projects:
Shale gas in a Danish context
Press / Media
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
Press / Media

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 Sølling Møller
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nyt center skal koble læring med teknologi
Helle Rootzén
01/12/2016
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis

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
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

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

Danskernes brug af vitamin/mineralpiller
Anja Pia Biltoft-Jensen
29/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Er nogle typer juleslik værre end andre?
Anja Pia Biltoft-Jensen
29/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Er nogle typer juleslik værre end andre?
29/11/2016
TV2 online, Web
Camilla Carlson
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

Press / Media

Ål og Sortmundet kutling
Mads Christoffersen
28/11/2016
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

Press / Media

Saltindholdet i brød fra danske supermarkeder
Ellen Trolle
24/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Press / Media
Saltindholdet i brød fra danske supermarkeder
Ellen Trolle
24/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Saltindholdet i brød fra danske supermarkeder
24/11/2016
DR Lev Nu, Web
Dorthe Kyhn
http://www.dr.dk/levnu/mad/mindre-salt-i-broedet-fra-supermarkedet
Ellen Trolle
National Food Institute, Division of Risk Assessment and Nutrition

Saltindholdet i brød fra danske supermarkeder
Ellen Trolle
23/11/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Saltindholdet i brød fra danske supermarkeder
23/11/2016
DR, Web
Matthias Valsgaard
Ellen Trolle
National Food Institute, Division of Risk Assessment and Nutrition

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 Fødevarestyrelsen om MRSA
Frank Møller Aarestrup
17/11/2016
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

DTU Fødevareinstituttets rådgivning af Fødevarestyrelsen om MRSA
17/11/2016
Magisterbladet, Print
Thomas Kølln
Frank Møller Aarestrup
Er vi klar til et nyt læringsskoncept?
Helle Rootzén
15/11/2016
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

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

Her jagter forskerne nøglen til kvantecomputeren
Ulrich Busk Hoff
12/11/2016
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
Press / Media

DTU inviterer gymnasieelever og andet godtfolk til at lave kvanteeksperimenter
09/11/2016
Quantum Physics and Information Technology, Department of Physics

Skype dialog på web-tv – Grøn omstilling: Panel diskusjon af den grønne omstilling med spørgsmål fra gymnasie elever
07/11/2016
Department of Wind Energy, Wind Turbine Structures and Component Design

Danskernes fiskeindtag
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

*Media contribution (1)*

**Ville du købe en bil, der var programmeret til at slå føreren ihjel?**
30/10/2016
Berlingske Business, Web
Martin Mose Bentzen
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

*Media contribution (1)*

**EFSA's opdaterede referenceværdi for D-vitamin**
28/10/2016
Videnskab.dk, Web
Sussi Broberg Bæch
Inge Tetens
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
28/10/2016

**Subject**
Liv i rummet
National Space Institute, Innovation and Research-based consultancy

*Media contribution (1)*

**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.**
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

**Description**
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.

**Subject**
https://www.youtube.com/watch?v=jocaJRget9g
Department of Mechanical Engineering, Department of Management Engineering
Primære aromatiske aminer (PAA) i fødevarekontaktmaterialer
Gitte Alsing Pedersen
27/10/2016

Subject
Hvor giftige er primære aromatiske aminer (PAA) i fødevarekontaktmaterialer?
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

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
Press / Media

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/p4kjh/p4-ettermiddag-2016-10-27-15-03-7/#/i45:43
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media

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
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 årtier. Men nu hævder to amerikanske astronomer, at de langt om længe har fundet dem - vaskægte 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
Press / Media

Pesticidrester i friskpresset juice
Jens Hinge Andersen
24/10/2016

Subject
Pesticidrester i friskpresset juice
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Pesticidrester 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 kvægsygdom
Carsten Thure Kirkeby
20/10/2016

Description
Short communication about iCull in Ingeniøren
National Veterinary Institute, Section for Epidemiology

Media contribution (1)

Fakta om GMO
Egon Bech Hansen
19/10/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

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)

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)
Ekspert: Redegørelse kan ikke bruges som grundlag for prioritering
Kåre Hendriksen
17/10/2016

Subject
Landsplanredegørelse 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
Landsplanredegørelse 2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Flere bygder vil lukke
14/10/2016
KNR, Print
Anton Gundersen Lihn
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Press / Media

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
Press / Media

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
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

Cross-border auctions for solar PV - the first of a kind
13/10/2016
Blog article on project homepage (International), Denmark, Web
AURES project
Danish-German cross-border auction on solar PV could serve as blue-print for future auctions
Lena Kitzing & Paul Wendring
Department of Management Engineering, Systems Analysis, Energy Economics and Regulation
Press / Media

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)

Den fødevarebårne sygdomsbyrde
Sara Monteiro Pires
13/10/2016

Subject
Den fødevarebårne sygdomsbyrde
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Den fødevarebårne sygdomsbyrde
Sara Monteiro Pires
12/10/2016
**Subject**
Den fødevarebårne sygdomsbyrde
National Food Institute, Research Group for Risk-Benefit

**Media contribution (1)**

**Den fødevarebårne sygdomsbyrde**
12/10/2016
Agência Lusa, Radio
Raquel Rio
Sara Monteiro Pires
National Food Institute, Research Group for Risk-Benefit

**Subject**
Den fødevarebårne sygdomsbyrde
National Food Institute, Research Group for Risk-Benefit

**Media contribution (1)**

**Den fødevarebårne sygdomsbyrde**
12/10/2016
Radio TSF, Radio
Isabel Meira
Sara Monteiro Pires
National Food Institute, Research Group for Risk-Benefit

**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

**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 kutling 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 kutling og projektet SORTMUND
10/10/2016
DR P4, Radio
Per Gade
Mads Christoffersen
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management
Press / Media

Stort fokus på branchens vækstpotentiale ved VandTek
Hans-Jørgen Albrechtsen
10/10/2016
Department of Environmental Engineering, Urban Water Systems

Media contribution (1)

Stort fokus på branchens vækstpotentiale ved VandTek
10/10/2016
DansVAND, Print
Hans-Jørgen Albrechtsen
Department of Environmental Engineering, Urban Water Systems
Press / Media

DHC+ newsletter: Interview with Dominik Franjo Dominković, winner of the 4th International DHC+ Student Awards
Dominik Franjo Dominkovic
10/10/2016

Description
An interview with the several questions concerning the participation in the DHC+ Student Awards Competition
Department of Energy Conversion and Storage, Centre for IT-Intelligent Energy Systems in Cities

Media contribution (1)

DHC+ newsletter: Interview with Dominik Franjo Dominković, winner of the 4th International DHC+ Student Awards
10/10/2016
DHC+ Technology Platform, Web
Debatindlæg om MRSA og andre former for resistens
Frank Møller Aarestrup
09/10/2016
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Debatindlæg om MRSA og andre former for resistens
09/10/2016
Politiken, Print
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Der beste Laser der Welt
Martin Meedom Nielsen
06/10/2016
Department of Physics, Neutrons and X-rays for Materials Physics

Media contribution (1)

Der beste Laser der Welt
06/10/2016
Die Zeit, Print
Martin Meedom Nielsen
Department of Physics, Neutrons and X-rays for Materials Physics
Press / Media

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
Press / Media

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
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

Press / Media
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 Kellemann
Gitte Alsing Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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
http://www.arbejdsmiljoforskning.dk/da/nyheder/arkiv/2016/ph-d--forsvar-om-risikovurdering-af-nano-i-arbejdsmiljoeet-vha-control-banding-værktøjer
Steffen Foss Hansen
Press / Media

Proteiner's mæthed
Inge Tetens
27/09/2016

Subject
Proteiner's mæthed
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

Proteiner's 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 Boge 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 Boge 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 geyserer 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
Asger 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
Fluorindholdet i danskvand
Miriam Meister
20/09/2016

Subject
Fluorindholdet i danskvand
National Food Institute

Media contribution (1)

MRSA bekæmpelse
Frank Møller Aarestrup
19/09/2016

Subject
MRSA bekæmpelse
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Bedre smittesporing med supercomputer
Emma Elisabeth Hagberg
17/09/2016

Subject
genrer og genomer; husdyrsygdomme; produktionsdyr; dataanalyse
Molecular Evolution, Department of Bio and Health Informatics, Disease Intelligence and Molecular Evolution

Media contribution (1)

Interview contribution: Article "Hamsterceller producerer medicin" in Dynamo
Helene Fastrup Kildegaard
16/09/2016
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
Anja Pia Biltoft-Jensen
15/09/2016

Subject
Danskernes indtag af kosttilskud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Bønnerup og Grenaa: Små fisk – skal gerne blive større
Ole Henriksen, Elliot John Brown, Dennis Ulrik Andersen & Aurelia Pereira Gabellini
15/09/2016
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Living Resources, Section for Monitoring and Data

Media contribution (1)

Bønnerup og Grenaa: Små fisk – skal gerne blive større
15/09/2016
NYT OM Østjylland (Local), Denmark, Web
Ole Henriksen, Elliot John Brown, Dennis Ulrik Andersen & Aurelia Pereira Gabellini
National Institute of Aquatic Resources, Section for Marine Living Resources, Section for Ecosystem based Marine Management, Section for Monitoring and Data

Relations
Projects:
Flatfish nursery grounds (38176)
Habitat Suitability for Recreationally Important Finfish of the Inner Danish Waters
FishHab-II (39345)

