

## CONFERENCE DAY 1 • 18 OCTOBER 2023

10:00 Check-In

### 11:30 **OPENING**

Opening by Stephan Scholl, Conference Chair, TU Braunschweig

Welcome address by Knut Baumann, Vice President for Academic and Student Affairs, TU Braunschweig

### KEYNOTE LECTURE

Chair: **Stephan Scholl**

### 11:45 **How to bring API production to Germany? - Engineering Aspects**

Michael Häberl, Merck Life Science KGaA, Darmstadt, Germany

12:30 Lunch Break

### SESSION I: API Synthesis

Chair: **Ludger Beerhues**

### 13:30 **INVITED LECTURE**

**New approaches for targeting the intracellular allosteric binding site of GPCRs**

Matthias Schiedel, Institute of Medicinal and Pharmaceutical Chemistry, TU Braunschweig, Germany

### 13:55 **Heading to phase I – Scale up of the production process of the antibiotic candidate coralopyronin A into industrial scale**

Miriam Große<sup>2,8</sup>, Birthe Sandargo<sup>2,8</sup>, Rolf Jansen<sup>2,8</sup>, Tim Becker<sup>3</sup>, Anna Krome<sup>3</sup>, Andrea Schiefer<sup>1,7</sup>, Silke Alt<sup>6</sup>, Rolf Müller<sup>5</sup>, Thomas Hesterkamp<sup>6</sup>, Kenneth Pfarra<sup>7</sup>, Karl Wagner<sup>3,7</sup>, Marc Stadler<sup>2,8</sup>, Achim Hoerauf<sup>1,7</sup>

<sup>1</sup>Institute for Medical Microbiology, Immunology and Parasitology, University Hospital Bonn; <sup>2</sup>Department Microbial Drugs, Helmholtz Centre for Infection Research, Braunschweig; <sup>3</sup>Department of Pharmaceutical Technology and Biopharmaceutics, University of Bonn; <sup>4</sup>Institute for Pharmaceutical Biology, University of Bonn; <sup>5</sup>Department Microbial Natural Products, Helmholtz Institute for Pharmaceutical Research Saarland; <sup>6</sup>Translational Project Management Office (TPMO), German Center for Infection Research; <sup>7</sup>German Center for Infection Research (DZIF), Partner Site Bonn-Cologne; <sup>8</sup>German Center for Infection Research (DZIF), Partner Site Hannover-Braunschweig

### 14:10 **Mycelial pellets - an intertwined matter: How salt-enhanced cultivation affects product formation and filamentous cellular morphology**

Zuzanna J. Kozanecka<sup>1,2</sup>, Jule Muehlenbrock<sup>1,2</sup>, Detlev Rasch<sup>1,2</sup>, Rainer Krull<sup>1,2</sup>

<sup>1</sup>Institute of Biochemical Engineering, TU Braunschweig, Germany; <sup>2</sup>Center of Pharmaceutical Engineering, TU Braunschweig, Germany

### 14:25 **Unveiling the biosynthesis of hyperforin and its analogues for engineering strategies**

Hesham MB Sayed<sup>1,2</sup>, Tomke Meents<sup>1,2</sup>, Sara Nassar<sup>1,2</sup>, Benye Liu<sup>1,2</sup>, Ludger Beerhues<sup>1,2</sup>, Islam El-Awaad<sup>1,2</sup>

<sup>1</sup>Institute of Pharmaceutical Biology, TU Braunschweig, Germany;

