

21/10	Basement lounge		
8:30	Light breakfast		
	Studio 2		
9:00	PL-1: Phenotypical heterogeneity in bioprocesses: better think positive!? – Anna Lena Heins and Alexander Grünberger		
	Basement lounge		
10:00	Coffee break		
	Studio 2	Studio 3	Studio 4
	Digitalisation	Biocatalysis	Biotechnology and metabolic engineering
	Chair: Krist Gernaey	Chair: Luuk van der Wielen	Chair: John Kavanagh
10:30	Comparison of vibrational spectroscopy methods for real-time monitoring of anaerobic fermentation. M. Mauricio Iglesias	Planalyze: A Practical Framework for Bayesian Optimization – A Case Study Designing Experiments in Biocatalysis. M. Siska	High-precision profiling of population dynamics and metabolites unravels joint biotransformation of natural products in cellulosic co-cultures. A. Palacio-Barrera
10:45	Real-time cell population analysis in bioreactors using deep learning enabled in situ microscopy. J.-S. Guez	Universal Microreactor for Flow Biocatalysis. M. Marques	Enhancing Xylose Utilization in Bioprocessing: Insights from XUT1 Gene Functional Characterization from <i>Candida tropicalis</i> . S. de Souza Queiroz
11:00	A “Legacy Zymer’s” Reflections on Industrial Digital Transformation at Novonesis. J. Price	Membrane modification strategies for high performance enzymatic membrane reactors. Z. Su	Proteome reduction as a strategy to improve the performance of cell factories. A. R. Lara
11:15	Real-time state estimation in non-linear adsorption chromatography using Kalman filters. D. Espinoza	Optical Hydrogen Peroxide Sensor for at-line Monitoring. T. Mayr	Demonstrating the capabilities of KIWI-Biolab’s robotic ecosystem by orchestration of model-based DoEs and fast in-depth analytics for the development of recombinant protein processes. P. Neubauer
11:30	Industrial digital scale-up: Development of a versatile modelling platform E. Stavad	Enzyme immobilisation technology at industrial scale: challenges and prospects. P. Andric	Utilization of spent sulfite liquor as substrate and inducer for protein production in engineered <i>Corynebacterium glutamicum</i> strains. G.Seibold
	Lounge first floor		
12:00	Lunch break		
	Studio 2	Studio 3	Studio 4
	Digitalisation	Biocatalysis	Biotechnology and metabolic engineering
	Chair: Ulrich Krühne	Chair: Bruno Bühler	Chair: Peter Neubauer
13:00	The BioProcessNexus: One step towards free and accessible techno economic bioprocess models. M. Medl	Development of Enzymes from Extremophiles for the Degradation of Plastics and Potential Generation of Useful Metabolites. J. Asenjo	Populations under stress: assessment of morphology and physiology heterogeneity in mono- and co-cultivation. S. Junne
13:15	A Physics -Informed Neural Network (PINNs) Framework for Bioreactor Hybrid Modelling. M. Kumar Thirugnanasambandam	Simplifying mRNA vaccine manufacturing by using immobilised enzymes during in vitro transcription reactions. G. Taylor	Automated adaptive laboratory evolution of <i>Clostridium kluyveri</i> enables growth at high CO partial pressures. V. Burgmaier
13:30	Uncertainty-aware real-time forecasting of pilot-scale bubble column aeration using ensemble hybrid model. P. Jul-Rasmussen	Optimization of BioActive Pickering emulsion for the production of R-Phenylacetylcarbinol. R. Jr Carubio	Metabolic Engineering of new <i>Streptomyces</i> sp. from Extreme Environments for Novel Antibiotics, Anticancer and Antifungal Drugs. B. Andrews
13:45	The more, the merrier? A quest for an efficient compartmentalization strategy for CFD-based analyses of bioreactors. H. Maldonado De Leon	To be announced	Enhanced productivity of filamentous pellets investigated with new tools for elucidation of oxygen uptake and morphology. Z. Justyna Kozanecka
14:00	Advanced simulation of large-scale bioreactors. J. Le Nepvou De Carfort	Process intensification guided by techno-economic analysis for the bioconversion of rutin. Z. Kádár	Selection and characterization of microbiomes under the same ecological stress. M. Catalão

14:15	Creating a Digital Twin for a Pilot-Plant Disk Centrifuge in GFPuv Production, A. A. Malanca	To be announced	Use of bacterial co-culture to overcome the toxicity of lignocellulosic hydrolysates. S. I. Mussatto
14:30	Basement lounge		
	Coffee break		
15:00	Different poster locations		
	Poster session	ESBES educational section meeting (studio 3 or 4)	Poster session
16:30	Free time		
18:00 19:30	Pancake Party (Copenhagen Town Hall)		