Press / Media

Bønnerup og Grenaa: Små fisk – skal gerne blive større
Ole Henriksen, Elliot John Brown, Dennis Ulrik Andersen & Aurelia Pereira Gabellini
15/09/2016
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Living Resources, Section for Monitoring and Data

Media contribution (1)

Bønnerup og Grenaa: Små fisk – skal gerne blive større
15/09/2016
NYT OM Østjylland (Local), Denmark, Web
Ole Henriksen, Elliot John Brown, Dennis Ulrik Andersen & Aurelia Pereira Gabellini
National Institute of Aquatic Resources, Section for Marine Living Resources, Section for Ecosystem based Marine Management, Section for Monitoring and Data

Relations
Projects:
Flatfish nursery grounds (38176)
Habitat Suitability for Recreationally Important Finfish of the Inner Danish Waters
FishHab-II (39345)

Press / Media

MRSA styregruppe
Flemming Bager
16/09/2016

Subject
MRSA styregruppe
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

MRSA styregruppe
Flemming Bager
16/09/2016

Subject
MRSA styregruppe
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Relæ

Danskerne indtag af kosttillskud
Anja Pia Biltoft-Jensen
15/09/2016

Subject
Danskerne indtag af kosttillskud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
Er der blevet lagt pres på mig?
National Food Institute, Research Group for Genomic Epidemiology

Hvad synes jeg om at DTU-foods anbefalinger om MRSA ikke er blevet fulgt
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology

FN's topmøde om resistens; hvad er situationen globalt og mine forhåbninger.
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology

MRSA og DRs dokumentar
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Fluorstoffer i Fødevarekontaktmaterialer (FKM)
Gitte Alsing Pedersen
13/09/2016

**Subject**
Fluorstoffer i Fødevarekontaktmaterialer (FKM)
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

Fluorstoffer i Fødevarekontaktmaterialer (FKM)
13/09/2016
Politiken, Print
Mette Guldagger
Gitte Alsing Pedersen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Indholdet af vitaminer og mineraler i vores fødevarer er lavere end tidligere
Jette Jakobsen
13/09/2016

**Subject**
Indholdet af vitaminer og mineraler i vores fødevarer er lavere end tidligere
National Food Institute, Research Group for Bioactives – Analysis and Application

**Media contribution (1)**

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
Press / Media

Mikroplastik
Kit Granby
13/09/2016

**Subject**
Mikroplastik
National Food Institute, Research Group for Analytical Food Chemistry

**Media contribution (1)**

Mikroplastik
13/09/2016
Koncern TV og..., Television
Søs Noiesen
Kit Granby
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

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

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

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

P1 eftermiddag
Kristoffer Leer
08/09/2016

Description
Interview om OSIRIS Rex missionen
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

P1 eftermiddag
08/09/2016
DR, Radio
10 min
http://www.dr.dk/radio/ondemand/p1/p1-eftermiddag-2016-09-08/#/
Første 10 min
Kristoffer Leer
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)

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。
8/09/2016
Polar and Ocean Portal, Web
http://polaroceanportal.com/article/1157
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media

D-vitamin
Inge Tetens
07/09/2016

Subject
D-vitamin
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

D-vitamin
07/09/2016
Søndagsavisen, Print
Lene Jæger Klausen
Inge Tetens
National Food Institute, Research Group for Risk-Benefit
Press / Media

Rumsonde forsvundet i to år på komet: Nu jubler forskerne igen
Kristoffer Leer
06/09/2016
Rumsonde forsvundet i to år på komet: Nu jubler forskerne igen
06/09/2016
TV2, Web
Kristoffer Leer
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

Vitaminer og mineraler fra kosten og kosttilskud
05/09/2016
Ritzau Fokus, Web
Mathias Sinius Mølgaard
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
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
NutraIngredients, Print
Anne-Rose Dunn
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

**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)**

**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

**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
BT, Web
Søren Brandt
National Space Institute, Astrophysics and Atmospheric Physics

Press / Media
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
Press / Media

Denmark Stakes on Drones and Greenlanders to Back its Arctic Claims
Jens Olaf Pepke Pedersen
01/09/2016

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
01/09/2016
Sputniknews, Web
http://sputniknews.com/europe/20160901/1044846086/denmark-greenland-arctic-claims.html
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media

An Expedition covering the Danish Coast's from the 18th July - 22nd August, 2016
Elliot John Brown, Ole Henriksen, Aurelia Pereira Gabellini, Asbjørn Emil Wilken Andreasen & Alexandros Kokkalis
31/08/2016
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Living Resources, Section for Monitoring and Data

Media contribution (1)

An Expedition covering the Danish Coast's from the 18th July - 22nd August, 2016
31/08/2016
YouTube (International), Denmark, Web
Kasper Due Bække
05:35
https://www.youtube.com/watch?v=NaFccdjFuNs
Elliot John Brown, Ole Henriksen, Aurelia Pereira Gabellini, Asbjørn Emil Wilken Andreasen & Alexandros Kokkalis
National Institute of Aquatic Resources, Section for Marine Living Resources, Section for Ecosystem based Marine Management, Section for Monitoring and Data

Relations
Projects:
Habitat Suitability for Recreationally Important Finfish of the Inner Danish Waters
Flatfish nursery grounds (38176)
FishHab-II (39345)
Press / Media
'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
Press / Media

I relation til DTU presse-meddelse: Mapping foods’ DNA can reveal fraud’
Reine 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
Reine S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

WGS capable of revealing food fraud but limitations identified
Reine 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
Reine S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

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  
Press / Media

**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  
Press / Media

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 minuter
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

Media contribution (1)

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

Media contribution (1)

Droner og satellitter skal sikre retten til Nordpolens havbund
29/08/2016
KNR Grønland, Web
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media

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

Media contribution (1)

Droner og satellitter er fremtiden for Arktis: Forskere fra DTU Space har undersøgt potentialet i at investere i rumbaseret overvågning
29/08/2016
DR, Web
Morten Greve
http://www.dr.dk/nyheder/viden/tech/droner-og-satellitter-er-fremtiden-arktis
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media
Storstillet satsning på droner kan styrke Danmarks rolle i Arktis: En eksplosiv udvikling i teknologien bag droner får forskere til at anbefale en storstillet 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
National Space Institute, Innovation and Research-based consultancy

Press / Media

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

Press / Media

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

Media contribution (1)
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
Press / Media

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

Media contribution (1)

Seks personer har været på Mars
29/08/2016
DR1, Television
https://www.dr.dk/tv/se/tv-avisen/tv-avisen-2016-08-29-21-29#!/
Sidste indslag
Kristoffer Leer
National Space Institute, Astrophysics and Atmospheric Physics
Press / Media

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)

Rapport: Send droner til Arktis: En eksplosiv udvikling i teknologi får forskere til anbefale satsning på droner i Arktis.
29/08/2016
Politiken, Print
Adam Hannestad
http://politiken.dk/indland/ECE3360181/rapport-send-droner-til-arktis/
Jens Olaf Pepke Pedersen
National Space Institute, Innovation and Research-based consultancy
Press / Media

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)

Cocktail effekter og fødevarekontaktmaterialer
29/08/2016
Ritzau, Web
Kristine Dam
Anne Marie Vinggaard
Copenhagen Center for Health Technology, National Food Institute, Research Group for Molecular Toxicology
Press / Media
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)

Hvis Solen lå 25 m fra Jorden ville Proxima b ligge i Chicago
27/08/2016
Politiken, Web
Kristoffer Leer
National Space Institute, Astrophysics and Atmospheric Physics
Press / Media

Danskerne indtag af salt
Anne Dahl Lassen
26/08/2016

Subject
Danskerne indtag af salt
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskerne indtag af salt
26/08/2016
Søndagsavisen, Print
Christina Ledertoug
Anne Dahl Lassen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Viker kampagner?
Sisse Fagt
24/08/2016

Subject
Viker kampagner?
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Viker kampagner?
24/08/2016
DR P1 Morgen, Radio
Mia Ulfgaard
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Viker kampagner?
Sisse Fagt
24/08/2016

Subject
Viker kampagner?
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Viker kampagner?
**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)**

**Streetfood**
Sisse Fagt
24/08/2016

**Subject**
Streetfood
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Virker kampagner?**
Sisse Fagt
23/08/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**bromerede flamnehæmmere**
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
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
Press / Media

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
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 Bøge Jensen
National Food Institute, Research Group for Microbial Food Safety
Press / Media

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
Press / Media

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

Veterinaert antibiotikaforbrug
Flemming Bager
09/08/2016

Subject
Veterinaert antibiotikaforbrug
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Veterinaert antibiotikaforbrug
09/08/2016
Landbrugsavisen, Print
Pia Lykke
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition

Indtag af kosttilskud
Anja Pia Biltoft-Jensen
09/08/2016

Subject
Indtag af kosttilskud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Indtag af kosttilskud
09/08/2016
DR1, Television
Asger Mow
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition

Hygiejne, mikrobiologi, forbrugeradfærd, antimikrobielt
Lisbeth Truelstrup Hansen
08/08/2016

Subject
Hygiejne, mikrobiologi, forbrugeradfærd, antimikrobielt
National Food Institute, Research Group for Analytical and Predictive Microbiology

Media contribution (1)