<sup>2</sup>Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, Germany

### 14:40 **INVITED LECTURE**

**Manufacturing through plant cell culture technology – sustainable, controlled and flexible in scale**

Gilbert Gorr, Phyton Biotech GmbH, Ahrensburg, Germany

15:05 Bio Break

## SESSION II: SCALE-UP / SCALE-DOWN PROCESSES

Chair: Rainer Krull

- 15:20 **INVITED LECTURE**  
**Towards sustainable continuous production of crystalline APIs**  
*Kerstin Wohlgemuth, Laboratory of Plant and Process Design, TU Dortmund, Germany*
- 15:45 **Scaling up crystallization conditions for achieving targeted crystal morphologies of an active pharmaceutical ingredient**  
*Nicolás Ramos<sup>1</sup>, Matthias Kind<sup>1</sup>*  
*<sup>1</sup>Karlsruhe Institute of Technology, Germany*
- 16:00 **Comparability of tablet compression characterization in small- and full-scale production**  
*Doreen Dunst<sup>1</sup>, Rebecca McVicker<sup>2</sup>, Ina Petry<sup>1</sup>*  
*<sup>1</sup>Fette Compacting GmbH, Schwarzenbek, Germany; <sup>2</sup>Tableting Ltd., Nottingham, UK*
- 16:15 **Multiscale morphology engineering for rebeccamycin production with the filamentous actinomycete *Lentzea aerocolonigenes***  
*Anna Dinius<sup>1,3</sup>, Marcel Schrader<sup>2,3</sup>, Katharina Mohrdieck<sup>1</sup>, Arno Kwade<sup>2,3</sup>, Rainer Krull<sup>1,3</sup>* *<sup>1</sup>Institute of Biochemical Engineering, TU Braunschweig, Germany, <sup>2</sup>Institute for Particle Technology, TU Braunschweig, Germany; <sup>3</sup>Center of Pharmaceutical Engineering, TU Braunschweig, Germany*
- 16:30 **INVITED LECTURE**  
**A robotic- and AI-assisted accelerated tablet formulation and process design platform**  
*Daniel Markl, Centre for Continuous Manufacturing and Advanced Crystallisation (CMAC), Strathclyde Institute of Pharmacy and Biomedical Sciences, Glasgow, UK*
- 16:55 Bio Break

## POSTER SESSION

Chair: Islam El-Awaad

- 17:15 Poster Short Talks
- 18:15 Poster Party
- 20:30 END OF DAY

## CONFERENCE DAY 2 • 19 October 2023

08:00 Check-In

### KEYNOTE LECTURE

Chair:

08:30 **Pharmaceutical Engineering at Nanoscale: Delivery of RNA and more**  
*Heinrich Haas, Department of Biopharmaceutics and Pharmaceutical Technology, Johannes Gutenberg-Universität, Mainz, Germany*

### SESSION III: SOLID DOSAGE FORMS

Chair: Denise Steiner

09:15 **INVITED LECTURE**  
**Material characterization in drug product development of oral solid dosage forms – an industry perspective**  
*Carolin Riehl<sup>1</sup>, Lena Mareczek<sup>1</sup>, Meike Harms<sup>1</sup>, Stephan Reichl<sup>2</sup>*  
*<sup>1</sup>Merck Healthcare KGaA, Darmstadt, Germany; <sup>2</sup>Institute of Pharmaceutical Technology and Biopharmaceutics, TU Braunschweig, Germany*

09:40 **Loading of oily ink formulations on structured orodispersible film templates for patient individual drug dosing**  
*Lena Mahlberg<sup>1</sup>, Denise Steiner<sup>1</sup>*  
*<sup>1</sup>University of Tübingen, Department of Pharmaceutical Technology, Germany*

09:55 **Damaging mechanism of functionally coated pellets in tableting machines and damage mitigation**  
*Luisa Enders<sup>1,2</sup>, Lara Stein<sup>1,2,3</sup>, Gernot Warnke<sup>3</sup>, Jan Henrik Finke<sup>1,2</sup>*  
*<sup>1</sup>Institute for Particle Technology, TU Braunschweig, Germany; <sup>2</sup>Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, Germany; <sup>3</sup>JRS PHARMA GmbH & Co. KG, Rosenberg, Germany*

10:10 **Manufacturing and characterization of particle-based silica aerogels for pharmaceutical applications**  
*Jennifer Pierick<sup>1,2</sup>, Lisann Soldanski<sup>1,2</sup>, Anne Jupitz<sup>1,2</sup>, Georg Garnweitner<sup>1</sup>*  
*<sup>1</sup>Institute for Particle Technology (iPAT), TU Braunschweig, Germany; <sup>2</sup>Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, Germany*

10:25 **Tableting of living microorganisms: Influence of biomass concentration in fluidized bed granules on physical-mechanical and microbiological tablet properties**  
*Karl Vorländer<sup>1,2</sup>, Arno Kwade<sup>1,2</sup>, Jan Henrik Finke<sup>1,2</sup>, Ingo Kampen<sup>1,2</sup>*  
*<sup>1</sup>Institute for Particle Technology, TU Braunschweig, Germany; <sup>2</sup>Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, Germany*

10:40 Discussion

10:45 Bio Break

### SESSION IV: SEMI-SOLID & LIQUID DOSAGE FORMS

Chair: Heike Bunjes

11:00 **INVITED LECTURE**  
**Current trends in dermal and transdermal drug delivery**  
*Jarmila Zbytovská, University of Chemistry and Technology Prague, Faculty of Organic Technology, Prague, Czech Republic*

