Research outputs:

Economic Risk Analysis and Critical Comparison of Biodiesel Production Systems
Research output: Research - peer-review › Book chapter – Annual report year: 2019

5 år og fuld fart frem "BIOPRO World Talent Campus byder endnu en gruppe talenter fra hele verden velkommen til Danmark."
Research output: Communication › Journal article – Annual report year: 2018

A fast and simple method to estimate relative, hyphal tensile-strength of filamentous fungi used to assess the effect of autophagy
Research output: Research - peer-review › Journal article – Annual report year: 2018

A Methodology for Development of a Pedagogical Simulation Tool used in Fermentation Applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

Anomaly Analysis in Cleaning-in-Place Operations of an Industrial Brewery Fermenter
Research output: Research - peer-review › Journal article – Annual report year: 2018

A probabilistic model-based soft sensor to monitor lactic acid bacteria fermentations
Research output: Research - peer-review › Journal article – Annual report year: 2018

A shortcut approach for decision-making and operational analysis of an integrated end-to-end continuous pharmaceutical process
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

A Systematic Methodology for Comprehensive Economic Assessment of Process Control Structures
Research output: Research - peer-review › Journal article – Annual report year: 2018

Biocatalyst Screening with a Twist: Application of Oxygen Sensors Integrated in Microchannels for Screening Whole Cell Biocatalyst Variants
Research output: Research - peer-review › Journal article – Annual report year: 2018

BIOPRO World Talent Campus: A week of real world challenge for biotechnology post-graduate students
Research output: Research - peer-review › Journal article – Annual report year: 2018

Caught In-between: System for in-flow inactivation of enzymes as an intermediary step in "plug-and-play" microfluidic platforms
Research output: Research - peer-review › Journal article – Annual report year: 2018

CFD modelling of axial mixing in the intermediate and final rinses of cleaning-in-place procedures of straight pipes
Research output: Research - peer-review › Journal article – Annual report year: 2018

Configuration optimization of series flow double-effect water-lithium bromide absorption refrigeration systems by cost minimization
Research output: Research - peer-review › Journal article – Annual report year: 2018

"Connecting worlds – a view on microfluidics for a wider application"
Research output: Research - peer-review › Journal article – Annual report year: 2018

Continuous enrichment strategies for biobutanol production
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Developing a framework to model the primary drying step of a continuous freeze-drying process based on infrared radiation
Research output: Research - peer-review › Journal article – Annual report year: 2018

Dynamic plantwide modeling, uncertainty and sensitivity analysis of a pharmaceutical upstream synthesis: Ibuprofen case study
Research output: Research - peer-review › Journal article – Annual report year: 2018

Efficient Computational Design of a Scaffold for Cartilage Cell Regeneration
Tajsoleiman, T., Jafar Abdekhodaie, M., Gernaey, K. V. & Krühne, U. 2018 In : Bioengineering. 5, 2, 15 p., 33
Research output: Research - peer-review › Journal article – Annual report year: 2018

Enzymatic keratin hydrolysis: Dynamic modelling, parameter estimation and validation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

Exploring the effects of ZVI addition on resource recovery in the anaerobic digestion process
A novel fuzzy-logic control strategy minimizing N2O emissions
Research output: Research - peer-review › Journal article – Annual report year: 2017

A novel in situ measurement method of bubble sizes in bioreactors using a high speed camera
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

A novel model-based control strategy for aerobic filamentous fungal fed-batch fermentation processes
Research output: Research - peer-review › Journal article – Annual report year: 2017

Application of a Mechanistic Model as a Tool for On-line Monitoring of Pilot Scale Filamentous Fungal Fermentation Processes - The Importance of Evaporation Effects: Mechanistic model for pilot scale monitoring
Mears, L., Stocks, S. M., Albaek, M. O., Sin, G. & Gernaey, K. V. 2017 In : Biotechnology and Bioengineering. 114, 3, p. 589–599
Research output: Research - peer-review › Journal article – Annual report year: 2017

Application of Iterative Robust Model-based Optimal Experimental Design for the Calibration of Biocatalytic Models
Research output: Research - peer-review › Journal article – Annual report year: 2017

A review of control strategies for manipulating the feed rate in fed-batch fermentation processes
Mears, L., Stocks, S. M., Sin, G. & Gernaey, K. 2017 In : Journal of Biotechnology. p. 34-46
Research output: Research - peer-review › Review – Annual report year: 2017

Biorefinery Sustainability Analysis
Research output: Research - peer-review › Book chapter – Annual report year: 2017

CFD Modeling of Flow and Ion Exchange Kinetics in a Rotating Bed Reactor System
Research output: Research - peer-review › Journal article – Annual report year: 2017

Computational Fluid Dynamics - en gennem gennemsigt
Bach, C., Spann, R., Larsson, H. K., Pereira Rosinha Grundtvig, I., Albaek, M. O., Gernaey, K. V. & Krühne, U. 2017 In : Dansk Kemi. 97, 10, p. 14-17
Research output: Communication › Journal article – Annual report year: 2017

Control of n2o-emissions by aeration
Boiocchi, R., Sin, G. & Gernaey, K. V. 2017 C02F3/00; C02F3/027 Dec 2017 3 Jun 2016DK2016PA00331
Research output: Research › Patent – Annual report year: 2018

Design of a gas-inducing impeller using Computational Fluid Dynamics
Research output: Research - peer-review › Poster – Annual report year: 2017

Development of in-situ product removal strategies in biocatalysis applying scaled-down unit operations
Dynamic modelling of pectin extraction describing yield and functional characteristics
Research output: Research - peer-review › Journal article – Annual report year: 2016

Evaluation of mixing and mass transfer in a stirred pilot scale bioreactor utilizing CFD
Research output: Research - peer-review › Journal article – Annual report year: 2017

Experimental and computational evaluation of area selectively immobilized horseradish peroxidase in a microfluidic device
Research output: Research - peer-review › Journal article – Annual report year: 2017

Flow characterization of aerated bubble column reactor using electrical resistance tomography and computational fluid dynamic methods
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Imaging for monitoring downstream processing of fermentation broths
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Implementation of the resource recovery concept in the biotech industry
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Large scale simulations of Trichoderma reesei fermentation using computational fluid dynamics: Approach and early successes
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Mechanistic Fermentation Models for Process Design, Monitoring, and Control
Mears, L., Stocks, S. M., Albæk, M. O., Sin, G. & Gernaey, K. V. 2017 In : Trends in Biotechnology. 35, 10, p. 914-924
Research output: Research - peer-review › Journal article – Annual report year: 2017

Mixing and mass transfer in a pilot scale U-loop bioreactor
Research output: Research - peer-review › Journal article – Annual report year: 2016

Model-based identification of chemicals transformation pathways combined with reaction kinetics models– the case of heroin biomarkers in wastewater
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Modelling an industrial anaerobic granular reactor using a multi-scale approach
Research output: Research - peer-review › Journal article – Annual report year: 2017
Modelling biotransformation of drug biomarkers by sewer biofilms
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Optimal design and planning of glycerol-based biorefinery supply chains under uncertainty
Research output: Research - peer-review › Journal article – Annual report year: 2017

Optimization-based design of waste heat recovery systems
Research output: Research › Ph.D. thesis – Annual report year: 2018

Perspectives on Resource Recovery from Bio-Based Production Processes: From Concept to Implementation
Research output: Research - peer-review › Journal article – Annual report year: 2017

Plant-wide modelling of phosphorus transformations in wastewater treatment systems: Impacts of control and operational strategies
Research output: Research - peer-review › Journal article – Annual report year: 2017

Quantitative risk assessment via uncertainty analysis in combination with error propagation for the determination of the dynamic Design Space of the primary drying step during freeze-drying
Research output: Research - peer-review › Journal article – Annual report year: 2017

Removal of benzaldehyde from a water/ethanol mixture by applying scavenging techniques
Research output: Research - peer-review › Journal article – Annual report year: 2017

Resource recovery from bio-based production processes: a future necessity?
Research output: Communication › Journal article – Annual report year: 2017

Ressourcegenvinding – vejen til øget bæredygtighed i biobaserede produktionsprocesser
Research output: Communication › Journal article – Annual report year: 2017

Reverse osmosis for water purification and reuse in the biotechnological industry: Process design, operation and economic guidelines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Shape optimization as a tool to design biocatalytic microreactors
Research output: Research - peer-review › Journal article – Annual report year: 2017
Superstructure-based optimization tool for plant design and retrofitting
Research output: Research - peer-review › Book chapter – Annual report year: 2018

Supply Chain Optimization of Integrated Glycerol Biorefinery: GlyThink Model Development and Application
Research output: Research - peer-review › Journal article – Annual report year: 2017

The effect of design and scale on the mixing and mass transfer in U-loop bioreactors
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Uncertainty & sensitivity analysis of economic assessment of lactic acid production from crude glycerol - impact of price correlations
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Understanding N₂O formation mechanisms through sensitivity analyses using a plant-wide benchmark simulation model
Research output: Research - peer-review › Journal article – Annual report year: 2017

Uncertainty and Sensitivity Analysis for an Ibuprofen Synthesis Model Based on Hoechst Path
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Untargeted GC-MS Metabolomics Reveals Changes in the Metabolite Dynamics of Industrial Scale Batch Fermentations of Streptococcus thermophilus Broth
Research output: Research - peer-review › Journal article – Annual report year: 2017

ZVI Addition in Continuous Anaerobic Digestion Systems Dramatically Decreases P Recovery Potential: Dynamic Modelling
Research output: Research › Article in proceedings – Annual report year: 2018

A case study on robust optimal experimental design for model calibration of ω-Transaminase
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Acceleration of Anti-Markovnikov Hydroamination in the Synthesis of an Active Pharmaceutical Ingredient
Research output: Research - peer-review › Journal article – Annual report year: 2016

A CFD model for determining mixing and mass transfer in a high power agitated bioreactor
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017
Early-Stage Design and Analysis of Biorefinery Networks
Research output: Research - peer-review › Book chapter – Annual report year: 2015

Economic risk analysis and critical comparison of optimal biorefinery concepts
Research output: Research - peer-review › Journal article – Annual report year: 2016

Economic Risk Assessment of Early Stage Designs for Glycerol2Valorization in Biorefinery Concepts
Research output: Research - peer-review › Journal article – Annual report year: 2016

Economic risk-based analysis: Effect of technical and market price uncertainties on the production of glycerol-based isobutanol
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Functional Unfold Principal Component Regression Methodology for Analysis of Industrial Batch Process Data
Research output: Research - peer-review › Journal article – Annual report year: 2016

Generation of synthetic influent data to perform (micro)pollutant wastewater treatment modelling studies
Research output: Research - peer-review › Journal article – Annual report year: 2016

Geometry optimization of a fibrous scaffold based on mathematical modelling and CFD simulation of a dynamic cell culture
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Implementation of Near-Infrared Spectroscopy for In-Line Monitoring of a Dehydration Reaction in a Tubular Laminar Reactor
Research output: Research - peer-review › Journal article – Annual report year: 2015

Linking granulation performance with residence time and granulation liquid distributions in twin-screw granulation: An experimental investigation
Research output: Research - peer-review › Journal article – Annual report year: 2015

Mechanism Models for Process Development and Optimization of Fed-batch Fermentation Systems
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

**Model-based analysis of a twin-screw wet granulation system for continuous solid dosage manufacturing**

Research output: Research - peer-review › Journal article – Annual report year: 2016

**Modelling and sensitivity analysis of urinary platinum excretion in anticancer chemotherapy for the recovery of platinum**

Research output: Research - peer-review › Journal article – Annual report year: 2016

**Modelling and simulation of a U-loop Reactor for Single Cell Protein Production**

Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

**Modelling phosphorus (P), sulfur (S) and iron (Fe) interactions for dynamic simulations of anaerobic digestion processes**

Research output: Research - peer-review › Journal article – Annual report year: 2016

**NLP modeling for the optimization of LiBr-H2O absorption refrigeration systems with exergy loss rate, heat transfer area, and cost as single objective functions**

Research output: Research - peer-review › Journal article – Annual report year: 2016

**Novel strategies for control of fermentation processes**


**Optimal algal cultivation for used water resource recovery**

Research output: Research - peer-review › Poster – Annual report year: 2016

**Plant-wide modelling and control of nitrous oxide emissions from wastewater treatment plants**


**Process Evaluation Tools for Enzymatic Cascades Welcome Message**


**Quantifying the importance of flow maldistribution in numbered-up microreactors**

Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

**Reaction invariant-based reduction of the activated sludge model ASM1 for batch applications**

Research output: Research - peer-review › Journal article – Annual report year: 2016
Systematic design of membership functions for fuzzy-logic control: A case study on one-stage partial nitritation/anammox treatment systems
Research output: Research - peer-review › Journal article – Annual report year: 2016

Uncertainty analysis as essential step in the establishment of the dynamic Design Space of primary drying during freeze-drying
Research output: Research - peer-review › Journal article – Annual report year: 2016

A benchmark simulation model to describe plant-wide phosphorus transformations in WWTPs
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Aeration control by monitoring the microbiological activity using fuzzy logic diagnosis and control. Application to a complete autotrophic nitrogen removal reactor
Research output: Research - peer-review › Journal article – Annual report year: 2015

