

## Posterprogramm

# Fachgruppentagung MPH / CFD / AT

20. + 21.3.2024

Universität Bremen / Gebäude GW2

## Allgemein

Allg-01

### **YoungFluidSeps - Early career fluid dynamics and separation engineers**

Marcel Gausmann<sup>1</sup>, Nicole Lutters<sup>2</sup>, Lena-Marie Ränger<sup>3</sup>  
<sup>1</sup>RWTH Aachen; <sup>2</sup>Universität Paderborn; <sup>3</sup>Universität Ulm

## Aerosoltechnologie AT

AT-01

### **Free electron and ion diffusion in nitrogen (N<sub>2</sub>)**

N. Mammadov, U. Riebel  
Brandenburg University of Technology

AT-02

### **1D modeling of single droplet combustion in Flame Spray Pyrolysis**

Arvind Chouhan, Nils Ellendt, Lutz Mädler  
Leibniz Institute for Materials Engineering IWT Bremen

AT-03

### **Break-up dynamics of single burning FSP-droplets**

Arne Witte<sup>1</sup>, Lutz Mädler<sup>1,2</sup>  
<sup>1</sup>University of Bremen; <sup>2</sup>Leibniz Institute for Materials Engineering IWT Bremen

AT-04

### **Heterostructural alumina aggregates prepared by plasma deposition**

Timur Fazletdinov<sup>1</sup>, Yuanqing Lu<sup>1</sup>, Zhiwen Pan<sup>1</sup>, Katrin Wondraczek<sup>2</sup>,  
Lothar Wondraczek<sup>1</sup>  
<sup>1</sup>Friedrich Schiller University, Jena; <sup>2</sup>Leibniz Institut für photonische Technologien, Jena

AT-05

### **Systematische und zufällige Fehler bei Kapillarverdünnern**

L. Hillemann<sup>1</sup>, C. Gabriel<sup>1</sup>, D. Göhler<sup>1</sup>, S. Große<sup>1</sup>, J. Müller<sup>1</sup> und F. Babick<sup>2</sup>  
<sup>1</sup>Technologieorientierte Partikel-, Analysen- und Sensortechnik, Topas GmbH; <sup>2</sup>Arbeitsgruppe Mechanische Verfahrenstechnik, TU Dresden

AT-06

### **Plasma-assisted synthesis of Al<sub>2</sub>O<sub>3</sub>/SiO<sub>2</sub> aggregates**

Ghazaleh Tahmasebi<sup>1</sup>, Hardy Baierl<sup>1</sup>, Robert Müller<sup>1</sup>, Lothar Wondraczek<sup>2</sup>  
and Katrin Wondraczek<sup>1</sup>  
<sup>1</sup>Leibniz Institute of Photonic Technology; <sup>2</sup>Otto Schott Institute of Materials Research, Friedrich-Schiller-University Jena