Hygiejne, mikrobiologi, forbrugeradfærd, antimikrobielt
08/08/2016
DR Kontant, Television
Helle Slejborg
Lisbeth Truelstrup Hansen
Condition report from the seabed
Ole Henriksen, Aurelia Pereira Gabellini & Elliot John Brown
07/08/2016
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Living Resources

Media coverage (1)

Tilstandsrapport fra havbunden
07/08/2016
Nordjyske Stiftstidende (Regional), Denmark, Print
Bent Stenbakken og Jesper Thomasen
Ole Henriksen, Aurelia Pereira Gabellini & Elliot John Brown
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management

Relations
Research outputs:
Multidisciplinary mapping of fish habitats in the Sound, Denmark for maritime spatial planning
Kortlægning af fiskenes levesteder i den danske del af Øresund
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)

Indslag i 24NORDJYSKE
Ole Henriksen & Elliot John Brown
07/08/2016
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Living Resources

Media contribution (1)

Indslag i 24Nordjyske omkring Yngeltogt 2016
07/08/2016
24Nordjyske (Regional), Denmark, Television
Bent Stenbakken
02:20
Ole Henriksen & Elliot John Brown
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management

Relations
Projects:
Habitat Suitability for Recreationally Important Finfish of the Inner Danish Waters
Flatfish nursery grounds (38176)
FishHab-II (39345)

Afrikansk svinepest: Danmark kan let blive ramt
Anette Bøtner
05/08/2016

Subject
Afrikansk svinepest
National Veterinary Institute, Section for Diagnostics and Scientific Advice
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
Press / Media

mælkesyrebakterier
Tine Rask Licht
04/08/2016

Subject
mælkesyrebakterier
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

Danskernes kødforbrug
Anja Pia Biltoft-Jensen
02/08/2016

Subject
Danskernes kødforbrug
National Food Institute, Division of Risk Assessment and Nutrition

Opdrætsfisk, specielt norske laks
Heddie Mejborn
01/08/2016

Subject
Opdrætsfisk, specielt norske laks
National Food Institute, Division of Risk Assessment and Nutrition
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

Forskere undersøger fisk langs kysten
Ole Henriksen & Elliot John Brown
26/07/2016
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Living Resources

Media contribution (1)
Forskere undersøger fisk langs kysten
26/07/2016
TV ØST (Regional), Denmark, Television
Signe Alvang
02:57
https://www.tveast.dk/artikel/forskere-undersoeger-fisk-langs-kysten
Ole Henriksen & Elliot John Brown
National Institute of Aquatic Resources, Section for Marine Living Resources, Section for Ecosystem based Marine Management

Relations
Projects:
Habitat Suitability for Recreationally Important Finfish of the Inner Danish Waters
Fintælling af bugtens fisk
Elliot John Brown & Ole Henriksen
22/07/2016
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Ecology and Oceanography

Media coverage (1)

Fintælling af bugtens fisk
22/07/2016
DAGBLADET Køge (Local), Denmark, Print
Torben Thorsø
Elliot John Brown & Ole Henriksen
National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Section for Marine Ecology and Oceanography

Relations
Projects:
Habitat Suitability for Recreationally Important Finfish of the Inner Danish Waters
Flatfish nursery grounds (38176)
FishHab-II (39345)
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

Media coverage (2)

Nanotubes help engineer attractive electrons
22/07/2016
nanotechweb.org (International), Web
Belle Dumé
http://nanotechweb.org/cws/article/tech/65677
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 Præstholm
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
http://www.dr.dk/radio/ondemand/p1/orientering-2016-07-18/#/01:00:11
Direct link to 53 minutes interview at DR P1
Søren Bang Korsholm
Department of Physics, Plasma Physics and Fusion Energy
Press / Media

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
JydskeVestkysten (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
Press / Media

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
I Qaanaaq har de kun vand fire måneder om året
12/07/2016
Videnskab DK, Print
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Press / Media

Om at spise sundt til frokost i kantinen eller med madpakken
Sisse Fagt
12/07/2016

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
12/07/2016
Magasinet Sundhed, Print
Maria Præst
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Om at spise sundt til frokost i kantinen eller med madpakken
Anne Dahl Lassen
12/07/2016

Subject
Om at spise sundt til frokost i kantinen eller med madpakken
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

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
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 Terkelsen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

Press / Media

Økologiske fødevarer, stigende forbrug, forbrugerernes motivation
Dorte Lau Baggesen
11/07/2016

Subject
Økologiske fødevarer, stigende forbrug, forbrugerernes motivation
National Food Institute

Media contribution (1)

Økologiske fødevarer, stigende forbrug, forbrugerernes motivation
11/07/2016
TV2 Go’ morgen Danmark, Television
Søren Øhlers
Dorte Lau Baggesen
Færdigretter/hurtigmad – udvikling gennem tiden
Sisse Fagt
05/07/2016

Subject
Færdigretter/hurtigmad – udvikling gennem tiden
National Food Institute, Division of Risk Assessment and Nutrition

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
Press / Media

DTU's rapport om kød og kræft.
Max Hansen
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
Max Hansen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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 Pepke 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 Pepke 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 nødhjælpen**
30/06/2016
Illustreret Videnskab, Web
Rene S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology

Press / Media

**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)**

**The Haiti /Nepal Cholera connection**
30/06/2016
Illustreret Videnskab, Print
Antje Poulsen
Rene S. Hendriksen
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Transittid
Henrik Munch Roager
28/06/2016

Subject
Transittid
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Transittid
28/06/2016
Gut Microbiota for Health, Web
Kristina Campbell
Henrik Munch Roager
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Transittid
Henrik Munch Roager
28/06/2016

Subject
Transittid
National Food Institute, Research Group for Gut Microbiology and Immunology

Media contribution (1)

Transittid
28/06/2016
Berlingske, Print
Sine Bach Jakobsen
Henrik Munch Roager
National Food Institute, Research Group for Gut Microbiology and Immunology
Press / Media

Færdigretter
Sisse Fagt
28/06/2016

Subject
Færdigretter
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Færdigretter
28/06/2016
Forbrugerbladet Tænk, Print
Regner Hansen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Transittid
Tine Rask Licht
28/06/2016

Subject
Global opvarmning kan få overset selvforstærkende effekt: Drivhusvirkningen af CO2 bliver tilsyneladende kraftigere, når temperaturerne på Jorden stiger. Dermed kan den globale opvarmning få en hidtil overset selvforstærkende effekt, der kan gøre kloden varmere, end antaget. Det viser et nyt studie, som DTU Space har været med til at udføre.

Jens Olaf Pepke Pedersen
27/06/2016
National Space Institute, Sunclimate

Jens Olaf Pepke Pedersen
24/06/2016
National Space Institute, Sunclimate

Media contribution (1)


24/06/2016
Berlingske, Print
Lars Henrik Aagaard
Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate

Media contribution (1)
Commission 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

Media contribution (1)

Commission seeks input to third nanomaterials regulatory review
23/06/2016
Chemical Watch (International), Web
Luke Buxton
https://chemicalwatch.com/48240/commission-seeks-input-to-third-nanomaterials-regulatory-review?q=steffen+foss+hansen
Steffen Foss Hansen
Press / Media

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

Media contribution (1)

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
Jens Ramskov
https://ing.dk/artikel/selvforstaerkende-klimaeffekt-opdaget-co2-effekten-oeges-naar-temperaturen-stiger-185129
Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate
Press / Media

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)

The season of birth can influence the health of your child
23/06/2016
Foreldre.no, Web
Susanne Brix Pedersen
Department of Systems Biology, Center for Biological Sequence Analysis
Press / Media

Estudio advierte que la Tierra podría calentarse en 10°C: Científicos detectaron fenómeno que amplifica el cambio climático. En la investigación participaron expertos de universidades chilenas.
Jens Olaf Pepke Pedersen
23/06/2016
National Space Institute, Sunclimate
Estudio advierte que la Tierra podría calentarse en 10°C: Científicos detectaron fenómeno que amplifica el cambio climático. En la investigación participaron expertos de universidades chilenas.

