

Program overview

Tuesday, April 19, 2016

09:00 Opening

09:10 Friedrich Löffler-Prize in Particle Technology

09:20 **Prof. Dr. T. Alan Hatton, Massachusetts Institute of Technology, USA**

Stabilization of nanoparticles and nanoemulsions under extreme salinity and high temperature conditions for oil reservoir applications

10:00 Coffee Break

10:30	Modelling and Simulation	Particles in Contact and Processing	Interface Controlled Processes	(Nano)-Structured Materials	Particles from Renewable Materials	Applications of Particle Technology	IPROCUM Conference
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12:10 Lunch Break & Exhibition Visit

14:00 **Prof. Dr.-Ing. Wolfgang Peukert, Friedrich-Alexander University Erlangen-Nürnberg, Germany**

Particle interfaces – from molecular structure to macroscopic properties

14:40	Modelling and Simulation	Particles in Contact and Processing	Interface Controlled Processes	(Nano)-Structured Materials	Particles from Renewable Materials	Applications of Particle Technology	IPROCUM Conference
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15:40 Coffee Break

16:10	Modelling and Simulation	Particles in Contact and Processing	Particles and Energy	(Nano)-Structured Materials	(Nano)-Structured Materials	Applications of Particle Technology	Modelling and Simulation
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17:30 Poster Presentation Visit

19:00 Get together

Wednesday, April 20, 2016

09:00 Opening & EFCE-MPS Award

09:10 **Dr.-Ing. Karsten Keller, DuPont, USA**

Particle technology in the new economy

09:50 Coffee Break

10:20	Modelling and Simulation	Particles in Contact and Processing	Interface Controlled Processes	(Nano)-Structured Materials	Pharmaceutical Particles	Applications of Particle Technology	ICHEME's PTSIG – Round Table
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12:20 Lunch Break & Exhibition Visit

14:00 **Prof. Dr.-Ing. Stefan Palzer, Nestle S.A., Switzerland**

State of the art of particle design in the food industry

14:40	Modelling and Simulation	Particles in Contact and Processing	Life & Food Science	(Nano)-Structured Materials	Pharmaceutical Particles	Applications of Particle Technology	Pharmaceutical Particles
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16:00 Industry Lectures & Exhibition Visit

18:00 POWTECH Exhibition Party

Thursday, April 21, 2016

09:00 Opening

09:10 **Dipl.-Ing. Dierk Wieckhusen, Novartis Pharma AG, Switzerland**

Particles in the pharmaceutical industry

09:50 Coffee Break

10:20	Modelling and Simulation	Particles in Contact and Processing	Life & Food Science	(Nano)-Structured Materials	Pharmaceutical Particles	Applications of Particle Technology	Modelling and Simulation
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12:20 Lunch Break & Exhibition Visit

14:00 **Prof. Dr. Hans Herrmann, ETH Zurich, Switzerland**

Particles in turbulent flow

14:40	Modelling and Simulation	Particles in Contact and Processing	Life & Food Science	(Nano)-Structured Materials	(Nano)-Structured Materials	Applications of Particle Technology	Particles in Contact and Processing
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16:00 Closing Ceremony

Tuesday, April 19, 2016

09:00 **Opening**

09:10 **Friedrich Löffler-Prize in Particle Technology**

Keynote

09:20 **Stabilization of Nanoparticles and Nanoemulsions under extreme Salinity and High Temperature Conditions for Oil Reservoir Applications**
 Prof. Dr. T. Alan Hatton, Massachusetts Institute of Technology, USA