- AT-07 **Experimentelle Untersuchung des Photoemissionsverhaltes von mono- und bimetalischen Aerosol Nanopartikeln in definierten Prozessgasen**  
Vinzent Olszok, Philipp Rembe, Alfred P. Weber  
TU Clausthal
- AT-08 **Desoxidation von gasgetragenen Cu-Partikeln in einem Aerosolreaktor und einer Wirbelschicht**  
Shukang Zhang, Vinzent Olszok, Alfred Weber  
TU Clausthal
- AT-09 **DMA-sp-ICP-MS als online-Methode zur Charakterisierung von Aerosol-Sprühsynthese-Prozessen**  
Vinzent Olszok, Jalal Poostforooshan, Alfred Weber  
TU Clausthal
- AT-10 **Synthesis of Metal Oxide Nanoparticles via Electrospray-Assisted Flame Spray Pyrolysis**  
J. Poostforooshan<sup>1</sup>, S. Belbekhouche<sup>2</sup>, V. Olszok<sup>1</sup>, M. Stodt<sup>3,4</sup>, Mira Simmler<sup>5</sup>, Hermann Nirschl<sup>5</sup>, J. Kiefer<sup>3</sup>, U. Fritsching<sup>4,6</sup> and A. P. Weber<sup>1</sup>  
<sup>1</sup>Clausthal University of Technology; <sup>2</sup>UMR 7182 CNRS-Université Paris-Est Créteil; <sup>3</sup>Technische Thermodynamik, Universität Bremen; <sup>4</sup>Leibniz Institute for Materials Engineering IWT Bremen; <sup>5</sup>Karlsruhe Institute of Technology; <sup>6</sup>Particles and Process Engineering Department, University Bremen
- AT-11 **Aerosol-Assisted Synthesis of Spherical Mesoporous Silica Nanoparticles**  
J. Poostforooshan<sup>1</sup>, S. Belbekhouche<sup>2</sup>, and A. P. Weber<sup>1</sup>  
<sup>1</sup>Clausthal University of Technology; <sup>2</sup>UMR 7182 CNRS-Université Paris-Est Créteil
- AT-12 **Herstellung von photokatalytischen Heteroaggregaten durch bipolare Koagulation in einem bipolaren Elektrospray**  
Philipp Rembe<sup>1</sup>, Vinzent Olszok<sup>1</sup>, Alfred Weber<sup>1</sup>, Simon Assmann<sup>2</sup>, Franz Huber<sup>2</sup>, Stefan Will<sup>2</sup>  
<sup>1</sup>Technische Universität Clausthal; <sup>2</sup>Friedrich-Alexander-Universität, Erlangen
- AT-13 **Deposition Mechanism of Droplets in Miniaturized Unidirectional Cyclone Separators**  
Gunnar Dwars, Carsten Mehring  
Institute of Mechanical Process Engineering, University of Stuttgart
- AT-14 **Einfluss der Pulverbehandlung mit nicht thermischem Plasma auf die effektive Austrittsarbeit und das triboelektrische Aufladungsverhalten**  
Annett Wollmann, Shukang Zhang, Mehran Javadi, Alfred P. Weber  
Institut für Mechanische Verfahrenstechnik Technische Universität Clausthal
- AT-15 **Comparison of methods for the generation of monodisperse aerosols for calibration, validation and testing purposes**  
Daniel Göhler, Lars Hillemann, Lukas Oeser und Kathrin Oelschlägel  
Topas GmbH, Dresden
- AT-16 **Triboelectric Charging Characteristics of Al<sub>2</sub>O<sub>3</sub> Particles: Controlled Synthesis and Surface Modification Effects**  
Mehran Javadi, Mohamed Abohelwa, Annett Wollmann, Alfred P. Weber  
TU Clausthal

AT-17 **Correlation between Point of Zero Net Charge and Work Function in Al<sub>2</sub>O<sub>3</sub> Particles**  
Mehran Javadi, Mohamed Abohelwa, Annett Wollmann, Alfred P. Weber  
TU Clausthal

AT-18 **Formation of silicon/graphene heterostructures through co-gas-phase synthesis**  
Muhammad Ali, Hartmut Wiggers  
Institute for Energy and Materials Processes – Reactive Fluids, University of Duisburg-Essen

## Computational Fluid Dynamics CFD

CFD-01 **Numerical modelling of turbulence-induced hetero-agglomeration in the gas phase**  
Victor Kolck<sup>1</sup>, Joscha Witte<sup>2</sup>, Eberhard Schmidt<sup>2</sup>, Harald Kruggel-Emden<sup>1</sup>  
<sup>1</sup>Technische Universität Berlin, Chair of Mechanical Process Engineering and Solids Processing; <sup>2</sup>Bergische Universität Wuppertal, Institute of Particle Technology

CFD-02 **Das Trennverhalten eines Zyklons mit zweifachem Einlass**  
R. Krisch<sup>1, 2, 3</sup>, A. R. Paschedag<sup>2</sup>, K. Müller<sup>3</sup>  
<sup>1</sup>Fr. Jacob Söhne GmbH & Co. KG; <sup>2</sup>Berliner Hochschule für Technik; <sup>3</sup>Lehrstuhl für Technische Thermodynamik, Universität Rostock