A Framework for Sustainable Design of Algal Biorefineries: Economic Aspects and Life Cycle Analysis
Research output: Research - peer-review › Book chapter – Annual report year: 2015

A mathematical programming framework for early stage design of wastewater treatment plants
Bozkurt, H., Quaglia, A., Gernaey, K. & Sin, G. 2015 In : Environmental Modelling & Software. 64, p. 164-176
Research output: Research - peer-review › Journal article – Annual report year: 2015

A novel control strategy for single-stage autotrophic nitrogen removal in SBR
Research output: Research - peer-review › Journal article – Annual report year: 2015

A Numerical Procedure for Model Identifiability Analysis Applied to Enzyme Kinetics
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

A Perspective on PSE in Fermentation Process Development and Operation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

A plant wide aqueous phase chemistry model describing pH variations and ion speciation/pairing in wastewater treatment process models
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

A plant-wide aqueous phase chemistry module describing pH variations and ion speciation/pairing in wastewater treatment process models
Development of an on-line state estimator for fed-batch filamentous fungal fermentations
Mears, L., Stocks, S. M., Albæk, M. O., Sin, G. & Gernaey, K. 2015 1 p.
Research output: Research - peer-review › Report – Annual report year: 2014

Dynamic Modeling of Pectin Extraction for Monitoring and Optimisation
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Effects of influent fractionation, kinetics, stoichiometry and mass transfer on CH$_4$, H$_2$ and CO$_2$ production for (plant-wide) modeling of anaerobic digesters
Research output: Research - peer-review › Journal article – Annual report year: 2015

Effects of ionic strength and ion pairing on (plant-wide) modelling of anaerobic digestion
Research output: Research - peer-review › Journal article – Annual report year: 2015

Evaluation of an in-line particle imaging tool for monitoring twin-screw granulation performance
Research output: Research - peer-review › Journal article – Annual report year: 2015

Experimental and in-silico investigation of population heterogeneity in continuous Sachharomyces cerevisiae scale-down fermentation in a novel two-compartment setup.
Research output: Research - peer-review › Journal article – Annual report year: 2014

Extending the benchmark simulation model nO2 with processes for nitrous oxide production and side-stream nitrogen removal
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Fungal Morphology in Industrial Enzyme Production - Modelling and Monitoring
Research output: Research - peer-review › Book chapter – Annual report year: 2015

Generation of synthetic influent data for performing (micro) pollutant wastewater treatment modelling studies
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Hydrodynamic Characterization of Substrate Gradients in a Pilot Scale Fermenter Using CFD and Spatially Distributed Sensors
Research output: Research - peer-review › Poster – Annual report year: 2015

Microscale technology and biocatalytic processes: Opportunities and challenges for synthesis
Model-Based Analysis and Efficient Operation of a Glucose Isomerization Reactor Plant

Model-based characterisation of twin-screw granulation system for continuous solid dosage manufacturing

Model-based optimization of the primary drying step during freeze-drying

Modeling Mass Transfer in Small Scale Reactors Using Computational Fluid Dynamics

Modelling of Mass Transfer Phenomena in Chemical and Biochemical Reactor Systems using Computational Fluid Dynamics

Modelling phosphorus (P), sulphur (S) and iron (Fe) interactions during the simulation of anaerobic digestion processes

Multivariate analysis of industrial scale fermentation data

Multivariate Analysis of Industrial Scale Fermentation Data

Novel strategies for control of fermentation processes

Optimal Design of Algae Biorefinery Processing Networks for the production of Protein, Ethanol and Biodiesel

Optimal WWTP process selection for treatment of domestic wastewater - A realistic full-scale retrofitting study
Uncertainties in early-stage capital cost estimation of process design – a case study on biorefinery design
Research output: Research - peer-review › Journal article – Annual report year: 2015

Upgrading of lignocellulosic biorefinery to value-added chemicals: Sustainability and economics of bioethanol-derivatives
Research output: Research - peer-review › Journal article – Annual report year: 2015

Upgrading the Benchmark Simulation Model Framework with emerging challenges - A study of N₂O emissions and the fate of pharmaceuticals in urban wastewater systems
Research output: Research › Ph.D. thesis – Annual report year: 2015

Use of operating windows for assessment of continuous plug flow slurry reactor
Research output: Research › Report – Annual report year: 2014

Analysing drying unit performance in a continuous pharmaceutical manufacturing line by means of mass – Energy balances
Research output: Research - peer-review › Journal article – Annual report year: 2014

An Integrated Systematic Framework to Assist the Development of Pharmaceutical Processes
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

An optimization based framework for design and retrofit of municipal wastewater treatment plants: Case study on side-stream nitrogen removal technologies
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Applying Enzymatic Cascades for ISCPR in ω-transaminase Systems
Research output: Research › Ph.D. thesis – Annual report year: 2014

A systematic methodology for design of tailor-made blended products
Research output: Research - peer-review › Journal article – Annual report year: 2014

Balancing effluent quality, economic cost and greenhouse gas emissions during the evaluation of (plant-wide) control/operational strategies in WWTPs
Research output: Research - peer-review › Journal article – Annual report year: 2013

Benchmarking of Control Strategies for Wastewater Treatment Plants
Research output: Research - peer-review › Book – Annual report year: 2014
Biocatalytic process development using microfluidic miniaturized systems
Research output: Research - peer-review › Journal article – Annual report year: 2014

Calibration and validation of a phenomenological influent pollutant disturbance scenario generator using full-scale data
Research output: Research - peer-review › Journal article – Annual report year: 2014

Challenges encountered when expanding activated sludge models: a case study based on N2O production.
Research output: Research - peer-review › Journal article – Annual report year: 2014

Challenges in Industrial fermentation technology research
Research output: Research - peer-review › Journal article – Annual report year: 2014

Comparison of techniques for reconstruction of a distribution from moments in the context of a pharmaceutical drying process
Research output: Research - peer-review › Journal article – Annual report year: 2014

Cost Estimation for Early-Stage Synthesis and Design of Biorefinery Networks
Cheali, P., Gernaey, K. & Sin, G. 2014
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Crystallization Kinetics within a Generic Modeling Framework
Meisler, K. T., von Solms, N., Gernaey, K. V. & Gani, R. 2014 In: Chemical Engineering and Technology. 37, 8, p. 1383-1392
Research output: Research - peer-review › Journal article – Annual report year: 2014

Development of novel control strategies for single-stage autotrophic nitrogen removal: A process oriented approach
Research output: Research - peer-review › Journal article – Annual report year: 2014

Early-stage design of municipal wastewater treatment plants – presentation and discussion of an optimisation based concept
Research output: Research - peer-review › Poster – Annual report year: 2014

Early-stage design of municipal wastewater treatment plants – presentation and discussion of an optimisation based concept
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Research output: Research - peer-review › Journal article – Annual report year: 2014
Effects of ion strength and ion pairing on (plant-wide) modelling of anaerobic digestion processes
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Experimental investigation of granule size and shape dynamics in twin-screw granulation
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Experimental investigation of residence time distribution in twin-screw granulation
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Filamentous Fungi Fermentation
Research output: Research - peer-review › Book chapter – Annual report year: 2014

Generation of (synthetic) influent data for performing wastewater treatment modelling studies
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Global sensitivity analysis applied to drying models for one or a population of granules
Research output: Research - peer-review › Journal article – Annual report year: 2014

Implementation of a Process Intensification Approach in the Production of an API Intermediate
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Influence of selecting secondary settling tank sub-models on the calibration of WWTP models – A global sensitivity analysis using BSM2
Research output: Research - peer-review › Journal article – Annual report year: 2014

Instrumentation, control and automation in wastewater - from London 1973 to Narbonne 2013
Research output: Research - peer-review › Journal article – Annual report year: 2014

Mixing and transport during pharmaceutical twin-screw wet granulation: Experimental analysis via chemical imaging
Research output: Research - peer-review › Journal article – Annual report year: 2014

Modeling and optimizing oxygen transfer in small scale reactors using computational fluid dynamics
Research output: Research - peer-review › Poster – Annual report year: 2015

Modelling across bioreactor scales: methods, challenges and limitations
Gernaey, K. 2014
Sensor equipment for quantification of spatial heterogeneity in large bioreactor
Nørregaard, A., Formenti, L. R., Stocks, S. M., Madsen, B., Woodley, J. & Gernaey, K. 2014

Shape optimisation of a microrreactor for biocatalytic synthesis of optically pure chiral amines

Superstructure Development and Optimization under Uncertainty for Design & Retrofit of Municipal Wastewater Treatment Plants.

Superstructure development and optimization under uncertainty for design and retrofit of municipal wastewater treatment plants

Synthesis and design of hybrid biorefinery systems a structural optimisation approach and uncertainty analysis
Cheali, P., Quaglia, A., Gernaey, K. & Sin, G. 2014


Systematic Methodology for Design of Tailor-Made Blended Products: Fuels and Other Blended Products
Yunus, N. A. B., Gani, R., Gernaey, K. & Woodley, J. M. 2014 Technical University of Denmark, Department of Chemical and Biochemical Engineering. 173 p.

Test design of particles for immobilization of ω-transaminase in a packed bed microreactor

The Electrical Breakdown of Thin Dielectric Elastomers: Thermal Effects

The Virtual Product-Process Design Laboratory for Structured Chemical Product Design and Analysis

Toward a Computer-Aided Synthesis and Design of Biorefinery Networks: Data Collection and Management Using a Generic Modeling Approach
Towards a single empirical correlation to predict kLa across scales and processes
Quintanilla Hernandez, D. A., Gernaey, K., Albæk, M. O. & Stocks, S. M. 2014
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Towards BSM2-GPS-X: A plant-wide benchmark simulation model not only for carbon and nitrogen, but also for greenhouse gases (G), phosphorus (P), sulphur (S) and micropollutants (X), all within the fence of WWTPs/WRRFs
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Uncertainty analysis in raw material and utility cost of biorefinery synthesis and design
Research output: Research - peer-review › Conference article – Annual report year: 2014

μ-structured devices as tools for screening process intensification in biocatalysis
Research output: Research › Ph.D. thesis – Annual report year: 2014

3D modelling of coupled mass and heat transfer of a convection-oven roasting process
Research output: Research - peer-review › Journal article – Annual report year: 2013

3D-printer vejen til innovation?
Poulsen, A., Heintz, S., Ringborg, R. H., Woodley, J., Gernaey, K. & Krühne, U. 2013 In : Dansk Kemi. 94, 10, p. 32-34
Research output: Communication › Journal article – Annual report year: 2013

A computer-aided support tool for synthesis and design of biorefinery networks under uncertainty
Cheali, P., Gernaey, K. & Sin, G. 2013
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Advances in the Process Development of Biocatalytic Processes
Research output: Research - peer-review › Journal article – Annual report year: 2013

A fuzzy-logic based diagnosis and control of a reactor performing complete autotrophic nitrogen removal
Research output: Research - peer-review › Poster – Annual report year: 2013

A fuzzy-logic based diagnosis and control of a reactor performing complete autotrophic nitrogen removal
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

A GLUE uncertainty analysis of a drying model of pharmaceutical granules
Research output: Research - peer-review › Journal article – Annual report year: 2013

Applications, benefits and challenges of flow chemistry
Mitic, A., Heintz, S., Ringborg, R. H., Bodla, V. K., Woodley, J. & Gernaey, K. 2013 In : Chimica Oggi. 31, 4, p. 4-8
Research output: Research - peer-review › Journal article – Annual report year: 2013
Applying mechanistic models in bioprocess development.
Research output: Research - peer-review › Book chapter – Annual report year: 2013

A Robust Process Analytical Technology (PAT) System Design for Crystallization Processes
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

A systematic framework for design of process monitoring and control (PAT) systems for crystallization processes
Abdul Samad, N. A. F. B., Sin, G., Gernaey, K. & Gani, R. 2013 In : Computers & Chemical Engineering. 54, p. 8–23
Research output: Research - peer-review › Journal article – Annual report year: 2013

A Systematic Framework for Design of Process Monitoring and Control (PAT) Systems for Crystallization Processes
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Benchmark simulation models, quo vadis?
Research output: Research - peer-review › Journal article – Annual report year: 2013

Biokatalysatorens vej til industrien
Research output: Research › Journal article – Annual report year: 2013

Calibration and validation of a model describing complete autotrophic nitrogen removal in a granular SBR system
Research output: Research - peer-review › Journal article – Annual report year: 2013

Cell mass and cell cycle dynamics of an asynchronous budding yeast population: Experimental observations, flow cytometry data analysis, and multi-scale modeling
Research output: Research - peer-review › Journal article – Annual report year: 2012

Considerations for a methodology for selection of cascades for co-product removal in ω-transaminase systems
Janes, K., Gernaey, K., Tufvesson, P. & Woodley, J. 2013
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Control of a Biological Nitrogen Removal Process in an Intensified Single Reactor Configuration
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Control of a Biological Nitrogen Removal Process in an Intensified Single Reactor Configuration
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013
Control of a Biological Nitrogen Removal Process in an Intensified Single Reactor Configuration
Research output: Research - peer-review › Sound/Visual production (digital) – Annual report year: 2013