22/10	Basement lounge		
8:30	Breakfast		
	Studio 2		
9:00	PL-3: Added value from reconstructed biomass fractions: Tackling lignin particle aggregation through hemicellulose- and laccase-assisted bioprocess. Kirsi S. Mikkone		
10:00	Basement lounge		
	Coffee break		
	Studio 2	Studio 3	Studio 4
	FBM	Novel upstream and downstream process concepts	Circular bioeconomy and processing
	Chair: Scaling, Gradients and Heterogeneity	Chair: Carina L. Gargalo	Chair: Solange I. Mussatto
10:30	10.30-10.40 Welcome Bjarke Bak Christensen	Photoautotrophic production of DHA and EPA enriched biomass by co-culturing golden brown and green microalgae. A.-L. Thurn	All-in-one: Direct conversion of cellulose to erythro-isocitric acid by a non-engineered strain of <i>Talaromyces verruculosus</i> . I. Schlembach
10:45	10.40-11.05 The start of green transition by the use of fermentation of large volume food and material proteins. P. Falholt	Manufacturing of recombinant disulphide-bonded peptides in <i>Escherichia coli</i> using CASPON™ technology. M. Cserjan-Puschmann	PEM Electrocatalysis in a Stirred-Tank Bioreactor Enables Growth of <i>Clostridium ragsdalei</i> with CO ₂ and Electrons. I. Schwarz
11:00	11.05- 11.30 Gradients in fermentations conditions can impact process performance by leading to decreased yields in large-scale fermentation processes. G. Nadal-Rey	Expansion of T-cells Using a Perfused Microfluidic Approach. O. Derevianko	Bringing food waste back to the food value chain using SustainMAX® technology. P. Madhusudan Bapat
11:15	See above	Upcycling of PET-based plastic waste into biodegradable polyhydroxyalkanoates (PHA) using mixed microbial cultures. P. Concórdio-Reis	Integrating process modeling and impacts into an automated sustainability assessment toolbox of bio-based products. S. Sukumara
11:30	Optimizing seed train design: Enhancing productivity in biomanufacturing scale-up. L Munkler	Bioprocess monitoring with miniaturized multi-parameter electrochemical sensors. A. Hasanzadeh	Towards Sustainable Food Security: Exploiting Synthetic Microbial Communities for Protein Production from Dairy Industry side streams. B. Delmoitié
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	Studio 2	Studio 3	Studio 4
	FBM Innovation for Biomanufacturing	Digitalisation	Biopharmaceutical process
	Chair: Andreas Worberg	Chair: To be announced	Chair: Raquel Aires-Barros
13:00	13.00-13-20 Planetary Health at the BioInnovation Institute Maria Henriques De Jesus, BII	Deep Hybrid Modelling of a Supercritical CO ₂ Extraction Process. R. Agharafeie	Rational bioprocess development and optimisation for cultured Red Blood Cells (cRBCs). L. van Der Wielen

13:15	13.20 -13.40 Next-generation food innovation Johan Agrell, Alfa Laval	Bioprocessing 5.0: From Knowledge Graphs to Cognitive Digital Threads. M. Nicolas Cruz Bournazou	Techno-economic Optimization under Uncertainty for Pharmaceutical Processes: Ibuprofen. T. Asrav
13:30	See above	Applying a Modified DevOps Workflow to Address Challenges in Developing Digitalisation Tools for Chemical and Biochemical Manufacturing. M. Stevnsborg	Enhancement of mRNA quality for improved vaccine development. A. Rita Santos
13:45	13.40-14.00 Food Innovation with Filamentous Fungi Leonie Johanna Jahn, DTU	A Novel Machine-Learning-Based Scaling Tool for Bioreactors Using CFD Simulation Data. C. Witz	Towards cfDNA extraction from plasma for liquid biopsy applications – partitioning behavior of short DNA. R. Meutelet
14:00	14.00-14.20 Valorization of end-of-life waste streams to high-value products. P. Reitzer	Merging metabolic networks with deep neural networks under the SBML standard Abstract. J. Pinto	Flocculants for reduction of (high-risk) host cell proteins during primary recovery of monoclonal antibody production processes. A.-C. Frank
14:15	14.20-14.40 Breaking the cost barrier - biomanufacturing with FAST continuous extractive fermentation Eric van der Meer, DAB	Process Modeling accelerates bioprocess development and enables digital biomanufacturing. M. Krippel	Biomanufacturing Decisions with Data and Models. P. Ramin
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15:00	Poster session		
16:30	Free time		
	National Museum		
18:30 22:30	Gala dinner		