CFD-03 **Modellierung der Mehrphasenströmung einer Air-Core-Liquid-Ring Düse zur Zerstäubung hochviskoser Flüssigkeiten**  
M. Á. Ballesteros Martínez, V. Gaukel  
Institut für Bio- und Lebensmitteltechnik: Lebensmittelverfahrenstechnik (LVT) Karlsruher Institut für Technologie

CFD-04 **Multiphase numerical modeling of the quenching process using polymer solution**  
Matheus Rover Barbieri<sup>1</sup>, Lizoel Buss<sup>1, 2</sup>, Friedhelm Frerichs<sup>2</sup>, Norbert Riefler<sup>2</sup>, Thomas Lübben<sup>2</sup>, Udo Fritsching<sup>1, 2</sup>  
<sup>1</sup>Particles and Process Engineering Department, University Bremen; <sup>2</sup>Leibniz Institute of Materials Engineering Bremen

CFD-05 **Advancing Deep Sea Sampling Using CFD Analysis**  
S. Saha<sup>1</sup>, A. Altmann<sup>1</sup>, M. Münsch<sup>1</sup>, M. Semel<sup>2</sup>, A. Wierschem<sup>1</sup>  
<sup>1</sup>Lehrstuhl für Strömungsmechanik, Friedrich-Alexander-Universität Erlangen-Nürnberg; <sup>2</sup>BAUER AG

CFD-06 **Carbon black synthesis and simulation in an enclosed Flame Spray Pyrolysis reactor**  
Fabio Henrique Bastiani<sup>1</sup>, Pedro Bianchi Neto<sup>1</sup>, Malte F.B. Stodt<sup>2</sup>, Udo Fritsching<sup>2, 3</sup>, Dirceu Noriler<sup>1</sup>  
<sup>1</sup>Department of Process Engineering, State University of Campinas, Campinas, Brazil; <sup>2</sup>Leibniz Institute of Materials Engineering Bremen; <sup>3</sup>Particles and Process Engineering Department, University Bremen

CFD-07 **Simulating the Wetting of Mesh Structures for Gas Diffusion Electrodes with a Phase-Field Method**  
Alexander Wagner<sup>1</sup>, Holger Marschall<sup>2</sup>, Henning Bonart<sup>1</sup>  
<sup>1</sup>Technische Universität Darmstadt, Fachgebiet Nano- und Mikrofluidik; <sup>2</sup>Technische Universität Darmstadt, Computational Multiphase Flow