23/06/2016
La Tercera, Print
Carlos González Isla

Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate
Press / Media

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

Asthma-free with no hay fever? Thank your older sibling
22/06/2016
National Public Radio US, Web
Susanne Brix Pedersen
Department of Systems Biology, Center for Biological Sequence Analysis
Press / Media

Pesticidrester i urinen – hvad kan forbrugerne gøre
Heidi Kornholt
22/06/2016

Subject
Pesticidrester i urinen – hvad kan forbrugerne gøre
National Food Institute

Pesticidrester i urinen – hvad kan forbrugerne gøre
22/06/2016
Geelmuyden Kiese for Dansk Gartneri, Web
Christian Kehler
Heidi Kornholt
National Food Institute
Press / Media

Min Vidensby
Susanne Balslev Nielsen
21/06/2016

Subject
Lyngby Vidensby
Department of Management Engineering, Systems Analysis, DTU Climate Centre, Centre for Facilities Management

Min Vidensby
21/06/2016
Det Grenne 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
Press / Media
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
Press / Media

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
Press / Media

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
Press / Media

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
Press / Media

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
Press / Media

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
Press / Media

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
Press / Media
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)**

**Forureninger i fisk**  
Max Hansen  
01/06/2016  
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**hormonforstyrrende stoffer indvirkning på hunlig reproduktion**  
Julie Boberg  
31/05/2016  
National Food Institute, Research Group for Reproductive Toxicology

**Media contribution (1)**

**Koralrev i Grønland**  
31/05/2016  
National Food Institute, National Institute of Aquatic Resources, Arctic Section

**Media contribution (1)**

**Hormonforstyrrende stoffer og kvinders fertilitet**  
Julie Boberg  
31/05/2016  
National Food Institute, Research Group for Reproductive Toxicology
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

4. International Vitamin Conference
Jette Jakobsen
30/05/2016
National Food Institute, Research Group for Bioactives – Analysis and Application

Danskernes forbrug af kød
Anja Pia Biltoft-Jensen
30/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Hygiejne, mikrobiologi, og genbrug af vandflasker
Lisbeth Truelstrup Hansen
26/05/2016
National Food Institute, Research Group for Diagnostic Engineering
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

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 skimmelsvampen
Birgitte Andersen
25/05/2016
Department of Systems Biology

Media contribution (1)

Penge: Pas på skimmelsvampen
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
Press / Media

Fødevarers vitaminindhold
Miriam Meister
24/05/2016
National Food Institute

Media contribution (1)

Fødevarers vitaminindhold
24/05/2016
DR's Lev Nu redaktion, Web
Susanne Vigsø Grøn
Miriam Meister
National Food Institute
Press / Media

Kronesmily og arbejdsbetingede lidelser på Vestas
Kåre Hendriksen
19/05/2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Kronesmily og arbejdsbetingede lidelser 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

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

Et nyt håb på Grønlunds ’bagside’?
Kåre Hendriksen
18/05/2016

Description
Bygden Kulusuk har som resten ag 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 Grønlunds ’bagside’?
18/05/2016
Information, Print
Emil Rottbøll
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Eksperter: Kontrollfirma skulle have fjernet Siemens' kronesmilley
Kåre Hendriksen
18/05/2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Eksperter: Kontrollfirma skulle have fjernet Siemens' kronesmilley
18/05/2016
Avisen DK, Print
Michael Bræmer og Gitte Redder
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Press / Media
**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
Ingeniører, Web
https://ing.dk/artikel/skimmel-stortrives-i-genbrugspap-pa-gipsplader-182920
Birgitte Andersen
Department of Systems Biology
Press / Media

**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
Press / Media

**En ny rapport fra MST om organophosphater: Oragnophosphate 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
Press / Media

**Køds rolle i kosten m.m.**
Sisse Fagt
17/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Køds rolle i kosten m.m.**
17/05/2016
Danmarks Medie- og journalisthøjskole, Web
Liselotte Skjoldan
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
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
Press / Media

Food Hacking - sensorik
Grethe Hyldig
13/05/2016
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

Food Hacking - sensorik
13/05/2016
Politiken, Print
Maj Bach Madsen
Grethe Hyldig
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

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, Journaliststudierende
Sofie Christiansen
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

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
Press / Media

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
Press / Media

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 Schultzze
Charlotte Jacobsen
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

Grøntsager og børn
Sisse Fagt
11/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Grøntsager og børn
11/05/2016
Ritzau, Web
Kristine Dam
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Når sundhed bliver religion – om orthorexi m.m.
Sisse Fagt
11/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Når sundhed bliver religion – om orthorexi m.m.
11/05/2016
I Form, Print
Simone Okkels
Sisse Fagt
Sukkerpolitik i daginstitutioner
Lene Møller Christensen
11/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Sukkerpolitik i daginstitutioner
11/05/2016
Zetland, Web
Sara Alfort
Lene Møller Christensen
National Food Institute, Division of Risk Assessment and Nutrition

Kødfri tendens
Sisse Fagt
10/05/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kødfri tendens
10/05/2016
Søndagsavisen, Web
Louise Poulsen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition

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

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
05/05/2016
Fyens Stiftstidende, Print
Tore Jeppesen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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)
Milløaerklubben
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)

Kødvaner
04/05/2016
Politiken, Print
Nanna Martensen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Siemens Wind Power's arbejdsmiljøproblemer og Kronemiley
Kåre Hendriksen
03/05/2016

Description
Om Siemens Wind Power, arbejdsmiljøcertificering og Kronemiley
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Media contribution (1)

Siemens Wind Power's arbejdsmiljøproblemer og Kronemiley
03/05/2016
DR TV Avisen, Television
Kåre Hendriksen
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions
Press / Media

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 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.
03/05/2016
KNR, Web
http://knr.gl/da/nyheder/dtu-space-ser-gerne-flere-droner-over-gr%C3%B8nland
Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate
Press / Media

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.
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.

03/05/2016
KNR, Web
http://knr.gl/da/nyheder/satelitoverv%C3%A5gning-af-gr%C3%B8nland-koster-1-2-milliarder
Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate

Press / Media

Arktis skal overvåges af satellitter
Jens Olaf Pepke Pedersen
03/05/2016

Description
Interview til DR2 Morgen

Subject
Overvågning af arktis med satellitter
National Space Institute

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

Press / Media

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 taksøe-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, Sunclimate

Media contribution (1)

Det giver meget bedre mening at satse på satellitter fremfor kampfly i Arktis.
03/05/2016
P1, Radio
6:00 min
http://www.dr.dk/radio/ondemand/p1/p1-morgen-2016-05-03#!/22:57
Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate

Press / Media

Satellitter i Arktis
Jens Olaf Pepke Pedersen
03/05/2016
National Space Institute
Satellitter i Arktis
03/05/2016
P3, Radio
5:00 min
Jens Olaf Pepke Pedersen
National Space Institute

Galdeblære i frossen kyllingelevere
Jens Kirk Andersen
03/05/2016
National Food Institute, Research Group for Microbial Food Safety and Quality

Siemens undgik besøg af Arbejdstilsynet med elitesmiley
Kåre Hendriksen
02/05/2016
Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions

Ny satellit i Grønland skal advare om soludbrud
Kristoffer Leer
02/05/2016

Subject
Soludbrud
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 Lawærz  
Tine Rask Licht  
Copenhagen Center for Health Technology, National Food Institute, Research Group for Gut Microbiology and Immunology  
Press / Media

**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  
Press / Media

**Interview i TV2 News - New Science - om Viborg Mercantec fusoren: Indslag i forbindelse med Viborg Tekniskes 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

**Interview i TV2 Nyhederne med Skammelsen: TV2s 22-Nyhederne med Poul Erik Skammelsen**  
Søren Bang Korsholm  
28/04/2016

**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**  
28/04/2016  
TV2, Television
Michael Malling Loehr
5 minutter
Søren Bang Korsholm
Department of Physics, Plasma Physics and Fusion Energy
Press / Media

Koffeins påvirkning af kroppen
Lea Bredsdorff
28/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

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
Jeppe Matthiessen
27/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

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
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 klods 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 klods 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)

Hvor meget ansvar er vi klar til at give den selvkørende bil?
25/04/2016
Information, Print
Martin Mose Bentzen
Department of Management Engineering, Technology and Innovation Management
Press / Media

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)

Can I use mathematics to win in Lotto?
25/04/2016
Videnskab.dk, Web
http://videnskab.dk/sporg-videnskaben/kan-jeg-bruge-matematik-til-vinde-i-lotto
Anders Stockmarr
Department of Applied Mathematics and Computer Science , Statistics and Data Analysis
Press / Media
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)

800.000 gode grunde til datalogi i skolen
20/04/2016
Print
Stephen Alstrup, Ole Lehmann Madsen, and Helle Rootzén
Helle Rootzén
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Press / Media

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)

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)

Stalddørssalg
Flemming Bager
20/04/2016
Staldørssalg
20/04/2016
JydskeVestkysten, Print
Daniel Jørgensen
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Staldørssalg
19/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Mikroplastik
Kit Granby
18/04/2016
National Food Institute, Research Group for Analytical Food Chemistry

Skimmelsvamp gør batterier bedre?
Tejs Vegge
17/04/2016
Atomic scale modelling and materials, Department of Energy Conversion and Storage

Danskerne indtag af kød
Anja Pia Biltoft-Jensen
15/04/2016
National Food Institute, Division of Risk Assessment and Nutrition
Line Felholt
Jeppe Mattheissen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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
Press / Media

Akrylamid fra hvilke fødevarer
Heidi Kornholt
13/04/2016
National Food Institute

Media contribution (1)

Akrylamid fra hvilke fødevarer
13/04/2016
Magasinet Danske Kartofler, Print
Redaktør Helge Lynggaard
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
Press / Media

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
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
TV2, Television
Katja Brandt Andersen
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

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
Press / Media

spildmålinger i forbindelse med økologiomlægninger
Anne Vibeke Thorsen
06/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

spildmålinger i forbindelse med økologiomlægninger
06/04/2016
FOA Bladet, Print
Ingrid Pedersen
Anne Vibeke Thorsen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
spildmålinger i forbindelse med økologiomlægninger
Anne Vibeke Thorsen
06/04/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

spildmålinger i forbindelse med økologiomlægninger
06/04/2016
FOA bladet, Print
Ingrid Pedersen
Anne Vibeke Thorsen
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

Media contribution (1)

Klimaorienterede kostråd
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

Media contribution (1)

klimavenlige kostråd
05/04/2016
Aller press, Web
Christina E. Ledertoug
Anne Vibeke Thorsen
National Food Institute, Division of Risk Assessment and Nutrition

