Alex Toftgaard Nielsen - DTU Orbit (01/04/2019)

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Research Groups

Bacterial Cell Factory Optimization

Research outputs:

Extraction, enrichment, and in situ electrochemical detection on lab-on-a-disc; monitoring the production of a bacterial secondary metabolite
Research output: Research - peer-review › Journal article – Annual report year: 2019

Genome editing of lactic acid bacteria: opportunities for food, feed, pharma and biotech
Research output: Research - peer-review › Journal article – Annual report year: 2019

Simultaneous quantification of multiple bacterial metabolites using surface-enhanced Raman scattering
Research output: Research - peer-review › Journal article – Annual report year: 2019

A Capture-SELEX Strategy for Multiplexed Selection of RNA Aptamers Against Small Molecules
Research output: Research - peer-review › Book chapter – Annual report year: 2018

Bacterial cells with improved tolerance to diacids
Research output: Research › Patent – Annual report year: 2018

Bacterial Genome Editing Strategy for Control of Transcription and Protein Stability
Research output: Research - peer-review › Book chapter – Annual report year: 2018

Genome-wide identification of tolerance mechanisms towards p-coumaric acid in Pseudomonas putida
Research output: Research - peer-review › Journal article – Annual report year: 2018

Injection molded lab-on-a-disc platform for screening of genetically modified E. coli using liquid-liquid extraction and surface enhanced Raman scattering
Research output: Research - peer-review › Journal article – Annual report year: 2018

Methods for decoupling cell growth from production of biochemicals and recombinant polypeptides
Multiplex Genome Editing in Escherichia coli
Research output: Research - peer-review › Book chapter – Annual report year: 2018

Towards Improved Biophysical Calculations to Identify Disease-Causing Mutations
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2018

Bacterial cells with improved tolerance to isobutyric acid
Research output: Research › Patent – Annual report year: 2017

Improved biological processes for the production of aryl sulfates
Research output: Research › Patent – Annual report year: 2017

Improved process for producing a fermentation product from a lignocellulose-containing material
Research output: Research › Patent – Annual report year: 2017

Bacterial cells with improved tolerance to polyols
Research output: Research › Patent – Annual report year: 2017

Bacterial cells with improved tolerance to polyamines
Research output: Research › Patent – Annual report year: 2017

Application of the thermostable β-galactosidase, BgaB, from Geobacillus stearothermophilus as a versatile reporter under anaerobic and aerobic conditions: Alternative title; Application of the thermostable beta-galactosidase, BgaB, from Geobacillus stearothermophilus as a versatile reporter under anaerobic and aerobic conditions
Research output: Research - peer-review › Journal article – Annual report year: 2017

CRISPR/Cas9-based genome editing for simultaneous interference with gene expression and protein stability
Research output: Research - peer-review › Journal article – Annual report year: 2017

Detection of p-coumaric acid from cell supernatant using surface enhanced Raman scattering
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2017

Development and Application of Efficient Forward and Reverse Genetic Tools
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2017
Exploiting the potential of gas fermentation
Research output: Research - peer-review › Journal article – Annual report year: 2017

Genetic toolbox for controlled expression of functional proteins in Geobacillus spp.
Research output: Research - peer-review › Journal article – Annual report year: 2017

Increased production of L-serine in Escherichia coli through Adaptive Laboratory Evolution
Research output: Research - peer-review › Journal article – Annual report year: 2016

Lab-on-a-disc platform for screening of genetically modified E. coli cells via cell-free electrochemical detection of p-Coumaric acid
Research output: Research - peer-review › Journal article – Annual report year: 2017

Lactobacilli and pediococci as versatile cell factories - Evaluation of strain properties and genetic tools
Research output: Research - peer-review › Review – Annual report year: 2017

Quantification of a bacterial secondary metabolite by SERS combined with SLM extraction for bioprocess monitoring
Research output: Research - peer-review › Journal article – Annual report year: 2017

Surface Enhanced Raman Scattering for Quantification of p-Coumaric Acid Produced by Escherichia coli
Research output: Research - peer-review › Journal article – Annual report year: 2017

Thermodynamics and economic feasibility of acetone production from syngas using the thermophilic production host Moorella thermoacetica
Research output: Research - peer-review › Journal article – Annual report year: 2017

Using A Metabolic Model Of Acetobacterium woodii For Insights Into Its Utility For Biotechnological Purposes
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2017