- CFD-08                    **Strömungssimulation in einem Rotating Packed Bed mit einem Rekonstruierten Metallschaum**  
Felix Febrian, Georg Brösigke, Jens-Uwe Repke  
 Technische Universität Berlin, Fachgebiet Dynamik und Betrieb technischer Anlagen
- CFD-09                    **Development of a high-flow personal cyclone sampler using LES**  
Dzmitry Misiulia, Sergiy Antonyuk  
 Universität Kaiserslautern-Landau (RPTU)
- CFD-10                    **An unstructured finite volume discretization of the one-field formulation of Navier-Stokes equations for incompressible twophase flows with high density-ratios**  
Jun Liu<sup>1</sup>, Tobias Tolle<sup>1</sup>, Davide Zuzio<sup>2</sup>, Jean-Luc Estivalezes<sup>2</sup>, Dieter Bothe<sup>1</sup>, Tomislav Maric<sup>1</sup>  
<sup>1</sup>TU Darmstadt, Mathematical Modeling and Analysis; <sup>2</sup>Office national d'études et de recherches aérospatiales (ONERA)
- CFD-11                    **Direct numerical simulation of suspension dynamics with arbitrarily shaped convex particles**  
Jan E. Marquardt, Mathias J. Krause  
 Karlsruhe Institute of Technology
- CFD-12                    **A Novel Solver for Simulating Electrohydrodynamic Processes using OpenFOAM**  
Julian Liedtke, Carsten Mehring  
 Institut für Mechanische Verfahrenstechnik, Universität Stuttgart
- CFD-13                    **Using PRCFD simulations to study the impact of catalyst distribution on the reactor performance in diluted fixed beds**  
Martin Kutscherauer, Gregor D. Wehinger  
 Institute of Chemical Process Engineering
- CFD-14                    **Impact of Air Distributors in Spray Dryers**  
S. Saha<sup>1</sup>, F. Klöppner<sup>1</sup>, M.Münsch<sup>1</sup>, D. Krause<sup>2</sup>, F. Fücksle<sup>3</sup>, M. Lübbers<sup>2</sup>, K. Kreitz<sup>3</sup>, A. Wierschem<sup>1</sup>  
<sup>1</sup>Lehrstuhl für Strömungsmechanik, Friedrich-Alexander Universität Erlangen-Nürnberg; <sup>2</sup>Lübbers Anlagen und Umwelttechnik GmbH; <sup>3</sup>Vectoflow GmbH
- CFD-15                    **Streamline analysis of CFD simulations to evaluate the process performance of stirred tank reactors**  
Florian Scharf, Arne Hoffmann, Sebastian Meinecke  
 BASF SE
- CFD-16                    **Transport von Metallspänen durch enge Bohrkanäle – Kopplung von CFD und DEM**  
Teresa Tonn<sup>1</sup>, Lukas Schumski<sup>2</sup>, Lizoel Buss<sup>1</sup>, Jens Sölter<sup>2</sup>, Bernhard Karpuschewski<sup>1,2</sup>, Udo Fritsching<sup>1,2</sup>  
<sup>1</sup>Leibniz Institute of Materials Engineering Bremen; <sup>2</sup>University Bremen
- CFD-17                    **Direct Numerical Simulation of the turbulent mixing of two liquids at high Schmidt numbers for the fabrication of nanoparticles**  
A. Karimi-Noughabi<sup>1</sup>, R. Grzeschik<sup>2</sup>, A. Dankov<sup>2</sup>, S. Schlücker<sup>2</sup>, I. Wlokas<sup>1</sup>, A. Kempf<sup>1</sup>  
<sup>1</sup>Chair of Fluid Dynamics, EMPI, University of Duisburg-Essen; <sup>2</sup>Physical Chemistry I, University of Duisburg-Essen

- CFD-18 **Simulating Industrial Multi-Phase Flows: Modified Equations of State for Lattice Boltzmann Methods**  
 Tim N. Bingert, Luiz E. Czelusniak, Mathias J. Krause  
 Lattice Boltzmann Research Group, Karlsruhe Institute of Technology
- CFD-19 **How Adding Machine Learning to Simulation Brings Greater Value for Process Industries**  
 Thomas Eppinger, Justin Hodges, Ravindra Aglave  
 Siemens Industry Software, Berlin
- CFD-20 **Using Magnetic Resonance Imaging (MRI) as a full-field validation technique for reactive CFD simulations**  
 K. Kuhlmann<sup>1</sup>, H. Ridder<sup>1</sup>, Ingmar Bösing<sup>1</sup>, G. Pesch<sup>1,2</sup>, J. Thöming<sup>1</sup>  
<sup>1</sup>Chemical Process Engineering, University Bremen, <sup>2</sup>School of Chemical and Bioprocess Engineering, University College Dublin