Control of a Novel Energy Efficient Biological Nitrogen Removal Process
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Crystallization Kinetics within a Generic Modelling Framework
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Design of future municipal wastewater treatment plants: A mathematical approach to manage complexity and identify optimal solutions
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Design of sustainable blended products using an integrated methodology
Yunus, N. A. B., Gernaey, K., Woodley, J. & Gani, R. 2013
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Design of Sustainable Blended Products using an Integrated Methodology
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Design of Sustainable Blended Products using an Integrated Methodology
Yunus, N. A. B., Gernaey, K., Woodley, J. & Gani, R. 2013
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Development of a Population Balance Model of a pharmaceutical drying process and testing of solution methods
Research output: Research - peer-review › Journal article – Annual report year: 2013

Effect of nitrite, limited reactive settler and plant design configuration on the predicted performance of simultaneous C/N/P removal WWTPs
Research output: Research - peer-review › Journal article – Annual report year: 2013

Enzymatic process intensification across scales
Heintz, S., Woodley, J., Krühne, U. & Gernaey, K. 2013
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Generic Modelling Framework for Design and Analysis of Crystallization Operations
Meisler, K. T., Abdul Samad, N. A. F. B., Gernaey, K. & Gani, R. 2013
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Introducing uncertainty analysis of nucleation and crystal growth models in Process Analytical Technology (PAT) system design of crystallization processes
Research output: Research - peer-review › Journal article – Annual report year: 2012
Microreactors and CFD as Tools for Biocatalysis Reactor Design: A case study
Bodla, V. K., Seerup, R., Krühne, U., Woodley, J. M. & Gernaey, K. 2013 In : Chemical Engineering and Technology. 36, 6, p. 1017-1026
Research output: Research - peer-review › Journal article – Annual report year: 2013

Miniaturized experimental toolbox for ω-transaminase technology (BIOINTENSE)
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Miniaturized Experimental Toolbox for ω-Transaminase Technology (BIOINTENSE)
Research output: Research - peer-review › Poster – Annual report year: 2014

Model-based analysis of high shear wet granulation from batch to continuous processes in pharmaceutical production - A critical review
Research output: Research - peer-review › Journal article – Annual report year: 2014

Model-Based Blend Design: Application to Lubricant Oils
Yunus, N. A. B., Gernaey, K., Woodley, J. & Gani, R. 2013
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Modeling Approaches for Describing Microbial Population Heterogeneity
Lencastre Fernandes, R., Gernaey, K., Jensen, A. D. & Nopens, I. 2013 Kgs. Lyngby: Technical University of Denmark, Department of Chemical and Biochemical Engineering. 268 p.
Research output: Research › Ph.D. thesis – Annual report year: 2012

Modeling, Experimentation, and Control of Autotrophic Nitrogen Removal in Granular Sludge Systems
Research output: Research › Ph.D. thesis – Annual report year: 2013

Performance of an autotrophic nitrogen removing reactor: Diagnosis through fuzzy logic
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

pH variation and influence in an autotrophic nitrogen removing biofilm system using an efficient numerical solution strategy
Research output: Research - peer-review › Journal article – Annual report year: 2013

Reduction of a single granule drying model: An essential step in preparation of a population balance model with a continuous growth term
Research output: Research - peer-review › Journal article – Annual report year: 2013

Simulation study of microbioreactor configurations for production of optically pure chiral amines
Pereira Rosinha, I., Gernaey, K., Woodley, J. & Krühne, U. 2013
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Study of Crystallization Kinetics Within a Generic Modelling Framework
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013
Superstructure development and optimization for design/retrofit of municipal wastewater treatment plants
Bozkurt, H., Quaglia, A., Gernaey, K. & Sin, G. 2013
Research output: Research - peer-review | Conference abstract for conference – Annual report year: 2013

Synthesis and Design of Biorefinery Processing Networks with Uncertainty and Sustainability analysis
Research output: Research - peer-review | Conference abstract for conference – Annual report year: 2013

Synthesis and design of optimal biorefinery using an expanded network with thermochemical and biochemical biomass conversion platforms
Research output: Research - peer-review | Article in proceedings – Annual report year: 2013

Systematic design of tailor-made blended products
Yunus, N. A. B., Gernaey, K., Woodley, J. & Gani, R. 2013
Research output: Research - peer-review | Conference abstract for conference – Annual report year: 2013

Systematic Design of Tailor-Made Blended Products
Research output: Research - peer-review | Poster – Annual report year: 2013

Systematic Design of Tailor-Made Blended Products
Research output: Research - peer-review | Poster – Annual report year: 2013

Systematic substrate adoption methodology (SAM) for future flexible, generic pharmaceutical production processes
Research output: Research - peer-review | Journal article – Annual report year: 2013

Towards an integrated µ-factory: Integrated micro membrane packed bed reactor
Bodla, V. K., Woodley, J., Krühne, U. & Gernaey, K. 2013
Research output: Research - peer-review | Conference abstract for conference – Annual report year: 2013

Towards an integrated µ-factory: Design and development of a microfluidic system to include fermentation and biocatalysis
Bodla, V. K., Woodley, J., Krühne, U. & Gernaey, K. 2013
Research output: Research - peer-review | Conference abstract for conference – Annual report year: 2013

Towards an integrated µ-factory: Integrated micro membrane packed bed reactor
Bodla, V. K., Woodley, J., Krühne, U. & Gernaey, K. 2013
Research output: Research - peer-review | Conference abstract for conference – Annual report year: 2013
Towards effective biocatalytic process development using microreactor technology
Woodley, J., Heintz, S., Ringborg, R. H., Pereira Rosinha, I., Tufvesson, P., Krühne, U. & Gernaey, K. 2013
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Uncertainty and Sensitivity Analysis on PAT System Performance for Crystallization Processes
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Using micro technology in process screening for improved ω-transaminases
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Using micro technology in process screening for improved ω-transaminases
Research output: Research - peer-review › Poster – Annual report year: 2013

Acceleration of pharmaceutical production by using micro-reactor technology in a continuous mode
Research output: Research - peer-review › Paper – Annual report year: 2012

Active pharmaceutical ingredient (API) production involving continuous processes – A process system engineering (PSE)-assisted design framework
Research output: Research - peer-review › Journal article – Annual report year: 2012

Adaptive Continuous Template-Based Novel Manufacturing Technique for Faster Manufacturing of New APIs for Clinical Trials
Singh, R., Gernaey, K., Gani, R. & Woodley, J. 2012
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2012

A dynamic modelling approach to evaluate GHG emissions from wastewater treatment plants
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

A framework for model-based optimization of bioprocesses under uncertainty: Lignocellulosic ethanol production case
Research output: Research - peer-review › Journal article – Annual report year: 2011

Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Research output: Research › Conference abstract for conference – Annual report year: 2012

A generic process template for continuous pharmaceutical production
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012
A generic process template for continuous pharmaceutical production
Research output: Research › Poster – Annual report year: 2012

All-Fiber Raman Probe
Research output: Research › Ph.D. thesis – Annual report year: 2012

A methodology for cascade selection for co-product removal in the ω-transaminase system
Janes, K., Gernaey, K., Tufvesson, P. & Woodley, J. 2012
Research output: Research › peer-review › Poster – Annual report year: 2012

A methodology for cascade selection for co-product removal in the ω-transaminase system
Janes, K., Gernaey, K., Tufvesson, P. & Woodley, J. 2012
Research output: Research › peer-review › Poster – Annual report year: 2012

A methodology for cascade selection for co-product removal in the ω-transaminase system
Janes, K., Gernaey, K., Tufvesson, P. & Woodley, J. 2012
Research output: Research › peer-review › Poster – Annual report year: 2012

An Integrated Methodology for Design of Tailor-Made Blended Products
Research output: Research › peer-review › Article in proceedings – Annual report year: 2012

An Integrated Methodology for Design of Tailor-Made Blended Products
Research output: Research › Conference abstract for conference – Annual report year: 2012

An Integrated Methodology for Design of Tailor-Made Blended Products
Yunus, N. A., Gernaey, K., Woodley, J. & Gani, R. 2012
Research output: Research › Poster – Annual report year: 2012

An Integrated Methodology for Design of Tailor-Made Blended Products: Biofuels and Bio-Based Lubricants
Yunus, N. A., Gernaey, K., Woodley, J. & Gani, R. 2012
Research output: Research › peer-review › Conference abstract for conference – Annual report year: 2012

A perspective on PSE in pharmaceutical process development and innovation
Research output: Research › peer-review › Journal article – Annual report year: 2012

Application of Global Sensitivity Analysis As Preparatory Step for Reduction of a Drying Model of Pharmaceutical Granules
Mortier, S. T. F. C., Nopens, I., De beer, T. & Gernaey, K. 2012
Research output: Research › peer-review › Conference abstract for conference – Annual report year: 2012

Application of model uncertainty analysis on the modelling of the drying behaviour of single pharmaceutical granules
Research output: Research › peer-review › Conference abstract for conference – Annual report year: 2012

Ask the experts: The challenges and benefits of flow chemistry to optimize drug development.
Gernaey, K. 2012 In : Future Medicinal Chemistry. 4, 14, p. 1780-1781
Research output: Communication › Comment/debate – Annual report year: 2012
Benchmarking biological nutrient removal in wastewater treatment plants: influence of mathematical model assumptions
Research output: Research - peer-review › Journal article – Annual report year: 2012

Calibration and validation of a model describing complete autotrophic nitrogen removal in granular sludge
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Calibration and validation of model describing complete autotrophic nitrogen removal in granular sludge
Research output: Research - peer-review › Article in proceedings (digital) – Annual report year: 2012

Comparison of laser diffraction and image analysis for measurement of Streptomyces coelicolor cell clumps and pellets.
Research output: Research - peer-review › Journal article – Annual report year: 2012

Computational Fluid Dynamics at work - Design and Optimization of Microfluidic Applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Computational Fluid Dynamics at work - Design and Optimization of Microfluidic Applications
Krühne, U., Bodla, V. K., Møllenbach, J., Laursen, S., Thielgaard, N., Christensen, L. H. & Gernaey, K. 2012
Research output: Research › Poster – Annual report year: 2012

Computer-aided approach for design of tailor-made blended products
Yunus, N. A., Gernaey, K., Woodley, J. & Gani, R. 2012
Research output: Research › Conference abstract for conference – Annual report year: 2012

Computer-aided approach for design of tailor-made blended products
Research output: Research - peer-review › Conference article – Annual report year: 2012

Continuous Hydrolysis and Liquid–Liquid Phase Separation of an Active Pharmaceutical Ingredient Intermediate Using a Miniscale Hydrophobic Membrane Separator
Research output: Research - peer-review › Journal article – Annual report year: 2012

Continuous hydrolysis and L-L phase separation of an active pharmaceutical ingredient using a miniscale PTFE membrane separator
Research output: Research › Conference abstract for conference – Annual report year: 2012

Control of Process Operations and Monitoring of Product Qualities through Generic Model-based Framework in Crystallization Processes
Research output: Research › Ph.D. thesis – Annual report year: 2012

Crystallization Kinetics Identification within a Generic Modeling Framework
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2012
Design of microfluidic reactors for biocatalytic reactions
Research output: Research › Conference abstract for conference – Annual report year: 2012

Development of continuous pharmaceutical production processes supported by process systems engineering methods and tools
Research output: Research - peer-review › Editorial – Annual report year: 2012

Dynamics in population heterogeneity during batch and continuous fermentation of Saccharomyces cerevisiae
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2012

Energibesparende biologisk proces til kvælstoffjernelse i spildevand
Research output: Research - peer-review › Journal article – Annual report year: 2012

Establishment of a gaseous pH control concept in microbioreactors
Research output: Research › Book chapter – Annual report year: 2012

Evaluating the impact of plant-wide WWTP control strategies on energy consumption and greenhouse gas emissions
Research output: Research - peer-review › Paper – Annual report year: 2012

Evaluation of the efficiency of alternative enzyme production technologies
Albæk, M. O., Gernaey, K., Hansen, M. S. & Stocks, S. M. 2012 Technical University of Denmark, Department of Chemical Engineering. 176 p.
Research output: Research › Ph.D. thesis – Annual report year: 2012

Evaluation of the energy efficiency of enzyme fermentation by mechanistic modeling
Albaek, M. O., Gernaey, K. V., Hansen, M. S. & Stocks, S. M. 2012 In : Biotechnology and Bioengineering (Print). 109, 4, p. 950-961
Research output: Research - peer-review › Journal article – Annual report year: 2012

Extending the BSM platform with occurrence, transport and fate of micro-pollutants using the ASM-X framework
Research output: Research - peer-review › Paper – Annual report year: 2012

Framework for the analysis of crystallization operations
Meisler, K. T., Abdul Samad, N. A. F. B., Gernaey, K., von Solms, N. & Gani, R. 2012
Research output: Research › Conference abstract for conference – Annual report year: 2012

Gernaey, K. 2012
Research output: Research › Sound/Visual production (digital) – Annual report year: 2012

Global sensitivity analysis of the BSM2 dynamic influent disturbance scenario generator
Research output: Research - peer-review › Journal article – Annual report year: 2012
PAT tools for fermentation processes
Gernaey, K. 2012
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2012

pH variation and influence in an autotrophic nitrogen removing biofilm system: An efficient numerical solution strategy
Research output: Research - peer-review › Poster – Annual report year: 2012

pH variation and influence in a nitrogen converting biofilm
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Physiological heterogeneities in microbial populations and Implications for physical stress tolerance
Research output: Research - peer-review › Journal article – Annual report year: 2012

Process Systems Engineering, 1. Introduction
Research output: Research - peer-review › Book chapter – Annual report year: 2012

Process Systems Engineering, 5. Process Dynamics, Control, Monitoring, and Identification
Research output: Research - peer-review › Book chapter – Annual report year: 2012

Process Systems Engineering, 9. Domain Engineering
Research output: Research - peer-review › Book chapter – Annual report year: 2012

PSE opportunities in biocatalytic process design and development
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Quantifying uncertainties of nucleation and crystal growth models on PAT system performance for crystallization processes
Research output: Research › Conference abstract for conference – Annual report year: 2012

Recent trends in modelling and simulation of biological nutrient removal systems
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2012

Recent trends in modelling and simulation of nutrient removal systems
Research output: Research - peer-review › Book chapter – Annual report year: 2012

Reduction of a Mechanistic Drying Model of Pharmaceutical Granules for Inclusion in a Population Balance Model with Continuous Growth Term
Relative importance of secondary settling tank models in WWTP simulations: A global sensitivity analysis using BSM2

Sensitivity analysis of autotrophic N removal by a granule based bioreactor: Influence of mass transfer versus microbial kinetics

Soft sensors in bioprocessing: A status report and recommendations

Systematic identification of crystallization kinetics within a generic modelling framework

Towards a plant-wide Benchmark Simulation Model with simultaneous nitrogen and phosphorus removal wastewater treatment processes.