23/10	Basement lounge		
8:30	Light breakfast		
	Studio 2		
9:00	PL-3: Intensification of biocatalytic processes towards industrial volumetric productivities – Selin Kara		
10:00	Basement lounge		
	Coffee break		
	Studio 2	Studio 3	Studio 4
	Biopharmaceutical process	Industrial water and wastewater technology	Bioenergy
	Chair: Tiffany Rau	Chair: To be announced	Chair: Tony Kiss
10:30	Automatic kLa Determination in Stirred Tank Reactors by Model-Based Design of Experiments. A. H. Valdeira Caetano	Immobilization of laccase from <i>Lentinus sajor-caju</i> on chitosan-clay beads and applications on sulfamethoxazole degradation. H. Sá	Unveiling biochar's role in Anaerobic Digestion: myths and facts for enhanced biogas production and sulfate inhibition mitigation. G. Vayena
10:45	A Hierarchical Approach for Evaluation of Lost Throughput in API Manufacturing. T. Overgaard	Sustainable power generation from salinity gradients via Pressure Retarded Osmosis (PRO): Membrane modification for improved performance. M. Malankowska	Conversion off Oxalic-Acid Impregnated Biomass into Glucose and Bioethanol with the Assistance of Microwave-Irradiation. R. Ceaser
11:00	CFD-guided scale-down for end-in-mind bioreactor development: from 2000 L to 2 L. M. Segami	Modelling partial nitrification/anammox processes in a full-scale aerobic granular sludge reactor treating reject water. X. Flores-Alsina	Computational Simulation of the Pressure-Retarded Osmosis: a Multi-Scale Multi-Physics Membrane-Based Process. M. Mohammadi Amin
11:15	<i>Vibrio natriegens</i> as a new host for plasmid DNA production. D. Miguel Prazeres	Unveiling the water-energy nexus: Wastewater reuse for district heating applications. F. Sousa Braga	Modeling and Simulation of Biological Water-Gas Shift Reaction in Trickle Bed Reactor and Comparison With CSTR. S. Dutta

11:30	Purification and characterization of recombinant neuraminidase for non-seasonal vaccine against Influenza virus. F. De Mathia	Bio-release of toxic elements from mining waste. A. Pawlowska	Effect of feeding regime and pH on thermophilic acidogenic fermentations from food waste. L. Vulart
11:45	Efficient Media and Buffer Formulation Development with Mixture Experiments using Space Filling Designs and Machine Learning. T. Rau	To be announced	Maximizing bioenergy production from agro-industrial and municipal wastes in Jalisco: analysis of feedstock effects on the biogas yield of anaerobic co-digestions. M. S. G. Hernández
	Lounge first floor		
12:00	Lunch break		
	Studio 2	Studio 3	Studio 4
	Biopharmaceutical process	Bioprocess for food engineering/precision fermentation	Education/New (bio)materials for process engineering
	Chair: Arne Staby	Chair: Marcel Ottens	Chair: To be announced
13:00	Microbial Process Transfer at Boehringer Ingelheim. E.M. Wlaschitz	Bottlenecks and Opportunities in Cultivated Meat Production. J. Pereira	Project Based Teaching of Biochemical Engineering. J. Kavanagh
13:15	Chemotools: a modern open-source Python software for end-to-end PAT applications. P. Cabaneros	Production of Proteins by Precision Fermentation. P. Falholt	Bioprocess Design Education at TU Delft. T. Kiss
13:30	Monitoring the effect of oxidative stress on pertactin productivity in Bordetella pertussis cultures: A mechanistic approach. A. Mishra	Establishing a High-Throughput Co-Culture Platform to Systematically Screen Diverse Strptomyces Species for new Natural Products. D. Miriam Schütterle	ChatGMP: a Digital Audit Tool for Good Manufacturing Practices. F. Caccavale
13:45	Autonomous operation and quality monitoring of a continuous antibody downstream process. M. Isaksson	Modelling of Transport Phenomena and process induced quality Changes During Baking of Soft-Baked Goods. A. H. Feyissa	Biosynthesis of Polyhydroxyalkanoates from Lignin Monomers by Halophiles: High-Throughput Screening and Understanding Limitations. V. Andhalkar
14:00	Hybrid model for mesenchymal stem cell cultivation processes incorporating seeding heterogeneity. K. Hirono	The impact of common fermentation medium salts on local holdup in bubble column bioreactors. R. Volger	Fermentative production and purification of L-(+)-lactic acid: assessing the potential of tree and shrub species growing on marginal land. L. Schroedter
14:15	Novel filtration technology allows for simpler and more efficient separation/recovery of api from biomass and downstream processing. A. Poulsen	Bubble Column measurements and modelling. J. Kavanagh	Novel applications in a redesigned 3D-printed micro bubble column reactor. G. Schultz
	Basement lounge		
14:30	Coffee break		
15:00	Award ceremony (poster and oral presentation)		
15:30	Closing remarks		
16:15	End of the conference		