## Mehrphasenströmungen MPH

- MPH-01 **Piezoelectric Generation of Micron-sized Droplets with Ultrasonic Bursts**  
 Norbert Riefler<sup>1</sup>, Sina Nayeri<sup>2</sup>, Lutz Mädler<sup>1,2</sup>  
<sup>1</sup>Leibniz Institute of Materials Engineering Bremen; <sup>2</sup>Particles and Process Engineering, University Bremen
- MPH-02 **1D PBE Modelling for Mass Transfer in Gas-Liquid Stirred Tank Reactors**  
 Ferdinand Breit, Erik von Harbou,  
 Laboratory of Reaction and Fluid Process Engineering, RPTU  
 Kaiserslautern-Landau
- MPH-03 **Proteins at interfaces and the influence on droplet breakup**  
 Patrick Giefer<sup>1</sup>, Anja Heyse<sup>2</sup>, Stefan Drusch<sup>2</sup>, Udo Fritsching<sup>1,3</sup>  
<sup>1</sup>University of Bremen, Particles and Process Engineering; <sup>2</sup>Technical University of Berlin, Department of Food Technology and Food Material Science, Institute of Food Technology and Food Chemistry; <sup>3</sup>Leibniz Institute of Materials Engineering Bremen
- MPH-04 **Inertial flow-induced particle motion in laminar shear flow**  
 S. Wrana, D. S. Mbuto Tchounguen, A. Wierschem  
 Friedrich-Alexander-Universität Erlangen Nürnberg (FAU)
- MPH-05 **Determination of surface tension and viscosity in molten metals using oscillating metallic droplets**  
 Kiana Fahimi, Lutz Mädler, Nils Ellendt  
 University of Bremen
- MPH-06 **Experimental Investigations and Modelling of Internal Mixing Effects in Reaction Mixing Pumps**  
 Yannick Mayer<sup>1</sup>, Seyedeh-Saba Ashrafmansouri<sup>1,2</sup>, Oliver Bey<sup>3</sup>, Erik von Harbou<sup>1</sup>  
<sup>1</sup>Laboratory of Reaction and Fluid Process Engineering, RPTU Kaiserslautern-Landau; <sup>2</sup>Department of Chemical Engineering, University of Larestan, Lar/Iran; <sup>3</sup>Group Research, BASF SE, Ludwigshafen/Germany

- MPH-07** **Process Optimisation in a 3D-printed Micro Bubble Column Reactor by Multiphase CFD Modeling**  
Leonie Schumann<sup>1,3</sup>, Gábor Schultz<sup>1,3</sup>, Ebrahim TaiediNejad<sup>2,3</sup>, Florian Kelsch<sup>4</sup>, Detlev Rasch<sup>1,3</sup>, Andreas Dietzel<sup>2,3</sup>, Janina Bahnemann<sup>5</sup>, Ulrich Krühne<sup>6</sup>, Andreas Liese<sup>4</sup>, Rainer Krull<sup>1,3</sup>  
<sup>1</sup>Institute of Biochemical Engineering, TU Braunschweig; <sup>2</sup>Institute of Microtechnology, TU Braunschweig; <sup>3</sup>Center of Pharmaceutical Engineering, TU Braunschweig; <sup>4</sup>Institute of Technical Biocatalysis, TUHH; <sup>5</sup>Institute of Biochemical Engineering, TU Braunschweig - Institute of Physics, University of Augsburg; <sup>6</sup>PROSYS, Department of Chemical and Biochemical Engineering, DTU, Denmark
- MPH-08** **MPH – Wiederverwendung und effizientere Nutzung**  
Sigrun Raedler  
AC Rädler Umwelttechnik GmbH, Wien / Österreich
- MPH-09** **Mixing of Turbulent Flame Jets**  
Tobias Tabeling<sup>1</sup>, Jakob Stahl<sup>2</sup>, Lutz Mädler<sup>1,2,3</sup>, Udo Fritsching<sup>1,2,3</sup>  
<sup>1</sup>Leibniz Institute of Materials Engineering Bremen; <sup>2</sup>Particles and Process Engineering, University Bremen; <sup>3</sup>MAPEX, University Bremen
- MPH-10** **Methanisierung im Blasensäulenreaktor: Konzept zur Validierung eines axialen Dispersionsmodells mit Experimenten im Pilotmaßstab**  
Simon Sauerschell, Siegfried Bajohr, Thomas Kolb  
Karlsruher Institut für Technologie. => cancelled
- MPH-11** **Numerical Investigation of Heat Transfer in the cooling-circuit of the PEM-electrolysis**  
Montadhar Guesmi, Simon Unz, Michael Beckmann  
Technische Universität Dresden
- MPH-12** **A PR-CFD study on the influence of measurement setup on temperature data from heat transfer test rig for packed beds**  
Shreyas Rohit Srinivas, Mark Zink, Andreas Richter  
TU Bergakademie Freiberg, Institute of Energy Process Engineering and Chemical Engineering
- MPH-13** **Numerical Study on Transport of Respiratory Droplets in Ventilated Indoor Environments Using the Eulerian Approach**  
Yi Fenga<sup>1</sup>, Dongyue Lib<sup>2</sup>, Daniele Marchisio<sup>1</sup>, Marco Vannia<sup>1</sup>, Antonio Buffoa<sup>1</sup>  
<sup>1</sup>Politecnico di Torino, Torino / Italy; <sup>2</sup>DYFLUID Ltd, Beijing / China
- MPH-14** **Bestimmung des Einflusses der Schichthöhe auf die viskose Kraft zwischen sphärischen Partikeln und benetzten Oberflächen durch aufgelöste CFD-Simulationen**  
David Strohner, Sergiy Antonyuk  
Rheinland-Pfälzische Technische Universität Kaiserslautern-Landau
- MPH-15** **In situ measurements of hydrodynamic variables in two- and three-phase flow in froth flotation.**  
Hifsa Pervez<sup>1</sup>, Ali Hassan<sup>3</sup>, Anna-Elisabeth Sommer<sup>2</sup>, Till Zürner<sup>2</sup>, Martin Rudolph<sup>3</sup>, Kerstin Eckert<sup>1,2</sup>  
<sup>1</sup>Institute for Process Engineering and Environmental Technology, Technische Universität Dresden; <sup>2</sup>Institute of Fluid Dynamics, Helmholtz-Zentrum Dresden-Rossendorf, Dresden; <sup>3</sup>Department of Mineral Processing, Helmholtz Institute Freiberg for Resource Technology, Freiberg