Genetically modified microorganisms having improved tolerance towards L-serine.
Research output: Research › Patent – Annual report year: 2016

Method for the production of L-serine using genetically engineered microorganisms deficient in serine degradation pathways.
Research output: Research › Patent – Annual report year: 2016
A two-cassette reporter system for assessing target gene translation and target gene product inclusion body formation
Research output: Research › Patent – Annual report year: 2016

A process for producing a fermentation product from a lignocellulose-containing material.
Research output: Research › Patent – Annual report year: 2016

Biological processes for the production of aryl sulfates.
Research output: Research › Patent – Annual report year: 2016

Processes for the production of hydroxycinnamic acids using polypeptides having tyrosine ammonia lyase activity.
Research output: Research › Patent – Annual report year: 2016

Broad host range ProUSER vectors enable fast characterization of inducible promoters and optimization of p-coumaric acid production in Pseudomonas putida KT2440
Research output: Research - peer-review › Journal article – Annual report year: 2016

Consortia based production of biochemicals
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2016

CRMAGE: CRISPR Optimized MAGE Recombineering
Ronda, C., Pedersen, L. E., Sommer, M. O. A. & Nielsen, A. T. 2016 In : Scientific Reports. 6, 11 p., 19452
Research output: Research - peer-review › Journal article – Annual report year: 2016

Developing Lactic Acid Bacteria for the conversion of brown macroalgae into green chemicals and fuels
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Engineering of High Yield Production of L-serine in Escherichia coli
Mundhada, H., Schneider, K., Christensen, H. B. & Nielsen, A. T. 2016 In : Biotechnology and Bioengineering. 113, 4, p. 807-816
Research output: Research - peer-review › Journal article – Annual report year: 2016

Enhanced protein and biochemical production using CRISPRi-based growth switches
Research output: Research - peer-review › Journal article – Annual report year: 2016

Genome-wide Escherichia coli stress response and improved tolerance towards industrially relevant chemicals
Research output: Research - peer-review › Journal article – Annual report year: 2016
Increasing production yield of tyrosine and mevalonate through inhibition of biomass formation
Research output: Research - peer-review › Journal article – Annual report year: 2016

Lab-on-a-disc device for screening of genetically engineered E.coli cells
Research output: Research - peer-review › Poster – Annual report year: 2017

Moorella thermoacetica, a workhorse creating value from various gaseous substrates
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Predictable tuning of protein expression in bacteria
Research output: Research - peer-review › Journal article – Annual report year: 2016

Production of Sulfated Organic Compounds in Cell Factories
Research output: Research › Poster – Annual report year: 2016

Surface Enhanced Raman Spectroscopy detection of p-coumaric acid from cell supernatant using gold-capped silicon nanopillar substrates
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Surface Enhanced Raman Spectroscopy detection of p-coumaric acid from cell supernatant using gold-capped silicon nanopillar substrates
Research output: Research - peer-review › Poster – Annual report year: 2016

Thermophilic acetogens for the production of higher value compounds from (biomass derived) waste gas streams
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2016

The Ssr protein (T1E_1405) from Pseudomonas putida DOT-T1E enables oligonucleotide-based recombineering in platform strain P. putida EM42
Research output: Research - peer-review › Journal article – Annual report year: 2016

CasEMBLR: Cas9-Facilitated Multiloci Genomic Integration of In Vivo Assembled DNA Parts in Saccharomyces cerevisiae
Research output: Research - peer-review › Journal article – Annual report year: 2015

CrEdit: CRISPR mediated multi-loci gene integration in Saccharomyces cerevisiae
Research output: Research - peer-review › Journal article – Annual report year: 2015

Differential expression of small RNAs under chemical stress and fed-batch fermentation in E. coli
Research output: Research - peer-review › Journal article – Annual report year: 2015
Differential expression of small RNAs under chemical stress and fed-batch fermentation in _Escherichia coli_


Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Differential Expression Of Small Rnas Under Chemical Stress And Fed-batch Fermentation In _Escherichia Coli_


Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Editorial overview: Chemical biotechnology: Interdisciplinary concepts for modern biotechnological production of biochemicals and biofuels


Research output: Research - peer-review › Editorial – Annual report year: 2015

Highly Active and Specific Tyrosine Ammonia-Lyases from Diverse Origins Enable Enhanced Production of Aromatic Compounds in Bacteria and Saccharomyces cerevisiae