Towards improved bioprocess operation: monitoring, modeling and control
Gernaey, K., Eliasson Lantz, A., Albaek, M. O. & Krühne, U. 2012

Uncertainty and sensitivity analysis: Mathematical model of coupled heat and mass transfer for a contact baking process

Continuous Membrane Microbioreactor for Development of Integrated Pectin Modification and Separation Processes

A continuous membrane microbioreactor system for development of integrated pectin modification and separation processes

A framework for model-based optimization of bioprocesses under uncertainty: Identifying critical parameters and operating variables
A framework for model-based optimization of bioprocesses under uncertainty: Identifying critical parameters and operating variables
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

A Framework for Optimization of Bioprocess Operation under Uncertainties: A lignocellulosic Ethanol Production Case Study
Research output: Research - peer-review › Poster – Annual report year: 2011

A generic multi-dimensional model-based system for batch cooling crystallization processes
Research output: Research - peer-review › Journal article – Annual report year: 2011

A Mathematical Model for Simultaneous Saccharification and Co-fermentation (SSCF) of C6 and C5 Sugars
Research output: Research - peer-review › Journal article – Annual report year: 2011

Research output: Research - peer-review › Journal article – Annual report year: 2011

An integral analysis for second generation bioethanol production via a dynamic model-based simulation approach: stochastic nonlinear optimisation
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

A retrofit strategy to achieve "Fast, Flexible, Future (F3)" pharmaceutical production processes
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

A retrofit strategy to achieve "Fast, Flexible, Future (F3)" pharmaceutical production processes
Singh, R., Rozada-Sanchez, R., Wrate, T., Muller, F., Gernaey, K., Gani, R. & Woodley, J. 2011
Research output: Research - peer-review › Poster – Annual report year: 2011

A systematic methodology for the design of continuous active pharmaceutical ingredient production processes
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

A systematic methodology for the design of continuous active pharmaceutical ingredient production processes
Cervera Padrell, A. E., Gani, R., Kill, S., Skovby, T. & Gernaey, K. 2011
Research output: Research › Poster – Annual report year: 2011

Benchmarking Biological Nutrient Removal in Wastewater Treatment Plants: Influence of Mathematical Model Assumptions
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011
Bioreactor design and optimization – a future perspective
Gernaey, K. 2011 In : BIOTECH International. 23, Feb/March, p. 21-23
Research output: Research - peer-review › Journal article – Annual report year: 2011

Cascade systems in ω-transaminase reactions
Janes, K., Gernaey, K., Tufvesson, P. & Woodley, J. 2011
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Design of tailor-made chemical blend using a decomposition-based computer-aided approach
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Design of Tailor-made Fuel Blends of Gasoline and Bio-fuels
Yunus, N. A., Gernaey, K., Woodley, J. & Gani, R. 2011
Research output: Research › Poster – Annual report year: 2011

Development of a fast and flexible generic process for the reduction of nitro compounds
Haas-Santo, K., Vankayala, B., Dittmeyer, R., Singh, R., Gernaey, K., Gani, R., Rozada-Sanchez, R. & Muller, F. 2011
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Dynamic influent pollutant disturbance scenario generation using a phenomenological modelling approach
Research output: Research - peer-review › Journal article – Annual report year: 2011

Dynamic Model-Based Evaluation of Process Configurations for Integrated Operation of Hydrolysis and Co-Fermentation for Bioethanol Production from Lignocellulose
Research output: Research - peer-review › Journal article – Annual report year: 2011

Example of a process model application: Evaluation of energy efficiency
Albæk, M. O., Gernaey, K., Hansen, M. & Stocks, S. 2011
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

Experimental methods and modeling techniques for description of cell population heterogeneity
Research output: Research - peer-review › Journal article – Annual report year: 2011

Framework for Construction of Multi-scale Models for Biological Wastewater Treatment Processes
Research output: Research › Poster – Annual report year: 2011

Framework for Construction of Multi-scale Models for Biological Wastewater Treatment Processes - Case Study: Autotrophic Nitrogen Conversion
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Generic Model and Data Based Framework for Analysis and Development of Crystallization Processes
Meier, K. T., Abdul Samad, N. A. F., Gernaey, K., von Solms, N. & Gani, R. 2011
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011
Investigations of the efficiency of enzyme production technologies using modelling tools
Albæk, M. O., Gernaey, K., Hansen, M. S. & Stocks, S. M. 2011
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2011

Kontinuerlig lægemiddelproduktion af små molekyler via organiske syntese
Cervera Padrell, A. E., Skovby, T., Kiil, S. & Gernaey, K. 2011 In : Dansk Kemi. 92, 11, p. 18-20
Research output: Research - peer-review » Journal article – Annual report year: 2011

Lab on a chip automates in vitro cell culturing
Research output: Research - peer-review » Poster – Annual report year: 2011

Mechanistic modelling of fluidized bed drying processes of wet porous granules: A review
Pharmaceutics and Biopharmaceutics. 79, 2, p. 205-225
Research output: Research - peer-review » Journal article – Annual report year: 2011

Methodological Approach for Modeling of Multienzyme in-pot Processes
Andrade Santacoloma, P. D. G., Roman Martinez, A., Sin, G., Gernaey, K. & Woodley, J. 2011 21st European Symposium
Research output: Research - peer-review » Article in proceedings – Annual report year: 2011

Micro2-Managed Microbial Communities: Next Generation Environmental Bio/Technologies
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2011

Microfluidic enzymatic reactors using ω-transaminases
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2011

Model based bioreactor comparison for cellulase production
Albæk, M. O., Gernaey, K., Hansen, M. S. & Stocks, S. M. 2011
Research output: Research > Sound/Visual production (digital) – Annual report year: 2011

Modeling enzyme production with Aspergillus oryzae in pilot scale vessels with different agitation, aeration, and agitator
types
1828-1840
Research output: Research - peer-review » Journal article – Annual report year: 2011

Modeling framework for multi-enzyme in-pot processes applied in amine production
Andrade Santacoloma, P. D. G., Sin, G., Gernaey, K. & Woodley, J. 2011
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2011

Modeling the Residence Time Distribution In a Batch Fermentor: Comparison of CFD Prediction with Experiment
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2011

Modelling Framework for the Identification of Critical Variables and Parameters under Uncertainty in the Bioethanol
Production from Lignocellulose
AMIDIQ.
Modelling Framework for the Identification of Critical Variables and Parameters under Uncertainty in the Bioethanol Production from Lignocellulose
Research output: Research - peer-review › Poster – Annual report year: 2011

Modelling of coupled heat and mass transfer during a contact baking process
Research output: Research - peer-review › Journal article – Annual report year: 2011

Modelling of drying processes of pharmaceutical granules. Pharmaceutical Sciences for the Future of Medicines
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Moving from batch towards continuous organic-chemical pharmaceutical production
Research output: Research › Ph.D. thesis – Annual report year: 2012

Multi-enzyme catalyzed processes: Next generation biocatalysis
Research output: Research - peer-review › Journal article – Annual report year: 2011

Process analytical technology (PAT) for biopharmaceuticals
Glassey, J., Gernaey, K., Clemens, C., Schulz, T. W., Oliveira, R., Striedner, G. & Mandenius, C-F. 2011 In : Biotechnology Journal. 6, 4, p. 369-377
Research output: Research - peer-review › Journal article – Annual report year: 2011

PSE in pharmaceutical process development
Gernaey, K., Cervera Padrell, A. E. & Woodley, J. 2011
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

PSE in Pharmaceutical Process Development
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Quo Vadis Benchmark Simulation Models? 8th IWA Symposium on Systems Analysis and Integrated Assessment
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Robust Modelling of Heat and Mass Transfer in Processing of Solid Foods
Research output: Research › Ph.D. thesis – Annual report year: 2011

Substrates adoption methodology (SAM) to achieve "Fast, Flexible, Future (F3)" pharmaceutical production processes
Singh, R., Rozada-Sanchez, R., Wrate, T., Muller, F., Gernaey, K., Gani, R. & Woodley, J. 2011
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Systematic Modelling and Crystal Size Distribution Control for Batch Crystallization Processes
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011
Systematic procedure for generating operational policies to achieve target crystal size distribution (CSD) in batch cooling crystallization
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Systematic Procedure for Generating Operational Policies to Achieve Target Crystal Size Distribution (CSD) in Batch Cooling Crystallization
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Tailor-made Design of Chemical Blends using Decomposition-based Computer-aided Approach
Research output: Research › Conference abstract for conference – Annual report year: 2011

Targeting population heterogeneity for optimal cell factories
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Targeting population heterogeneity in Saccharomyces cerevisiae batch fermentation for optimal cell factories
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Technology Evaluation of Process Configurations for Second Generation Bioethanol Production using Dynamic Model-based Simulations
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Technology Evaluation of Process Configurations for Second Generation Bioethanol Production using Dynamic Model-based Simulations
Research output: Research - peer-review › Poster – Annual report year: 2011

Topology optimized microbioreactors
Research output: Research - peer-review › Journal article – Annual report year: 2011

Uniform and reproducible stirring in a microbioreactor
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2011

Validation of Inhibition Effect in the Cellulose Hydrolysis: a Dynamic Modelling Approach
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Validation of Inhibition Effect in the Cellulose Hydrolysis: a Dynamic Modelling Approach
Research output: Research - peer-review › Poster – Annual report year: 2011

Wastewater Systems
Wastewater treatment models
Research output: Research - peer-review › Book chapter – Annual report year: 2011

Analysis of Multivariate Sensor Data for Monitoring of Cultivations
Research output: Research › Ph.D. thesis – Annual report year: 2010

Continuous Culture Microbioreactors
Research output: Research › Ph.D. thesis – Annual report year: 2010

Measurement and Chemometric Modelling of streptomyces Cultivations
Research output: Research › Ph.D. thesis – Annual report year: 2010

A Dynamic Model for Cellulosic Biomass Hydrolysis: Validation of Hydrolysis and Product Inhibition Mechanism
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

A Generic Model-Based Framework for Batch Cooling Crystallization Processes
Abdul Samad, N. A. F., Singh, R., Sin, G., Gernaey, K. & Gani, R. 2010
Research output: Research - peer-review › Poster – Annual report year: 2010

A Generic Multi-Dimensional Model-Based Framework for Batch Cooling Crystallization Process
Abdul Samad, N. A. F., Singh, R., Sin, G., Gernaey, K. & Gani, R. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

A Model-Based Methodology for Simultaneous Design and Control of a Bioethanol Production Process
Research output: Research - peer-review › Journal article – Annual report year: 2010

A model-based systems approach to pharmaceutical product-process design and analysis
Gernaey, K. & Gani, R. 2010 In : Chemical Engineering Science. 65, 21, p. 5757-5769
Research output: Research - peer-review › Journal article – Annual report year: 2010

A New Extant Respirometric Assay to Estimate Intrinsic Growth Parameters Applied to Study Plasmid Metabolic Burden
Research output: Research - peer-review › Journal article – Annual report year: 2010

An Ontological Knowledge-Based System for Identification of Efficient Chemical Production Routes
Singh, R., Gernaey, K., Gani, R. & Woodley, J. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

An ontological knowledge based system for selection of process monitoring and analysis tools
Research output: Research - peer-review › Journal article – Annual report year: 2010
A Population Balance Model for Microbial Populations in Fermentors
Research output: Research › Article in proceedings – Annual report year: 2010

Application of mechanistic models to fermentation and biocatalysis for next-generation processes
Research output: Research - peer-review › Journal article – Annual report year: 2010