- 11:25 **Quantum dots nanoemulsion as a fluorescent tool for labeling zebrafish cells to study neurodegenerative diseases**  
*Luiza Araújo Gusmão<sup>1</sup>, Antonio Claudio Tedesco<sup>2</sup>, Reinhard W. Köster<sup>1</sup>*  
<sup>1</sup>Zoological Institute, Cellular and Molecular Neurobiology, TU Braunschweig, Germany; <sup>2</sup>University of São Paulo, Ribeirão Preto, Brazil
- 11:40 **Controlled release from lipid nanoparticles by modification of drug lipophilicity**  
*Nina Baumann<sup>1,2</sup>, Janosh Baumgarten<sup>2,3</sup>, Conrad Kunick<sup>2,3</sup>, Heike Bunjes<sup>1,2</sup>*  
<sup>1</sup>Institute of Pharmaceutical Technology and Biopharmaceutics, TU Braunschweig, Germany; <sup>2</sup>Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, Germany; <sup>3</sup>Institute of Medicinal and Pharmaceutical Chemistry, TU Braunschweig, Germany
- 11:55 **High-pressure production of nanoemulsions using nickel-based superalloy membranes**  
*Daniel Jupke<sup>1,2</sup>, J. M. Lück<sup>3</sup>, C. Heidenreich<sup>2,4</sup>, Heike Bunjes<sup>2,4</sup>, J. Rösler<sup>3</sup>, Jan-Henrik Finke<sup>1,2</sup>, Arno Kwade<sup>1,2</sup>*  
<sup>1</sup>Institute for Particle Technology, TU Braunschweig, Germany; <sup>2</sup>Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, Germany; <sup>3</sup>Institute for Materials Science, TU Braunschweig, Germany; <sup>4</sup>Institute of Pharmaceutical Technology and Biopharmaceutics, TU Braunschweig, Germany
- 12:10 **Bioprocess characterisation with microfluidic Devices**  
*Marco P.C. Marques, Nicolas Szita,*  
*University College London (UCL), Department of Biochemical Engineering London, WC1E 7JE, United Kingdom*
- 12:25 Discussion
- 12:30 Lunch Break

## SESSION V: DIGITAL MODELS IN PHARMACEUTICAL MANUFACTURING

Chair: **Stephan Scholl**

- 14:00 **INVITED LECTURE**  
**Process analytical technologies for inline control of fluidized bed agglomeration using artificial intelligence**  
*Michael Jacob, Marcel Voisin; Glatt Ingenieurtechnik GmbH, Weimar, Germany*
- 14:25 **In-silico supported methods (COSMO-RS) for the sustainable and targeted extraction and isolation of natural products from side-streams of wine production**  
*Mats Kiene<sup>1</sup>, Hendrik Fellensiek<sup>1</sup>, Malte Zaremba<sup>1</sup>, Gerold Jerz<sup>1</sup>, Edwin Januschewski<sup>2</sup>, Andreas Juadur<sup>2</sup>, Peter Winterhalter<sup>1</sup>*  
<sup>1</sup>Institute of Food Chemistry, TU Braunschweig, Germany; <sup>2</sup>German Institute of Food Technology, Quakenbrück, Germany
- 14:40 **Development of a method for AI supported crystallization process control**  
*Conrad Meyer<sup>1</sup>, Stephan Scholl<sup>1</sup>*  
<sup>1</sup>Institute for Chemical and Thermal Process Engineering, TU Braunschweig, Germany
- 14:55 **Learning adsorption processes with physics-informed neural networks: a parameter sensitivity perspective**  
*Md Meraj Khalid<sup>1</sup>, Subiksha Selvarajan<sup>1</sup>, Caroline Heiduk<sup>2</sup>, Stephan Scholl<sup>2</sup>, René Schenkendorf<sup>1</sup>*  
<sup>1</sup>Automation & Computer Sciences Department, Harz University of Applied Sciences, Wernigerode, Germany; <sup>2</sup>Institute for Chemical and Thermal Process Engineering, TU Braunschweig, Germany
- 15:10 **Perspectives of Work in Pharmaceutical Production**  
*Hans-Walter Hoehl, University of Applied Science BFI, Vienna, Austria*
- 15:25 Discussion

15:30 Bio Break

### SPECIAL GUEST SESSION

Chair: Stephan Scholl

15:45 **EU Funding & Policies for Research and Innovation: A Companion for a Research Career**  
*Inga Benner, European Liaison Office of the German Research Organisations (KoWi), Bonn, Germany*

