

BioProScale Symposium

Inhomogeneities in large-scale bioreactors

Description – scaling – control

24 to 27 November 2009
Berlin – Germany

Language: English

- **Large-scale bioreactors**
- **Cell physiology
in large scale bioprocesses**
- **Large-scale modeling and control**

■ **Organisers**

Technische Universität Berlin – Department of Bioprocess Technology & Institute for Biotechnology and Fermentation in Berlin (IfGB)

■ **Conference days**

November 24 – 27, 2009

■ **Location**

TU Berlin, TIB Gebaeudekomplex Humboldthain, Building 13B
Gustav-Meyer-Allee 25, 13355 Berlin, Germany

■ **Target groups**

Producers of biogas and enzymes, antibiotic production, bioprocess development, pharmaceutical bioprocesses, brewery processes – experts from research & development and industrial practice

Institute for Biotechnology and Fermentation in Berlin (IfGB)
Seestrasse 13, 13353 Berlin, Germany

IfGB



**Institute
for Biotechnology and
Fermentation in Berlin**



**Early booking discount
extended until 6th November**

**In
cooperation
with**



BioProScale Symposium – Announcement

Inhomogeneities in large-scale bioreactors

Description – scaling – control

■ Aim

Large scale bioprocesses are non-homogenous systems which are generally characterized by lower biomass yield and different metabolic rates if compared to small scale laboratory processes. Various approaches have been undertaken in the past to characterize large scale bioreactors, to understand the biology of large-scale systems, to develop 2D and 3D computational models and tools to simulate such processes in laboratory scale.

The aim of this symposium is to bring stakeholders which work with different large-scale bioprocesses (e.g. biogas, brewing, enzymes and metabolite production, pharma) together to discuss their experiences and research needs.

Preliminary Programme

■ Tuesday, 24 November 2009

Welcome address: *Prof. Peter Neubauer (TU Berlin)*

Opening Lecture: Large-scale bioprocesses in the enzyme producing industries – state of the art and needs. *Henk Noorman (DSM, The Netherlands)*

Welcome Reception

■ Wednesday, 25 November 2009

Large-scale Bioprocesses

Key Note Lecture: Mixing in large scale bioprocesses *Alvin Nienow (University of Birmingham, UK)*

Bacterial cultures come to WAVE. *N.N. (Sartorius Stedim)*

Mixing, Shear & Mass Transfer in Production Scale Cell Culture Reactors. *Marco Jenzsch (Roche Diagnostic, Penzberg, Germany)*

How to integrate bioreactor inhomogeneities into QbB and PAT design concepts for biopharmaceutical production processes. *Carl-Fredrik Mandenius (University of Linköping, Sweden)*

Scale-up of continuous mode lactic acid fermentation *Joachim Venus (Dept. Bioengineering, Leibniz-Institute for Agricultural Engineering, Potsdam-Bornim, Germany)*

Large-scale fermentation processes in the brewery. *Roland Pahl (VLB Berlin)*

Metabolic flux analysis of pulse experiments: Modelling the impact on product concentration gradients in the acetone-butanol-ethanol fermentation. *Stefan Junne (TU Berlin)*

Transcriptomic and proteomic approaches for understanding and optimisation of bioprocesses. *Thomas Schweder (Ernst-Moritz-Arndt Universität Greifswald, Germany)*

■ Thursday, 26 November 2009

Cell Physiology in Large-scale bioprocesses

Key Note Lecture: Cell physiology in large-scale bioprocesses. *Sven-Olof Enfors (Royal Institute of Technology KTH, Stockholm, Sweden)*

Bioprocess scale up – tracking the informations relevant for up-scaling by GFP reporter strains. *Frank Delvigne (Unité de BioIndustrie, Gembloux, Belgium)*

New insights in biological dynamics and relaxation time to well-characterized environmental stress using innovative microbial and process engineering tools. *Nathalie Gorret (Dept. de Genie Biochimique et Alimentaire, Toulouse, France)*

Bioreactor Scale-Down Studies of Temperature-Inducible Recombinant Protein Production in *E. coli*. *Luis Caspeta / Octavi T. Ramirez (Instituto de Biotecnología, Universidad Nacional Autónoma de México)*

Redesigning microbial processes to circumvent heterogeneities issues in large scale bioreactors: examples in *Saccharomyces cerevisiae*. *Stephane Guillouet (Dept. de Genie Biochimique et Alimentaire, Toulouse, France)*

Responses of *E. coli* to oxygen limitation – experiences from scale-down reactors. *Peter Neubauer (TU Berlin)*

Overcoming environmental heterogeneities in *E. coli* cultivations through metabolic engineering *Alvaro R. Lara (Universidad Autónoma Metropolitana-Cuajimalpa, Mexico)*

■ Friday, 27 November 2009

Large-scale Modeling and Control

Key Note Lecture: Modeling the heterogeneity of microbial metabolism in large scale bioreactors. *Matthias Reuss (University of Stuttgart, Germany)*

Exactly reproducible process operation in microbial and animal cell cultures. *Andreas Lübbert (Dept. Bioprocess Engineering, Martin-Luther-Universität Halle-Wittenberg, Germany)*

EnBase – a scalable fed-batch technology. *Antje Neubauer (BioSilta Oy, Oulu, Finland)*

Bioprocessing of stem cells for Regenerative Medicine purposes – Scale-up or Scale-out. *Chris Hewitt (Department of Chemical Engineering, Loughborough University, UK)*

Closing remarks and farewell: *Peter Neubauer (TU Berlin)*

The Call for Posters is still open!

■ Contact

Prof. Dr. Peter Neubauer
Department of Bioprocess Technology
Institute of Biotechnology
Technische Universität Berlin
Ackerstrasse 71-76, 13355 Berlin, Germany
Phone +49 30 314 72573
Fax +49 30 314 72950
peter.neubauer@tu-berlin.de

■ Exhibition and sponsoring

For accompanying exhibition and sponsoring opportunities please contact
ifGB, Olaf Hendel, hendel@vlb-berlin.org

Information & registration
www.ifgb.de/bioproscale