Approaches to Robust Modelling of Frying Processes
Feyissa, A. H., Adler-Nissen, J. & Gernaey, K. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Assessing Reliability of Cellulose Hydrolysis Models to Support Biofuel Process Design – Identifiability and Uncertainty Analysis
Research output: Research - peer-review › Journal article – Annual report year: 2010

Comparison of Traditional Rushton Disc Turbines with Up-pumping Hydrofoil B2 Impellers in 550 L Pilot Scale Aerobic Submerged Fermentations
Research output: Research › Article in proceedings – Annual report year: 2010

Comparison of Traditional Rushton Disc Turbines with Up-pumping Hydrofoil B2 Impellers in 550 L Pilot Scale Aerobic Submerged Fermentations
Albæk, M. O., Gernaey, K., Hansen, M. S. & Stocks, S. M. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010
Concepts in multi-step biocatalysis
Woodley, J., Andrade Santacoloma, P. D. G., Vennestrøm, P. N. R., Sin, G. & Gernaey, K. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Continuous membrane microbioreactor for integrated pectin degradation and separation
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2010

Control of Process Operations and Monitoring of Product Qualities through Generic Model-based in Batch Cooling Crystallization
Abdul Samad, N. A. F., Singh, R., Sin, G., Gernaey, K. & Gani, R. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Control of Process Operations and Monitoring of Product Qualities through Generic Model-based in Batch Cooling Crystallization
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Design of Continuous Processes for Organic-Synthesis Based Production of Active Pharmaceutical Ingredients - a Methodology
Cervera Padrell, A. E., Gernaey, K., Gani, R., Kiil, S. & Skovby, T. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Development of a mathematical model describing hydrolysis and co-fermentation of C6 and C5 sugars
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Development of a mathematical model describing hydrolysis and co-fermentation of C6 and C5 sugars
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Development of a single-use microbioreactor for cultivation of microorganisms
Research output: Research - peer-review › Journal article – Annual report year: 2010

Dynamic plant-wide modelling for bioethanol production from lignocellulosic biomass (2G)
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Embedded resistance wire as a heating element for temperature control in microbioreactors
Zainal Alam, M. N. H., Schäpper, D. & Gernaey, K. 2010 In : Journal of Micromechanics and Microengineering. 20, 5, p. 055014
Research output: Research - peer-review › Journal article – Annual report year: 2010

F3 process design for fine chemical and Pharmaceutical transformations
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

From lab experiments to plant operation and design: Bioethanol production from lignocellulose using different enzyme technologies
Moving from batch toward continuous organic-chemical pharmaceutical production
Cervera Padrell, A. E., Gernaey, K., Gani, R., Kill, S. & Skovby, T. 2010
Research output: Research › Poster – Annual report year: 2010

New concepts for multi-enzymatic synthetic processes
Research output: Research › Article in proceedings – Annual report year: 2010

New concepts for multi-enzymatic synthetic processes
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

New concepts for multi-enzymatic synthetic processes
Andrade Santacoloma, P. D. G., Sin, G., Gernaey, K. & Woodley, J. 2010
Research output: Research › Poster – Annual report year: 2010

New framework for standardized notation in wastewater treatment modelling
Research output: Research - peer-review › Journal article – Annual report year: 2010

New framework for standardized notation in wastewater treatment modelling
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

New framework for standardized notation in wastewater treatment modelling
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2010

On-line monitoring of fermentation processes in lignocellulose-to-bioalcohol production
Research output: Research - peer-review › Book chapter – Annual report year: 2010

Perspectives on the use of global uncertainty and sensitivity analysis methods in a PAT context
Sin, G., Eliasson Lantz, A. & Gernaey, K. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Population balance models for microbial populations: describing heterogeneity in fermentors
Lencastre Fernandes, R., Dutta, A., Nopens, I., Jensen, A. D. & Gernaey, K. 2010
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2010

Process Development and Design for Greener Pharmaceutical Processes
Gernaey, K., Tufvesson, P. & Woodley, J. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Process Technology Evaluation for Lignocellulosic Bioethanol Production: Plantwide Configurations Using a Dynamic Modeling Approach
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010
Report and recommendation of a workshop on education and training for measurement, monitoring, modelling and control ((MC)-C-3) in biochemical engineering
Research output: Research - peer-review › Editorial – Annual report year: 2010

Sammenligning af avancerede online sensorer til måling af biomassekonzentrationen i filamentøse fermenteringer
Research output: Research › Article in proceedings – Annual report year: 2010

Sammenligning af avancerede online sensorer til måling af biomassekonzentrationen i filamentøse fermenteringer
Petersen, N., Stocks, S., Eliasson Lantz, A. & Gernaey, K. 2010
Research output: Research › Poster – Annual report year: 2010

Sensitivity analysis in the WWTP modelling community – new opportunities and applications
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Sensitivity analysis in the WWTP modelling community – new opportunities and applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Sensitivity Analysis of a Kinetic Model Describing the Bi-enzymatic Synthesis of Lactobionic Acid
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Sensor combination and chemometric variable selection for online monitoring of Streptomyces coelicolor fed-batch cultivations
Research output: Research - peer-review › Journal article – Annual report year: 2010

Structurally Optimized Microbioreactors: A Design Example for Immobilized Yeast Cultivations
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Structurally optimized microbioreactors for immobilized yeast cultivations
Research output: Research › Article in proceedings – Annual report year: 2010

Structurally optimized microbioreactors for immobilized yeast cultivations
Research output: Research › Poster – Annual report year: 2010

Structurally optimized microbioreactors for immobilized yeast cultivations
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2010
Synthesis, Design and Analysis of Downstream Separation in Bio-refinery Processes through a Group-Contribution Approach
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Systematic computer-aided method and tool (ICAS-PAT) for design, analysis &/or validation of process monitoring and analysis systems (PAT systems)
Singh, R., Gernaey, K. & Gani, R. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Systematic Framework for Design and Adoption of Fast, Flexible, Continuous Modular Plants
Singh, R., Gernaey, K., Gani, R. & Woodley, J. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Systematic method and tool for design, analysis &/or validation of PAT systems
Singh, R., Abdul Samad, N. A. F., Sin, G., Gernaey, K. & Gani, R. 2010
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Uncertainty and Sensitivity Analysis of Heat and Mass Transfer in Food Processing
Feyissa, A. H., Adler-Nissen, J. & Gernaey, K. 2010
Research output: Research › Poster – Annual report year: 2010

Validation of Structured Model of Complete Autotrophic Nitrogen Removal
Research output: Research › Sound/Visual production (digital) – Annual report year: 2010

Wastewater treatment plant influent disturbance models
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

A Model-Based Methodology for Simultaneous Design and Control of a Bioethanol Production Process
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

A Model-Based Methodology for Simultaneous Design and Control of a Bioethanol Production Process
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Analyse af NIR data fra Streptomyces coelicolor fermenteringer
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2009

Application of ICAS-PAT On Design of Process Monitoring and Control System for a Batch Cooling Crystallization Process through Hybrid Multiscale Model-Based Analysis
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009
Application of microbioreactors in fermentation process development: a review
Research output: Research - peer-review › Journal article – Annual report year: 2009

Application of modeling and simulation tools for the evaluation of biocatalytic processes: a future perspective
Sin, G., Gernaey, K. & Woodley, J. 2009 In : Biotechnology Progress. 25, 6, p. 1529-1538
Research output: Research - peer-review › Journal article – Annual report year: 2009

Application of near-infrared spectroscopy for monitoring and control of cell culture and fermentation
Cervera Padrell, A. E., Petersen, N., Eliasson Lantz, A., Larsen, A. & Gernaey, K. 2009 In : Biotechnology Progress. 25, 6, p. 1561-1581
Research output: Research - peer-review › Journal article – Annual report year: 2009

Applying spectroscopic methods and chemometrics to get a snap-shot of physiology in fermentation processes
Eliasson Lantz, A., Ödman, P., Petersen, N., Olsson, L. & Gernaey, K. 2009
Research output: Research - peer-review › Poster – Annual report year: 2009

A priori regression analysis for the calibration of complex dynamic models: application to an integrated biological, chemical and physical model of antibiotic production with S. coelicolor
Sin, G. & Gernaey, K. 2009 Computer Aided Chemical Engineering, on CD.
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

A software tool for design of process monitoring and analysis systems
Singh, R., Gernaey, K. & Gani, R. 2009
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

A systematic computer aided framework for design and analysis of PAT systems
Gernaey, K., Singh, R. & Gani, R. 2009
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Benchmark Simulation Model No 2 – Finalisation of plant layout and default control strategy
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Biorefining: Computer aided tools for sustainable design and analysis of bioethanol production
Research output: Research - peer-review › Journal article – Annual report year: 2009
Continuous culture microbiorreactors
Schäpper, D., Eliasson Lantz, A., Stocks, S., Szita, N. & Gernaey, K. 2009
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Development of An Integrated Dynamic Model for Bioethanol Production From Lignocellulosic Biomass
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Development of continuous culture microbiorreactors
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2009

Development of continuous culture microbiorreactors
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Disposable continuous culture microbiorreactor with yeast for screening and process development applications
Eliasson Lantz, A., Schäpper, D., Stocks, S., Szita, N. & Gernaey, K. 2009
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Evaluation of plant-wide WWTP control strategies including the effects of filamentous bulking sludge
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Evaluation of plant-wide WWTP control strategies including the effects of filamentous bulking sludge
Research output: Research - peer-review › Review – Annual report year: 2009

Good Modeling Practice for PAT Applications: Propagation of Input Uncertainty and Sensitivity Analysis
Sin, G., Gernaey, K. & Eliasson Lantz, A. 2009 In : Biotechnology Progress. 25, 4, p. 1043-1053
Research output: Research - peer-review › Journal article – Annual report year: 2009

ICAS-PAT: A new software tool for systematic design/validation of process monitoring and analysis systems (PAT systems)
Singh, R., Gernaey, K. & Gani, R. 2009
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Improving the Morris method for sensitivity analysis by scaling the elementary effects
Sin, G. & Gernaey, K. 2009
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Improving the Morris method for sensitivity analysis by scaling the elementary effects
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Including the effects of filamentous bulking sludge during the simulation of wastewater treatment plants using a risk assessment model
Research output: Research - peer-review › Journal article – Annual report year: 2009
Inhibition and toxicity modelling within the long-term control benchmark model (BSM1_LT) framework  
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Introducing mechanistic models in Process Analytical Technology education  
Gernaey, K., Woodley, J. & Sin, G. 2009 In : Biotechnology Journal. 4, 5, p. 593-598  
Research output: Research - peer-review › Journal article – Annual report year: 2009

Lægemiddelproduktion - brugen af modellering og PAT  
Research output: Communication › Journal article – Annual report year: 2009

Mechanism of water transport in meat during the roasting process  
Research output: Research › Article in proceedings – Annual report year: 2009

Mechanistic models and advanced model analysis within a PAT framework  
Gernaey, K., Woodley, J., Eliasson Lantz, A. & Sin, G. 2009  
Research output: Research - peer-review › Poster – Annual report year: 2009

Model-based Computer Aided Framework for Design of Process Monitoring and Analysis Systems  
Research output: Research - peer-review › Journal article – Annual report year: 2009

Modelling of an industrial enzyme fermentation by mass transfer estimation  
Albæk, M. O., Gernaey, K. & Stocks, S. M. 2009  
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Model of heat and mass transfer with moving boundary during roasting of meat in convection-oven  
Feyissa, A. H., Adler-Nissen, J. & Gernaey, K. 2009  
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Model of Heat and Mass Transfer with Moving Boundary During Roasting of Meat in Convection-Oven  
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Monitoring of S. coelicolor fermentations using in-situ NIR  
Research output: Research - peer-review › Poster – Annual report year: 2009

Moving From Batch towards Continuous Organic-Chemical Pharmaceutical Production  
Cervera Padrell, A. E., Skovby, T., Kill, S., Gani, R. & Gernaey, K. 2009  
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

On-line estimation of biomass, glucose and ethanol in Saccharomyces cerevisiae cultivations using in-situ multi-wavelength fluorescence and software sensors  
Research output: Research - peer-review › Journal article – Annual report year: 2009

Process design and development issues for pharmaceutical processes  
Gernaey, K. & Woodley, J. 2009  
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009
Bioprocess Synthesis, Design and Analysis through a Group-Contribution Approach

CAPE methods and tools for systematic analysis of new chemical product design and development

Classification and Diagnostic Output Prediction of Cancer Using Gene Expression Profiling and Supervised Machine Learning Algorithms
Yoo, C. & Gernaey, K. 2008 In : Journal of Chemical Engineering of Japan. 41, 9, p. 898-914

Development of continuous culture microbioreactors

Evaluating prediction uncertainty of fermentation models
Sin, G., Eliasson Lantz, A. & Gernaey, K. 2008

Gassed and ungassed power draw in a pilot scale 550 litre fermentor retrofitted with up-pumping hydrofoil B2 impellers in media of different viscosity and with very high power draw
Albæk, M. O., Gernaey, K. & Stocks, S. 2008 In : Chemical Engineering Science. 63, 24, p. 5813-5820