16:45 END OF DAY

19:00 Conference Dinner Dornse

## CONFERENCE DAY 3 • 20 OCTOBER 2023

08:00 Check-In

### CAREER SESSION

Chair: Gerlinde Benninger / Denise Steiner

08:30 *Kerstin Wohlgemuth, TU Dortmund, Germany*  
*Jhinuk Rahman-Yildir, NextPharma, Göttingen, Germany*

10:00 Bio Break

### SESSION VI: ANALYTICS, PAT

Chair: Andreas Dietzel

10:15 **INVITED LECTURE**  
**Benefits of using UV-Vis, NIR and Raman spectrometers as inline PAT in pharmaceutical application**  
*Fuat Eker, Andreas Berghaus; ColVisTec AG, Berlin, Germany,*

10:40 **Online coupling of size exclusion chromatography to Raman spectroscopy for protein analysis**  
*Jana Thissen<sup>1,2</sup>, Martin D. Kläßen<sup>1</sup>, Michael C. Hacker<sup>2</sup>, Jörg Breitzkreutz<sup>2</sup>, Thorsten Teutenberg<sup>1</sup>, Björn Fischer<sup>2</sup>*  
*<sup>1</sup>Institut für Umwelt & Energie, Technik & Analytik e.V. (IUTA), Duisburg, Germany; <sup>2</sup>Institute of Pharmaceutics and Biopharmaceutics, Heinrich Heine University, Düsseldorf, Germany*

10:55 **Emerging PAT for freeze-drying processes for advanced process control**  
*Alex Juckers<sup>1,2</sup>, Petra Knerr<sup>2</sup>, Frank Harms<sup>2</sup>, Jochen Strube<sup>1</sup>*  
*<sup>1</sup>Clausthal University of Technology, Clausthal-Zellerfeld, Germany; <sup>2</sup>Martin Christ Gefriertrocknungsanlagen GmbH, Osterode am Harz, Germany*

11:10 **A-TEEM spectroscopy for fast and efficient QC and PAT of liquid samples**  
*Sascha Just, HORIBA Scientific, Oberursel, Germany*

11:25 **In-situ characterization of cells in a bioreactor by ultrasound enhanced in-line Raman and ATR-FTIR spectroscopy**  
*Christoph Gasser, Stefan Schöller, Stefan Radel, usePAT GmbH, Vienna, Austria*

11:40 Lunch Break

## SESSION VII: MICROSYSTEMS FOR PHARMACEUTICAL TESTING

Chair: Iordania Constantinou

- 12:15 **INVITED LECTURE**  
**Droplet-based microfluidic screening: from basics to precision oncology**  
*Doris Heinrich, Institut für Bioprocess- und Analysenmesstechnik e.V. (iba), Heilbad Heiligenstadt, Germany*
- 12:40 **Development of an automated and fully sensor equipped capillary-wave microbio-reactor for biopharmaceutical research**  
*Kevin Viebrock<sup>1,4</sup>, Sven Meinen<sup>2,4</sup>, Dominik Rabl<sup>3</sup>, Detlev Rasch<sup>1,4</sup>, Torsten Mayr<sup>3</sup>, Andreas Dietze<sup>2,4</sup>, Rainer Krull<sup>1,4</sup>*  
*<sup>1</sup>Institute of Biochemical Engineering, TU Braunschweig, Germany; <sup>2</sup>Institute of Microtechnology, TU Braunschweig, Germany; <sup>3</sup>Institute of Analytical Chemistry and Food Chemistry, TU Graz, Austria; <sup>4</sup>Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, Germany*
- 12:55 **Advances towards live-cell imaging on cell-stretching devices**  
*David Jaworski<sup>1</sup>, Lara Hundsdorfer<sup>2</sup>, Effie Bastounis<sup>2</sup>, Iordania Constantinou<sup>1</sup>*  
*<sup>1</sup>Institute of Microtechnology (IMT), Center of Pharmaceutical Engineering (PVZ), Technische Universität Braunschweig, Germany; <sup>2</sup>Institute of Microbiology and Infection Medicine (IMIT), Eberhard Karls University of Tübingen, Germany*
- 13:10 **Overcoming oxygen impermeability in PDMS-free organ-on-a-chip devices with nanoporous plastics**  
*Franziska Buck<sup>1</sup>, Jeroen. Bugter<sup>1</sup>, Stephanie Fuchs<sup>2</sup>, Torsten Mayr<sup>2</sup>, Thomas E. Winkler<sup>1</sup>*  
*<sup>1</sup>Institute of Microtechnology, TU Braunschweig, Germany; <sup>2</sup>Technische Universität Graz, Austria*
- 13:25 **Real-time monitoring of cell confluence and barrier integrity of an endothelial monolayer on an ultrathin nanoporous membrane with a bioimpedance sensor.**  
*Bo Tang<sup>1,3</sup>, Victor Krajka<sup>1,3</sup>, Wei Zhao<sup>1</sup>, Gazal Gökkus<sup>1,3</sup>, Stephan Reich<sup>2,3</sup>, Iordania Constantinou<sup>1,3</sup>, Andreas Dietzel<sup>1,3</sup>*  
*<sup>1</sup>Institute of Microtechnology, TU Braunschweig, Germany; <sup>2</sup>Institute of Pharmaceutical Technology and Biopharmaceutics, TU Braunschweig, Germany; <sup>3</sup>Center of Pharmaceutical Engineering (PVZ), TU Braunschweig, Germany*
- 13:40 Discussion
- 13:45 SPhERe 2023 POSTER AWARDS
- Remarks & Conclusions