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

Mord på film: Batman
Alexander Weider King
30/03/2016
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

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)

Mapping of ground movements to target climate adaptation
Carlo Sass Sørensen
24/03/2016
National Space Institute, Geodesy

Media coverage (1)

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)
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
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

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
Press / Media

Er chokolade sundt
Heddie Mejborn
16/03/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Er chokolade sundt
16/03/2016
BT, Web
Andreas Erbo Vestergaard
Heddie Mejborn
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
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

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

Generel tarmmikrobiologi
Martin Iain Bahl
14/03/2016
National Food Institute, Research Group for Gut Microbiology and Immunology

følfod
Kirsten Pilegaard
14/03/2016
National Food Institute, Research Group for Risk-Benefit

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
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)

DTU PIXL
11/03/2016
TV2 Nyheder, Television
http://nyheder.tv2.dk/2016-02-26-mars-mission-fyldt-med-dansk-teknologi
David Arge Klevang Pedersen
Measurement and Instrumentation Systems, National Space Institute
Press / Media

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
Press / Media

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
Press / Media

**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/archiv/nyheder-2016/marts/fremtidens-klima-mere-vand-i-nedboermodellerne/
Morten Andreas Dahl Larsen
Department of Management Engineering, Systems Analysis, DTU Climate Centre
Press / Media

**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 D-vitamin og kosttilskud
08/03/2016
DR Ultra, Television
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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
08/03/2016
Politiken, Web
Lars Igum Rasmussen
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
**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**
08/03/2016
Ritzau.dk, Web
Morten Larsen
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Indtag af kosttilskud**
08/03/2016
BT, Print
Andreas Erboe Vestergaard
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition

**Media contribution (1)**

**Energirevolutionen er lige om hjørnet**
Tejs Vegge
08/03/2016
Atomic scale modelling and materials, Department of Energy Conversion and Storage

**Media contribution (1)**

**Energirevolutionen er lige om hjørnet**
08/03/2016
Berlingske Business, Print
http://www.business.dk/energi/energirevolutionen-er-lige-om-hjoernen
Tejs Vegge
Department of Energy Conversion and Storage, Atomic scale modelling and materials

**Media contribution (1)**

**Avocadosten**
Kirsten Pilegaard
07/03/2016

**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**
07/03/2016
TV2, Television
Camilla Carlsen
Kirsten Pilegaard
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)

Indtag af forarbejdet kød blandt børn
07/03/2016
Food Culture.dk, Web
Maria Stove
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition

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)

Campylobacter kontrol
04/03/2016
Swiss consumer magazine (Saldo/K-Tipp), Print
Yves Demuth
Louise Boysen
National Food Institute, Division of Risk Assessment and Nutrition, Research Group for Risk-Benefit

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
02/03/2016
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)

Vil tyngdebølge-sensation ændre dansk forskning?
02/03/2016
Videnskab.dk (National), Denmark, Web
Charlotte Price Persson
https://videnskab.dk/miljo-naturvidenskab/vil-tyngdebolge-sensation-aendre-dansk-forskning
Søren Brandt
Press / Media

Gold nanoparticles riddle solved – offering medical hope
Arnab Halder & Jens Ulstrup
01/03/2016
Description
https://www.scimex.org/newsfeed/gold-nanoparticles-riddle-solved-offering-medical-hope
NanoChemistry, Department of Chemistry

Media coverage (1)

Gold nanoparticles riddle solved – offering medical hope
01/03/2016
Australia
https://www.scimex.org/newsfeed/gold-nanoparticles-riddle-solved-offering-medical-hope
https://www.scimex.org/newsfeed/gold-nanoparticles-riddle-solved-offering-medical-hope
Arnab Halder & Jens Ulstrup
NanoChemistry, Department of Chemistry

Relations
Research outputs:
Gold surfaces and nanoparticles are protected by Au(0)-thiyl species and are destroyed when Au(I)-thiolates form
Press / Media

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

Media contribution (1)

Record-breaking Reach for Low-cost Data Transmission between Data Centers
01/03/2016
Business Wire, Web
Juan José Vegas Olmos
Department of Photonics Engineering, Metro-Access and Short Range Systems

Press / Media

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
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 boligeget
Anders Thorseth
28/02/2016
Department of Photonics Engineering, Diode Lasers and LED Systems

Media contribution (1)

LED-pæren er blevet boligeget
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

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.
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.
Steffen Foss Hansen
Press / Media

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.
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

Kost, tarmflora, småbørn
Tine Rask Licht
18/02/2016
National Food Institute, Research Group for Gut Microbiology and Immunology, Copenhagen Center for Health Technology

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

Danskernes mælkeforbrug gennem tiderne/officielle mælkestatistikker
Sisse Fagt
17/02/2016
Danskernes mælkeforbrug gennem tiderne/officielle mælkestatistikker
17/02/2016
Danmarks Radio, Radio
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

ESAs Philae: P1 Morgen
Kristoffer Leer
17/02/2016

Description
P1 Morgen ca kl 7.55
National Space Institute, Astrophysics

Media contribution (1)

ESAs Philae: P1 Morgen
17/02/2016
DR, Radio
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

ESA opgiver Philae
Kristoffer Leer
17/02/2016

Description
Interview om ESAs Philaes afslutning
National Space Institute, Astrophysics

Media contribution (1)

ESA opgiver Philae
17/02/2016
DR, Television
7 min
http://www.dr.dk/nyheder/viden/naturvidenskab/esa-opgiver-definitivt-kometlander#!/00:00
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

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 forskningsprojektbeskrivelser
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
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
15/02/2016
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes kødindtag
15/02/2016
Sandagsavisen, Print
Christina Ledertoug
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
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

Media contribution (1)
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

Press / Media

Fysikerne jubler: Vi har fundet tyngdebølger!
Søren Brandt
12/02/2016
National Space Institute, Astrophysics and Atmospheric Physics

Media contribution (1)
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-tyngdeboelter
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

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

Media coverage (1)
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-tyngdeboelter-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
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

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

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

Videnskabelig sensation: Forskere bekræfter Einstein-teori: Den største videnskabelige opdagelse i det nye århusinde 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 århusinde er netop blevet afsløret
Jonas Skov Nielsen
11/02/2016
Ekstrabladet, Web
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

Myter om måltider
Sisse Fagt
08/02/2016

Subject
Myter om måltider
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Myter om måltider
08/02/2016
Ritzau, Web
Amalie Kraare
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Resistens, MRSA, mv
Frank Møller Aarestrup
08/02/2016

Subject
Resistens, MRSA, mv
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Resistens, MRSA, mv
08/02/2016
DR, Television
george larsen, Poul-Erik Heilbutt
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

Dagen gryr for kunstig intelligens på de finansielle marker
Thomas Bolander
08/02/2016
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Media contribution (1)

Dagen gryr for kunstig intelligens på de finansielle marker
08/02/2016
Finans, Jyllands-Posten, Print
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic
Press / Media

Resistens, MRSA, mv
Frank Møller Aarestrup
08/02/2016
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Resistens, MRSA, mv
08/02/2016
DR, Web
George larsen, Poul-Erik Heilbutt
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
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
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
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

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

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

Media contribution (1)

Udviklingen i fysisk aktivitet blandt voksne danskere
04/02/2016
P1 Morgen, Radio
Jan Falkenfort og Jette Damgaard
Jeppe Matthiessen
National Food Institute, Division of Risk Assessment and Nutrition

Artikel Kosttilskud med antioxidanter
Charlotte Jacobsen
04/02/2016

Subject
Artikel Kosttilskud med antioxidanter
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

Artikel Kosttilskud med antioxidanter
04/02/2016
Kristeligt Dagblad, Print
Louise Graa Christensen
Charlotte Jacobsen
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

36 risici ved at bore efter skifergas
Steffen Foss Hansen
03/02/2016

Description
Regeringsrapport peger på, at der er 36 risici ved at bore efter skifergas. Ifølge lektor ved DTU Steen Foss Hansen er der dog behov for yderligere undersøgelser.
Department of Environmental Engineering, Environmental Chemistry

Media coverage (1)

36 risici ved at bore efter skifergas
03/02/2016
Danskfjernvarme.dk, Denmark, Print
Dansk Fjernvarme
162 words
Steffen Foss Hansen

Relations
Projects:
Shale gas in a Danish context
Press / Media

Wolfgang Puffitsch
03/02/2016

Description
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
Press / Media
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-goer-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
Press / Media

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
Steffen Foss Hansen
Department of Environmental Engineering, Environmental Chemistry
Press / Media

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 Behrensdorff Poulsen
01/02/2016
Department of Photonics Engineering, Diode Lasers and LED Systems

Media contribution (1)

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 Behrensdorff Poulsen
01/02/2016
Department of Photonics Engineering, Diode Lasers and LED Systems
Media contribution (1)

Smart idé fik designet til at virke
01/02/2016
DTU Avisen, Print
Peter Behrens Dorf Poulsen
Department of Photonics Engineering, Diode Lasers and LED Systems
Press / Media

Forskere tænder nyt lys for glødæpæren
Anders Thorseth
01/02/2016
Department of Photonics Engineering, Diode Lasers and LED Systems

Relations
Projects:
Center for LED metrology
Press / Media

Pesticidrester i øl
Bodil Hamborg Jensen
01/02/2016

Subject
Pesticidrester i øl
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
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
Regionalisering af sundhedsvesenet og udfordringer i Qaanaaq
Kåre Hendriksen
25/01/2016