10:00 **Coffee Break**

	Modelling and Simulation – Capillary Effects/Drying	Particles in Contact and Processing – Piko	Interface Controlled Processes – Particles at interface/coating	(Nano)-Structured Materials – Structuring
10:30	Continuum-mechanical simulation of capillary bridges between nanoscale particles Michael Dörmann, University of Paderborn, Germany	Adhesion moment of spherical particles in gaseous environment – comparison between experiment and simulation Alexander Haarmann, University of Wuppertal, Germany	Two-dimensional arrangement of magnetic nanoparticles Heinz Rehage, TU Dortmund, Germany	Stabilisation of Pt/oxide nanoparticles using a sol-gel-process Jana Ehrhardt, University of Stuttgart, Germany
10:50	Collision behaviour of particles during normal and oblique impact on wet surfaces Britta Crüger, Hamburg University of Technology, Germany	Influence of the plate thickness on the contact time at elastic impact Peter Mueller, Otto-von-Guericke-University Magdeburg, Germany	Selective separation of ultrafine particle systems: chances and drawbacks when using non-polar oil as process aid Tom Leistner, Helmholtz Institute Freiberg for Resource Technology, Germany	Gas phase coating of aerosol nanoparticles with SiOx in a DBD plasma at atmospheric pressure Patrick Post, Clausthal University of Technology, Germany
11:10	Discrete element analysis of the shear behaviour of partially wet granular material Haithem Louati, École des Mines d'Albi, France	Micromechanics and Energy Dissipation of Pharmaceutical Particles at Contact Alexander Russell, Otto-von-Guericke-University Magdeburg, Germany	Influence of Surface Structuring on the Adhesion of Wheat Flour and Wheat Dough Richard-Sebastian Moeller, Karlsruhe Institute of Technology, Germany	Hierarchical composite nanostructures via spray-drying Carsten Schilde, Technical University of Braunschweig, Germany
11:30	Pore network simulations of superheated steam drying Kieu Hiep Le, Otto-von-Guericke-University Magdeburg, Germany	A new discrete element contact model to simulate the mechanical behaviour of TiO₂-nanoparticle films in humid air Jens Laube, University of Bremen, Germany	Surface modification of particles in a fluidized-bed plasma-enhanced CVD process Axel Binder, BASF SE, Germany	On spray drying of uniform mesoporous silica microparticles Cordelia Selomulya, Monash University, Australia
11:50	Modelling and Validation of Spray Drying Process in Pilot-Scale Counter-Current Spray Tower Muzammil Ali, University of Leeds, United Kingdom	Presentation of a New Optical Centrifuge for Particle Adhesion Measurement Johannes Knoll, Karlsruhe Institute of Technology, Germany	Systematic process optimisation of fluid bed coating Andreas van Kampen, University of Hohenheim, Germany	Influence of process conditions on the morphology of Maltodextrin agglomerates investigated by 3D X-ray images Reihaneh Pashminehazar, Otto-von-Guericke-University Magdeburg, Germany

12:10 **Lunch Break & Exhibition Visit**

Keynote

14:00 **Particle interfaces – from molecular structure to macroscopic properties**
 Prof. Dr.-Ing. Wolfgang Peukert, Friedrich-Alexander University Erlangen-Nürnberg, Germany

	Modelling and Simulation – Grinding	Particles in Contact and Processing – Piko	Interface Controlled Processes – Powder technologies for additive manufacturing and 3D printing	(Nano)-Structured Materials – Material Properties 1
14:40	DEM simulation of aggregate crushing Riccardo Artoni, IFSTTAR, France	Rolling, sliding and torsion of micron-sized silica particles: experimental, numerical and theoretical analysis Thomas Weinhart, University of Twente, Netherlands	Laser Sintered Part Surface Simulation of Topography and optimized Alignment Patrick Delfs, University of Paderborn, Germany	Characterization of silver nanoparticle-coated textiles for antibacterial applications Xiaoai Guo, Karlsruhe Institute of Technology, Germany
15:00	Predicting Milling Performance of Roller Compacted Ribbons by DEM Colin Hare, University of Leeds, United Kingdom	Investigation of contact forces between oxidic surfaces as a function of adsorbate chemistry and temperature under UHV conditions Bastian Mosebach, University of Paderborn, Germany	A process route for the production of filled polymer particles for additive manufacturing Marius Sachs, Friedrich-Alexander University Erlangen-Nürnberg, Germany	Simultaneous Analysis of Hydrodynamic and Optical Properties Using Multi-wavelength Analytical Ultracentrifugation Johannes Walter, Friedrich-Alexander University Erlangen-Nürnberg, Germany