# 5th International Symposium on Pharmaceutical Engineering Research – SPhERe 18 – 20 October 2023

## Poster Session – Detailed Programme

A dedicated poster session is preceded by an introductory presentation. Please note that your presentation time is limited to 2 minutes per poster. The detailed poster programme below lists only the presenting authors and their affiliations.

### WEDNESDAY, 18 OCTOBER 2023

17:15 Short Introduction by Islam El-Awaad

#### 17:18 P-I: API Synthesis

P-I.1 BIPHASIC BIOCATALYTIC TESTOSTERONE DEHYDROGENATION IN MICROFLUIDIC DROPLETS AND SLUG FLOW SYSTEMS

*L. Xiang, Institute of Microtechnology, Center of Pharmaceutical Engineering, TU Braunschweig*

P-I.2 ENGINEERING YEAST FOR PRODUCTION OF POLYPRENYLATED BENZOPHENONES AND XANTHONES

*R. Mögenburg, Institute of Pharmaceutical Biology, Center of Pharmaceutical Engineering, TU Braunschweig*

P-I.3 POLYMERIC IONIC LIQUIDS (PILs)-BASED HYDROGELS AS IMMOBILIZATION MATERIAL IN CATALYTIC REACTORS

*F. M. Teubner, Institute for Chemical and Thermal Process Engineering, Center of Pharmaceutical Engineering, TU Braunschweig*

P-I.4 GENERATION OF NOVEL PRISTINAMYCIN DERIVATIVES BY MUTASYNTHESIS

*Juan Pablo Gomez-Escribano, German Collection of Microorganisms and Cell Cultures, Leibniz Institute DSMZ*

#### 17:26 P-II: Scale-Up / Scale-Down Processes

P-II.1 DEVELOPING A BIOCATALYTIC MULTIPHASE REACTION SCALE-DOWN MODEL

*G. Schultz, Institute of Biochemical Engineering, Center of Pharmaceutical Engineering, TU Braunschweig*



P-II.2 PICKING MICROORGANISMS BY IMPEDANCE FLOW CYTOMETRY

*M. Mozafari, Institute of Microtechnology, TU Braunschweig*

P-II.3 DEVELOPMENT AND SCALE-UP OF A MODIFIED RELEASE BILAYER TABLET BASED ON COMPACTION SIMULATION

*Friederike Gütter, KORSCH AG*

### 17:32 P-III: Solid Dosage Forms

P-III.1 PRODUCTION OF SELF-DISPERSIBLE LIPID PELLETS BY JETCUTTING

*J. Pfeifer, Institute of Pharmaceutical Technology and Biopharmaceutics, Center of Pharmaceutical Engineering, TU Braunschweig*

P-III.2 PREPARATION OF SELF-DISPERSIBLE PELLETS BY EXTRUSION-SPHERONIZATION

*P. Schlosser, Institute of Pharmaceutical Technology and Biopharmaceutics, Center of Pharmaceutical Engineering, TU Braunschweig*

P-III.3 SYSTEMATIC EVALUATION OF THE INFLUENCE OF MATERIAL PROPERTIES AND PUNCH COATINGS ON STICKING

*I. Bialuch, Fraunhofer Institute for Surface Engineering and Thin Films IST, Center of Pharmaceutical Engineering, TU Braunschweig*

