



Institut für Biotechnologie
Technische Universität Berlin
Bioverfahrenstechnik

BioProScale
DEVELOP · IMPROVE · SUSTAIN



IfGB

Institut für
Gärungsgewerbe
und Biotechnologie
zu Berlin

9th BioProScale Symposium

Scaling Down and Up of Bioprocesses: Process Heterogeneities, Robustness, and Analytics

APRIL 20-22, 2026

LANGENBECK-VIRCHOW-HAUS, BERLIN, GERMANY

- Scale Up and Industrial Scale Processes
- Bioprocess Scale Down Models for Heterogeneities
- Process-Driven Cell Performance
- Integrated Bioprocesses
- Process Analytical Technologies (PAT) and FAIR Data Management



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VENUE: LANGENBECK-VIRCHOW-HAUS, BERLIN, GERMANY

LANGUAGE: ENGLISH

Exhibitors & Sponsors



INFORMATION & REGISTRATION:

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MONDAY, 20 APRIL 2026

WELCOME ADDRESS AND PLENARY TALK

12:00 **Welcome address & introduction***Peter Neubauer, TU Berlin, Germany*12:20 **Plenary Talk: The dilemma of scale-up/down and the promise of scaling out/modularized biomanufacturing (P01)***Andreas Worberg, Center for Biosolutions DTU, Denmark*

SESSION 1: MASS TRANSFER, SCALE-UP & MODELLING (I)

Chair TBA

13:05 **From pilot to production: development and application of a hybrid model across scales (L01)***Marc Lemperle, Technical University of Denmark, Denmark*13:30 **Lessons learned on dynamic simulation of heterogeneities using compartment models (L02)***Hector Maldonado de Leon, TU Delft, The Netherlands*13:55 **Industry promotion talks**14:15 *Coffee break & exhibition*

SESSION 2: MASS TRANSFER, SCALE-UP & MODELLING (II)

Chair Robert Spann / Isabel Thiele

14:45 **Challenges in oxygen mass transfer measurement for industrial-scale aerated stirred tank bioreactors (L03)***Nicolas Nickel, Hamburg University of Technology, Germany*15:10 **Using CFD-based compartment modelst to resolve spatial heterogeneities in industrial bioprocesses (L04)***Johan Le Nepvou De Carfort, Technical University of Denmark, Denmark*15:35 **Numerical scale-up and experimental validation of gas-liquid bioleaching reactors using LB-LES CFD modelling : from 2 L to 2000 L (L05)***Saranath Sripriya, Bureau de Recherches Géologiques et Minières Orléans, France*16:00 **Coupling genome-scale models with compartment bioreactor models to study intracellular responses under fluctuating conditions (L06)***Titania Insani Sugiarto, RWTH Aachen, Germany*16:25 **Scale-up challenges in *Pichia pastoris* fermentation processes (L07)***Anamari Brdar, Sanofi Aventis Deutschland GmbH, Germany & Hannah Singer, Sanofi Aventis Deutschland GmbH, Germany*16:50 *Coffee break & exhibition*

SESSION 3: MASS TRANSFER, SCALE-UP & MODELLING (III)

17:20 **Multivariate population balance model resolution for bioreactor simulation (L08)***Benjamin Casale, Toulouse Biotechnology Institute, France*17:45 **Morphology-based scale-up of *Streptomyces* species cultivations using CFD simulations (L09)***Philipp Eibl, SimVantage GmbH, Austria & Gesa Brauneck, RWTH Aachen, Germany*18:10 **Balancing yield and sustainability: Modelling operational strategies for scaled cultivated meat production (L10)***Ben Tumulero, TU Delft, The Netherlands*

EVENING PROGRAM

18:35 **Melody of the genome 2.0 – The sound of DNA***Langenbeck-Virchow-Haus, Foyer**Artistic Contribution*19:00 **Poster Session, Exhibition, Get-together for all participants***Langenbeck-Virchow-Haus, Foyer**We encourage all poster authors to be at their posters at least from 19:30-20:15 (even poster numbers) and 20:15-21:00 (odd poster numbers).*

21:00 End of day 1

TUESDAY, 21 APRIL 2026

9:00 **Welcome note***Peter Neubauer, TU Berlin, Germany*9:05 **Plenary Talk: Process modeling strategies for successful biopharmaceutical development (P02)***Thomas Wucherpennig, Boehringer Ingelheim Pharma GmbH & Co. KG, Germany***SESSION 4: SCALING OF BIOPROCESSES**

Chair TBA

9:50 **Hybrid modelling to assist scaling of mAb production processes (L11)***Sally Gras, University of Melbourne, Australia*10:15 **Model-based scaling of recombinant protein production in *Escherichia coli* fed-batch processes: Knowledge-based optimization of secretion performance and cell viability (L12)***Fabian Schröder-Kleeberg, TU Berlin, Germany*10:40 **Industry promotion talks**10:55 *Coffee break & exhibition***SESSION 5: BIOPROCESS INTEGRATION (I)**