Matrix Notation for Efficient Development of First-Principles Models Within PAT Applications: Integrated Modeling of Antibiotic Production With Streptomyces coelicolor

Mechanistic models for evaluation of alternative fermentation control strategies within a PAT framework

Mixing by rotary jet heads: Indications of the benefits of head rotation under turbulent and transitional flow conditions

Modelling nitrite in wastewater treatment systems: A discussion of different modelling concepts

Multi-criteria evaluation of wastewater treatment plant control strategies under uncertainty

Multivariate models for prediction of rheological characteristics of filamentous fermentation broth from the size distribution
Petersen, N., Stocks, S. & Gernaey, K. 2008 In : Biotechnology and Bioengineering (Print). 100, 1, p. 61-71
Off-line design of PAT systems for on-line applications
Singh, R., Gernaey, K. & Gani, R. 2008
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008

Off-line design of PAT systems for on-line applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Practical identifiability of complex fermentation models: a systematic approach
Sin, G. & Gernaey, K. 2008
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008

Risk assessment modelling of microbiology-related solids separation problems in activated sludge systems
Comas, J., Rodríguez-Roda, I., Gernaey, K., Rosen, C., Jeppsson, U. & Poch, M. 2008 In : Environmental Modelling &
Software. 23, p. 1250-1261
Research output: Research - peer-review › Journal article – Annual report year: 2008

Scale-up of biocatalytic processes
Woodley, J. & Gernaey, K. 2008
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008

Sensitivity analysis of the Benchmark Simulation Model no 1
Pons, M-N., Jeppsson, U., Flores Alsina, X., Benedetti, L., Laurencio da Silva, M., Nopens, I., Alex, J., Copp, J. B.,
Gernaey, K., Rosen, C., Steyer, J-P. & Vanrolleghem, P. 2008 Computer Aided Chemical Engineering, on CD. Elsevier
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Special issue - ECCE-6
Gernaey, K. 2008 In : Food and Bioproducts Processing. 86, 2, p. 77-78
Research output: Research - peer-review › Editorial – Annual report year: 2008

Udvikling af mikrobioreaktorer til kontinuerlig kultuvering af gær
Schäpper, D., Gernaey, K., Eliasson Lantz, A. & Stocks, S. 2008 In : Dansk Kemi. 89, 4, p. 16-19
Research output: Communication › Journal article – Annual report year: 2008

Uncertainty analysis in WWTP model applications: a critical discussion of issues using a design example
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008

Uncertainty and sensitivity analysis of control strategies using the benchmark simulation model no 1 (BSM1)
Flores Alsina, X., Sin, G., Rodriguez-Roda, I. & Gernaey, K. 2008 Proceedings of the iEMSs Fourth Biennial Meeting:
International Congress on Environmental Modelling and Software (iEMSs 2008). Sánchez-Marrè, M., Béjar, J., Comas, J.,
Rizzoli, A. E. & Guariso, G. (eds.). Universitat Politècnica de Catalunya, p. 1331-1338
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Wastewater Treatment Models
Ecological Models, p. 3705-3718
Research output: Research - peer-review › Book chapter – Annual report year: 2008

A hybrid modelling approach in the simulation of integrated urban wastewater systems
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007
Application of Multivariable Statistical Techniques in Plant-wide WWTP Control Strategies Analysis
Research output: Research › Conference article – Annual report year: 2007

Application of Multivariable Statistical Techniques in Plant-wide WWTP Control Strategies Analysis
Flores Alsina, X., Comas, J., Rodríguez-Roda, I., Jiménez, L. & Gernaey, K. 2007 In : Water Science and Technology. 56 , 6, p. 75-83
Research output: Research - peer-review › Journal article – Annual report year: 2007

Artificial neural networks for rapid WWTP performance evaluation: Methodology and case study
Research output: Research - peer-review › Journal article – Annual report year: 2007

Benchmark simulation model no 2: general protocol and exploratory case studies
Research output: Research - peer-review › Journal article – Annual report year: 2007

BSM1 versus BSM1_LT: Is the Control Strategy Performance Ranking Maintained?
Research output: Research › Conference article – Annual report year: 2007

Chemometric modeling of filamentous broth rheology using size distributions from industrial fermentations
Petersen, N., Stocks, S. & Gernaey, K. 2007
Research output: Research › Conference abstract for conference – Annual report year: 2007

Design of Process Monitoring and Analysis Systems
Research output: Research › Sound/Visual production (digital) – Annual report year: 2007

Design of Process Monitoring and Analysis Systems, using a Model-based Computer Aided Framework
Research output: Research › Article in proceedings – Annual report year: 2007

Design of Process Monitoring and Analysis Systems, using a Model-based Computer Aided Framework
Research output: Research › Sound/Visual production (digital) – Annual report year: 2007

Development of continuous culture microbioreactors
Research output: Research › Sound/Visual production (digital) – Annual report year: 2007

Development of continuous culture microbioreactors
Research output: Research - peer-review › Poster – Annual report year: 2007

Mikrosystemer giver fuld kontrol over laboratoriearbejdet
Research output: Communication › Journal article – Annual report year: 2007
Model-based Computer Aided Framework for Design of Process Monitoring and Analysis Systems
Research output: Research › Conference abstract for conference – Annual report year: 2007

Model-based generation of continuous influent data from daily mean measurements available at industrial scale
Research output: Research › Conference abstract for conference – Annual report year: 2007

Modelling van rioolwaterzuiveringsinstallaties
Gernaey, K. & Sin, G. 2007 In : Afvalwaterwetenschap. 6, 4, p. 224-233
Research output: Communication › Journal article – Annual report year: 2007

On-line estimation and detection of abnormal substrate concentrations in WWTPs using a software sensor: A benchmark study
Research output: Research › Peer-review › Journal article – Annual report year: 2007

On-line monitoring of fermentation processes using multi-wavelength fluorescence
Research output: Research › Peer-review › Conference abstract in journal – Annual report year: 2007

On-Line Monitoring of Fermentation Processes Using Multi-Wavelength Fluorescence
Research output: Research › Peer-review › Poster – Annual report year: 2007

Supporting Tools for Design and Validation of Process Analytical Technology System
Research output: Research › Peer-review › Poster – Annual report year: 2007

Uncertainty Analysis during the Multi-criteria Evaluation of Wastewater Treatment Plant Design Alternatives
Flores Alsina, X., Comas, J., Poch, M., Rodríguez-Roda, I., Bañeres-Alcántara, R. & Gernaey, K. 2007
Research output: Research › Sound/Visual production (digital) – Annual report year: 2007

Benchmark Simulation Model No 2 in Matlab-Simulink: Towards plant-wide WWTP control strategy evaluation
Research output: Research › Peer-review › Journal article – Annual report year: 2006

Efficient modelling necessitates standards for model documentation and exchange
Research output: Research › Peer-review › Journal article – Annual report year: 2006

Impact of reactive settler models on simulated WWTP performance
Gernaey, K., Jeppsson, U., Batstone, D. J. & Ingildsen, P. 2006 In : Water Science and Technology. 53, 1, p. 159-167
Research output: Research › Peer-review › Conference article – Annual report year: 2006

Implementing ADM1 for plant-wide benchmark simulations in Matlab/Simulink
Research output: Research › Peer-review › Journal article – Annual report year: 2006

Online monitoring and modeling of Streptomyces coelicolor cultivations
Research output: Research › Poster – Annual report year: 2006
Application of recursive principal component analysis to a continuous biological phosphorous removal process
Research output: Research › Sound/Visual production (digital) – Annual report year: 2004

Conservation principles suspended solids distribution modelling to support ATS introduction on a recirculating WWTP
Research output: Research - peer-review › Journal article – Annual report year: 2004

Conservation Principles Suspended Solids Distribution Modelling to Support ATS Introduction on a Recirculating WWTP
Research output: Research - peer-review › Article in proceedings – Annual report year: 2004

Efficient modeling necessitates standards for model documentation and exchange
Research output: Research - peer-review › Article in proceedings – Annual report year: 2004

Impact of reactive settler models on simulated WWTP performance
Research output: Research - peer-review › Article in proceedings – Annual report year: 2004

Instrumentation and control in anaerobic digestion
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2004

Instrumentation and Control in Anaerobic Digestion
Batstone, D. J., Gernaey, K. & Steyer, J-P. 2004
Research output: Research › Sound/Visual production (digital) – Annual report year: 2004

SMAC – SMArt Control of wastewater system, Deliverable 12:External WWTP flow rate control functions, Algorithm, Design
Gernaey, K. V. B. & Nielsen, M. K. 2004
Research output: Research - peer-review › Report – Annual report year: 2004

SMAC – SMArt Control of wastewater system, Deliverable 1: Generic wastewater system configuration
Gernaey, K. V. B. & Nielsen, M. K. 2004
Research output: Research › Report – Annual report year: 2004

SMAC – SMArt Control of wastewater system, Deliverable 2: Working Report on Data Acquisition and Processing
Gernaey, K. V. B. & Nielsen, M. K. 2004
Research output: Research - peer-review › Report – Annual report year: 2004

SMAC – SMArt Control of wastewater system, Deliverable 3: Specification of Wastewater System Goals
Gernaey, K. V. B. & Nielsen, M. K. 2004
Research output: Research - peer-review › Report – Annual report year: 2004

SMAC – SMArt Control of wastewater system, Deliverable 5: Definition of System Performance Assessment Criteria, and Selection of Models for Monitoring and Control
Gernaey, K. V. B. & Nielsen, M. K. 2004
Research output: Research - peer-review › Report – Annual report year: 2004
Towards a benchmark simulation model for plant-wide control strategy performance evaluation of WWTPs
Research output: Research - peer-review › Article in proceedings – Annual report year: 2004

Transient Response of Aerobic and Anoxic Activated Sludge Activities to Sudden Substrate Concentration Changes
Sin, G., Vanrolleghem, P. A. & Gernaey, K. 2004 In : Biotechnology and Bioengineering. 86, 3, p. 277-290
Research output: Research - peer-review › Journal article – Annual report year: 2004

Understanding control mechanisms in microorganisms: representation of regulatory networks
Research output: Research › Sound/Visual production (digital) – Annual report year: 2004

A Combined N and P Removal Wastewater Treatment Plant Simulation Benchmark for Control Strategy Evaluation
Research output: Research › Sound/Visual production (digital) – Annual report year: 2003

A Comprehensive Model Calibration Procedure for Activated Sludge Models
Research output: Research › Article in proceedings – Annual report year: 2003

Application of Recursive Principal Component Analysis to a Continuous Biological Phosphorus Removal Process
Research output: Research › Article in proceedings – Annual report year: 2004

Effective Integration of Data from Practice and Theory for Efficient Effluent Quality Control
Nielsen, M. K., Thornberg, D. & Gernaey, K. 2003
Research output: Research › Sound/Visual production (digital) – Annual report year: 2003

Influence of Sedimentation Tank Model Assumptions on Bio-P Model Performance
Research output: Research › Article in proceedings – Annual report year: 2003

Reconsidering Wastewater Treatment Plant Model Assumptions for Simulating Full-Scale Plant Control
Research output: Research › Sound/Visual production (digital) – Annual report year: 2003

Anoxic Activated Sludge Monitoring with Combined Nitrate and Titrimetric Measurements
Research output: Research - peer-review › Journal article – Annual report year: 2002

A Simplified Method to Assess Structurally Identifiable Parameters in Monod-base Activated Sludge Models
Research output: Research - peer-review › Journal article – Annual report year: 2002

Computer Aided Model Analysis and Dynamic Simulation of Wastewater Treatment Plant
Mussati, M., Gernaey, K., Gani, R. & Jørgensen, S. B. 2002 In : Clean Technologies & Environmental Policies. 4, 0, p. 100-114
Research output: Research - peer-review › Journal article – Annual report year: 2002
Control Strategy Evaluation for Combined N and P Removal Using A Benchmark Wastewater Treatment Plant
Research output: Research › Article in proceedings – Annual report year: 2002

Evaluation of an ASM1 Model Calibration Procedure on a Municipal-Industrial Wastewater Treatment Plant
Petersen, B., Gernaey, K., Henze, M. & Vanrolleghem, P. A. 2002 In : Journal of Hydroinformatics. 4, 0, p. 15-38
Research output: Research › peer-review › Journal article – Annual report year: 2002

Modeling Aerobic Carbon Source Degradation Processes using Titrimetric Data and Combined Respirometric-Titrimetric Data: Experimental Data and Model Structure
Gernaey, K., Petersen, B., Nopens, I., Comeau, Y. & Vanrolleghem, P. A. 2002 In : Biotechnology and Bioengineering. 79, 7, p. 741-753
Research output: Research › peer-review › Journal article – Annual report year: 2002

Modeling Aerobic Carbon Source Degradation Processes using Titrimetric Data and Combined Respirometric-Titrimetric Data: Structural and Practical Identifiability
Gernaey, K., Petersen, B., Dochain, D. & Vanrolleghem, P. A. 2002 In : Biotechnology and Bioengineering. 79, 7, p. 754-767
Research output: Research › peer-review › Journal article – Annual report year: 2002