Research output: Research - peer-review › Journal article – Annual report year: 2015

Moorella Strains for the Production of Biochemicals from Syngas


Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Moorella Strains for the Production of Biochemicals from Syngas


Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Seven gene deletions in seven days: fast generation of _Escherichia coli_ strains tolerant to acetate and osmotic stress


Research output: Research - peer-review › Journal article – Annual report year: 2015

Accelerating Genome Editing in CHO Cells Using CRISPR Cas9 and CRISPy, a Web-Based Target Finding Tool


Research output: Research - peer-review › Journal article – Annual report year: 2014

Increased tolerance towards serine obtained by adaptive laboratory evolution


Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Trash to treasure: Production of biofuels and commodity chemicals via syngas fermenting microorganisms


Research output: Research - peer-review › Journal article – Annual report year: 2014

Comparative study on aptamers as recognition elements for antibiotics in a label-free all-polymer biosensor


Research output: Research - peer-review › Journal article – Annual report year: 2013

Characterization of a Feedback-Resistant Mevalonate Kinase from the Archaeon _Methanosarcina mazei_


Research output: Research - peer-review › Journal article – Annual report year: 2011
Distribution of bacterial growth activity in flow-chamber biofilms
Research output: Research - peer-review › Journal article – Annual report year: 1999

Identification of a novel group of bacteria in sludge from a deteriorated biological phosphorus removal reactor
Research output: Research - peer-review › Journal article – Annual report year: 1999

Molecular tools for study of biofilm physiology
Research output: Research - peer-review › Article in proceedings – Annual report year: 1999

Projects:

Application and optimization of genetic systems for two-stage fermentation technology
Rong, Y., Nielsen, A. T., Ingemann Jensen, S. & Woodley, J.
01/03/2019 → 28/02/2022
Project: PhD

Development of an innovative bioprocess for protease production in Bacillus subtilis by integrating cell factory optimization and bioreactor engineering
01/10/2018 → 30/09/2021
Project: PhD

Accessing the catalytic potential of the soil bacterium Pseudomonas putida through dedicated synthetic biology tools
Kozaeva, E., Nikel, P. I. & Nielsen, A. T.
Fonde
01/09/2018 → 31/08/2021
Project: PhD

Harnessing the Oxidative Power of Enzymes
Falkenberg, K. B., Nørholm, M. & Nielsen, A. T.
Samfinansierede - Virksomhed
01/04/2018 → 31/03/2021
Project: PhD

Inducible growth decoupling systems for improved production og biochemicals
Landberg, J. M., Nielsen, A. T. & Nørholm, M.
Fonde
01/09/2017 → 31/08/2020
Project: PhD

Synthetic Biology tool Development for Protein engineering and study of adaptive evolution in Bacteria
Lauritsen, I., Nørholm, M. & Nielsen, A. T.
Technical University of Denmark
01/11/2016 → 31/10/2019
Project: PhD

Engineering of Thermophilic bacteria for the production of industrially relevant chemicals
Pogrebnyakov, I., Nielsen, A. T., Sommer, M. O. A., Gram, L., Hreggvidsson, G. O. & van Kranenburg, R.
Marie Curie (EU-stipendium)
Synthetic biology solutions to phenotypic instability in cell factory engineering
Sarup-Lytzen, K., Sommer, M. O. A. & Nielsen, A. T.
Anden EU-finansiering
01/02/2016 → 07/02/2020
Project: PhD

Physiologisk karakterisering af mikrobielle overfladesamfund
Nielsen, A. T., Molin, S., Gram, L. & Nybroe, O.
DTU-Su Stipendium, Eksperiment
01/09/1997 → 23/05/2001
Project: PhD

Aptameric Biosensor Arrays for Metabolic Engineering
Lauridsen, L. H., Nielsen, A. T., Sommer, M. O. A., Nørholm, M., Gallivan, J. & Sloth Andersen, E.
Technical University of Denmark
01/12/2011 → 29/04/2015
Project: PhD

Decouple Growth from Central Metabolism in order to Control Growth during Production of Biochemicals
Li, S., Nielsen, A. T., Nørholm, M., Beck, Z. Q. & Rasmussen, M. D.
Marie Curie (EU-stipendium)
01/05/2013 → 01/09/2016
Project: PhD