Description
Regionalisering af sundhedsvesenet og udfordringer i Qaanaaq
Department of Civil Engineering

Media contribution (1)

Regionalisering af sundhedsvesenet 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
Kemiske fødevareanalyser
23/01/2016
Sandagsavisen, 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
SISÉL 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

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

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: Gø'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: Gø'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

Media contribution (1)

Slankemidler, hindbærketon, manglende risikovurdering
11/01/2016
Jyllands Posten, Web
Morten Zhale
Lea Bredsdorff
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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
Press / Media

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 avisen - 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
Press / Media

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

Den nye stevia sødede coca colar
Sisse Fagt
06/01/2016

Subject
Den nye stevia sødede coca colar
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Den nye stevia sødede coca colar
06/01/2016
TV2, hjemmeside, Web
Christian Sejerø
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
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)
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.
06/01/2016
NATURE Jobs Online, Print
Virginia Gewin
http://dx.doi.org/10.1038/nj7584-117a
Ivo Grigorov
National Institute of Aquatic Resources, Research Secretariat

Relations
Projects:
European basin-scale analysis, synthesis and integration (EURO-BASIN) (38899)
Facilitating open science to European research (FOSTER, GA 612 425)(39146)

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)
Avanceret måler afslører solcellers produktivitet i al slags vejr
06/01/2016
Ingeniøren, Web
http://ing.dk/artikel/avanceret-maaler-afslorer-solcellers-produktivitet-i-al-slags-vejr-181061
Peter Behrensdorff Poulsen
Department of Photonics Engineering, Diode Lasers and LED Systems

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

Subject
Vedligehold
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.
01/01/2016
DTU avis, Print
Peter Behrensdorff Poulsen
Department of Photonics Engineering, Diode Lasers and LED Systems
Du lægger ud som Luke Skywalker – hvordan undgår du at ende som Darth Vader?
Martin Mose Bentzen
01/01/2016

Subject
Engineering Ethics
Department of Management Engineering, Technology and Innovation Management

Media contribution (1)

Du lægger ud som Luke Skywalker – hvordan undgår du at ende som Darth Vader?
01/01/2016
Ingeniøren, Print
Martin Mose Bentzen
Department of Management Engineering, Technology and Innovation Management
Press / Media

Langzeitspeicherung von Wärme mittels Phasenwechselmaterialien
Gerald Englmair
01/01/2016

Subject
Thermal Storage
Department of Civil Engineering, Section for Building Energy

Media contribution (1)

Langzeitspeicherung von Wärme mittels Phasenwechselmaterialien
01/01/2016
Erneuerbare Energie, Web
AEE
http://www.aee.at/aee/index.php?option=com_content&view=article&id=936&Itemid=113
Gerald Englmair
Department of Civil Engineering, Section for Building Energy
Press / Media

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

Media contribution (1)

DTU Wind Energy plans 2nd stage of offshore wind farms project planning tool
01/01/2016
Energy Insight Yearbook 2016, pp 48-49, Print
NEM Media
Charlotte Bay Hasager
Department of Wind Energy, Meteorology & Remote Sensing
Press / Media

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
Media contribution (1)

**Bacteria Monitoring in 3D**
01/01/2016
Water Online, Web
Hans-Jørgen Albrechtsen
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
National Food Institute, Research Group for Reproductive Toxicology

**Tarmbakterier**
Tine Rask Licht
17/12/2015
National Food Institute, Research Group for Gut Microbiology and Immunology
Om Star Wars, robotter og kunstig intelligens
Thomas Bolander
16/12/2015
Department of Applied Mathematics and Computer Science, Algorithms and Logic

Media contribution (1)

Om Star Wars, robotter og kunstig intelligens
16/12/2015
TV2 News, Television
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic

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

Meteorsværm sender masser af stjerneskud over himlen
Kristoffer Leer
14/12/2015
National Space Institute, Astrophysics

Media contribution (1)

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

Her kan du masser af stjerneskud i nat
Kristoffer Leer
Her kan du masser af stjerneskud i nat
14/12/2015
Web
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

En illusion at kloden er reddet af en politisk klimaftale
Jens Olaf Pepke Pedersen
14/12/2015
National Space Institute, Sunclimate

En illusion at kloden er reddet af en politisk klimaftale
14/12/2015
Byggeeksport, Print
CCR News
Jens Olaf Pepke Pedersen
National Space Institute, Sunclimate
Press / Media

Computerome - Kopenhagen Fur
Emma Elisabeth Hagberg
10/12/2015
Molecular Evolution, Department of Bio and Health Informatics, Disease Intelligence and Molecular Evolution

Computerome - Kopenhagen Fur
10/12/2015
Youtube, Web
Julie Iben Schmidt
https://www.youtube.com/watch?v=HPsWZzi5Gkg
Emma Elisabeth Hagberg
Molecular Evolution, Department of Bio and Health Informatics, Disease Intelligence and Molecular Evolution
Press / Media

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

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
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

Bio, D-vitamin
National Food Institute, Research Group for Risk-Benefit

Bill Gates forgylder tre enegriteknologier
Tejs Vegge
04/12/2015
Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design

Bill Gates med energi nummer 1: Flowbatterier
Tejs Vegge
04/12/2015
Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design
**BPA og dåsemad. Meget kort notits.**
Ulla Hass
03/12/2015

**Subject**
BPA og dåsemad. Meget kort notits.
National Food Institute, Research Group for Reproductive Toxicology

**Media contribution (1)**

*BPA og dåsemad. Meget kort notits.*
03/12/2015
Alt for Damerne, Print
Jo Brandt
Ulla Hass
National Food Institute, Research Group for Reproductive Toxicology

**Artikel om hormonforstyrrende stoffer pba. Høring i Folketinget sidste år**
Ulla Hass
03/12/2015

**Subject**
Artikel om hormonforstyrrende stoffer pba. Høring i Folketinget sidste år
National Food Institute, Research Group for Reproductive Toxicology

**Media contribution (1)**

*Artikel om hormonforstyrrende stoffer pba. Høring i Folketinget sidste år*
03/12/2015
Søndagsavisen, Print
Sanne Fahmøe
Ulla Hass
National Food Institute, Research Group for Reproductive Toxicology

**Bill Gates med energi nummer 1: Flowbatterier**
Tejs Vegge
03/12/2015
Atomic scale modelling and materials, Department of Energy Conversion and Storage, Center for Atomic-scale Materials Design

**Media contribution (1)**

*Bill Gates med energi nummer 1: Flowbatterier*
03/12/2015
www.ing.dk, Web
Tejs Vegge
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials

**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*
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

Media contribution (1)

Ved nye nature artikler om biologisk containment
Peter Ruhdal Jensen
01/12/2015
National Food Institute, Division of Industrial Food Research, Systems Biotechnology

Media contribution (1)

Matematik mindsker risiko for togkollision
Anne Elisabeth Haxthausen
01/12/2015
Department of Applied Mathematics and Computer Science, Software Engineering
Matematik mindsker risiko for togkollision
01/12/2015
Dynamo nr. 43, Print
Iben Julie Schmidt
Anne Elisabeth Haxthausen
Department of Applied Mathematics and Computer Science, Software Engineering
Press / Media

Tang og populariteten i DK- inkl Nordisk Tang by Endelaves produkter
Susan Løvstad Holdt
27/11/2015

Subject
Tang og populariteten i DK- inkl Nordisk Tang by Endelaves produkter
National Food Institute, Research Group for Bioactives – Analysis and Application

Tang og populariteten i DK- inkl Nordisk Tang by Endelaves produkter
27/11/2015
P4 Østjylland-radioen, Radio
Johannes Reimer
Susan Løvstad Holdt
National Food Institute, Research Group for Bioactives – Analysis and Application
Press / Media

CLEAN REVOLUTION: Denmark is striving to become the world's first carbon-neutral nation
Jacob Østergaard
27/11/2015

Description
Department of Electrical Engineering, Center for Electric Power and Energy

CLEAN REVOLUTION: Denmark is striving to become the world's first carbon-neutral nation
27/11/2015
SCIENCE, Print
AAAS
http://www.sciencemag.org/content/350/6264/1020.full.pdf?sid=39146665-3dc4-4db7-b4ce-598adc0699cc
Article at sciencemag.org
Jacob Østergaard
Department of Electrical Engineering, Center for Electric Power and Energy

Relations
Projects:
EcoGrid EU - Large scale Smart Grids demonstration of real time market-based integration of DER and DR

Status på ESCO-projekter i Danmark?
Susanne Balslev Nielsen
27/11/2015

Description
Susanne Balslev Nielsen og Jesper Ole Jensen er interviewet til artikel i Bygge- og anlægsavisen.
Introduktionen til artiklen er: Renoveringen af den eksisterende bygningsmasse er en kæmpemæssig opgave, og der er ingen tvivl om, at byggebranchen overordnet set skal blive bedre til at sammentænke anlæg og drift. I den forbindelse har ESCO-modellen et stort potentiale, og forskere fra SBI og DTU mener, det er på tide at blotlægge eventuelle forhindringer for modellens udbredelse nøjere.
Department of Management Engineering, Systems Analysis, DTU Climate Centre, Energy Systems Analysis, Centre for Facilities Management
Derfor er det kun én frugt, der bliver dårlig
Ulf Thrane
27/11/2015
Department of Systems Biology