Chair TBA

11:25 **FerroFlow: unlocking simulation software for end-to-end bioprocess design – A fermentation case-study (L13)***Pierre Guilloteau, Technical University of Denmark, Denmark*11:50 **Towards understanding the effect of upstream process parameters on the properties and downstream performance of inclusion bodies (L14)***Mohamed Elshazly, TU Wien, Austria*12:15 **Two-dimensional protein denaturation surfaces as a process development tool for solubilization and refolding of bacterial inclusion bodies (L15)***Robert Klausser, TU Wien, Austria & Martin Voigtmann, Boehringer Ingelheim RCV GmbH & Co KG, Vienna, Austria*12:40 *Lunch break, poster session & exhibition***SESSION 6: BIOPROCESS SCALE-DOWN**

Chair Peter Neubauer, TU Berlin

13:50 **Bioreactor simulation from the cellular perspective application in scaling from cell cultures to syngas fermentation (P03)***Cees Haringa, TU Delft, The Netherlands*14:35 **BioProScale Lifetime Award***Awardee: Matthias Reuss, Prof. Emeritus of University of Stuttgart, Germany*14:50 **Predictive scale-down using AI-designed 3D-printed bioreactors (L16)***Lena Achleitner, print4biotech GmbH, Obersdorf, Germany*15:15 **Beyond mixing times: From industrial to lab-scale bioreactors using cell trajectories (L17)***Ryan Rautenbach, Technical University Hamburg, Germany*15:40 *Coffee break & exhibition*

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SESSION 7: PROCESS ANALYTICAL TECHNOLOGY (I)

Chair	TBA
16:10	Unlocking the potential of inline process analytical technology (PAT) for advanced bioprocess development, scale-up, and control (L18) <i>Katharina Dahlmann, Hamilton Bonaduz AG, Switzerland</i>
16:35	From off-line to real-time: Probe-integrated electrochemical glucose sensing for bioprocess monitoring (L19) <i>Aliyeh Hasanzadeh, Technical University of Denmark, Denmark</i>
17:00	Smart feeding: Raman-based glucose control for enhanced malic acid fermentation (L20) <i>Luca Antonia Grebe, RWTH Aachen, Germany</i>
17:25	Machine learning spatially offset time-gated Raman spectroscopy (TG-SORS) in-line sensors for endoglucanase production in <i>T. reesei</i> bioprocesses (L21) <i>Martin Kögler, VTT Finland, Finland</i>
17:50	From fed-batch to repetitive fed-batch: Soft-sensor-driven control of phosphate-regulated Fab production in <i>E. coli</i> (L22) <i>Rüdiger Lück, TU Wien, Austria</i>
18:20	<i>End of presentation program</i>

EVENING PROGRAM

19:30	Conference Dinner <i>TBA</i> <i>(with voucher only)</i>
22:30	<i>End of day 2</i>

WEDNESDAY, 22 APRIL 2026

9:00	Welcome note <i>Peter Neubauer, TU Berlin, Germany</i>
9:05	Plenary Talk: Intensified fermentation with <i>E. coli</i> effects on the economic and ecological footprint (P04) <i>Oliver Spadiut, TU Wien Austria</i>

SESSION 8: BIOPROCESS INTEGRATION (II)

Chair	TBA
9:50	Hybrid modeling as a life cycle support solution of bioprocesses: from process development to manufacturing operations (L23) <i>Niels Krausch, DataHow AG, Zurich, Switzerland</i>
10:15	Development and application of an ANN-perception-based autonomous control system for an <i>Escherichia coli</i> cultivation process (L24) <i>Nikolai Mushnikov, T&J Bioengineering, Shanghai, China</i>
10:40	<i>Coffee break & exhibition</i>

SESSION 9: PROCESS ANALYTICAL TECHNOLOGY (II)

Chair	TBA
11:10	A novel view into aerated stirred tanks: Magnetic resonance imaging (L25) <i>Till Lenczyk, Technical University Hamburg, Germany</i>
11:35	Integration of online HPLC analytics into chemostat-based polyhydroxyalkanoate production from dark fermentation effluent (L26) <i>Saskia Waldburger, TU Berlin, Germany</i>
12:00	Integrating microfluidic analysis and MRI-based flow characterization for the scale-up of a novel bioelectrochemical reactor (L27) <i>Selma Iraqi Houssaini, Hamburg University of Technology, Germany & Daniel Bauer, Hamburg University of Technology, Germany</i>
12:25	<i>Lunch break, poster session & exhibition</i>

14:00 **Plenary Talk: Process intensification in microbial and enzymatic conversions (P05)***Helen de Wever, VITO, Belgium***SESSION 10: INTENSIFIED AND CONTINUOUS PROCESSES**

Chair TBA

14:45 **Lipid production in *Schizochytrium limacinum* SR21 from biogenic residues (L28)***Simon Täuber, TU Berlin, Germany & Anne Kathrine Clausen, Aalborg University, Denmark*15:10 **A cell-machine interface for monitoring plasmid-loss events and population stability during continuous bioproduction of plasmid DNA (L29)***Hannah Sehr, University of Liège, Belgium*15:35 **Paving the way for continuous bioprocessing: Building robust *Pichia pastoris* strains for long-term cultivation (L30)***Arnau Gasset, Universitat Autònoma de Barcelona, Spain*16:00 **Award ceremony best talks and posters & Closing remarks***Peter Neubauer, TU Berlin, Germany & Stefan Junne, Aalborg University, Denmark*16:20 *End of symposium***Attendance fees**

	Full conference ticket
Participant from industry	1390 € incl. VAT
Participant from a scientific institution	750 € incl. VAT
PhD/MSc Student (against valid proof)	380 € incl. VAT

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