

**2nd Braunschweig International Symposium on
Pharmaceutical Engineering Research SPHERE
September 06 to 08, 2017**

Wednesday, Sept. 06, 2017

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| 12:00 - 13:00 | Registration
Light lunch |
| 13:00 | Opening, Welcome Addresses |
| 13:30 | A. Kwade, Institute for Particle Technology, TU Braunschweig
<i>The new Research Center of Pharmaceutical Engineering Research PVZ @
TU Braunschweig</i> |
| 14:00 - 16:10 | Session I: Continuous Manufacturing in Formulation |
| 14:00-14:40 | <i>Invited lecture</i>
K. Klokkers, Sandoz, Holzkirchen
<i>Innovative in-process controls</i> |
| 14:40 - 15:10 | <i>Coffee Break</i> |
| 15:10-15:30 | M. Michaelis, Hüttlin GmbH, Schropfheim
<i>Advanced data analytics of process data</i> |
| 15:30-15:50 | <u>B. Bonhoeffer</u> ¹ , Arno Kwade ^{2,3} , Michael Juhnke ¹ , ¹ Novartis Pharma AG, Basel, ² Institute for Particle Technology, TU Braunschweig, ³ Center of Pharmaceutical Engineering (PVZ), TU Braunschweig,
<i>Dispensing and processing of drug nanosuspensions into solid oral dosage forms using alternative manufacturing concepts</i> |
| 15:50-16:10 | <u>M. Evers</u> ¹ , A. Cabre ¹ , D. Weis ² , S. Anonyuk ² , M. Thommes ¹ , ¹ Chair for Solids Process Engineering, TU Dortmund, ² Chair for Particle Process Engineering, TU Kaiserslautern
<i>Scale-up modelling for the spheronization of wet extrudates</i> |
| 16:10 - 18:10 | Session II: Poster and short presentations |
| 16:10-17:10 | Poster short presentations |
| 17:10-18:10 | Poster Discussions |
| 18:10 - ... | Get Together @ PVZ-Atrium & Guided tours |

Thursday, Sept. 07, 2017

08:30 - 10:00 Session III: Formulation and process development

8:30-9:10 *Keynote Lecture*

J. Schmitt, B. Braun Melsungen, Melsungen
Intravenous Lipid Emulsions (IVLE) – an industrial view

9:10-9:30 S. Melzig^{1,2}, C. Schilde^{1,2}, J. H. Finke^{1,2}, A. Kwade^{1,2}, ¹Institute for Particle Technology, TU Braunschweig, ²Center of Pharmaceutical Engineering (PVZ), TU Braunschweig,
Tailoring the release kinetics of nanosized API formulations by process chain design

9:30-9:50 D. Markl¹, A. Zeitler², ¹Department of Chemical Engineering and Biotechnology, University of Cambridge, ²Department of Chemical Engineering, University of Cambridge
Insights into the Disintegration Mechanisms of Pharmaceutical Tablets using Terahertz Imaging and Spectroscopy

9:50 - 10:20 *Coffee Break*

10:20 - 12:00 Session IV: Microsystems for continuous processing and analytics

10:20-11:00 *Keynote Lecture*

H. Wachtel, Boehringer Ingelheim Pharma GmbH & Co. KG, Ingelheim
Micro nozzles for soft inhalers

11:00-11:20 A. Al-Halhoul¹, W. Al-Faqheri¹, B. Alhamarneh¹, L. Hecht², A. Dietzel², ¹Nano Lab, School of Applied Technical Sciences, German Jordanian University (GJU), Amman/J, ²Institute of Microtechnology, TU Braunschweig,
Trapezoidal spiral microfluidics for inertial focusing and separation of different particle sizes

11:20-11:40 A. Wilk, T. Heitmann
Wilk - Graphite GmbH, Lörrach
Continuous Archimedean Screw-Crystallizer / Reactor (ASKR)

11:40 - 12:40 *Lunch Break*

12:40 - 14:40 Session V: Micro bioreactors for pharmaceutical applications

12:40-13:20 *Keynote Lecture*

N. Szita, Bioprocess Microfluidics, Department of Biochemical Engineering, University College London, London/UK
Microfluidic approaches for bioprocess development from upstream to downstream

13:20-13:50 U. Krühne, Department of Chemical and Biochemical Engineering, Technical University of Denmark
Experiences with microsystems in processing and screening