(Q)SAR database publicering
Eva Bay Wedebye
26/11/2015

Subject
(Q)SAR database publicering
National Food Institute, Research Group for Molecular Toxicology

Ny (Q)SAR database.
Eva Bay Wedebye
25/11/2015

Subject
Ny (Q)SAR database.
National Food Institute, Research Group for Molecular Toxicology

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
20/11/2015
Politikken, Print
Line Selholt
Anne Marie Vinggaard
National Food Institute, Research Group for Molecular Toxicology
Press / Media

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)

Spørg Scientariat: Kunne man nedsætte CO2-udslippet med mikroorganismer i skorstenen?
19/11/2015
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

The birth season influences your unborn child's immune response
Susanne Brix Pedersen
12/11/2015
Department of Systems Biology, Center for Biological Sequence Analysis

Fluorerede stoffer og bisphenol A i fødevareemballage
Xenia Trier
12/11/2015

Akrylamid
Pelle Thonning Olesen
11/11/2015
Nanoteknologien buldrer frem på arbejdspladserne
Steffen Foss Hansen
11/11/2015

Subject
Nr. 11 - 2015
Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)

Nanoteknologien buldrer frem på arbejdspladserne
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

Media contribution (1)

Danskernes madvaner
10/11/2015
DR, Television
Christina Øager
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Nordiske kostvaner og sundhed
Sisse Fagt
09/11/2015
Subject
Nordiske kostvaner og sundhed
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Nordiske kostvaner og sundhed
09/11/2015
radioavisen, Radio
Bjørn Schønning
Sisse Fagt
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

Media contribution (1)

Mineralske olier i julekalender-chokolade til børn
09/11/2015
Forbrugerådet, TÆNK, Print
Tage Majland
Gitte Alsing Pedersen
National Food Institute, Division of Risk Assessment and Nutrition

Research om abrikoskerner
Kirsten Pilegaard
06/11/2015

Subject
Research om abrikoskerner. Der er kommet chocoladeovertrukne 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 chocoladeovertrukne eller om det er med andre abrikoskerner, der er i handlen er uvist
National Food Institute, Research Group for Risk-Benefit

Media contribution (1)

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
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
Press / Media

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
Press / Media

24syv Morgen
Martin Mose Bentzen
03/11/2015

Subject
Ethical dilemmas for social robots
Department of Management Engineering, Technology and Innovation Management

Media contribution (1)

24syv Morgen
03/11/2015
radio24syv, Radio
Martin Mose Bentzen
Department of Management Engineering, Technology and Innovation Management
Press / Media

Nanoteknologien buldrer frem på arbejdspladserne
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

**Media contribution (1)**

**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
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
Berlingske Media/Midtjyske Medier, Web
Henrik H. Breum
Jeppe Mattheissen
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 Ulnits
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
Landbrugsvisen, 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
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Hvor mange danske børn der har medansvar for madlavning
30/10/2015
Nyhedsmargasinet Danske Kommuner, Print
Simon Lessel
Anja Pia Biltoft-Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Har din robot forstået dig i dag?
Thomas Bolander
30/10/2015
Har din robot forstået dig i dag?
30/10/2015
Ingeniøren, Print
Thomas Bolander
Department of Applied Mathematics and Computer Science, Algorithms and Logic
Press / Media

Forbrug af kebab/shawarma
Sisse Fagt
28/10/2015

Subject
Forbrug af kebab/shawarma
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

DTUs sektorudviklingsrapport for Big Data der kommer den 29/10 2015
Jørn Smedsgaard
28/10/2015

Subject
DTUs sektorudviklingsrapport for Big Data der kommer den 29/10 2015
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

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)
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 brøndum 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
Sarah Golczyk
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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
Fuldkomspartnerskabet, 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
National Food Institute, Research Group for Analytical Food Chemistry

Media contribution (1)

Genbrugspapir genbrugsemballage af papir og pap, cocktail studierne, Hormonforstyrrende stoffer
24/10/2015
Radioavisen, Radio
Mikael Olesen
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

Danskernes forbrug af rodfrugter
Sisse Fagt
22/10/2015
Subject
Danskernes forbrug af rodfrugter
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes forbrug af rodfrugter
22/10/2015
Bladet Kulør, Print
Mette Stepnicka
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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)

Sprøjtemidler i kartofler, herunder aclonifen
22/10/2015
DR P4 Radio Sjælland, Radio
Magnus Nørtoft
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Køds rolle i kosten
Sisse Fagt
22/10/2015

Subject
Køds rolle i kosten
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Køds rolle i kosten
22/10/2015
Ugebladet Søndag, Print
Lene Jæger Klausen
Sisse Fagt
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

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
Danskernes brug af kosttilkud
Sisse Fagt
20/10/2015

Subject
Danskernes brug af kosttilkud
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Danskernes brug af kosttilkud
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 Boge 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 Boge Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality

ESBL i kyllinger. Pressemeddelelse om Danmap
Lars Boge 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
Radioavisen, Radio
Rene
Lars Boge Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality

Mendelian Randomization studies: The use of a new study type to deduce causality in humans
Lasse Westergaard Folkeresen
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
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-gavnlig-virkning
Lasse Westergaard Folkersen
Department of Systems Biology, Center for Biological Sequence Analysis, Integrative Systems Biology

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)

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)

Stigning i forbrug af antibiotika i kyllingeproduktionen
Lars Boge Jensen
12/10/2015

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
12/10/2015
DR, Web
Cathrine Lakmann
Lars Bøge Jensen
National Food Institute, Research Group for Microbial Food Safety and Quality
Press / Media

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-roe-bakterier-til-de-nye-oliesheiker-179335
Torbjørn Ølshøj Jensen
Novo Nordisk Foundation Center for Biosustainability, Bacterial Cell Factory Optimization
Press / Media

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
Press / Media

Antibiotikaforbrug hos fjærkræ
Flemming Bager
08/10/2015

Subject
Antibiotikaforbrug hos fjærkræ
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Antibiotikaforbrug hos fjærkræ
08/10/2015
DR Syd, Television
Per Helberg
Flemming Bager
National Food Institute, Division of Risk Assessment and Nutrition
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

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

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

Media contribution (1)

Indsamling af planter fra naturen, hvilke muligheder er der for at komme galt afsted.
05/10/2015
Ekstrabladet, Print
Amalie Larsen
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit

Børns madpakker
Sisse Fagt
05/10/2015
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
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
Press / Media

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.
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
Amerikansk maling indeholder kulstofnanorør. Men hvis de små partikler kommer ned i lungerne er der risiko for både lungekræft og asbestose-lignende sygdomme. Nu advarer danske forskere og myndigheder. 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-kulstofnanoroe-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 angribe lungerne
Steffen Foss Hansen
21/09/2015

Description

Department of Environmental Engineering, Environmental Chemistry

Media contribution (1)

Kulstofnanorør kan angribe 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
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
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)

Cocktail effekter
17/09/2015
Altinget-miljø, Web
Emma Holst
Anne Marie Vinggaard
National Food Institute, Research Group for Molecular Toxicology
Press / Media

Hormonforstyrrende stoffers effekt på brystudviklingen
Karen Mandrup Egebjerg
15/09/2015

Subject
Hormonforstyrrende stoffers effekt på brystudviklingen
National Food Institute, Research Group for Reproductive Toxicology

Media contribution (1)

Hormonforstyrrende stoffers effekt på brystudviklingen
15/09/2015
Web
Karen Mandrup Egebjerg
National Food Institute, Research Group for Reproductive Toxicology
Press / Media

Miljøgarantisagen vedr. nitrit
Pelle Thonning Olesen
11/09/2015

Subject
Miljøgarantisagen vedr. nitrit
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Miljøgarantisagen vedr. nitrit
11/09/2015
Premieres Lignes, Web
Sandrine Rigaud
Pelle Thonning Olesen
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Mennesker hæmmer it-vækst
Jan Karlshøj
10/09/2015
Department of Civil Engineering, Section for Building Design

Media contribution (1)

Mennesker hæmmer it-vækst
10/09/2015
Børsen, Print
Børsen
http://borsen.dk/nyheder/avisen/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 Fiéron
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 Fiéron
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)

Sundhedsdebatten
Sisse Fagt
01/09/2015

Subject
Sundhedsdebatten
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

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)

Denmark: Early adopter of water and climate solutions
Sara Maria Lerer
01/09/2015
Department of Environmental Engineering, Urban Water Engineering

Media contribution (1)
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

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

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 forurenete grunde (lufthavne, tekstil virksomheder mm)
27/08/2015
ingeniøren, Web
Magnus Bredsdorff
Xenia Trier
National Food Institute, Research Group for Analytical Food Chemistry
Press / Media

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
Press / Media

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
Politiken, Print
Mette Guldagger
Lea Bredsdorff
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media

Zoonoserapporten, salmonellasmittenkilderegnskabet, svinekød, kyllingeød, udlandsrejse
Birgitte Helwigh
25/08/2015

Subject
Zoonoserapporten, salmonellasmittenkilderegnskabet, svinekød, kyllingeød, udlandsrejse
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Zoonoserapporten, salmonellasmittenkilderegnskabet, svinekød, kyllingeød, udlandsrejse
25/08/2015
DR2, Television
Matthias Valsgard
Birgitte Helwigh
National Food Institute, Division of Risk Assessment and Nutrition
Press / Media
Zoonoserapporten, salmonellasmittekilderegnskabet, svinekød, kyllingekød, udlandsrejse, campylobacter
Birgitte Helwigh
25/08/2015