Multivariable Control to Optimize Biological Phosphorous Removal on Wastewater Treatment Plants
Gernaey, K., Mussati, M. & Jørgensen, S. B. 2002
Research output: Research › Sound/Visual production (digital) – Annual report year: 2002

Multivariable Control to Optimize Phosphorus Removal on Biological Wastewater Treatment Plants
Research output: Research › Sound/Visual production (digital) – Annual report year: 2002

Performance Analysis of Denitrifying Wastewater Treatment Plants
Mussati, M., Gernaey, K., Gani, R. & Jørgensen, S. B. 2002 In : Clean Technologies & Environmental Policies. 4, 0, p. 171-182
Research output: Research - peer-review › Journal article – Annual report year: 2002

The SMAC An integrated approach to control of wastewater systems
Research output: Research › Sound/Visual production (digital) – Annual report year: 2002

Simulation and Optimization of a Pre-denitrification Plant for Biological Nitrogen Removal
Research output: Research - peer-review › Paper – Annual report year: 2001

Projects:

Novel strategies for control and monitoring of bio-processes using advanced image-analysis
Nielsen, R. F., Gernaey, K. V. & Mansouri, S. S.
Samfinansierede - Virksomhed
01/09/2018 → 31/08/2021
Project: PhD

Developing Novel Systematic Strategies for Downstream Bioprocess Design
Mancini, E., Pinelo, M., Gernaey, K. V. & Mansouri, S. S.
Samfinansieret - Andet
01/06/2018 → 31/05/2021
Project: PhD
Optimization of industrial anaerobic pre-treatment processes
Samfinansieret - Andet
01/02/2018 → 31/01/2021
Project: PhD

Ecological Control Strategies for Biobutanol Production
Pinto, T. N. B. C., Gernaey, K. V., Flores-Alsina, X., Junicke, H. & Eliasson Lantz, A.
Forskningsrådsfinansiering
01/01/2018 → 31/12/2020
Project: PhD

Development and Application of Novel Free-floating Sensor Device for Bioprocess Optimization
Bisgaard, J., Gernaey, K. V., Huusom, J. K., Skyggebjerg, O. & Skyggebjerg, O.
Industrial PhD
01/09/2017 → 31/08/2020
Project: PhD

ModLife: Advancing Modelling for Process-Product Innovation, Optimization, Monitoring and Control in Life Science Industries
01/11/2015 → 31/10/2019
Project: Research

Sustainable Process Synthesis and Design
Al, R., Sin, G., Gernaey, K. V. & Zubov, A.
Marie Curie (EU-stipendium)
01/05/2017 → 30/04/2020
Project: PhD

Physiological characterization of the impact of gradients on fermentation processes
Nadal Rey, G., Gernaey, K. V., Cornelissen, S. & Eliasson Lantz, A.
Samfinansieret - Andet
01/03/2017 → 29/02/2020
Project: PhD

Conceptual design of yeast propagation strategies for improved bioethanol production
Lopez, P. C., Gernaey, K. V. & Junicke, H.
Samfinansieret - Andet
01/01/2017 → 31/12/2019
Project: PhD

Advanced Modelling, Simulation and Optimization for in Silico Process Design
Öner, M., Sin, G., Abildskov, J., Gernaey, K. V., Shibabaw Molla, G., Stocks, S. M. & Freitag, M. F.
Samfinansieret - Andet
01/01/2017 → 31/12/2019
Project: PhD

Development of a Raman spectroscopy based control system for the U-Loop fermentor
Petersen, L. A. H., Gernaey, K. V., Christensen, I. & Eliasson Lantz, A.
Industrial PhD
15/10/2016 → 14/10/2019
Project: PhD
A Decision Support Tool for Screening Novel WWT Processes
Behera, C. R., Sin, G. & Gernaey, K. V.
Forskningsrådsfinansiering
15/08/2016 → 14/08/2019
Project: PhD

Produktion af lægemidler
Christensen, H., Kill, S., Dam-Johansen, K., Nielsen, O., Gernaey, K. V., Buchwald, S. L. & Dancer, R. J.
1/3 DTU-stip, 2/3 FUR/andet
01/09/2004 → 25/02/2008
Project: PhD

Undersøgelse af effekten af alternative enzymproduktionsteknologier
Albæk, M. O., Gernaey, K. V., Hansen, M. S., Stocks, S. M., Villadsen, J., Græn, S. & Lübbert, A.
ErhvervsPhD-ordningen VTU
01/04/2009 → 27/06/2012
Project: PhD

A Decision Support Tool for Screening Novel WWT Processes
Behera, C. R., Sin, G. & Gernaey, K. V.
Forskningsrådsfinansiering
15/08/2016 → 14/08/2019
Project: PhD

In-silico Process Design and Evaluation Tool for Pharmaceutical Manufacturing
do Carmo Montes, F. D. C., Sin, G. & Gernaey, K. V.
Marie Curie (EU-stipendium)
15/04/2016 → 14/04/2019
Project: PhD

Design and optimization of selected oleochemical processes
Jones, M. N., Sin, G., Gernaey, K. V. & Sarup, B.
Ansat eksternt
15/04/2016 → 14/04/2019
Project: PhD

Autosamling and monitoring of bioprocesses
Pontius, K., Gernaey, K. V., Junicke, H. & Hundebøl, I.
Samfinansieret - Andet
01/12/2015 → 07/04/2019
Project: PhD

Development of Strategies for More Efficient CIP Cleaning
Yang, J., Krühne, U. & Gernaey, K. V.
Samfinansieret - Andet
01/12/2015 → 30/11/2018
Project: PhD

Engineered yeast strains for the production of bulk chemicals from algal biomass
Porcayo Loza, J., Mortensen, U. H. & Gernaey, K. V.
Stipendie fra udlandet
15/10/2015 → 16/04/2019
Project: PhD

Consistent Scale-up of the Freeze-drying Process
Eksternt EU-finansieret
Bioprocess risk assessment using a mechanistic modelling framework
Marie Curie (EU-stipendium)
01/08/2015 → 31/07/2018
Project: PhD

Automating Experimentation in miniaturized reactors
Marie Curie (EU-stipendium)
15/08/2015 → 14/10/2018
Project: PhD

Genome-Scale Modeling of Protein Biosynthesis in Methylo trophic Bacteria involved in Animal Feed Production from Natural Gas
Lieven, C., Sonnenschein, N., Gernaey, K. V., Herrgard, M., Workman, C., König, M., Rotaru, A. & König, M.
Samfinansieret - Andet
01/03/2015 → 28/02/2018
Project: PhD

The implementation of anammox in a full-scale industrial waste-water treatment plant
Samfinansierede - Virksomhed
01/04/2015 → 31/07/2018
Project: PhD

Modeling of gradients in large scale bioreactors
Samfinansierede - Virksomhed
01/03/2015 → 20/06/2018
Project: PhD

Characterization of Microbial consortia for keratin degradation processes
Samfinansieret - Andet
01/10/2014 → 30/04/2018
Project: PhD

Computer-aided Mixture and Blend Design
Cignitti, S., Woodley, J., Abildskov, J., Gernaey, K. V., Kontogeorgis, G., Camarda, K. V. & Kate, A. J. B. T.
Forskningsrådssponsorering
15/09/2014 → 24/01/2018
Project: PhD

Continuous crystallization and filtration of Ective Pharmaceutical Ingredients and Intermediates for pharmaceutical production
Capellades Mendez, G., Kiil, S., Christensen, T. V., Dam-Johansen, K., Mealy, M. J., Gernaey, K. V., Glennon, B. & Lopez de Diego, H.
Samfinansierede - Virksomhed
15/09/2014 → 24/11/2017
Project: PhD

Model-based interpretation of microbioreactor data
Marie Curie (EU-stipendium)  
15/08/2014 → 30/09/2018  
Project: PhD

**Micro Scale Reactor System development with integrated advanced sensor technology**  
Marie Curie (EU-stipendium)  
01/07/2014 → 24/01/2018  
Project: PhD

**Conflict-based Method for Economical, Subsustainable, Safe and Environmentally Clean Process (Retrofit) Design and Operation**  
Davidescu, F. P., Jørgensen, S. B., Madsen, H., Gernaey, K. V., Kristensen, N. R. & Marquardt, W.  
Offentlig finansiering  
01/02/2004 → 25/09/2008  
Project: PhD

**Exploring biochemical process performance limits through topology optimization**  
Grundforskningsfonden  
01/12/2012 → 16/06/2016  
Project: PhD

**All-fiber Raman Probe**  
Brunetti, A. C., Rottwitt, K., Gernaey, K. V., Tidemand-Lichtenberg, P., Brambilla, G. & De Matos, C. J. S.  
Forskningsrådets finansiering  
01/05/2009 → 22/11/2012  
Project: PhD

**Modelling of Enzymatic Hydrolysis of Lignocellulosic Material**  
DTU, Samfinansiering  
01/01/2004 → 26/10/2007  
Project: PhD

**Modelling for Monitoring, Control and Optimization of Fed-Batch**  
Rasmussen, J. K., Jørgensen, S. B., Jørgensen, H. S., Madsen, H., Gernaey, K. V., Lei, F. & Lübbert, A.  
DTU, Samfinansiering  
01/09/2003 → 02/06/2008  
Project: PhD

**Novel Modelling Concepts for Description of Processes in Living Cells - Moving Towards Systems Biology**  
Grotkjær, T., Nielsen, J., Villadsen, J., Akesson, M. F., Gernaey, K. V., Hatizimanikatis, V. & Stephanopoulos, G.  
DTU, Samfinansiering  
01/03/2002 → 30/09/2005  
Project: PhD

**Design of continuous reactor systems for API production**  
Pedersen, M. J., Dam-Johansen, K., Kiil, S., Skovby, T., Gernaey, K. V., Kappe, O. & Petersen, H.  
ErhvervsPhD-ordningen VTU  
01/08/2011 → 17/12/2014  
Project: PhD

**Optimizing control of the integrated urban wastewater system**  
ErhvervsPhD-ordningen VTU  
01/08/2011 → 10/11/2015
Control of Process Operations and Monitoring of Product Qualities through Hybrid Multi-Scale Model-Based Analysis
Stipendie fra udlandet
01/01/2009 → 21/11/2012
Project: PhD

Continuous Membrane Microbioreactors for Development of Integrated Pectin Modification and Separation Processes
Stipendie fra udlandet
01/07/2007 → 09/02/2011
Project: PhD

Integration of Modelling, Design and Control for Efficient Operation of Chemical Processes
Stipendie fra udlandet
01/07/2007 → 13/04/2011
Project: PhD

Development of Optimal Operating Conditions for Producing Single Cell Protein
Wu, M., Gernaey, K. V., Huusom, J. K. & Krühne, U.
Forskningsrådsfinansiering
15/12/2014 → 15/09/2018
Project: PhD

Continuous Culture Microbioreactors
DTU, Samfinansiering
01/05/2006 → 29/09/2010
Project: PhD

Computer-Aided Multiscale Modelling for Chemical Product-Process Design
Morales Rodriguez, R., Gani, R., Gernaey, K. V., Cisneros, E. S. P. & Harper, P. M.
DTU-lønnet stipendie
01/02/2006 → 26/08/2009
Project: PhD

Upscaling of Particulate Processes in Fluidised Beds
1/3 DTU-stip, 2/3 FUR/andet
01/09/2005 → 30/01/2009
Project: PhD

Bridging Flows: Microfluidic End-User Solutions
Sabourin, D., Dufva, M., Snakenborg, D., Gernaey, K. V., Thomsen, P. T. & Verpoorte, E. M. J.
DTU-lønnet stipendie
01/05/2007 → 22/09/2010
Project: PhD

Physiological Characterization of Trichoderma
DTU, Samfinansiering
01/09/2007 → 09/02/2011
Project: PhD
Model-Based Computer Aided Framework for Design of Process Monitoring and Analysis Systems
DTU-lønnet stipendie
Project: PhD

Multi-enzyme process modelling
Andrade Santacoloma, P. D. G., Woodley, J., Gernaey, K. V., Sin, G., Jørgensen, S. B., Pedersen, S. & Vasic-Racki, D.
Institut stipendie (DTU) Samf.
01/11/2008 → 27/06/2012
Project: PhD

Moving from batch towards continuous organic-chemical pharmaceutical production
Institut stipendie (DTU)
01/08/2008 → 08/02/2012
Project: PhD

Novel Analytical Technologies
Baum, A., Mikkelson, J. D., Hansen, P. W., Gernaey, K. V., Berg, M. A. V. D., van den Berg, F. W. & van den Berg, F. W.
J. Eksternt EU-finansieret
01/06/2010 → 30/09/2013
Project: PhD

Systematic methodology for design of emulsion based chemical products
Mattei, M., Gani, R., Kontogeorgis, G., Gernaey, K. V., Kate, A. J. B. T. & Wiebe, L.
Institut stipendie (DTU) Samf.
01/08/2011 → 30/09/2014
Project: PhD

Systematic Methods and Tools for Computer Aided Modeling
Anden EU-finansiering
01/04/2012 → 02/09/2015
Project: PhD

Membrane Assisted Enzyme Fractionation
DTU, Samfinansiering
15/03/2008 → 08/02/2012
Project: PhD