13:50-14:10 S. Lladó Maldonado^{1,2}, D. Rasch^{1,2}, A. Kasjanow³, D. Bouwes³, U. Krühne⁴, R. Krull^{1,2}, ¹Institute of Biochemical Engineering, TU Braunschweig, ²Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, ³Micronit GmbH, Dortmund, ⁴Department of Chemical and Biochemical Engineering, Technical University of Denmark
Bioengineering at the microscale: Process characterization of a microbubble column-bioreactor

14:10-14:30 O. Shvydkiv, M. Roth,
Leibniz Institute for Natural Product Research and Infection Biology, Jena
Droplet microfluidics in biotechnological research

14:30 - 15:00 *Coffee Break*

15:00 - 17:30 **Session VI: μ Props-Session**

15:00-15:15 Introductory Talk to μ Props Graduate Program (Bunjes, Dietzel)

15:15-16:15 Poster short presentations

16:15-17:30 Poster Discussion

18:30 Conference Dinner

Friday, Sept. 08, 2017

08:30 - 10:00 **Session VII: Production processes for chemical API**

8:30-9:00 *Invited Lecture*
W. Sievers, Sanofi Frankfurt
Chemical API production – life cycle management

9:00-9:20 V. N. Emenike^{1,2,3}, R. Schenkendorf^{1,2}, U. Krewer^{1,2}
¹ Institute of Energy and Process Systems Engineering, TU Braunschweig,
² Center of Pharmaceutical Engineering (PVZ), TU Braunschweig
³ International Max Planck Research School for Advanced Methods in Process
and Systems Engineering, Magdeburg
*Advances in model-assisted process design for (bio)pharmaceutical
manufacturing*

9:20-9:40 M. C. Rehbein^{1,2}, S. Husmann¹, J. Wolters¹, C. Lechner³, C. Kunick^{2,3}, S. Scholl^{1,2},
¹Institute for Chemical and Thermal Process Engineering, TU Braunschweig,
²Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, ³Institute for
Medicinal and Pharmaceutical Chemistry, TU Braunschweig
*Batch-to-conti transfer of a pharmaceutically relevant synthesis utilizing in-situ
ATR-FTIR*

9:40-10:10 *Invited Lecture*
J. Hubbuch¹, M. Kind², H. Nirschl³,
Department of Chemical and Process Engineering, Karlsruhe Institute of
Technology, ¹Biological Separation Engineering, ²Thermal Process Engineering,
³Process Engineering and Mechanics
Preparatory protein crystallization

10:10-10:30 M. Mostafavi, H. B. Schwartz, F. H. Schwartz,
Sequip S+E GmbH
*In-process evaluation and monitoring of crystallization processes using rather new
measuring techniques*

10:30 - 11:00 *Coffee Break*

11:00 - 12:10

Session VIII: Biotechnological production of API

11:00-11:20

M. Gaid^{1,3}, D. Neb², R. Hänsch¹, L. Beerhues^{1,3},
¹Institute of Pharmaceutical Biology, TU Braunschweig, ²Faculty 2, Botany,
University of Bremen, ³Center of Pharmaceutical Engineering (PVZ), TU
Braunschweig
Hypericum: Toward In vitro cultures with high medicinal value

11:20-11:50

L. Fillaudeau^{1,2}, Y. Manon^{1,2}, H. Kraiem¹, A. Timoumi¹, T. C. Nguyen^{1,2,4}, T. Le^{1,2,4},
D. Anne-Archard^{3,4}, C. Bideaux¹, N. Gorret¹, C. Molina-Jouve¹,
¹Laboratoire d'Ingénierie des Systèmes Biologiques et des Procédés (Université
de Toulouse; INSA; INRA UMR792, CNRS UMR5504), Toulouse/F, ²CNRS,
Fédération de Recherche FERMAT, Toulouse/F, ³Université de Toulouse, IMFT
(Institut de Mécanique des Fluides de Toulouse), Toulouse/F, ⁴School of
Biotechnology and Food Technology, Hanoi University of Science and
Technology, Hanoi/V
*Characterization of mycelial transition of Yarrowia lipolytica during oxidative
cultures: comparison of optical methods and their limitation, impact of morphology
on rheological behaviour*

11:50-12:10

S. Tesche^{1,2}, R. Rösmeier-Scheumann¹, R. Krull^{1,2},
¹Institute of Biochemical Engineering, TU Braunschweig, ²Center of
Pharmaceutical Engineering (PVZ)
*Improved production of Labyrinthopeptin with Actinomadura namibiensis by salt-
controlled modification of pellet morphology*

12:10

Adjourn

12:20 - 13:20

Lunch (Optional)

September 3, 2017