- MPH-16** **Bubble paths in two-phase flows through open-porous foams: Imaging measurements by X-ray and neutron radiography**  
Tobias Lappan<sup>1,2</sup>, Guanghao Jiao<sup>1,2</sup>, Julian Heinrich<sup>1,2</sup>, Pavel Trtik<sup>3</sup>, Robin Michak<sup>1,2</sup>, Natalia Shevchenko<sup>1</sup>, Kerstin Eckert<sup>1,2</sup>, Sven Eckert<sup>1</sup>  
<sup>1</sup>Institute of Fluid Dynamics, Helmholtz-Zentrum Dresden Rossendorf; <sup>2</sup>Institute of Process Engineering and Environmental Technology, Technische Universität Dresden; <sup>3</sup>Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institut, Villigen PSI / Switzerland
- MPH-17** **Optimization of fine powder separation in an air classifier**  
Mohamed Abohelwa, Bernd Benker, Mehran Javadi, Annett Wollmann, Alfred P. Weber  
TU Clausthal
- MPH-18** **Optimization of geometrical parameters of an air classifier for fine powder separation**  
Mohamed Abohelwa, Bernd Benker, Mehran Javadi, Annett Wollmann, Alfred P. Weber  
TU Clausthal
- MPH-19** **Selective fractionation process for fine dispersed and multidimensional property distributed particles**  
Krischan Sandmann, Udo Fritsching  
Leibniz-Institut für Werkstofforientierte Technologien – IWT Bremen
- MPH-20** **Impact of Process Gas Control on Atomization of Viscous Melts**  
A. Weicht<sup>1</sup>, L. Achelis<sup>2</sup>, S. Evers<sup>1</sup>, M. Peters<sup>1</sup>, V. Uhlenwinkel<sup>1</sup>, U. Fritsching<sup>1,2</sup>  
<sup>1</sup>Leibniz Institute for Materials Engineering – IWT; <sup>2</sup>Department of Production Engineering, University of Bremen
- MPH-21** **Molecular Dynamic Simulation of Nanodroplet Impacting upon the Heated Microstructured Surface**  
Danqi Wang<sup>1,2,3</sup>, Martin Sommerfeld<sup>3</sup>  
<sup>1</sup>State Key Laboratory of Alternate Electrical Power System with Renewable Energy Sources, North China Electric Power University; <sup>2</sup>Research Center of Engineering Thermophysics, North China Electric Power University, 102206 Beijing, China; <sup>3</sup>Multiphase Flow Systems (MPS), Institute for Process Engineering, Otto-von-Guericke-University Magdeburg
- MPH-22** **Fluidynamic optimization of Additively Manufactured Lattice Structures (AMLS) for SMART Reactors by using CFD**  
Wigger, C.<sup>1</sup>, Acikgöz, S.<sup>2</sup>, Lehmann, T.<sup>1</sup>, Herzog, D.<sup>2</sup>, Weiland C.<sup>1</sup>, Hoffmann, M.<sup>1</sup>, Kinau, S.<sup>3</sup>, Skiborowski, M.<sup>3</sup>, Kelbassa, I.<sup>2</sup>, Schlüter, M.<sup>1</sup>  
<sup>1</sup>Institute of Multiphase Flows Hamburg University of Technology (TUHH); <sup>2</sup>Institute for Industrialization of Smart Materials Hamburg University of Technology (TUHH); <sup>3</sup>Institute for Process Systems Engineering Hamburg University of Technology (TUHH)
- MPH-23** **Effect of reactor scale on local and global dissolved carbon dioxide mass transfer coefficient**  
Nicolas Nickel<sup>1</sup>, Sebastian Hofmann<sup>1</sup>, Jürgen Fitschen<sup>2</sup>, Thomas Wucherpfennig<sup>2</sup> and Michael Schlüter<sup>1</sup>  
<sup>1</sup>Hamburg University of Technology, Institute of Multiphase Flows; <sup>2</sup>Late Stage USP Development, Bioprocess Development Biologicals, Boehringer Ingelheim Pharma GmbH & Co. KG