P-III.4 CONTINUOUS RING LAYER GRANULATION IN A NEW LAB SCALE PLANT

*Jan-Henrik Finke, Institute for Particle Technology, Center for Pharmaceutical Engineering, TU Braunschweig*

### 17:40 P-IV: Semi-Solid & Liquid Dosage Forms

P-IV.1 DIFFERENTIAL SCANNING CALORIMETRY (DSC) STUDIES ON THE CRITICAL MICELLE TEMPERATURE (CMT) OF POLOXAMERS IN AQUEOUS SOLUTIONS AND LIPID NANO-EMULSIONS

*O. Sukhbat, Institute of Pharmaceutical Technology and Biopharmaceutics, TU Braunschweig*

P-IV.2 COMPARING PHYSICO-CHEMICAL CHARACTERISTICS OF NANOPOROUS SUPERALLOY MEMBRANES WITH THOSE OF MEMBRANES ESTABLISHED IN PREMIX MEMBRANE EMULSIFICATION

*C. Heidenreich, Institute of Pharmaceutical Technology and Biopharmaceutics, Center of Pharmaceutical Engineering, TU Braunschweig*

P-VI.3 EVALUATION OF TEMPERATURE EXPOSURE OF NANOPARTICLES DURING SPRAY DRYING

*I. Klein, Department of Pharmaceutical Technology, University of Tübingen*

### 17:46 P-IV: Digital Models in Pharmaceutical Manufacturing

P-V.1 PREDICTION OF SOLVATION FREE ENERGIES FOR ORGANOMETALLIC COMPOUNDS VIA MOLECULAR DYNAMICS SIMULATIONS

*M. Sprick, Institute of Thermodynamics, Center of Pharmaceutical Engineering, TU Braunschweig*

### 17:48 Analytics, PAT

P-VI.1 MICROELECTRODE MEASUREMENTS AND MODELLING OF OXYGEN CONSUMPTION PARAMETERS IN FILAMENTOUS PELLETS OF ASPERGILLUS NIGER

*A. Dinius, Institute of Biochemical Engineering, Center of Pharmaceutical Engineering, TU Braunschweig*



- P-VI.2 IMPROVING IN-LINE MEASUREMENTS OF MODEL CRYSTALLIZATIONS BY THE CAREFUL APPLICATION OF AN ULTRASONIC STANDING WAVE  
*S. Radel, usePAT GmbH, Vienna, Austria*

### 17:52 Microsystems for Pharmaceutical Testing

- P-VII.1 ESTABLISHMENT OF A CAPILLARY WAVE MICROBIOREACTOR PLATFORM TO PERFORM PHAGOGRAMS  
*K. Viebrock, Institute of Biochemical Engineering, Center of Pharmaceutical Engineering, TU Braunschweig*
- P-VII.2 MODULATING EXTRACELLULAR MATRIX PROPERTIES IN ORGAN-ON-CHIPS  
*H. Kutluk, Institute of Microtechnology, Center of Pharmaceutical Engineering, TU Braunschweig*
- P-VII.3 ESTABLISHING A METHOD FOR QUANTIFICATION OF MUCUS IN CELL CULTURE MODELS OF NASAL MUCOSA  
*L. Klintz, Institute of Pharmaceutical Technology and Biopharmaceutics, Center of Pharmaceutical Engineering, TU Braunschweig*
- P-VII.4 GAP JUNCTION-MEDIATED CELL-CELL COMMUNICATION THROUGH ULTRA-THIN; ULTRA-POROUS BARRIER-CHIP MEMBRANES  
*J. Bugter, Institute of Microtechnology, Center of Pharmaceutical Engineering, TU Braunschweig*
- P-VII.5 OCULAR DYNAMITES – A MICROFLUIDIC MODEL OF THE HUMAN CORNEA FOR PRE-CLINICAL TESTING OF OPHTHALMIC DRUGS  
*V. Ledwig, Institute of Pharmaceutical Technology and Biopharmaceutics, Center of Pharmaceutical Engineering, TU Braunschweig*
- P-VII.6 AN IN VITRO MODEL OF MECHANICAL STRAIN ENHANCES CELLULAR UPTAKE OF SINGLE-WALLED CARBON NANOTUBES  
*David Jaworski, Institute of Microtechnology, Center of Pharmaceutical Engineering, TU Braunschweig*

**18:04 End of Poster Introductory Presentation**

### Poster Exhibition

The poster tour starts immediately after the introductory presentation. All poster presenters are requested to be available at the posters in the poster area (1st floor) of the conference venue.

### 18:15 GET TOGETHER