Linking strain morphology to rheology and mass transfer as a means to improve fermentation processes
Samfinansieret - Andet
01/11/2013 → 17/05/2017
Project: PhD

Systematic Modelling, Simulation and Design of Intensified Bio-Chemical Processes
Roman Martinez, A., Gani, R., Woodley, J., Gernaey, K. V., Sales Cruz, A. M. & Wiebe, L.
Stipendie fra udlandet
01/08/2008 → 29/11/2011
Project: PhD

Sustainable design of biorefinery systems for biorenewables
Marie Curie (EU-stipendium)
15/11/2013 → 25/08/2017
Project: PhD

Synthesis and Evaluation of Structures Lipids based Polyurethanes for Sensors, Actuators and Generators trough Monte Carlo Simulation
Stipendie fra udlandet
15/01/2013 → 26/05/2016
Project: PhD

Tailor-made design of chemical products: Bio-fuels and other blended products
Yunus, N. A. B., Gani, R., Gernaey, K. V., Woodley, J., Sin, G., Harper, P. M. & Kate, A. J. B. T.
Stipendie fra udlandet
15/07/2010 → 07/05/2014
Project: PhD

Scale-up of biocatalytic cascade reactions for the synthesis of chiral amines
Janes, K., Gernaey, K. V., Tufvesson, P., Woodley, J., Krühne, U., Pedersen, L. H. & Vasic-Racki, D.
Institut stipendie (DTU) Samf.
01/12/2010 → 24/09/2014
Project: PhD

Operational aspects of continuous pharmaceutical production
1/3 DTU-stip, 2/3 FUR/andet
15/11/2010 → 02/07/2014
Project: PhD

Integrated framework for synthesis and design of multi-product biorefinery networks
Cheali, P., Sin, G., Gernaey, K. V., Huusom, J. K., Mogensen, J. & Zondervan, E.
Institut stipendie (DTU) Samf.
01/05/2012 → 01/07/2015
Project: PhD

Experimental Implementation and model-based optimization for multi-enzyme processes
Abu, R., Woodley, J., Gernaey, K. V., Nordblad, M., Blazevic, Z. F. & Riva, S.
Stipendie fra udlandet
01/10/2013 → 15/03/2017
Project: PhD

Measurement and Chemometric Modelling of streptomyces Cultivations
Forskningsrådskostnader
01/03/2006 → 15/04/2010
Project: PhD

Population heterogeneity of yeast cultivations
Heins, A., Eliasson Lantz, A., Carlqvist, M., Gernaey, K. V., Workman, M., Bagge, N. & Neubauer, P.
Forskningsrådskostnader
01/01/2011 → 30/09/2014
Project: PhD

Mastering bioprocess Integration and Intensification across scales
1/3 FUU, 1/3 inst 1/3 Andet
01/10/2012 → 02/12/2015
Project: PhD
Process intensification in biocatalytic reactions
1/3 FUU, 1/3 inst 1/3 Andet
01/09/2012 → 22/02/2016
Project: PhD

Multi-dimensional population balance models of crystallization processes
Institut stipendie (DTU) Samf.
01/03/2011 → 04/02/2015
Project: PhD

Green Chemistry based innovative process-operation synthesis and design
Institut stipendie (DTU) Samf.
01/12/2008 → 18/04/2012
Project: PhD

Computer-aided modelling for efficient and innovative product-process engineering
Heitzig, M., Gani, R., Glarborg, P., Sin, G., Gernaey, K. V., Piccione, P. M. & Pistikopoulos, S.
Institut stipendie (DTU)
01/12/2008 → 18/04/2012
Project: PhD

Topology optimisation in biocatalytic reactions using miniaturized reactors
Pereira Rosinha Grundtvig, I., Krühne, U., Gernaey, K. V., Woodley, J., Abildskov, J., Maier, P., Perozziello, G. & Maier, P.
1/3 FUU, 1/3 inst 1/3 Andet
01/11/2012 → 20/04/2016
Project: PhD

Validation of Structures Model for Autotrophic Nitrogen Removal in High Strength Wastewater
1/3 FUU, 1/3 inst 1/3 Andet
01/09/2010 → 12/11/2013
Project: PhD

Plantwide modelling and control for N2O emissions fro WWTP
Samfinansierer - Andet
01/10/2013 → 14/12/2016
Project: PhD

Monitoring Continuous fermentation processes in microbioreactors
Offentlig finansiering
01/03/2010 → 14/03/2018
Project: PhD

Guiding biocatalytic process improvements using engineering evaluation tools
Marie Curie (EU-stipendium)
01/03/2010 → 24/06/2013
Project: PhD

Control of Enzymatic Biodiesel Production
Population balance models and computational fluid dynamics: a model framework to describe heterogeneity in fermentors
01/11/2009 → 19/03/2013
Project: PhD

Monitoring and Control of Fermentation Processes using In-Situ Microscopy and On-Line Multi-Wavelength Fluorescence in Combination
1/3 FUU, 1/3 inst 1/3 Andet
01/11/2001 → 06/03/2006
Project: PhD

Computer aided framework for synthesis, design and retrofit of water networks in processing industries
16/12/2011 → 13/05/2015
Project: PhD

Investigation of Aspergillus niger aggregation behaviour and its relationship to industrial fermentation
Hagemann, T., Gernaey, K. V., Krühne, U., Stocks, S. M. & Hansen, K.
15/11/2013 → 08/08/2018
Project: PhD

Process-Product Synthesis, Design and Analysis through the Group-Contribution Approach
01/04/2007 → 01/09/2010
Project: PhD

Robust Modelling of Mass and Heat Transfer in Food Processing
01/02/2008 → 22/06/2011
Project: PhD

Data-driven Modelling for Monitoring and Control of Streptomyces Cultivations
Petersen, N., Gernaey, K. V., Eliasson Lantz, A., Stocks, S. M., van den Berg, F. W., Glassey, J. & Haack, M. B.
01/10/2006 → 30/09/2010
Project: PhD

Integrated microfactories for enzyme production
Bodla, V. K., Gernaey, K. V., Krühne, U., Woodley, J., Nordblad, M., Baganz, F. & Bouwes, D.
01/03/2011 → 11/03/2015
Project: PhD

Establishment and calibration of consensus process models of N2O dynamics
Domingo-Felez, C., Smets, B. F., Plösz, B. G., Sin, G., Gernaey, K. V., Plaza, E., Sperandio, M., Plaza, E. & Sperandio, M.
15/12/2013 → 30/08/2017
Project: PhD

**Novel Strategies for Fermentation Control**
Samfinansierede - Virksomhed
01/12/2013 → 15/03/2017
Project: PhD

**Modelling and Simulation of Wastewater Treatment Plants**
Marie Curie (EU-stipendium)
01/05/2012 → 01/07/2015
Project: PhD

**reactor and process design for chem.-enzymatic synthesis of FDA**
Fu, W., Woodley, J., Riisager, A., Gernaey, K. V., Lye, G. J. & Wiebe, L.
DTU-lønnet stipendie
01/03/2008 → 18/04/2012
Project: PhD

**Separation of Chiral Active Pharmaceutical Ingredients: A First Step Towards Continuous Preferential Crystallization in the Pharmaceutical Industry**
Chaaban, J. H., Kiil, S., Dam-Johansen, K., Skovby, T., Gernaey, K. V., Christensen, T. V. & Kalman Nagy, Z.
1/3 DTU-stip, 2/3 FUR/andet
01/01/2010 → 24/06/2013
Project: PhD

**Polymer Dynamics in Microfluidic Devices**
Hansen, R., Hassager, O., Bruus, H., Callisen, T. H., Gernaey, K. V., Anna, S. L. & Olmsted, P. D.
Institut stipendie (DTU) Samf.
01/01/2009 → 18/04/2012
Project: PhD

**Engineered yeast strains for the production of bulk chemicals from algae biomass**
Fürster, J., Porcayo Loza, J. & Gernaey, K. V.
15/10/2015 → 14/10/2018
Project: Research

**μ factories: Novel greener and lean processes using integrated microfactories**
Krühne, U., Bodla, V. K. & Gernaey, K. V.
01/03/2011 → 28/02/2014
Project: Research

**Activities:**

**Control of Non-Key Compositional Bulges in Industrial Distillation Unit Operations**
Abeykoon Udugama, I. S. B. (Guest lecturer), Gernaey, K. V. (Guest lecturer), Michael A. Taube (Guest lecturer)
30 Oct 2018
Activity: Talks and presentations › Conference presentations

**6th International Conference on Population Balance Modeling**
Mansouri, S. S. (Organizer), Gernaey, K. V. (Organizer)
7 May 2018 → 9 May 2018
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
Model-based optimization of a full-scale industrial anaerobic reactor producing biogas
Feldman, H. (Speaker), Flores Alsina, X. (Other), Ramin, P. (Other), Kasper Kjellberg (Other), Ulf Jeppsson (Other), Gernaey, K. V. (Other)
10 Dec 2017 → 13 Dec 2017
Activity: Talks and presentations › Conference presentations

CFD application as a tool for designing industrial fermenters
Pereira Rosinha Grundtvig, I. (Speaker), Gernaey, K. V. (Other)
29 Oct 2017 → 1 Nov 2017
Activity: Talks and presentations › Conference presentations

Dynamics of physiological adaptation of Saccharomyces cerevisiae to biomass hydrolysates: a single cell analysis approach.
Lopez, P. C. (Other), Chuen Tao Peng (Other), Nils Arneborg (Other), Eliasson Lantz, A. (Other), Gernaey, K. V. (Other)
29 Oct 2017 → 2 Nov 2017
Activity: Talks and presentations › Conference presentations

Strategy for characterizing microbial physiology across scales in fermentation processes
Nadal Rey, G. (Other), Sjef Cornelissen (Other), Eliasson Lantz, A. (Other), Gernaey, K. V. (Other)
29 Oct 2017
Activity: Talks and presentations › Conference presentations

Calibration and Validation of an Anaerobic Digestion Model for Process Optimization of an Industrial Granular Sludge Reactor
Feldman, H. (Speaker), Flores Alsina, X. (Other), Ramin, P. (Other), Kasper Kjellberg (Other), Ulf Jeppsson (Guest lecturer), Batstone, D. J. (Guest lecturer), Gernaey, K. V. (Guest lecturer)
17 Oct 2017 → 20 Oct 2017
Activity: Talks and presentations › Conference presentations

Design of a gas-inducing impeller using Computational Fluid Dynamics
Pereira Rosinha Grundtvig, I. (Guest lecturer), Tim Hybschmann (Other), Gernaey, K. V. (Other), Tore C. Svendsen (Other), Krühne, U. (Other)
1 Oct 2017 → 5 Oct 2017
Activity: Talks and presentations › Conference presentations

Feasibility-test of a complete autotrophic nitrogen removal process treating the effluent of an industrial anaerobic digester
Feldman, H. (Other), Flores Alsina, X. (Other), Kasper Kjellberg (Other), Blum, J. (Other), Valverde Pérez, B. (Other), Sin, G. (Other), Smet, B. F. (Other), Gernaey, K. V. (Other)
9 May 2017 → 12 May 2017
Activity: Talks and presentations › Conference presentations

Modelling Methane, Sulphide and Multiple Mineral Precipitation in a Full-Scale Industrial Granular Anaerobic Digester
Feldman, H. (Other), Flores Alsina, X. (Other), Kasper Kjellberg (Other), Sin, G. (Other), Gernaey, K. V. (Other)
9 May 2017 → 12 May 2017
Activity: Talks and presentations › Conference presentations

Model Based Optimization of an Industrial Wastewater Treatment Plant Combining a Full-scale Granular Sludge Reactor and Autotrophic Nitrogen Removal
Feldman, H. (Other), Neda Faraghi Parapari (Other), Sille Bendix Larsen (Other), Kasper Kjellberg (Other), Flores Alsina, X. (Other), Sin, G. (Other), Ulf Jeppsson (Other), Gernaey, K. V. (Other)
Activity: Talks and presentations › Conference presentations

Design of future municipal wastewater treatment plants: A mathematical approach to manage complexity and identify optimal solutions
Gernaey, K. V. (Lecturer)
24 Apr 2013 → 26 Apr 2013
Activity: Talks and presentations › Conference presentations
Biorefinery Öresund Conference 'Biorefining from raw material to high value products'
Cheali, P. (Speaker), Gernaey, K. V. (Speaker), Sin, G. (Speaker)
1 May 2012 → 30 Apr 2015
Activity: Talks and presentations › Conference presentations

Recent Advances in Fermentation Technology
Gernaey, K. V. (Participant)
8 Nov 2009 → 11 Nov 2009
Activity: Attending an event › Participating in or organising a conference

Prizes:

Best Contributed Paper Award
Seyed Soheil Mansouri (Recipient), Simoneta Caño de Las Heras (Recipient), Helle Rootzén (Recipient), Charlotte Lærke Weitze (Recipient), Krist V. Gernaey (Recipient), Ulrich Krühne (Recipient) & Stefano Cignitti (Recipient), 5 Jul 2018
Prize: Prizes, scholarships, distinctions

Press clippings:

Modeling for production of bacterial cultures
Gürkan Sin & Krist V. Gernaey
02/11/2018
1 media contribution
Press/Media: Press / Media