MPH-24

**KUNSTBLUT - Mehrphasiges Blutersatzfluid für die experimentelle Strömungsvisualisierung in Gefäßprothesen**

Christina Maria Winkler<sup>1,2</sup>, Gesine Hentschel<sup>1,2</sup>, Marc Müller<sup>1</sup>, Philipp Berg<sup>3,4</sup>, Péter Kováts<sup>5</sup>, Katharina Zähringer<sup>5</sup>, Florian Rummel<sup>6</sup>, Birgit Glasmacher<sup>1,2</sup>

<sup>1</sup>Institut für Mehrphasenprozesse, Fakultät für Maschinenbau, Leibniz Universität Hannover; <sup>2</sup>NIFE – Niedersächsisches Zentrum für Biomedizintechnik, Implantatforschung und Entwicklung, Medizinische Hochschule Hannover; <sup>3</sup>Forschungscampus STIMULATE, Otto-von-Guericke-Universität Magdeburg; <sup>4</sup>Lehrstuhl Medizinische Telematik und Medizintechnik, Otto-von-Guericke- Universität Magdeburg; <sup>5</sup>Lehrstuhl Strömungsmechanik & Strömungstechnik, Otto-von-Guericke-Universität Magdeburg; <sup>6</sup>NETZSCH-Gerätebau GmbH

MPH-25

**Einfluss der Schneckengeometrie auf die Verweilzeitverteilung in einem Gegenstrom-Extraktionsprozess**

Riem Al-Hamadi<sup>1</sup>, Annemarie Lehr<sup>1</sup>, Gábor Janiga<sup>1</sup>, Andreas Seidel-Morgenstern<sup>2</sup>, Dominique Thévenin<sup>1</sup>

<sup>1</sup>Otto-von-Guericke Universität Magdeburg; <sup>2</sup>Max-Planck-Institut für Dynamik komplexer technischer Systeme, Magdeburg