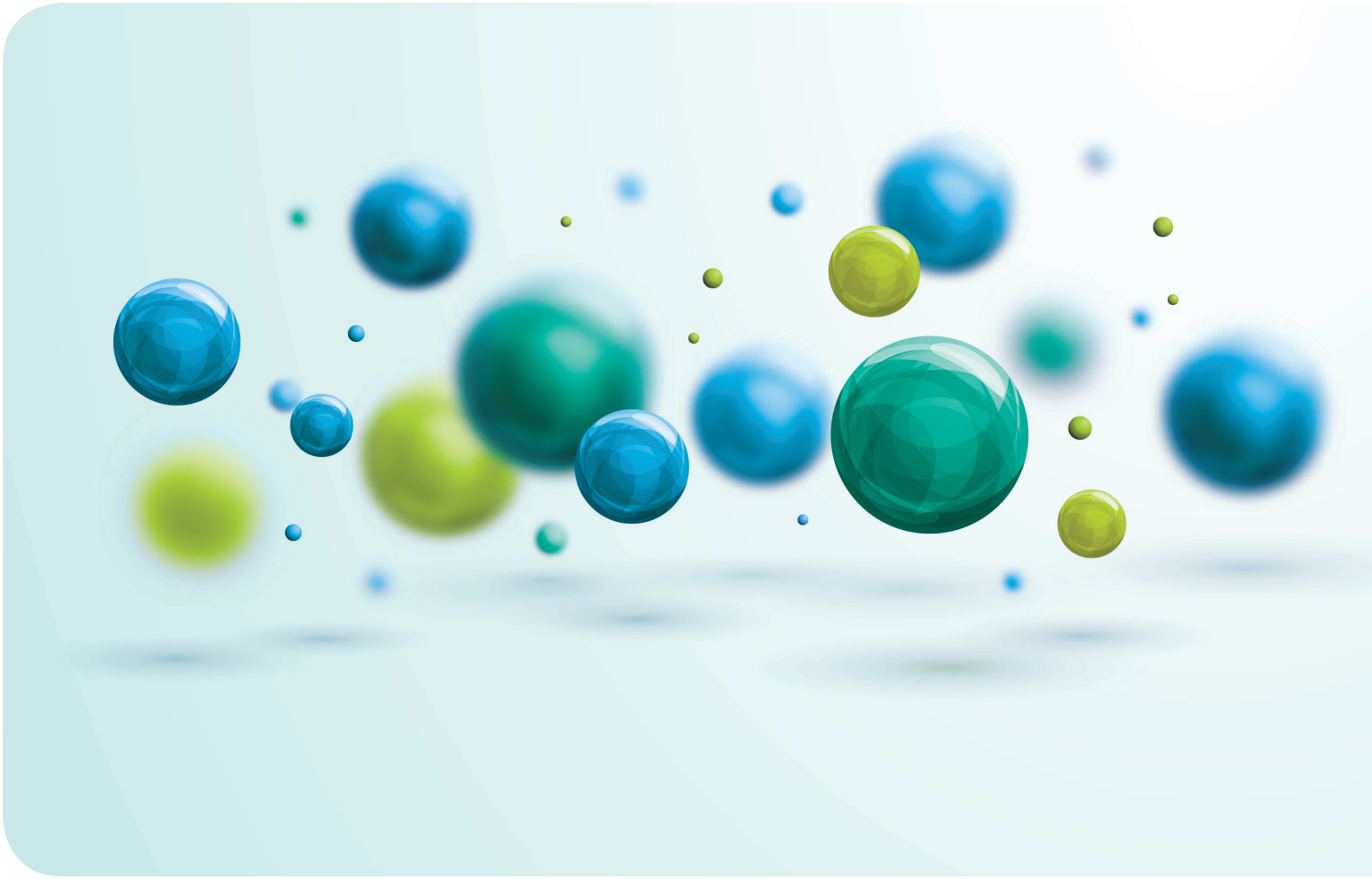
PARTEC 2019

International Congress on Particle Technology

April 9–11, 2019 | Nürnberg, Germany



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Purpose

Modern production processes in chemical, pharmaceutical and biological industries are characterized by solids processes with complex process structures.

Grand challenges has been achieved to better understand and to adjust processes for particle product design and the corresponding and required product properties, which are of multiscale nature.

Besides this classical fields the PARTEC, as one of the largest international particle and powder technology conferences, wants to address also emerging fields of applications of particle technology in life sciences and medicine, environmental and energy technology, synthesis reactions, materials science, electronics, photonics and additive manufacturing, which influence our daily life.

For this reasons the major topic of the next PARTEC in 2019 is „Particles for a better life". PARTEC attracts a very wide mix of attendees, from both academia and industry, all meeting together in the same place and surrounded by POWTECH, the world's leading exhibition for the processing, analysis and handling of powder and bulk solids.

I would therefore like to invite the academic world and the representatives from the industry to take part in this important event.

I look forward to meeting you at PARTEC 2019.

Prof. Dr.-Ing. Stefan Heinrich
Head of the Institute of Solids Process Engineering and Particle Technology of the Hamburg University of Technology (TUHH)
Chairman of PARTEC 2019

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Peukert, W. – FAU Erlangen-Nürnberg, Germany

Program overview

Tuesday, April 9, 2019

09:00	Opening						
09:10	Friedrich Löffler-Prize in Particle Technology						
09:20	Particle Functionalization by ALD: Fundamentals, Applications, and Path Forward, Prof. Dr. Alan W. Weimer						
10:00	Coffee Break						
10:30	Modelling and Simulation	Characterization of Particles	Fluidization and Multiphase Flow	Handling and Flow of Particulate Systems	Mechanics of Particulate Solids	Modelling and Simulation	DynSim SPP 1679
12:10	Lunch Break & Exhibition Visit						
14:00	Dynamics of Cohesive Powder Flow, Prof. Mojtaba Ghadiri						
14:40	Modelling and Simulation	Application of Particle Technology	Fluidization and Multiphase Flow	Mixing	Interface Properties	Particle and Bulk Powder Characterization	DynSim SPP 1679
15:40	Coffee Break						
16:10	Modelling and Simulation	Characterization of Particles	Fluidization and Multiphase Flow	Handling and Flow of Particulate Systems	Interface Properties	Particle and Bulk Powder Characterization	Particle Technology for Pharmaceuticals
17:30	Poster Presentation Visit						
19:00	Get-together						

Wednesday, April 10, 2019

09:00	EFCE-MPS Award						
09:10	Particle Technology in Additive Manufacturing, Prof. Karen Hapgood						
09:50	Coffee Break						
10:20	Modelling and Simulation	Particle Technology for Pharmaceuticals	Fluidization and Multiphase Flow	Agglomeration and Granulation	Particle Interactions and Interfaces	Particle and Bulk Powder Characterization	Particles for Additive Manufacturing
12:20	Lunch Break & Exhibition Visit						
14:00	Model Driven Design of Particulate Processes and Products - Applications in Pharmaceutical Manufacture and Beyond, Prof. Jim Litster						
14:40	Modelling and Simulation	Particle Technology for Pharmaceuticals	Application of Particle Technology	Agglomeration and Granulation	Characterization of Particles	Particle and Bulk Powder Characterization	Particle Design and Functionalization
16:00	Coffee Break						
16:30	Modelling and Simulation	Particle Technology for Pharmaceuticals	Comminution	Particle Technology for Energy Systems	Particles for Additive Manufacturing	Life and Food Science	Particle Design and Functionalization
18:00	POWTECH Exhibition Party						

Thursday, April 11, 2019

09:00	Elsevier/Powder Technology Poster-Award, PARTEC 2019						
09:10	Engineering of particles by spray drying and spray fluidized bed processes, Prof. Dr.-Ing. Evangelos Tsotsas						
09:50	Coffee Break						
10:20	Modelling and Simulation	Agglomeration and Granulation	Comminution	Formation and Synthesis of Particles	Particle Interactions and Interfaces	Seperation	Nano Hybrids
12:20	Lunch Break & Exhibition Visit						
14:00	Contribution of Particle Technology Research on CO_2 capture and reduction, Prof. Hamid Arastoopour						
14:40	Modelling and Simulation	Characterization of Particles	Application of Particle Technology	Formation and Synthesis of Particles	Particle Technology for Pharmaceuticals	Seperation	Handling and Flow of Particulate Systems
16:00	Closing Ceremony						

Tuesday, April 9, 2019

09:00 Opening

09:10 Friedrich Löffler-Prize in Particle Technology

09:20 **Particle Functionalization by ALD: Fundamentals, Applications, and Path Forward** Keynote
Prof. Dr. Alan W. Weimer, University of Colorado, USA

10:00 Coffee Break

	Modelling and Simulation	Characterization of Particles	Fluidization and Multiphase Flow	Handling and Flow of Particulate Systems
10:30	**Experimentally validated DEM characterization for a hydrodynamic granular model with application to hopper flow** Robert Hesse, Technical University of Kaiserslautern, Germany	**On-line Particle Size Analysis by Laser Diffraction and Scattering for nanoscale Suspensions and Emulsions** Dr. rer. nat. Thomas Stübinger, Sympatec GmbH, Germany	**Spatially-averaged models for fluidized gas-particle suspensions** Dr. Simon Schneiderbauer, Johannes Kepler University of Linz, Austria	**Characterisation of flow behaviour of metal powders for 3D printing application** Mozhdeh Mehrabi, University of Leeds, UK
10:50	**Numerical simulations of dry granular avalanches flowing down a vibrated inclined plane** Dr. Sébastien Kiesgen de Richter, University of Lorraine, France	**Online Structure Determination of Aerosol Particles Using Sequential Classification by Mobility Diameter and Vacuum Aerodynamic Diameter** Dennis Kiesler, University of Duisburg-Essen, Germany	**DEM-CFD simulation of the dispersion of particle agglomerates by cyclonic flows** Dr. Alberto Di Renzo, University of Calabria, Italy	**Revealing Rheology of Dense Non-cohesive Granular Materials by DEM Simulation** Dr. Fenglei Qi, University of Luxembourg
11:10	**Discrete Element Method simulation of wet granulation** PhD Mikio Yamanoi, Prometech Software, Japan	**Sintering of Fe-Nanoparticles in a Well-defined Model Flow Reactor** Thore Rosenberger, University of Duisburg-Essen, Germany	**A Simple Model to Account Particle Attrition in Pneumatic Conveying** Dr. Dmitry Portnikov, Ben-Gurion University of the Negev, Israel	**Influence of Fluid Pressure Gradient and Fluid Drag on Hopper Outflow Characteristics for Cohesive Powders** Robert Hesse, Technical University of Kaiserslautern, Germany
11:30	**An interface resolved immersed boundary method in XDEM for particulate flow simulations** Mingqiu Wu, University of Luxembourg	**Porosity determination techniques for spray dried particulate systems** Nora Ruprecht, University of Hohenheim, Germany	**A comprehensive review of current drag models and the physical limitations of their validation** Dr. Casey LaMarche, Particulate Solid Research Inc, USA	**A New Method for Particle Dispersion by Induction Charging** Prof. Shuji Matsusaka Kyoto University, Japan
11:50	**Modelling deformable particles in complex fluid flow: A reduced-order modelling approach** A. N. Balachandran Nair M. Sc., Johannes Kepler University of Linz, Austria	**Segmentation-Optimized Preparation Method for Particulate Samples in Micro-CT Analysis** Ralf Ditscherlein, Technical University Bergakademie Freiberg, Germany	**Stability Analysis of Uniform Fluidization** Dr. Chenxi Zhang, Tsinghua University, China	**Investigating the potential of size and density fractionation of micro particles through passive MOFF, DLDF and serpentine micro channels using µPIV and high-speed PTV** Sebastian Blahout, Ruhr-University of Bochum, Germany

12:10 Lunch Break & Exhibition Visit

Supporting Organisations

International Association for Pharmaceutical Technology (APV), Germany

Deutsche Keramische Gesellschaft (DKG), Germany

The Chinese Academy of Sciences (CAS), China

The Chemical Industry and Engineering Society of China

German Association of Biotechnology Industries (DIB), Germany

IChemE PTSIG, England

Deutsche Keramische Gesellschaft (DKG), Germany

Mechanics of Particulate Solids	Modelling and Simulation	DynSim SPP 1679
Contact behavior of wet cylindrical particles during compression and impact Philipp Grohn, Technical University of Kaiserslautern, Germany	**Modelling breakup of a suspension droplet containing nanoparticles during pulse combustion drying** Daniel Pramudita, Otto Von Guericke University of Magdeburg, Germany	**Model-based optimization of ripening processes with feedback** Michele Spinola, Friedrich-Alexander-University of Erlangen-Nuremberg, Germany
Analysis of the Influence of Protein Crystal Shape and Breakage on the Filtration Behaviour Using a Downscaled Filtration Cell Benjamin Radel, Karlsruhe Institute of Technology, Germany	**Particle simulations: a story of scales and how to bridge them** Dr. Thomas Lichtenegger, Johannes Kepler University of Linz, Austria	**Dynamics and control of continuous fluidized bed layering granulation** Christoph Neugebauer, Max Plank Institute for Dynamics of Complex Technical Systems Magdeburg, Germany
A numerical adhesive contact law for deformable particles Dr. Csaba Sinka, University of Leicester, UK	**Numerical Investigation of Particle Transport in Human Respiratory System** Dr. Shuji Ohsaki, Osaka Prefecture University, Japan	**Dynamic Flowsheet Simulation of a Crystallization Reactor with Material Recovery via a Hydrocyclone** Simon Kulozik, M. Sc., Technical University of Munich, Germany
Stability analysis of stick-slip phenomena Karl Krueger, Technical University of Kaiserslautern, Germany	**Development of dust release functions validation methods for simulations** Nadja Schwindt, University of Wuppertal, Germany	**Dynamic flowsheet simulation of the mechanical fluid separation in solid bowl centrifuges** Marco Gleiß, Karlsruhe Institute of Technology, Germany
Understanding the mechanics of particulate solids: From particles to continuum-theory and applications Prof. Stefan Luding, University of Twente, The Netherlands	**Predictive modelling and experimental evaluation of structured food powder dissolution** Nora Ruprecht, M. Sc., University of Hohenheim, Germany	**Interconnected multivariate population balances based on the Monte Carlo method** Gregor Kotalczyk, University of Duisburg-Essen

FEI Forschungskreis der Ernährungsindustrie e.V. — The Research Association of the German Food Industry (FEI), Germany

GAeF — Association for Aerosol Research (GAeF), Germany

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

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

The Society of Powder Technology, Japan

ProcessNet — ProcessNet, Germany

Nano in Germany — Nano in Germany, Germany

Tuesday, April 9, 2019

14:00 **Dynamics of Cohesive Powder Flow** Keynote
Prof. Mojtaba Ghadiri, University of Leeds, United Kingdom

	Modelling and Simulation	Application of Particle Technology	Fluidization and Multiphase Flow	Mixing
14:40	**Modelling the calendaring process of lithium-ion electrodes via DEM simulations** Clara Sangrós, Technical University of Braunschweig, Germany	**What Particle Measurement Software should provide to prepare the Way to Industry 4.0** Oliver Rutsch, Sympatec GmbH, Germany	**Investigation of fluidization characteristics and agglomerate formation during drying of nanosuspensions in a vacuum fluidized bed** Prof. Dr.-Ing. Andreas Bück, Friedrich-Alexander University of Erlangen-Nuremberg, Germany	**Validation of DEM simulations of a high intensity mixer and coater** Tom Meaclem, University of Canterbury, UK
15:00	**Coarse-grained DEM for granular shear flow and application to powder mixing process** Hideya Nakamura, Osaka Prefecture University, Japan	**Real time measurement of flocs produced during the water treatment process** Dr. Stephen Ward Smith, Malvern Panalytical, UK	**Measurement of residence time distributions in a continuous spouted bed** Swantje Pietsch, Hamburg University of Technology, Germany	**Experimental study on shear induced percolation** Dr. Silvia Volpato, University of Padova, Italy
15:20	**DEM study of cohesive solid flow in screw feeder with asymmetrical screw designs** Xin Li, Monash University, Australia	**Adaptive feedback control of continuously operated convective dryers for particulate materials** Prof. Dr.-Ing. Andreas Bück, Friedrich-Alexander University of Erlangen-Nuremberg, Germany	**Bubble Hydrodynamic Comparison for Geldart Group a and B Materials at Different Fluidization Regimes** Shyam Sundaram, Particulate Solid Research, Inc. USA	**Shaping Segregation: Multiscale modelling of industrial mixers** Dr. Anthony Thornton, University of Twente, The Netherlands

15:40 Coffee Break

	Modelling and Simulation	Characterization of Particles	Fluidization and Multiphase Flow	Handling and Flow of Particulate Systems
16:10	**Modelling of particle formation in spray-drying of multi-component mixtures** Prof. Dr.-Ing. Andreas Bück, Friedrich-Alexander University of Erlangen-Nuremberg, Germany	**Formation and characterisation of inorganic particle residues from lube oil droplets** Julia Thieringer, Karlsruhe Institute of Technology, Germany	**Reduction of metal powder in a fluidized bed reactor using a dielectric barrier discharge reactor** Malte Bierwirth, M. Sc., TU Clausthal, Germany	**Online monitoring of particle distribution in pneumatic conveying systems via electrical capacitance tomography** Dr. Stefan Puttinger, Johannes Kepler University of Linz, Austria
16:30	**Numerical simulations of melt pool dynamics in powder-bed additive manufacturing processes** Dr. Claas Bierwisch, Fraunhofer IWM, Germany	**Imaging of Particles for Size and Shape Analysis in Laboratory and Process Environments** Dr.-Ing. Ulrich Köhler, Sympatec GmbH, Germany	**Particle Attrition in cyclone** Fabio Fulchini, University of Leeds, UK	**Investigation of energy loss in horizontal bends in dilute phase pneumatic conveying** Prof. Haim Kalman, Ben Gurion University of the Negev, Israel
16:50	**Modelling and Characterization of Aggregated Nanoparticle Films** Prof. Dr.-Ing, Lutz Mädler, University of Bremen, Germany	**Characterization of Particles needs International Standardization** Prof. Dr.-Ing. habil. Michael Stintz, Technical University of Dresden, Germany	**Development of a Simple Approach for Quantifying the Magnitude of Interparticle Forces in a High Temperature Gas-Solid Fluidized Bed** Jaber Shabanian, CanmetENERGY-Ottawa, Canada	**Velocities and porosities in pneumatic conveying** Philipp Schweda, Technical University of Munich, Germany
17:10	**Numerical Simulation of the Frictional Behaviour of the Tire-Pavement System in Presence of Ice-Snow Interface** Prof. Rimantas Kačianauskas, Vilnius Gediminas Technical University, Lithuania	**Comprehensive Characterization of Nano-Aerosols by Wide-Angle Light Scattering (WALS) and Laser-Induced Incandescence (LII)** Simon Aßmann, Friedrich-Alexander-University Erlangen-Nuremberg, Germany	**Pulsierende Mehrphasenströmungen – Untersuchung des Einflusses der Strömungsbedingungen und Partikeleigenschaften auf den gekoppelten Wärme- und Stoffübergang in Gas-Feststoff-Strömungen** Arne Teiwes, Glatt Ingenieurtechnik GmbH, Germany	**Cohesive Powder Flow of Faceted Particles in Screw Feeders** Dr. Alejandro Lopez, University of Leeds, UK

17:30 **Poster Presentation Visit**

19:00 **Get together** sponsored by BECKMAN COULTER Life Sciences

Interface Properties	Particle and Bulk Powder Characterization	DynSim SPP 1679
Formulating with particles using Hansen Solubility/Similarity Parameters Prof. Steven Abbott, Steven Abbott TCNF Ltd, Ipswich, UK Prof. Dietmar Lerche LUM GmbH, Berlin, Germany	Significant advances in bulk solids handling and ultrafine grinding through the life's work of Prof. Jörg Schwedes (Ehrenvortrag anlässlich des Todes von Prof. Jörg Schwedes) Prof. Dr.-Ing. Arno Kwade, Technical University of Braunschweig, Germany	Simulation of Technical Precipitation Processes DYNSIM Hendrik Rehage, Karlsruher Institute of Technology, Germany
	Assessment of Triboelectric Charging Propensity of Powders by Aerodynamic Dispersion Umair Zafar, University of Leeds, UK	A software framework for dynamic flowsheet simulation with advanced treatment of multidimensional distributed parameters Vasyl Skorych, Hamburg University of Technology, Germany
On the characterization of the wettability of microparticles using Finite Dilution Inverse Gas Chromatography – critical introduction and application in ultrafine particle separation processes Dr.-Ing. Martin Rudolph, Helmholtz-Zentrum Dresden-Rossendorf, Germany	TiO2 Pigment Sizing: Constituents, Aggregates and Primary Particles Dr. Ralf Theissmann, KRONOS International Inc., Germany	Simulation of dynamic behaviour of fine grinding in stirred media mills Greta Fragnière, Technical University of Braunschweig, Germany

Interface Properties	Particle and Bulk Powder Characterization	Particle Technology for Pharmaceuticals
The Effect of the Surface Functionalization of in Polymers Embedded Nanoparticles Lisa Ditscherlein, Technical University Bergakademie Freiberg, Germany	Study on the influence of solids volume fraction on filter cake structures using micro tomography Erik Loewer, Technical University Bergakademie Freiberg, Germany	Characterization of Liposomal Particles for Pharmaceutical Applications Kirsten Ullmann, Karlsruhe Institute of Technology, Germany
The Effect of the Surface Functionalization of in Polymers Embedded Nanoparticles Reza Saadat, Technical University Braunschweig, Germany	Characterization of precipitated Silica in terms of use in vacuum insulation panels (VIPs) Manuel Meier, Karlsruhe Institute of Technology, Germany	Process chain design as a tool to tailor the release kinetics of poorly soluble APIs Sebastian Melzig, Technical University of Braunschweig, Germany
Liquid – solid interaction during wet extrusion/spheronization: Impact of different solvents on pellet characteristics Vincent Lenhart, Heinrich-Heine-University Dusseldorf, Germany	Predicting packing of pharmaceutical powders and blends Dr. Rajesh Dave, New Jersey Institute of Technology, USA	Characterization of primary lyophilization using a coulometrically based humidity sensor Nicole Vorhauer, Otto-von-Guericke Universität Magdeburg, Germany
Selective Agglomeration of Graphite in a Heterogeneous Suspension – Effect of Contact Angle Julia Schreier, M. Sc., Trier University of Applied Sciences, Germany	Unifying size-topology relationship in random packings of polydisperse adhesive spheres Dr. Wenwei Liu, University of Surrey, UK	Characterization of primary lyophilization op frozen bulky solids Dr. Petra Först, Graz University of Technical University of Munich

Wednesday, April 10, 2019

09:00 EFCE-MPS Award

09:10 **Particle Technology in Additive Manufacturing** Keynote
Prof. Karen Hapgood, Deakin University, Australia

09:50 Coffee Break

	Modelling and Simulation	Particle Technology for Pharmaceuticals	Fluidization and Multiphase Flow	Agglomeration and Granulation
10:20	**Simulation of soot and ash dynamics in diesel particulate filters employing a hybrid subgrid/resolved particle approach with a Lattice Boltzmann Method** Nicolas Hafen, M. Sc., Karlsruhe Institute of Technology, Germany	**Application of Physicochemical Characterization Techniques for Complex Generic Product In Vitro bioequivalence studies** Deborah Huck-Jones, Malvern Panalytical, UK	**Experimenatal model of a fluidized granular beds for biomass gasification** Anna Prati, Free University of Bolzano – Bozen, Italy	**Development of Dry Granulates: Comparability of Granulates Obtained by Tableting and Roller Compaction** Dr. Barbara Fretter, Solids Development Consult GmbH, Germany
10:40	**Particle systems on the molecular scale: Multiscale modeling of bio-agglomerates** Philipp Nicolas Depta, Technical University of Hamburg, Germany	**Determination of the solid (true) density of pharmaceutical powders and the impact on tablet compression characterization** Dr. Edgar John, Novartis Pharma AG, Switzerland	**Influence of Temperature on the Transition from Bubbling to Turbulent Fluidization for Geldart's Group B Particles** Tom Wytrwat, Hamburg University of Technology, Germany	**Experimental parameter study on Mn oxides agglomeration's key factors** John-Lee Dubos, ERAMET Research, France
11:00	**Potentials and Constraints for the application of CFD to dry powder inhalers: A Review** Prof. Dr.-Ing. Martin Sommerfeld, Otto-von-Guericke University of Magdeburg, Germany	**Energy State Quantification of Amorphous Systems using Differential Scanning Calorimetry** Karsten Fluegel, Merck KGaA, Germany	**Understanding calcium cooping activity of limestone for thermochemical energy storage of concentrated solar power** Dr. Pablo Garcia Trinanes, University of Greenwich, UK	**Auto-Agglomeration of Cohesive Powders Due to Mechanical Vibration** Umair Zafar, University of Leeds, UK
11:20	**Residence Time Distribution Prediction in Large-Scale Continuous Apparatuses using Recurrence CFD** Paul Kieckhefen, Technical University of Hamburg, Germany	**Particle Size Analysis for Medical Sprays and Inhalation Products** Jana Krone, Sympatec GmbH, Germany	**High pressure fluidized-bed reactors for chemical looping CO_2 capture processes using two novel concepts: internally circulating reactor (ICR) and gas switching reactor (GSR)** Shahriar Amini, SINTEF, Norway	**Mechanistic modeling of spherical agglomeration process for pharmaceutical manufacturing** Dr. Omid Arjmandi-Tash, The University of Sheffield, UK
11:40	**Simulation of a Fluidized Hot-Melt Coating Process Using CFD - DEM** Peter Böhling M. Sc., Research Center Pharmaceutical Engineering, Austria	**Particle size distribution and impact on the pharmaceutical development** Frank Rüschhoff, Micronisierungs-Kontor Oberrot GmbH, Germany	**Coupled VOF/CFD-DEM method for simulation of heat transfer in dense particle-laden free surface flow** Tim Nijssen, Eindhoven University of Technology, The Netherlands	**Characterization of agglomerating wet fluidized particulate** Ziv Greidinger, Ben Gurion University of the Negev, Israel
12:00	**Microscale CFD-DEM Simulation of the Carbon Black Aggregates Behavior in a Shear Flow** Ermek Asylbekov, Karlsruhe Instutute of Technology, Germany	**Calibration strategy for material parameters in DEM modelling of compaction** Dr. rer. nat. Jan Henrik Finke, Technical University of Braunschweig, Germany	**Drying of cohesive particles in vibrated fluidized beds** Sören Lehmann M. Sc., Hamburg University of Technology, Germany	**Experimental investigation of dynamic process stability of continuous fluidized bed spray agglomeration with internal classification** Daniel Müller M. Sc., Otto von Guericke University Magdeburg, Germany

12:20 Lunch Break & Exhibition Visit

Particle Interactions and Interfaces	Particle and Bulk Powder Characterization	Particles for Additive Manufacturing
Monitoring flocculation performance of designed polyelectrolytes in an industrial effluent using Laser Diffraction Spectroscopy Prof. Maria Graca Rasteiro, University of Coimbra, Portugal	Single particle properties of elongated particles and their impact on bulk solid properties Steffen Beitz, Technical University of Braunschweig, Germany	Production of complex polymer particles for additive manufacturing by spray drying Dr. Jochen Schmidt, Friedrich-Alexander-Universität Erlangen-Nuremberg, Germany
Normal elastic impact of wet particles: a DEM study Prof. Chuan-Yu Wu, University of Surrey, UK	Understanding the nature of Active Pharmaceutical Ingredients during dry granulation James Clarke, University of Birmingham, UK	Effect of flowability on powder spreading process in Additive Manufacturing Vanessa Seyda, Hoedtke GmbH & Co. KG, Germany
Influence of the surface structure on the fluid displacement during fine particle collision: Experimental study and CFD-DEM simulation Fabian Krull, Technical University of Kaiserslautern, Germany	Magnetically assisted impaction coating (MAIC) for blending optimising Jamie Clayton, Freeman Technology Ltd. United Kingdom	The effect of temperature on the flow properties of polymeric powders for selective laser sintering Prof. Massimo Poletto, University of Salerno, Italy
Demonstrating Surface Structural Differences of Dry Powders: Processing and Powder Flow Hector Lozano-Perez, Purdue University, USA	Measuring powder flowability at low stresses: comparison of techniques Azza Mahmoud, University of Surrey, UK	Polymer and metallic powders flowability & electrical charges characterization for additive manufacturing Dr. Quentin Ribeyre, GranuTools, Belgium
From elasticity to capillarity in soft contacts Dr. Michael Kappl, MPI for Polymer Research, Germany	Bag filling characteristics of starch related to the flow properties of different starches Dr. Gabriel Meesters, Delft University of Technology, The Netherlands	Comparison of different flow assessments for Selective Laser Sintering powders Dr. rer. nat. Denis Schütz, Anton Paar GmbH, Austria
Exploring the Requirements of Pharmaceutical Powders for use in 3D Binder Jetting Printing Anthony Antic, Deakin University, Australia	Die filling behavior of spray dried ceramic granules Dipl-Ing. Bianca Glöß, Fraunhofer IKTS, Germany	Advanced analytical insight for optimising metal powders for additive manufacture Dr. Cathryn Langley, Malvern Panalytical, UK

Wednesday, April 10, 2019

14:00 Model Driven Design of Particulate Processes and Products – Applications in Pharmaceutical Manufacture and Beyond — Keynote
Prof. Jim Litster, University of Sheffield, United Kingdom

	Modelling and Simulation	Particle Technology for Pharmaceuticals	Application of Particle Technology	Agglomeration and Granulation
14:40	Validation of a CFD – DEM Simulation Coupling Method of a Tablet Coating Process Peter Böhling M. Sc., Research Center Pharmaceutical Engineering, Austria	Development of a novel drying technology for drying of wet powders and pastes without change of initial particle size DI Dr. Isabella Aigner, Research Center Pharmaceutical Engineering GmbH, Austria	An advanced numerical approach to predict wall erosion due to particle impact Dr.-Ing. Bernhard Peters, Université du Luxembourg	Property-based control of fluidized bed agglomeration Dr. Michael Jacob, Glatt Ingenieurtechnik GmbH, Germany
15:00	An Efficient CFD-DEM Coupling Using Network Communication Dr. Yi He, University of Leeds, UK	In situ investigation of the protein particle formation process during drying in an acoustic levitator Julian Perlitz, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany	Photocatalytic performance of TiO2 nanoparticles decorated with gold nano-nuggets in a scalable flow reactor Nadia Licciardello, Technical University of Dresden, Germany	Electrostatic Spray Drying – Innovation in Spray Dry Technology Audrey Maudhuit, Fluid Air Europe, France
15:20	Coupled CFD-DEM simulations to model the viscosity of nanoparticulate suspensions Dr.-Ing. Carsten Schilde, Technical University of Braunschweig, Germany	tba.	Silver nanoparticles – production, application and regulatory background Gregor Schneider, RAS AG, Germany	In-Line Measurement System for Ribbon Strength at a GERTEIS PACTOR Robert Frank Lammens, Solids Development Consult GmbH, Germany
15:40	Coupled DEM/LBM Simulation of DLD Fractionation Simon Raoul Reinecke M. Sc., Technical University of Berlin, Germany	Aerosol Fabrication of Spherical Mesoporous Silica and its Application as a Drug Carrier Dr. Poostforooshan Jalal, TU Clausthal, Germany	The new test dust: DMT A2 fine quartz-free Umalan Gogilan, DMT GmbH & Co. KG, Germany	Liquid contact spreading in tumbling drums: Effect of material properties and process parameters Rachel Smith, University of Sheffield, UK

16:00 Coffee Break

	Modelling and Simulation	Particle Technology for Pharmaceuticals	Comminution	Particle Technology for Energy Systems
16:30	Optimal Control and Optimization of Fluid Flows in Process Engineering Dr. Matthias J. Krause, Karlsruhe Institute of Technology, Germany	An attempt to mechanistically explain derived compression parameters of powders by acting micro-processes Isabell Wünsch M. Sc., Technical University of Braunschweig, Germany	A Hybrid Particle Breakage Model for Large scale DEM Simulations PhD Klas Jareteg, Fraunhofer Chalmers Research Centre Industrial Mathematics, Germany	Particle technology based design of lithium-ion battery electrodes Prof. Dr.-Ing. Arno Kwade, Hamburg University of Technology, Germany
16:50	A Surrogate Based Modelling and Optimization Methodology for Calibration and Engineering Design using DEM PhD Johannes Quist, Fraunhofer Chalmers Research Centre Industrial Mathematics, Germany	Development of a novel continuous production system of pharmaceuticals Prof. Satoru Watano, Osaka Prefecture University, Canada	Characterization of stressing conditions in jet mills by particle probes Alexander Strobel, Fraunhofer Institute for Chemical Technology ICT, Germany	Dry coating of active material with solid electrolyte for all-solid-state secondary battery Hideya Nakamura, Osaka Prefecture University, Kanada
17:10	Uncertainty propagation for population balance model of a conical screen mill PhD Satyajeet Bhonsale, BioTeC+ KU Leuven, Belgium	tba.	Understanding the Fine Grinding of Calcium Carbonate in Stirred Media Mills Sophie Rimmer, University of Birmingham, UK	Powder pretreatment for a solvent free processing of lithium ion battery electrodes Gerrit Schälicke, Technische Universität Braunschweig, Germany

Characterization of Particles	Particle and Bulk Powder Characterization	Particle Design and Functionalization
Performance test of a novel multi-parameter optical particle counter for colloidal particles PD Dr.-Ing. habil. Frank Babick, Technical University of Dresden, Germany	Ultrasonic In-Die Measurement of Deformation Properties Robert Frank Lammens, TU Bergakademie Freiberg, Germany	Design of skeletal silica nanoparticles to improve optical property Dr. Chika Takai-Yamashita, Nagoya Institute of Technology, Japan
Crunch it if you can – or why particle sizing can free up more than 50 % of energy use in the chocolate industry Dr. Stephen Ward Smith, Malvern Panalytical, UK	The shear response of particles in the FT4 powder rheometer: a numerical and experimental investigation Marvellous J. Khala, University of Surrey, UK	Synthesis and Application of a Magnetised Ternary Core-Shell Catalyst for Biodiesel Production Dr. Jabbar Gardy, University of Leeds, UK
Enhanced spectral and size analysis of nanoparticles using analytical ultracentrifugation Simon Wawra, Friedrich-Alexander Universität Erlangen-Nürnberg, Germany	Characterising Powder Flowability in the Intermediate Flow Regime Dr. Colin Hare, University of Surrey, UK	Continuous manufacturing of coated powders by gas-phase deposition in a Pneumatic Transport Reactor J. Ruud van Ommen, Technical University of Delft., The Netherlands
The Radial Centrifugal DMA – A Novel Method for Multidimensional Aerosol Characterization David Rasche M. Sc., University of Paderborn, Germany	Development of an Inline Measurement Tool for Particle Analysis during Spheronization Maria Evers, Technical University of Dortmund, Germany	Morphology control in the aerosol synthesis of titania by vapor-liquid-solid reaction and heterogeneous nucleation Maximilian Domaschke, Institute of Particle Technlogy, Germany

Particles for Additive Manufacturing	Life and Food Science	Particle Design and Functionalization
Manufacturing and application of novel polymer particles for selective laser sintering Maximilian A. Dechet, FAU Erlangen-Nuremberg, Germany	Improving the rehydration of granulated food powders Prof. Andrea C. Santomaso, University of Padova, Italy	Enhancing the Performance of Catalytic Oxidation of n-Butane in a Microwave-Heated Gas-Solid Fluidized Bed Reactor Dr. Sepehr Hamzehlouia, Polytechnique Montréal, Canada
Discrete Particle Model of Sintering Mohamad Yousef Shaheen, University of Twente, The Netherlands	Capillary penetration into heterogeneous food powders Jana Kammerhofer M. Sc., Hamburg University of Technology, Germany	Strategy for coating of aerogels using spouted bed technology Monika Goslinska, Hamburg University of Technology, Germany
Characterization of powders for additive manufacturing Dr. Jochen Schmidt, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany	Adsorption and desorption behavior of protein particles at liquid-liquid interfaces under flow induced stresses Tobias Wollborn M. Sc., Leibniz Institute for Materials Engineering - IWT, Germany	Numerical investigation of gas dynamics in a bubbling gas-solid fluidized bed in the presence of cohesive interparticle forces Prof. Jamal Chaouki, Polytechnique de Montreal, Kanada

Thursday, April 11, 2019

09:00 **Opening**

09:10 **Engineering of particles by spray drying and spray fluidized bed processes** Keynote
Prof. Dr.-Ing. Evangelos Tsotsas, Otto-von-Guericke-Universität Magdeburg, Germany

09:50 Coffee Break

	Modelling and Simulation	Agglomeration and Granulation	Comminution	Formation and Synthesis of Particles
10:20	**Numerical study of grain shape effect on surface erosion using smoothed particle hydrodynamics** Shoya Mohseni-Mofidi, Fraunhofer Institute for Mechanics of Materials IWM, Germany	**Scale-up of tableting processes in different fields of application** Daniel Puckhaber, Technical University of Braunschweig, Germany	**Fine grinding of inorganic material mixtures in stirred media mills** Markus Nöske M. Sc., Technical University of Braunschweig, Germany	**Aerosol formation in the course of VOC-Degradation by means of Non-Thermal Pulsed Plasma** Sadid Salajegheh, BTU Cottbus-Senftenberg, Germany
10:40	**The Influence of Shape on the Settling of Particles Simulated with a Homogenised Lattice Boltzmann Approach** Robin Trunk, Karlsruhe Institute of Technology, Germany	**Roller compaction: Online monitoring of powder feeding** Mingzhe Yu, University of Sheffield, UK	**Attrition methods and how to select a jet velocity in attrition test** Ben Freireich, Particulate Solid Research Inc., USA	**Optical investigation of particle characteristics produced by Spray Flame Synthesis using Wide-Angle Light-Scattering (WALS)** Bettina Münsterjohann, University Erlangen-Nuremberg, Germany
11:00	**Optimization of Pore Scale Conjugate Heat Transfer using Lattice Boltzmann Simulations towards Lower Cost Vacuum Insulation Panels** Jesse Ross-Jones, Mannheim University of Applied Sciences, Germany	**High-Shear Granulation Process of Soft Porous Particles** Dr. Shuji Ohsaki, Osaka Prefecture University, Japan	**Comminution of wood – process parameters** Moritz Eisenlauer, Technical Institute Georg-Simon-Ohm Nürnberg, Germany	**Impact of atomization on particle formation in spray flames** Ricardo Tischendorf M. Sc., University of Paderborn, Germany
11:20	**Fast, flexible particle simulations: An introduction to MercuryDPM** Dr. Thomas Weinhart, University of Twente, Netherlands	**Roller compaction: Effect of temperature during powder storage on final ribbon properties** Dr. Omar Chalak, The University of Sheffield, UK	**Dispersion and Rheology of multi-wall Carbon Nanotubes** Alexander Dresel, Fraunhofer Institute for Chemical Technology ICT, Germany	**Synthesis of nanoparticles out of silicon and germanium in a controlled nucleation aerosol reactor** Lukas Wergen, Friedrich-Alexander-Universität Erlangen-Nuremberg, Germany
11:40	**A thorough analysis of temporal plate erosion by particle impacts and validation of Lagrangian models** Guilherme Antonio Novelletto Ricardo M. Sc., Otto-von-Guericke University Magdeburg, Germany	**Liquid bridge interaction in funicular regime: toward detailed simulation of wet particle agglomerates** Dr. Alberto Di Renzo, University of Calabria, Italy	**Breakage of Carbamazepine Dihydrate Crystals under Impact** Wei Pin Goh, University of Leeds, UK	**Automated High-throughput synthesis of colloidal semiconductor nanoparticles: A multi-dimensional parametric study on the influence of mixing** Ahmed Mahmoud, Friedrich-Alexander-Universität Erlangen-Nuremberg, Germany
12:00	**Mechanical behavior of particle aggregates during drying** Son Thai Pham, Otto-von-Guericke-University Magdeburg, Germany	**An investigation on the evolution of granule formation by in-process sampling of a high shear granulator** Dr. Faiz Mahdi, University of Leeds, UK	**Time-resolved characterization of customized aluminium-doped zinc oxide nanocrystals by means of Small-Angle X-ray Scattering (SAXS)** Julian Ungerer, Karlsruher Institute of Technology, Germany	**Continuous flow metal patch coating of flake-like particles** Prof. Dr. Robin Klupp Taylor, FAU Erlangen Nuremberg, Germany

12:20 Lunch Break & Exhibition Visit

14:00 **Contribution of Particle Technology Research on CO_2 capture and reduction** Keynote
Prof. Hamid Arastoopour, Illinois Institute of Technology, USA

Particle Interactions and Interfaces	Seperation	Nano Hybrids
Chemical and size-specific separation of fine particles at liquid-liquid interfaces: Challenges and system design Dr. rer. nat. Christian Weber, Technical University of Freiberg, Germany	Multidimensional fractionation of solid microparticles from aqueous suspensions by crossflow filtration Philipp Lösch, Technical University of Kaiserslautern, Germany	Cellulose aerogel particles via emulsion technique Prof. Tatiana Budtova, MINES ParisTech – CEMEF, France
Stability and granulometric state of Pickering emulsions Dipl. Ing., Rodrigo Renato Retamal Marín, Technical University of Dresden, Germany	Numerical and Experimental Investigations on the Influence of Electrical Charge of Electret Filters on Particle Deposition Maximilian Kerner M. Sc., Technical University of Kaiserslautern, Germany	Multiscale modeling of particles supercritical drying process Dr. Natalia Menshutina, Mendeleev University of Chemical Technology of Russia
Coating and Drying of Slot Die Coated OLED-Multilayers Dr.-Ing. Sebastian Raupp, BASF SE, Germany	Prediction of Filtration Efficiency and Local Deposition inside Fibrous Filters Kevin Hoppe, Anhalt University of Applied Science, Germany	Drying of aerogel particles and beads in lab and pilot scale Prof. Irina Smirnova, Technical University of Hamburg-Harburg, Germany
An insight into influence of particle size on vapour sorption profile of pharmaceutical anhydrate-hydrate systems Søren Lund Kristensen, Particle Analytical aps, Denmark	CFD simulations of cyclones with and without an eccentrically positioned vortex finder Dr. Ray Cocco, Particulate Solid Research, Inc., USA	Kinetics of Supercritical Drying for Production of Aerogel Particles: Effects of Process Parameters and Gel Properties Ibrahim Sahin, Koc University, Turkey
		Aerogel particles: state of the art and recent advances Dr. Pavel Gurikov, Hamburg University of Technology, Germany
Charge transfer between single highly resistive particles: Experiments and Numerical Simulation Alpesh Laxman Vora, Brandenburg Technical University Cottbus-Senftenberg, Germany	Quantitative evaluation of nanoparticle separation using size-exclusion chromatography Sebastian Süß, Friedrich-Alexander-University Erlangen-Nuremberg, Germany	Carbon-based aerogels for adsorption of toxic gases and air decontamination Prof. Patrina Paraskevopoulou, National and Kapodistrian University of Athens, Greece
Additive Manufacturing with ceramics: Simulation of the printing process using meshfree simulation methods Bastien Dietemann, Fraunhofer IWM, Germany	Fractionation of Nanoparticles by Preparative Gel Electrophoresis Matthäus Barasinski M.Sc., Technical University of Braunschweig, Germany	Cellulose-hybrid aero/xerogels for sorption of gas, moisture and cationic compounds Dr. Fernando Alvarado, RISE Innventia AB, Sweden
		Chitosan-based aerogels with exceptional properties for environmental control system Kathirvel Ganesan, German Aerospace Center, Germany

Thursday, April 11, 2019

	Modelling and Simulation	Characterization of Particles	Application of Particle Technology	Formation and Synthesis of Particles
14:40	Heat transfer coefficients in flighted rotary kilns: Comparison of experiments with DEM simulations Alexander Berndt, Ruhr-University of Bochum, Germany	Application of Nanofocused X-ray tomography and Image Processing for the Quantitative Analysis of Pharmaceutical Particulate Solid Products Frederik J. S. Doerr, University of Strathclyde, Scotland	Sintering free conductive hybrid ink for inkjet printed electronics Robert Strahl, Leibniz-Institute for New Materials GmbH, Germany	In Situ monitoring of particle formation with spectroscopic and analytical techniques under solvothermal conditions Dr. Monica Distaso, Friedrich-Alexander-University Erlangen-Nuremberg, Germany
15:00	A dimensionless number for scaling particle size and stiffness in DEM analyses of cohesive powders Mohammadreza Alizadeh Behjani, University of Leeds, UK	Chemical and mechanical stability of casein microparticles Jann Schulte M. Sc., RWTH-Aachen, Germany	Developments in catalytic stripper technology for powder measurement Dr. Jacob Swanson, Catalytic Instruments GmbH & Co.KG., Germany	Investigation of size distributions in highly concentrated particle suspensions – influence of production method Dr. Lena Bressel, University of Potsdam, Germany
15:20	Modelling of sintering in macro porous structures with discrete element method (DEM) Christoph Ohmstede, Technical University of Hamburg, Germany	The role of glidants in interparticle friction Dr. Sadegh Nadimi, University of Leeds, UK	Sustainable turbidity controls mimicking oil-in-water emulsions by the use of polymer particles Dr. Kyriakos Eslahian, BS-Partikel GmbH, Germany	Synthesis and processing of tailored AZO nanocrystals Ann-Kathrin Thurm, Technical University of Braunschweig, Germany
15:40	Predicting flowability of cohesive bulk solids via DEM David Craig, Jenike & Johanson, Inc., USA	Optical single particle detection with wide dynamic range for nano- and microparticle counting and sizing Dr. Martin Hussels, Physikalisch-Technische Bundesanstalt, Germany	Evaluation of the mixing mechanisms during Twin-Screw-Extrusion by Residence Time Distribution Jens Wesholowski, Technical University Dortmund, Germany	Correlation between pore size distribution and thermal conductivity of core materials for vacuum insulation panels (VIPs) based on precipitated silica Sebastian Sonnick, Mannheim University of Applied Sciences, Germany
16:00	Closing Ceremony			

General Information

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Registration / Office hours
The registration onsite is open on
Tuesday, April 9 – Wednesday, April 11 from 8–18 h
Thursday, April 11 from 8–15 h

Particle Technology for Pharmaceuticals	Seperation	Handling and Flow of Particulate Systems
Surface Modification of Pharmaceutical Particles via Scalable Atomic Layer Deposition in Fluidized Bed Reactors Damiano La Zara M. Sc., Delft University of Technology, The Netherland	Zonal Rotor Ultracentrifugation: New Avenues in Sorting Nanoparticles Prof. Dr. Alexander Wittemann, University of Konstanz, Germany	Mechanistic modelling of powder flow into a confined space Prof. Chuan-Yu Wu, University of Surrey, UK
Atomic Scale Surface Engineering of Micro- to Nano- Sized Pharmaceutical Particles Dr. Michael Quayle, AstraZeneca, Germany	Investigation of Coefficients of Restitution for a Deflector Wheel Classifier Martin Weers M. Sc., TU Clausthal, Germany	Towards modelling gas-solid flows of cohesive particles DI Alija Vila, K1-Met GmbH, Austria
3D Printed Dosage Containing Engineered BCS Class II Drug Particles Dr. Rajesh Dave, New Jersey Institute of Technology, USA	Determination of non-ideality parameters from theoretical and experimental sedimentation velocity and sedimentation equilibrium studies Maximilian Uttinger, Friedrich-Alexander Universität Erlangen-Nuremberg, Germany	Dynamic behavior of particle curtains in a flighted rotating drum investigated by PTV experiments and a DEM model Lanyue Zhang, Leibniz Institute of Agricultural Engineering and Bio-economy e.V. (ATB), Germany
Comparison of Scale Concepts for Pharmaceutical Hot-Melt-Extrusion Vanessa Düphans, Technical University of Dortmund, Germany	Investigation of continuum mechanics models of granular flow by MRI Daniel Holland, University of Canterbury, UK	Real-time in-situ Rheological Assessment of Sticky Point Temperature and Humidity of Powdered Products Tim Groen, Delft Solids Solutions B.V., The Netherlands

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