Subject
Zoonoserapporten, salmonellasmittekilderegnskabet, svinekød, kyllingekød, udlandsrejse, campylobacter
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Zoonoserapporten, salmonellasmittekilderegnskabet, svinekød, kyllingekød, udlandsrejse, campylobacter
25/08/2015
Television
Birgitte Helwigh
National Food Institute, Division of Risk Assessment and Nutrition

Kvartalsrapporten for 2014 for pesticidrester i fødevarer. Multiple fund i prøver
Bodil Hamborg Jensen
25/08/2015

Subject
Kvartalsrapporten for 2014 for pesticidrester i fødevarer.
Multiple fund i prøver
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Kvartalsrapporten for 2014 for pesticidrester i fødevarer. Multiple fund i prøver
25/08/2015
Netavisen Landbrugsavisen, Web
Stine Lauridsen
Bodil Hamborg Jensen
National Food Institute, Division of Risk Assessment and Nutrition

Press / Media

Zoonoserapporten, Listeria
Birgitte Helwigh
25/08/2015

Subject
Zoonoserapporten, Listeria
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Zoonoserapporten, Listeria
25/08/2015
Jyllandsposten, Print
Simone Skyum
Birgitte Helwigh
National Food Institute, Division of Risk Assessment and Nutrition

Press / Media

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
Press / Media

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
Press / Media

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
Press / Media

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

Media contribution (1)

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

Media contribution (1)

Chance igen i nat: Sværmen af stjerneskud fortsætter
13/08/2015
eb.dk, Web
http://ekstrabladet.dk/nyheder/samfund/chance-igen-i-nat-svaermen-af-stjerneskud-fortsaetter/5684023
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Perihlion Rosetta
Kristoffer Leer
13/08/2015
National Space Institute, Astrophysics

Media contribution (1)

Perihlion Rosetta
13/08/2015
TV2 News, Television
Kristoffer Leer
National Space Institute, Astrophysics
Press / Media

Reduktion i forbrug
Frank Møller Aarestrup
04/08/2015

Subject
Reduktion i forbrug
National Food Institute, Research Group for Genomic Epidemiology

Media contribution (1)

Reduktion i forbrug
04/08/2015
Landbrugsmedierne, Print
Signe Merete Lauesen
Frank Møller Aarestrup
National Food Institute, Research Group for Genomic Epidemiology
Press / Media

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 Helwigh
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 Helwigh
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

Media contribution (1)
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

Media contribution (1)

Vand til småbørn
30/07/2015
Katharina Clemens, Web
Phoenix digital
Heidi Kornholt
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

Media contribution (1)

Danskernes top tyve retter
28/07/2015
Søndagsavisen, Print
Niels Philip Kjeldsen
Sisse Fagt
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

Media contribution (1)

Danskernes top tyve retter
28/07/2015
DR web, Web
Dorthe Kyhn
Sisse Fagt
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
Vindmøllekontroverser
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

**Liv i rummet?**
Kristoffer Leer
23/07/2015
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

**Farvel til en gammel drøm**
Anders Peter Andersen
17/07/2015
Biophysics and Fluids, Department of Physics

**Pluto**
Kristoffer Leer
17/07/2015
National Space Institute, Astrophysics
Storkøbenhavn får mindre kalk i drikkevandet: Når Hovedstadsområdets Forsyningselskab 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

Energidrikke
Jeppe Matthiessen
09/07/2015

Sundhedsværdien af at drikke eller spise en frugt eller grøntsag
Inge Tetens
09/07/2015

Energidrikke
Jeppe Matthiessen
08/07/2015

Subject
Energidrikke
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)
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
Go morgen P3
Ole Ravn
24/06/2015

Description
Talking about Terminator
Automation and Control, Department of Electrical Engineering

Media contribution (1)

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 Sprognævn.
National Food Institute, Research Group for Bioactives – Analysis and Application

Media contribution (1)

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)

Sukker og fedme
Jeppe Matthiessen
23/06/2015

Subject
Sukker og fedme  
National Food Institute, Division of Risk Assessment and Nutrition

Media contribution (1)

Sukker og fedme  
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 svinekød  
Miriam Meister  
18/06/2015

Subject  
MRSA i svinekød  
National Food Institute

Media contribution (1)

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

**Media contribution (1)**

**Fremtidens Energiforsyning**
15/06/2015
NOAHkanalen, Web
https://www.youtube.com/watch?v=tlNi2v2W63M
Tejs Vegge
Center for Atomic-scale Materials Design, Department of Energy Conversion and Storage, Atomic scale modelling and materials

Press / Media

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

**Media contribution (1)**

Video af "Thue og monopolet" i Folkets Hus på Folkemødet 2015
13/06/2015
Web
https://www.youtube.com/watch?v=S9vwabpl554.
Kasper Edwards
Department of Management Engineering, Production and Service Management, Implementation and Performance Management

Press / Media

**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

**Media contribution (1)**

**Folkemøde: Slå ring om Bo og sig: "Det accepterer vi ikke!"**
13/06/2015
Offentlig Ledelse, Web
http://offentligledelse.dk/folkemoede-slaa-ring-om-bo-og-sig-det-accepterer-vi-ikke/
Kasper Edwards
Department of Management Engineering, Production and Service Management, Implementation and Performance Management

Press / Media

**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
Spådommen, der blev til lov: Gordon Moore forudås smartphone 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 forudås smartphone og iPads i 1965
11/06/2015
Politiken.dk, Web
Ivan Harald Holger Jørgensen
Department of Electrical Engineering, Electronics

Kvantemekanik bruges til super sikker kommunikation: Kvantemekanikken fører til nye kommunikationsmetoder, der forhinder hacking. Forskere fra York og DTU har introduceret en ny teknik der tåler infiltration af måleudstyret.
Christian Scheffmann Jacobsen
11/06/2015

Subject
Kvantefysik og informationssikkerhed
Quantum Physics and Information Technology, Department of Physics

Media contribution (1)

Kvantemekanik bruges til super sikker kommunikation: Kvantemekanikken fører til nye kommunikationsmetoder, der forhinder hacking. Forskere fra York og DTU har introduceret en ny teknik der tåler infiltration af måleudstyret.
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

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
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:
Communication Technologies for Vehicles
Impact of the traffic load on performance of an alternative LTE railway communication network
LTE Micro-cell Deployment for High-Density Railway Areas
Communication Technologies Support to Railway Infrastructure and Operations
VoLTE performance in railway scenarios
VoLTE Performance in Railway Scenarios
**Capacity gain with an alternative LTE railway communication network**

*LTE for Railways: Impact on Performance of ETCS Railway Signaling*

**Press / Media**

**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  
Ingeniøren, Print  
Bo Madsen

Department of Wind Energy, Composites and Materials Mechanics

**Press / Media**

**Nyt robothotel udfordrer vores menneskelighed**

Martin Mose Bentzen
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

self.com
Anne Marie Vinggaard
27/05/2015
National Food Institute, Research Group for Molecular Toxicology

Media contribution (1)
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

Media contribution (1)

Tænk i en temaartikel om uønsket kemi i fødevarer
27/05/2015
Altinget, Print
Anne-Helene Merkelsen
Ulla Hass
National Food Institute, Research Group for Reproductive Toxicology

Interview relatert til indlæg ved Mejeriforskningens Dag
Paw Dalgaard
26/05/2015

Subject
Interview relatert til indlæg ved Mejeriforskningens Dag 2015 vedr. Listeria monocytogenes og mejeriprodukter.
National Food Institute

Media contribution (1)

Interview relatert til indlæg ved Mejeriforskningens Dag
26/05/2015
Mejeri, Print
Lene Mikkelsen Walsh
Paw Dalgaard
National Food Institute
Press / Media

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

Media contribution (1)

Forskningsprojekt skal give mejerierne et nyt værktøj til at forudse vækst af listeria og andre uønskede bakterier i mejeriprodukter
26/05/2015
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
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
Sundagsavisen, 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 Bladet, Web
Peter Jeppesen
Kirsten Pilegaard
National Food Institute, Research Group for Risk-Benefit
Press / Media

Dit immunforsvar slapper af om sommeren
Susanne Brix Pedersen
13/05/2015
Department of Systems Biology, Center for Biological Sequence Analysis
Media contribution (1)

Dit immunforsvar slapper af om sommeren
13/05/2015
P4 København, Radio
Susanne Brix Pedersen
Department of Systems Biology, Center for Biological Sequence Analysis
Press / Media

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)

Pressekontakt - Mikrobiel production af protein
13/05/2015
Radio24syv, Radio
Peter Ruhdal Jensen
Systems Biotechnology, National Food Institute, Research Group for Microbial Biotechnology and Biorefining
Press / Media

Dit immunforsvar slapper af om sommeren
Susanne Brix Pedersen
12/05/2015
Department of Systems Biology, Center for Biological Sequence Analysis

Media contribution (1)

Dit immunforsvar slapper af om sommeren
12/05/2015
Politiken, Web
Susanne Brix Pedersen
Department of Systems Biology, Center for Biological Sequence Analysis
Press / Media