Particles from Renewable Materials	Applications of Particle Technology – Bulk Properties and functional particles	IPROCOCOM Conference – In silico process modeling for roll compaction
Industrial Product Design of Disperse Systems Jens Uhlemann, Bayer Technology Services GmbH, Germany	Superparamagnetic micro-particles with functional surfaces for substance targeting in water treatment Michael Schneider, Fraunhofer Institute for Silicate Research ISC, Germany	A combined DEM & FEM modelling of powder flow and compaction during roll pressing Luca Orefice, Graz University of Technology, Austria Alon Mazor, École des Mines d'Albi, France
Recycling of Silicon via atomization for Photovoltaics Supply Chain application Valdiney Domingos, Viridis.iQ GMBH, Germany	General Framework to Predict Segregation Behavior in Multi-component and Multi-Mechanism Materials Kerry Johanson, Material Flow Solutions Inc, USA	Machine learning tools for modelling of powder mixing Varun Kumar Ojha, Technical University of Ostrava, Czech Republic Serena Schiano, University of Surrey, United Kingdom
Comparative method of investigating the resistance of biomass pellets degradation through repeated impact Murtala Muhammad Abdulummini, University of Greenwich, United Kingdom	How to improve classical flowability tests to meet current requirements of industries Geoffroy Lumay, University of Liège, Belgium	Roll Compaction: The impact of system design and Scale up Kitti Csordas, Ana Pérez Gago, both Heinrich-Heine-University Düsseldorf, Germany
Investigation of segregated fines during the filling operation of biomass materials in large scale Lahiru Lakshan Lulbadda Waduge, University of Greenwich, United Kingdom	The role of inorganic salts on the structure and functional properties of detergent powders Amin Farshchi, University of Leeds, United Kingdom	Feature selection techniques for Roll Compaction Hossam Zawbaa, Babes-Bolyai University, Romania Lucía Pérez Gandarillas, École des Mines d'Albi, France Serena Schiano, University of Surrey, United Kingdom
Properties and quality system for granular biomass Mateusz Stasiak, Institute of Agrophysics Polish Academy of Sciences, Poland	Multifunctional nanoparticles for targeted theranostics Fabian Starsich, ETH Zurich, Switzerland	Multiscale modelling of ribbon Milling: a DEM-PBM framework Simone Loreti, University of Surrey, United Kingdom Andreja Mirtič, AstraZeneca, United Kingdom

Particles from Renewable Materials	Applications of Particle Technology – Separation Processes	IPROCOCOM Conference – In silico process modeling for roll compaction
Single biofuel pellet durability characterization with predictive ability for standard bulk method results Sylvia Larsson, Swedish University of Agricultural Sciences, Sweden	Highly Efficient Filtration of Ultrafine Dust Emitted by Biomass Combustions With Baghouse Filter Using Precoat Material Sascha Schiller, University of Paderborn, Germany	The impact of roll compaction process on die filling and die compaction Lucía Pérez Gandarillas, École des Mines d'Albi, France Serena Schiano, University of Surrey, United Kingdom
Chitosan based nanoparticles for adsorption of micropollutants Benjamin Riegger, University of Stuttgart, Germany	Separation characteristics of a deflector wheel classification during stationary conditions Christian Spötter, Clausthal University of Technology, Germany	DEM modelling of powder flow & powder-filling during die compaction Raphael Schubert, Fraunhofer Institute for Mechanics of Materials IWM, Germany Zilin Yan, Johnson Matthey Plc, United Kingdom



Tuesday, April 19, 2016

	Modelling and Simulation – Grinding	Particles in Contact and Processing – Piko	Interface Controlled Processes – Powder technologies for additive manufacturing and 3D printing	(Nano)-Structured Materials – Material Properties 1
15:20	Analysis of Fluid-Particle-Wall Interactions in a Spiral Jet Mill Selasi Dogbe, University of Leeds, United Kingdom	Sintering of polymer particle – Experiments and modelling of temperature- and time-dependent contacts Regina Fuchs, Max Planck Institute for Polymer Research, Germany	Production of polymer particles by melt emulsification for additive manufacturing processes Stephanie Fanselow, Friedrich-Alexander University Erlangen-Nürnberg, Germany	Impact of optical property on the photocatalytic activity of aggregates Hoai Nga Le, Dresden University of Technology, Germany
15:40	Coffee Break			
	Modelling and Simulation – Fluidized Beds	Particles in Contact and Processing – Piko – Capillary Forces	Particles and Energy	(Nano)-Structured Materials – Material Properties 2
16:10	Process control of continuous fluidized bed layering with internal product classification by MPC Andreas Bück, Otto-von-Guericke-University Magdeburg, Germany	Adhesive forces on rough hydrophobic surfaces – Modelling of force distributions Jörg Fitzsche, Freiberg University of Technology, Germany	Influence of three-dimensional electrode microstructure on the performance of lithium-ion batteries Michael Kespe, Karlsruhe Institute of Technology, Germany	Automated synthesis of CdSe quantum dot nanocrystals for reproducibility studies and unique insights to process-structure Ahmed Mahmoud Salaheldin, Friedrich-Alexander University Erlangen-Nürnberg, Germany
16:30	CFD simulation of the hydrodynamics of fluidized beds operated under reduced pressure Sayali Zarekar, Otto-von-Guericke-University Magdeburg, Germany	Development of new Analysis Methods for the Characterization and Classification of Wet Sticky Ores Jens Plinke, University of Newcastle, Australia	The role of Power Technology in Thermal energy storage – a challenge across tens of orders of magnitude Yulong Ding, University of Birmingham, United Kingdom	The effects of chemical components distribution and particle structure on dissolution kinetics Patricia Andreu, University of Birmingham, United Kingdom
16:50	Investigation of heat transfer in packed/fluidized beds resolved by an implicit 3D finite difference approach Tobias Oschmann, Ruhr University Bochum, Germany	Simultaneous measurement of capillary force and shape of the capillary bridges between a particle and a liquid film Frank Schellenberger, Max Planck Institute for Polymer Research, Germany	DEM Simulation of Lithium-ion battery electrodes with tailored active material particle size Clara Sangrós, Technical University of Braunschweig, Germany	Characterization and prediction of random structured granules: structure measures and property functions Julia Harnacke, University of Hohenheim, Germany
17:10	Multiscale simulation of the fluidized bed granulation in a Wurster coater apparatus Maksym Dosta, Hamburg University of Technology, Germany	Wet granular matter under shear Laurent Gilson, Max Planck Institute for Polymer Research, Germany	The recycling of Li-ion batteries from electric vehicles – methodological approaches of Mechanical Engineering Lutz Wuschke, Technical University Bergakademie Freiberg, Germany	High-Speed Dynamic Image Analysis for Food and Fibre Applications Wolfgang Witt, Sympatec GmbH, Germany
17:30	Poster Presentation Visit			
19:00	Get together In a relaxed atmosphere with pretzels and beer all participants can discuss the topics of the first conference day and establish new contacts. The Get together is included in the delegate fee.			

Supporting Organisations



International Association for Pharmaceutical Technology (APV), Germany



Deutsche Keramische Gesellschaft (DKG), Germany



The Chinese Academy of Sciences (CAS), China



Deutscher Schüttgut-Industrie Verband (DSIV), Germany



German Association of Biotechnology Industries (DIB), Germany



The Research Association of the German Food Industry (FEI), Germany



Nano in Germany, Germany



Association for Aerosol Research (GAref), Germany

Particles from Renewable Materials	Applications of Particle Technology – Separation Processes	IPROCOCOM Conference – In silico process modeling for roll compaction
Processing and investigation of carbohydrate-based polymers for the encapsulation by spray-drying Michael Walz, University of Stuttgart, Germany	Determination of surface properties and dispersibility of NPs by means of sedimentation analysis Sebastian Süß, Friedrich-Alexander University Erlangen-Nürnberg, Germany	CI for solid dosage forms: modeling milling and die compaction processes Hassan Khalid, Pezhman Kazemi, both Jagiellonian University, Poland
(Nano)-Structured Materials – Measuring Technology	Applications of Particle Technology – High Temperature Processes	Modelling and Simulation
Analytical Centrifugation and Direct Boundary Modelling as a Next Generation Tool for Accurate Particle Size Analysis Johannes Walter, Friedrich-Alexander University Erlangen-Nürnberg, Germany	Oxide particles production by low-voltage/low-current cathode plasma electrolysis Alexander Gromov, Nuremberg Institute of Technology Georg Simon Ohm, Germany	A hard-sphere model for DEM-simulations Boris Balakin, University of Bergen, Norway
New insight into concentrated micro- and nanodispersions by X-ray concentration profiling Dietmar Lerche, LUM GmbH, Germany	APPtec – a new generation of spray pyrolysis technology Lars Leidolph, Glatt Ingenieurtechnik GmbH, Germany	Effect of Particle Shape on Bulk Particle Motion in Discrete Element Simulations Mehrddad Pasha, University of Leeds, United Kingdom
Continuous synthesis and in situ SAXS analysis of nanoparticles in liquid phase Manuel Meier, Karlsruhe Institute of Technology, Germany	Plasma Compatiibility of Particles for Functional PVD-coatings by ex-situ Injection Uwe Beck, BAM Federal Institute for Materials Research and Testing, Germany	Simulation of Impact Breakage of Weak Agglomerates by Distinct Element Method Tina Bonakdar, University of Leeds, United Kingdom
Photon Cross-Correlation Spectroscopy for on-line Particle Size Analysis Helmut Geers, Sympatec GmbH, Germany	Antibacterial and photocatalytic activity of nano-coatings generated by Liquid Flame Spray Janne Haapanen, Tampere University of Technology, Finland	Mechanistic Modeling of Capsule Filling Processes Peter Loidolt, Graz University of Technology, Austria



VDI Society Chemical and Process Engineering (VDI-GVC), Germany



AIChE's Particle Technology Forum (AIChE's PTF), USA



ProcessNet – eine Initiative von DECHEMA und VDI-GVC, Germany



IChemE's Particle Technology Special Interest Group (PTSIG), United Kingdom