Bioactive compounds in mixed marine bacterial communities
Giubergia, S., Gram, L., Nielsen, K. F., Nielsen, A. T., Niedermeyer, T. & Ingham, C. J.
Marie Curie (EU-stipendium)
01/05/2013 → 30/06/2016
Project: PhD

Standardization of DNA Vector Design-Processes
Marie Curie (EU-stipendium)
01/03/2013 → 21/04/2016
Project: PhD

Utilize Gasified Biomass and Waste Products (Synthesis Gas) for the Production of Biochemicals
Marie Curie (EU-stipendium)
01/05/2013 → 29/09/2016
Project: PhD

The structure, dynamics and complexity of the bacterial transcriptome
Marie Curie (EU-stipendium)
01/05/2013 → 30/06/2016
Project: PhD

Generate Prototype Expression Platforms for Membrane Integrated Enzymes in E. coli
Vazquez Albacete, D., Nørholm, M., Nielsen, A. T., Takos, A. & Drew, D.
Marie Curie (EU-stipendium)
01/09/2013 → 29/09/2016
Project: PhD
Biosensors for Fermentation
Marie Curie (EU-stipendium)
01/05/2013 → 21/06/2017
Project: PhD

Production of biochemicals using P.putida as a host
Calero Valdayo, P. M., Nielsen, A. T., Molin, S., Long, K., Tolker-Nielsen, T. & Ramos, J. L.
Marie Curie (EU-stipendium)
01/05/2013 → 30/06/2016
Project: PhD

Mining Bacteria Genomes for Novel Bioactive Compounds
Machado, H., Gram, L., Nielsen, A. T., Schramm, A. & Ziemert, N.
Marie Curie (EU-stipendium)
01/05/2013 → 29/09/2016
Project: PhD

Development of new metabolic engineering technologies for the production of biochemicals
Ronda, C., Nielsen, A. T., Molin, S., Förster, J., de Gier, J. & Ingmer, H.
Technical University of Denmark
01/06/2012 → 25/11/2015
Project: PhD

A riboswitch based method for in vivo selection of biocatalysts from large libraries
Genee, H. J., Sommer, M. O. A., Nielsen, A. T., Suess, B. & de Lorenzo, V.
Technical University of Denmark
01/07/2012 → 02/09/2015
Project: PhD

Microbial platform for expression of membrane integrated enzymes and sustainable production of high value chemicals
Technical University of Denmark
01/12/2012 → 27/01/2016
Project: PhD

Microbial electrosynthesis for acetate production from carbon dioxide: innovative biocatalysts leading to enhanced performance
Aryal, N., Zhang, T., Tremblay, P., Nielsen, A. T., Rotaru, A. & Aulenta, F.
Samfinansierede - Virksomhed
15/02/2014 → 25/08/2017
Project: PhD

Bacterial physiology in biofilms
Ukendt
01/01/1996 → 31/12/1999
Project: Research

Activities:

Current Opinion in Biotechnology (Journal)
Nielsen, A. T. (Editor)
Dec 2015
Activity: Research › Journal editor
Novo Nordisk Foundation Cluster Days
Nielsen, A. T. (Lecturer)
15 Nov 2015
Activity: Talks and presentations › Conference presentations

DuPont Research Seminar Series
Nielsen, A. T. (Invited speaker)
5 Nov 2015
Activity: Talks and presentations › Conference presentations

Technical University of Denmark (External organisation)
Nielsen, A. T. (Chairman)
7 Aug 2015
Activity: Membership › Membership in review committee

Aarhus University (External organisation)
Nielsen, A. T. (Participant)
12 Jun 2015
Activity: Membership › Membership in review committee

The 7th Copenhagen Bioscience Conference
Nielsen, A. T. (Organizer)
17 May 2015 → 21 May 2015
Activity: Attending an event › Participating in or organising a conference

Stuttgart University, Institut für Technische Biochemie, Seminar Series
Nielsen, A. T. (Invited speaker)
22 Jan 2015
Activity: Talks and presentations › Conference presentations

C1NET – CHEMICALS FROM C1 GAS CONFERENCE
Nielsen, A. T. (Invited speaker)
15 Jan 2015
Activity: Talks and presentations › Conference presentations

University of Nottingham (External organisation)
Nielsen, A. T. (Participant)
2015 → …
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar