

PARTEC

International Congress on Particle Technology

September 26–28, 2023, Nuremberg, Germany

PARTICLE TECHNOLOGY FOR SUSTAINABLE PRODUCTS

PROGRAM

Together with

POWTECH

Honorary Sponsor

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NÜRNBERG MESSE

PURPOSE

Today particle technology not only plays an important role in classical industries like chemical, pharmaceutical, food and minerals industry, but also in in dynamically developing industries for products related to energy transition like battery and fuel cells as well as for advanced production technologies like additive manufacturing.

Consequently, besides the classical fields the PARTEC 2023, as one of the largest international particle and powder technology conferences, addresses both, the classical and the emerging fields of research and applications of particle technology. Especially, due to climate change, sustainability and circular economy are becoming increasingly important. PARTEC 2023 wants to take this change into account with the overarching theme **“Particle Technology for Sustainable Products”**. Thus, special focus will lay not only on highest product quality, but on maximizing material utilization and energy efficiency of the processes.

SCIENTIFIC COMMITTEE

Antonyuk, S. – University of Kaiserslautern-Landau, DEU
Arastoopour, H. – IIT, USA
Braun, M. – Ansys Germany GmbH, DEU
Butt, H.-J. – MPIP, DEU
Chaouki, J. – EPM, CAN
Cölfen, H. – University of Konstanz, DEU
Coppens, M.-O. – UCL - Engineering, GBR
Dave, R.-N. – New Jersey Institute of Technology, USA
Fan, L.-S. – University of Ohio State, USA
Fritsching, U. – University of Bremen, DEU
Frye, L. – Bayer AG, DEU
Fuji, M. – NITech, JPN
Hartmann, C. – Nestlé, CHE
Herrmann, H. J. – ETH Zürich, CHE
John, E. – Novartis Pharma AG, CHE
Juhnke M. – F. Hoffmann-La Roche Ltd, CHE
Kalman, H. – BGU Negev, ISR
Kind, M. – Karlsruhe Institute of Technology, DEU
Kleinebudde, P. – HHU Düsseldorf, DEU
Klupp-Taylor, R. – Friedrich-Alexander-University Erlangen-Nuremberg, DEU
Kuipers, J.A.M. – TU Eindhoven, NLD
Kraus, T. – INM – Leibniz, DEU
Li, J. – CAS, CHN
Litster, J. – University of Sheffield, GBR
Luding, S. – University of Twente, NLD
Materazzi, M. – UCL Chemical Engineering, GBR

EXECUTIVE COMMITTEE

Garnweiter, G. – TU Braunschweig, DEU
Ghadiri, M. – University of Leeds, GBR
Heinrich, S. – TU Hamburg, DEU
Kleine Jäger, F. – BASF SE, DEU
Kwade, A. – TU Braunschweig, DEU

PARTEC brings together a wide mix of attendees, from both academia and industry, in a very communicative place. A highlight, especially regarding transfer of research to application, is the connection to POWTECH, the world’s leading exhibition for the processing, analysis and handling of powder and bulk solids, promoting intensive discussion between academic and industrial attendees.

I would be very happy to welcome you, as many other academic and industrial particle experts from all over the world in Nuremberg at PARTEC 2023.

Prof. Dr.-Ing. Arno Kwade
TU Braunschweig, Head of Institute of Particle Technology, Chairman for PARTEC 2023

Matsusaka, S. – University of Kyoto, JPN
Meesters, G.M.H. – TU Delft, NLD
Muzzio, F. J. – SoE Rutgers, USA
Naito, M. – Osaka University, JPN
Nakamura, H. – Osaka Metropolitan University, JPN
Peglow, M. – IPT-Pergande GmbH, DEU
Pirker, S. – JKU Linz, AUT
Prastinis, S. – ETH Zürich, CHE
Pui, D.Y.H. – University of Minnesota, USA
Riebel, U. – BTU Cottbus, DEU
Salman, A.D. – University of Sheffield, GBR
Satoru, W. – Osaka Prefecture University, JPN
Schmidt, E. – BUW, DEU
Schneider, H. – Zeppelin Systems GmbH, DEU
Seville, J.P.K. – University of Birmingham, GBR
Tavares, L.M.M. – UFRJ, BRA
Teipel, U. – TH Nürnberg, DEU
Tsotsas, E. – OvGU Magdeburg, DEU
van Ommen, R. – TU Delft, NLD
Weber, A.P. – TU Clausthal, DEU
Weimer, A.W. – University of Colorado, USA
Weinekötter, R. – Gericke AG, CHE
Winter, M. – WWU Münster, DEU
Witt, W. – Sympatec GmbH, DEU
Wollny, M. – Merck KGaA, DEU
Yu, A. – Monash University, AUS

Mädler, L. – Stiftung Institut für Werkstofftechnik Bremen, DEU
Nirschl, H. – Karlsruhe Institute of Technology, DEU
Ooi, J. – The University of Edinburgh, GBR
Peuker, U. – TU Bergakademie Freiberg, DEU
Peukert, W. – Friedrich-Alexander-University Erlangen-Nuremberg, DEU

PROGRAM OVERVIEW

09:00	Opening & Welcome of NürnbergMesse								Room Tokio
09:10	Simulation of Particulate Process – towards Industrial Digitalisation Jin Ooi, The University of Edinburgh, GBR								Room Tokio
Room	Tokio	Shanghai	Seoul	Kopenhagen	Kiew	Riga	Istanbul	St. Petersburg	
09:55	Bulk powder technologies, gas-solid-multi-phase flow		Comminution, breakage, agglomeration and granulation	Separation, fractionation and sorting	Comminution, breakage, agglomeration and granulation	Nano and aerosol particle technology	Innovative analytical methods for lab and production	Innovations in modelling and simulation	
10:55	Coffee Break								
11:25	Comminution, breakage, agglomeration and granulation	Bulk powder technologies, gas-solid-multi-phase flow		Separation, fractionation and sorting	Mixing and Dispersing, Liquid-solid-multiphase flow	Product formulation, particle interactions, interfaces and stabilization	Innovative analytical methods for lab and production	Innovations in modelling and simulation	
12:45	Lunch Break & Exhibition Visit								
14:05	Advanced Manufacturing of Powder-Based Pharmaceutical Products Fernando Muzzio, Rutgers University, USA								Room Tokio
14:50	Mixing and Dispersing, Liquid-solid-multiphase flow	Bulk powder technologies, gas-solid-multi-phase flow	Comminution, breakage, agglomeration and granulation	Separation, fractionation and sorting		Product formulation, particle interactions, interfaces and stabilization	Innovative analytical methods for lab and production	Innovations in modelling and simulation	
15:50	Coffee Break								
16:20	Separation, fractionation and sorting	Bulk powder technologies, gas-solid-multi-phase flow	Comminution, breakage, agglomeration and granulation		Mixing and Dispersing, Liquid-solid-multiphase flow	Product formulation, particle interactions, interfaces and stabilization	Nano and aerosol particle technology	Innovations in modelling and simulation	
17:40	Poster Party								

09:00	Opening & Friedrich-Löffler-Prize in Particle Technology								Room Tokio
09:10	BASF’s Pathways to Sustainability and Circular Economy Helmut Winterling, BASF SE, DEU								Room Tokio
Room	Tokio	Shanghai	Seoul	Kopenhagen	Kiew	Riga	Istanbul	St. Petersburg	
09:55	Product formulation, particle interactions, interfaces and stabilization	Bulk powder technologies, gas-solid-multi-phase flow	Comminution, breakage, agglomeration and granulation	Separation, fractionation and sorting	Particle technologies for sustainable products		Nano and aerosol particle technology	Innovations in modelling and simulation	
10:55	Coffee Break								
11:25	Wet synthesis and formation of particles	Bulk powder technologies, gas-solid-multi-phase flow	Comminution, breakage, agglomeration and granulation	Separation, fractionation and sorting	Particle technologies for sustainable products		Nano and aerosol particle technology	Innovations in modelling and simulation	
12:45	Lunch Break & Exhibition Visit								
14:05	Particle Technology Enabling the Transition to a Regenerative Food System Stefan Palzer, Nestlé, CHE								Room Tokio
14:50	Innovative analytical methods for lab and production	Bulk powder technologies, gas-solid-multi-phase flow	Comminution, breakage, agglomeration and granulation		Particle technologies for sustainable products	Wet synthesis and formation of particles	Nano and aerosol particle technology	Innovations in modelling and simulation	
15:50	Coffee Break								
16:20	Innovations in modelling and simulation	Bulk powder technologies, gas-solid-multi-phase flow	Comminution, breakage, agglomeration and granulation	Innovative analytical methods for lab and production	Particle technologies for sustainable products	Wet synthesis and formation of particles	Nano and aerosol particle technology		
17:40	POWTECH Feierabend								

Room	Tokio	Shanghai	Seoul	Kopenhagen	Kiew	Riga	Istanbul	St. Petersburg	
09:00	Nano and aerosol particle technology	Bulk powder technologies, gas-solid-multi-phase flow	Comminution, breakage, agglomeration and granulation	Innovative analytical methods for lab and production	Particle technologies for sustainable products	Innovations in modelling and simulation		Innovations in modelling and simulation	
10:20	Coffee Break								
10:50	Particle technologies for sustainable products	Bulk powder technologies, gas-solid-multi-phase flow	Comminution, breakage, agglomeration and granulation	Innovative analytical methods for lab and production		Innovations in modelling and simulation	Nano and aerosol particle technology	Innovations in modelling and simulation	
12:15	Poster Award								Room Tokio
12:25	Solid-State Batteries – a Future Application of Advanced Particle Technology Jürgen Janek, Justus-Liebig-University Gießen, DEU								Room Tokio
13:05	Closing Ceremony								Room Tokio
13:15	Lunch Break								
14:00	Exhibition Visit								
17:00	Exhibition Closing								

09:00	Opening								Room Tokio
09:10	<div>Plenary</div> <div>Simulation of Particulate Processes – towards Industrial Digitalisation</div> <div>Jin Ooi, The University of Edinburgh, GBR</div>								
	<div>Industrial Needs</div> <div>Room Tokio</div> <div>Moderation: Stefan Heinrich, TU Hamburg, DEU</div>	<div>Tableting</div> <div>Room Seoul</div> <div>Moderation: Mojtaba Ghadiri, University of Leeds, GBR</div>	<div>Multi-dimensional Fractionation of Particles (SPP 2045)</div> <div>Room Copenhagen</div> <div>Moderation: Alfred P. Weber, TU Clausthal, DEU</div>	<div>Agglomeration by Dynamic Particle Motion</div> <div>Room Kiev</div> <div>Moderation: Rajesh Dave, New Jersey Institute of Technology, USA & Riccardo Artoni, Gustave Eiffel University, FRA</div>		<div>Spray Flame Synthesis I</div> <div>Room Riga</div> <div>Moderation: Hartmut Wiggers, University of Duisburg-Essen, DEU</div>	<div>Particle Size Analysis in Suspension</div> <div>Room Istanbul</div> <div>Moderation: Rainer Friehmelt, BASF, DEU</div>	<div>Modelling Granular Processes I</div> <div>Room St. Petersburg</div> <div>Moderation: Anthony Thornton, University of Twente, NLD</div>	
09:55	<div>Keynote</div> <div>Synthesis, functionalization, and biological sensing applications of fluorescent semiconductor nanocrystals</div> <div>Triantafillos J. Mountziaris</div> <div>University of Houston, USA</div>	<div>Measuring the elasticity of porous tablets for modelling direct powder compression</div> <div>Dingeman van der Haven</div> <div>University of Camebridge, GBR</div>	<div>Multi-dimensional description of particle property distributions and related processes</div> <div>Urs Peuker</div> <div>TU Bergakademie Freiberg, DEU</div>	<div>The morphology of graphite agglomerates during the spherical agglomeration process</div> <div>Julia Schreier</div> <div>Trier University of Applied Sienes, DEU</div>		<div>In situ investigation of the spray flame synthesis using X-ray scatterin</div> <div>Mira Simmler</div> <div>Karlsruhe Institute of Technology, DEU</div>	<div>Real-time online nanoparticle size monitoring during wet bead milling using SR-DLS with a microdilution device</div> <div>Yan Wang</div> <div>InProcess-LSP, NLD</div>	<div>A DEM-based approach for modelling twin-screw extruders</div> <div>Riccardo Togni</div> <div>DCS Computing GmbH, AUT</div>	
10:15	<div>Flash Oral Presentation</div> <div>* The flowability of polypropylene powder under industrially relevant conditions</div> <div>P. Christian van der Sande</div> <div>TU Delft, NLD</div> <div>* Correlation between powder air permeability and packing fraction</div> <div>Marco Lupo</div> <div>Granutools, BEL</div> <div>* Influence of particle properties for surface treatment by cold spraying</div> <div>Mustafa Bozoglu</div> <div>University of Kaiserslautern-Landau, DEU</div>	<div>Dynamic image analysis for three-dimensional particle shape characterisation</div> <div>Sadegh Nadimi</div> <div>Newcastle University, GBR</div>	<div>Flash Oral Presentation*1</div> <div>1. Simon Paas</div> <div>University of Kaiserslautern-Landau, DEU</div> <div>2. Matthäus Barasinski</div> <div>TU Braunschweig, DEU</div> <div>3. Laura Weirauch</div> <div>University of Bremen, DEU</div> <div>4. Jasper Giesler</div> <div>University of Bremen, DEU</div> <div>5. Laura Kuger</div> <div>Karlsruhe Institute of Technolgy, DEU</div> <div>6. Krischan Sandmann</div> <div>University of Bremen, DEU</div> <div>7. Tom Kirstein</div> <div>University of Ulm, DEU</div>	<div>Micro scale investigations of agglomeration and deagglomeration due to single collisions between dry and wet particles</div> <div>Falk Bunke</div> <div>TU Hamburg, DEU</div>		<div>Influence of atomization on the particle formation in spray flame pyrolysis</div> <div>Orlando Massopo</div> <div>University of Paderborn, DEU</div>	<div>Characterising the milling of nanomaterials using differing on / in / at line process analytical technologies</div> <div>Richard Ward-Smith</div> <div>MalvernPanalytical, GBR</div>	<div>Dyssol – an open-source tool for flowsheet dynamic modelling of granular solids materials</div> <div>Vasyl Skorych</div> <div>TU Hamburg, DEU</div>	
10:35	<div>Reflections on bulk solids handling/particle technology research and education needs in industry</div> <div>Harald Wilms</div> <div>Wilms-ITC, DEU</div>	<div>Elucidation of capping mechanism during high-speed tableting process using numerical analyses</div> <div>Yusuke Imayoshi</div> <div>Osaka Metropolitan University, JPN</div>	<div>Flash Oral Presentation*2</div> <div>8. Azita Rezvani</div> <div>University of Duisburg-Essen, DEU</div> <div>9. Claudia Heilmann</div> <div>TU Bergakademie Freiberg, DEU</div> <div>10. Torben Rüther</div> <div>University of Paderborn, DEU</div> <div>11. Stefan Neumann</div> <div>TU Bergakademie Freiberg, DEU</div> <div>12. Jan Eric Marquardt</div> <div>Karlsruhe Institute of Technology, DEU</div> <div>13. Thomas Wilhelm</div> <div>University of Ulm, DEU</div>	<div>Numerical study of formulation of hetero-aggregates in continuously operated opposed-jet fluidized</div> <div>Laura Unger</div> <div>Friedrich-Alexander-University Erlangen-Nuremberg, DEU</div>		<div>Simulation of particle formation and droplet fragmentation in spray flame synthesis using a coupled population balance approach</div> <div>Ivan Skenderovic</div> <div>University of Duisburg-Essen, DEU</div>	<div>Particle size analysis by gravitational and centrifugal sedimentation. Interlab and intralab reproducibility</div> <div>Frank Babick</div> <div>TU Dresden, DEU</div>	<div>Computation of effective thermal conductivity for packed beds of non-spherical particles</div> <div>Simson Julian Rodrigues</div> <div>Otto-von-Guericke-University Magdeburg, DEU</div>	
10:55	Coffee Break								

Multi-dimensional Fractionation of Particles (SPP 2045)

*1 10:15 Flash Oral Presentation

- 1. SPP 2045 – Investigations on particle movement for an electrophoresis and a hydrodynamic force field in a discontinuous crossflow
- 2. SPP 2045: Fractionation of nanoparticles by preparative gel electrophoresis
- 3. SPP 2045: Multidimensional sorting of mixed microparticles in a mesh-based dielectrophoretic device
- 4. SPP2045 B12: Upscaling of dielectrophoretic separators using printed circuit boards
- 5. SPP 2045: Magnetic field controlled chromatography for the continuous fractionation of ultra-fine magnetic particle collectives
- 6. SPP 2045 B4 Selective particle fractionation in multi-parameter potential fields – Multi-Field Fractionation (M-FF)
- 7. SPP 2045 Quantitative assessment of separation behavior, using neural networks and multivariate stochastic modeling

*2 10:35 Flash Oral Presentation

- 8. SPP 2045-Investigation of the agglomeration mechanism in binary colloidal dispersions of Au nanoparticles and ZnS quantum dots for 2D separation via selective agglomeration using deuterium NMR study
- 9. SPP 2045 Multidimensional separation of fine particles at liquid-liquid interfaces
- 10. SPP 2045 CDMA: Centrifugal differential mobility analyzer transferfunction and first results
- 11. SPP 2045: Correlative multiscale characterization of nanoparticles statistical information beyond size and shape
- 12. SPP 2045: Modelling and simulation of the shape-dependent settling behavior of particles
- 13. SPP 2045: Parametric stochastic modeling of particle descriptor vectors for studying the influence of particle wettability and morphology on flotation-based separation behavior

Friedrich-Löffler-Prize in Particle Technology



Award Lecture on September 26., 11:25 am in Room Copenhagen:
"Combination of spectral and hydrodynamic characterization for multidimensional particle property analysis"

Awardee: Johannes Walter, Friedrich-Alexander-University Erlangen-Nuremberg, DEU

Award Ceremony

September 27, 09:00 am in Room Tokio

Dynamics of Agglomeration I / Optimizations in Fluidized Bed Granulation		Bulk Reaction	Particle Size Classification	Mixing – Effect of Particle Coatings	Product Formulation I	Powder Characterization	Particle Properties and Interactions
Room Tokio Moderation: Mojtaba Ghadiri, University of Leeds, GBR & Raffaella Occone, Heriot-Watt University, GBR		Room Shanghai Moderation: Harald Kruggel-Emden, TU Berlin, DEU	Room Kopenhagen Moderation: Doris Segets, University of Duisburg-Essen, DEU	Room Kiev Moderation: Hermann Nirschl, Karlsruhe Institute of Technology, DEU	Room Riga Moderation: Nicolas Vogel, Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Room Istanbul Moderation: Sergiy Antonyuk, TU Kaiserslautern, DEU	Room St. Petersburg Moderation: Thomas Weinhart, University of Twente, NLD
11:25	Keynote Predicting breakage of elongated particles using the discrete element method Jennifer Sinclair Curtis University of California, USA	Reacting and moving granular assemblies with gas flow Evangelos Tsotsas Otto-von-Guericke-University Magdeburg, DEU	Combination of spectral and hydrodynamic characterization for multidimensional particle property analysis Johannes Walter Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Experimental study of powder mixture flowability of uranium oxides powders Nicolas Blanc CEA, FRA	Evaluation of drying behaviour and temperature exposure of lipid nanodispersions during spray drying Denise Steiner University of Tübingen, DEU	Characterization method of powder blend after mixing procedure for electrode manufacturing Salvatore Pillitteri Granutools, BEL	Multidimensional modelling of particle separation processes: an approach to highly increase the number of particle properties considered Lucas Pereira Helmholtz Institute Freiberg for Resource Technology, DEU
11:45	Poster Flash Presentations * Restructuration of food powder using roller compactor to increase the shelf life Yang Sarah Mohamad University of Sheffield, GBR * Developing affordable granulation methods Yashodh Karunanayake University of Sheffield, GBR	Poster Flash Presentations * Bulk Reaction: Pore-scale modeling of a single particle calcination Abdolreza Kharaghani Otto-von-Guericke-University Magdeburg, DEU * Ray tracing Particle Image Velocimetry (RT-PIV) enabling gaseous flow field measurements in transparent packed beds Christin Velten Otto-von-Guericke-University Magdeburg, DEU * Development of a cost-effective PET-like detector system for particle tracking in granular assemblies Josephine Oppotsch Ruhr-University of Bochum, DEU * Reduced particle models accerelate system-scale simulations of reactive bulks Lucas Reineking Ruhr-University of Bochum, DEU	Production and size classification of two-dimensional materials Cornelia Damm Friedrich-Alexander-University Erlangen-Nuremberg, DEU	A regime map for dry powder coating Colin Hare Newcastle University, GBR	High-throughput fabrication of size-controlled pickering emulsions, colloidosomes and air-coated particles via clog-free jetting of suspensions Jieke Jiang University of Twente, NLD	The role of temperature and moisture on polymer materials for additive manufacturing, and their implications for the process Denis Schütz Anton Paar GmbH, DEU	Influence of interparticle forces on the rheological behaviour of suspensions in unresolved coupled CFD-DEM-Simulations Dimitri Ivanov TU Braunschweig, DEU
12:05	Capacity optimization of fluidized bed granulation and coating processes Paul Mort University of Purdue, USA	3D Particle tracking in bulk solids based on microwave multiple input multiple output radar systems Jan Barowski Ruhr-University of Bochum, DEU	Fractionation concerning size and density employing classifying aerodynamic lens operated at various pressures Matthias Masuhr University of Duisburg-Essen, DEU	Influence of silane-based surface treatments on the singulation of magnetizable pigments Roman Würfl TU Nuremberg, DEU	Conductive particle suspensions as alternative electronic components Lola Gonzalez-Garcia Leibniz Institute for New Materials, DEU	The next-generation of powder and particle characterisation tools Ben Jenkins Granutools, BEL	From particle simulations towards a universal continuum theory about jamming, un-jamming transitions Stefan Luding University of Twente, NLD
12:25	Characterization of fine pharmaceutical cohesive powder agglomeration and its mitigation via surface modification to enhance its flowability, packing and dissolution Rajesh Dave New Jersey Institute of Technology, USA	Microstructure-Informed drag models for particle-laden flows Berend van Wachem Otto-von-Guericke University Magdeburg, DEU	Investigation of material and particle size on the tribo-electrification and separation Mehran Javadi TU Clausthal, DEU	Optimizing industrial bag-filling of granular materials through powder characterization P. Christian van der Sande TU Delft, NLD	FOOOP-EPD: A novel electrophoretic deposition process for particulate layers with improved functionality Robin Klupp Taylor Friedrich-Alexander-University Erlangen Nurembeg, DEU	Assessing the processability of powder bed fusion feedstocks Jochen Schmidt Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Description of the disperse properties of particle systems using statistical entropy Edgar Schach TU Bergakademie Freiberg, DEU
12:45	Lunch Break & Exhibition Visit						
14:05	Plenary Advanced Manufacturing of Powder-Based Pharmaceutical Products Fernando Muzzio, Rutgers University, USA						

SUPPORTING ORGANISATIONS



International Association for Pharmaceutical technology (APV), Germany



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



DECHEMA, Gesellschaft für Chemische Technik und Biotechnologie e.V. (Society for Chemical Engineering and Biotechnology), Germany



The Chemical Industry an Engineering Society of China, China



Association for Aerosol Research (GAeF), Germany



Nano in Germany, Germany

SUPPORTING ORGANISATIONS



German Association of Biotechnology Industries (DIB), Germany



Deutsche Keramische Gesellschaft (German Ceramic Society) (DKG), Germany



Deutscher Schüttgut-Industrie Verband (The German Powder and Bulk Asociation) (DSIV), Germany



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



IChemE PTSIG, United Kingdom



The Society of Powder Technology, Japan




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

	Efficient Mixing Room Tokio Moderation: Hermann Nirschl, Karlsruhe Institute of Technology, DEU	Additive Manufacturing I Room Shanghai Moderation: Massimo Poletto, University of Salerno, ITA	Advancement in Granulation Room Seoul Moderation: Gabrie M.H. Meesters, TU Delft, NDL & Paul Mort, Purdue University, USA	Flotation and Pickering Room Copenhagen Moderation: Martin Rudolph, Hemholtz-Centrum Dresden- Rossendorf, DEU		Product Interfaces Room Riga Moderation: Sabrina Zellmer, Fraun- hofer-Institute for surface engineering and thin-film technology, DEU	Microstructure Room Istanbul Moderation: Carsten Schilde, TU Braunschweig, DEU	Modelling Granular Processes II Room St. Petersburg Moderation: John P Morrissey, The Univeristy of Edinburgh, GBR						
14:50	Mixing and Dispersing, Liquid-solid-multiphase flow	<div>Keynote</div> <div>New synchrotron tomography- assisted insights into mixing and structure formation of liquid-solid-multiphase systems</div> <div>Erich Windhab Swiss Federal Institute of Technology Zürich, CHE</div>	Bulk powder technologies, gas-solid-multiphase flow	<div>Dynamic-mechanical rounding of polymer particles for flowability improvements in selective laser sintering</div> <div>Hans-Joachim Schmid University of Paderborn, DEU</div>	Comminution, breakage, agglomeration and granulation	<div>Module configuration impact on the processing conditions in continuous planetary roller melt granulation (PRMG)</div> <div>Jens Bartsch TU Dortmund, DEU</div>	The influence of the particle properties of size, shape and surface energy on the sepa- ration of ultrafine particles via froth flotation using multi- dimensional tromp maps for evaluation <div>Johanna Sygusch Helmholtz-Zentrum Dresden- Rossendorf, DEU</div>	Product formulation, particle interactions, interfaces and stabilization	<div>Contact behavior of particle- laden gas bubbles</div> <div>Jan Nicklas TU Bergakademie Freiberg, DEU</div>	Innovative analytical methods for lab and production	<div>Determination of porous microstructure of metallurgical coke using XCT</div> <div>Masahiko Watanabe The University of Edinburgh, GBR</div>	Innovations in modelling and simulation	<div>A texture inheritance model for spherical particles in particle replacement method (PRM) schemes for breakage in discrete element simulations (DEM)</div> <div>Paul Hirschberger TU Berlin, DEU</div>	
15:10		<div>Poster Flash Presentations</div> <div>* Deagglomeration of Al₂O₃ powder in a cryogenic suspension Anne-Charlotte Robisson CEA, FRA</div> <div>* Distributive mixing character- istics of screw elements for modeling pharmaceutical twin- screw extrusion processes Vincent Kimmel TU Dortmund, DEU</div>		<div>Spreading properties of polymeric powders in selective laser sintering process at different temperatures</div> <div>Sina Zinatlou Ajabshir University of Salerno, ITA</div>		<div>Mechanistic analysis of basket granulation</div> <div>Abul Hassan Syed University of Surrey, GBR</div>			<div>Surface chemistry and pickering emulsion of a fine rare earth minerals ore</div> <div>Mohammed Zriki Polytechnic of Montreal, CAN</div>		<div>Postprocessing of scattering- data in flow-cytometry yields new ways of characterizing sub-micrometer particles</div> <div>Alexander Putz National Metrology Institute Berlin, DEU</div>		<div>Particle size analysis of nano- particles in highly turbid suspensions combining polarisation-separated photon cross-correlation spectroscopy with backscattering</div> <div>Daniel Werner Sympatec GmbH, DEU</div>	<div>Analysis of particle impact deformation by material point method</div> <div>Saba Saifoori University of Leeds, GBR</div>
15:30		<div>Application examples and particle-based simulations of a novel, highly efficient mixing process</div> <div>Claas Bierwisch Fraunhofer Institute for Mechanics of Materials, DEU</div>		<div>Correlation between SLS- powder processability and particle properties</div> <div>Moritz Rüther University of Paderborn, DEU</div>		<div>Experimental investigation of the microstructure and strength of agglomerates</div> <div>Yannik Sinnwell University of Kaiserslautern- Landau, DEU</div>			<div>Nanoparticles as depressants in the seperation of fine particles – How colloidal silica can improve</div> <div>Borhane Ben Said Helmholtz-Zentrum Dresden- Rossendorf, DEU</div>		<div>Numerical modeling of the dissolution of drug nano- crystals and its application to industrial product development</div> <div>Michael Juhnke F. Hoffmann-La Roche Ltd, CHE</div>		<div>Characterization of coating structures on particles after dry particle coating using the mechano-fusion process</div> <div>Judith Friebel TU Bergakademie Freiberg, DEU</div>	<div>Calibration of discrete particle model parameters: An industrial case study</div> <div>Sahar Pourandi University of Twente, NLD</div>
15:50	Coffee Break													
	<div>Innovative Processes</div> <div>Room Tokio Moderation: Urs Peuker, TU Bergakademie Freiberg, DEU</div>	<div>Particle Property Characterization / Powder Property Characterization</div> <div>Room Shanghai Moderation: Denis Schütz, Anton Paar GmbH, DEU</div>	<div>Advancement in Modelling & Simulation</div> <div>Room Seoul Moderation: Shuji Ohsaki, Osaka Metropolitan University, JPN & Alberto Di Renzo, University of Calabria, ITA</div>	<div>Simulative Approaches for mixing processes</div> <div>Room Kiev Moderation: Frank Rhein, Karlsruhe Institute of Technology, DEU</div>		<div>Particle Interactions</div> <div>Room Riga Moderation: Rajesh Dave, New Jersey Institute of Technology, USA</div>	<div>Nanoparticle Synthesis</div> <div>Room Istanbul Moderation: Alfred P. Weber, TU Clausthal, DEU</div>	<div>Faster Simulations</div> <div>Room St. Petersburg Moderation: Jennifer Sinclair Curtis, University of California, USA</div>						
16:20	Separation, fractionation and sorting	<div>Keynote</div> <div>Virus aerosol filtration: Infectivity vs physical pene- tration, real-time low-cost bio- aerosol sensor, virus droplets evaporation and transport</div> <div>Martin Spillmann ETH Zurich, CHE</div>	Bulk powder technologies, gas-solid-multiphase flow	<div>The effect of spontaneous liquid movement on motion of small particles in static bulk liquid</div> <div>Zheng Wang University of Sheffield, GBR</div>	Comminution, breakage, agglomeration and granulation	<div>Modeling the dynamics of grinding media inside a wet planetary ball mill using SPH-DEM simulations</div> <div>Horacio Andres Petit Universidade Federal do Rio de Janeiro, BRA</div>	Investigating shape dependent mixing behavior of binary mixtures using DEM simu- lations <div>Tiaan Friedrich TU Munich, DEU</div>	Product formulation, particle interactions, interfaces and stabilization	<div>Comparison between the effectiveness of powder spreading process and the GranuDrum cohesive index of polymeric powders at temperatures of the Selective laser sintering process</div> <div>Daniele Sofia University of Salerno, ITA</div>	Nano and aerosol particle technology	<div>Inline band gap analysis of nanoparticles in the gas phase using UV/Vis absorption spectroscopy</div> <div>Simon Aßmann Friedrich-Alexander-University Erlangen-Nuremberg, DEU</div>	Innovations in modelling and simulation	<div>Multiscale, multiphysics modelling of granular materials: Volume- & surface- coupled discrete particle simulations in MercuryDPM</div> <div>Thomas Weinhart University of Twente, NLD</div>	
16:40		<div>Poster Flash Presentations</div> <div>* Liquid chromatographic separation and characterisation of carbon dots Fabian Zillner Friedrich-Alexander-University Erlangen-Nuremberg, DEU</div> <div>* Bonded membrane fabric composite filter media for continuous cake filtration Nikolai Benz University of Kaiserslautern- Landau, DEU</div>		<div>Quantification of the morpho- logy and roughness of oxide powder particles in relation to their manufacturing history and flow properties</div> <div>Christophe D'Angelo CEA, FRA</div>		<div>DEM simulation of particle attrition in mechanofusion device</div> <div>Wei Pin Goh University of Leeds, GBR</div>			<div>Morphological properties of latex aggregates under mixing</div> <div>Ali Hamieh University of Toulouse, FRA</div>		<div>Dynamical characterization of the cohesion of ice powders at very low temperatures</div> <div>Benoît Jabaud Gustave Eiffel University, FRA</div>		<div>Entrained flow SCR using an in-situ synthesis of catalyst particles for a combined flue gas cleaning system</div> <div>Janis Beimdiek University of Paderborn, DEU</div>	<div>Real-time rCFD simulations of unsteady segregation effects in poly-disperse fluidized beds</div> <div>Stefan Pirker Johannes Kepler University, AUT</div>
17:00		<div>Autonomous processes in particle technology</div> <div>Hermann Nirschl Karlsruhe Institute of Technology, DEU</div>		<div>Investigation of wetting phenomena in correlation with surface roughness using 3D tomography data of a relational data base</div> <div>Erik Löwer TU Bergakademie Freiberg, DEU</div>		<div>Predicting the effect of stirred media mills design and operation using CFD-DEM simulations and mechanistic models</div> <div>Anderson Chagas TU Braunschweig, DEU</div>			<div>Dispersing carbon black in cathode slurries: a numerical approach</div> <div>Felix Möhlen TU Braunschweig, DEU</div>		<div>Studying the colloidal stability of functionalized metal oxide NPs in dispersion by analytical ultracentrifugation</div> <div>Lisa Stiegler Friedrich-Alexander-University Erlangen-Nuremberg, DEU</div>		<div>Experimental investigation compared to numerical simu- lation of silicon nanoparticle synthesis in a hot-wall-reactor</div> <div>Moritz Loewenich University of Duisburg-Essen, DEU</div>	<div>Simulating industrial scenarios: with the open-source software MercuryDPM</div> <div>Anthony Thornton University of Twente, NLD</div>
17:20	<div>Fractionation of hetero- geneous yeast cells according to their cell age</div> <div>Sebastian Schwaminger Medical University Graz, AUT</div>	<div>A study of battery powder flow behavior using a ring shear cell with humidity and temperature as parameter</div> <div>Markus Hilgart Anton Paar Germany GmbH, DEU</div>	<div>DEM-assisted model of ribbon breakage in dry granulation</div> <div>Christian Eichler TU Hamburg, DEU</div>	<div>Mixing behaviour of complex- shaped particles on a batch stoker grate: Experiments and DEM simulation</div> <div>Nikoline Hilse Ruhr-University of Bochum, DEU</div>	<div>Supraparticles: Aggregation of colloids in evaporating dispersion drops</div> <div>Melis Yetkin Max-Planck-Institute, DEU</div>	<div>Particle filtering face masks: Investigation of aerosol depo- sition under real-life wearing conditions</div> <div>Daniel Stoll TU Kaiserslautern, DEU</div>	<div>Effective wall friction in granular flows</div> <div>Riccardo Artoni Gustave Eiffel University, FRA</div>							
17:40	Poster Party*													

* You will receive an invitation in time with the possibility to register



09:00 Friedrich-Löffler-Prize in Particle Technology 

09:10 **Plenary**
BASF's Pathways to Sustainability and Circular Economy
Helmut Winterling, BASF SE, DEU

	Surface Functionalizaiton Room Tokio Moderation: Wolfgang Peukert, Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Additive Manufacturing II Room Shanghai Moderation: Hans-Joachim Schmid, University of Paderborn, DEU	Advancements in Press Granulation Room Seoul Moderation: Hideya Nakamura, Osaka Metropolitan University, JPN & Riccardo Artoni, Gustave Eiffel University, FRA	Filter and cyclones Room Kopenhagen Moderation: Einar Kruis, University of Duisburg-Essen, DEU		Sustainable Food and Pharma Room Kiew Moderation: Michael Juhnke, F. Hoffmann-La Roche Ltd, CHE	Heteroaggregation I Room Istanbul Moderation: Udo Fritsching, University of Bremen, DEU	Coupling Simulation Methods I Room St. Petersburg Moderation: Alberto Di Renzo, University of Calabria, ITA
9:55	Keynote Supraparticles – Controlling confined self-assembly processes to design functional materials Nicolas Vogel Friedrich-Aleyander-University Erlangen-Nuremberg, DEU	Effect of particle characteristics and environmental conditions on the spreading behaviour of metal powders Mozhdeh Mehrabi University of Leeds, GBR	Tablet formulation development focusing on the functional behaviour of water uptake and swelling Jan Lenz Novartis Pharma AG, DEU	Secondary flows in a small-scale cyclone separator Dzmitry Misiulia University of Kaiserslautern-Landau, DEU		Particles in pharmaceutical polymer hot melt extrusion from micro structures to macro effects Marius Tidau TU Braunschweig, DEU	Nanoparticulate hetero-aggregates: Influence of the heterocontact of carbon black with silica on the aggregate properties Simon Buchheiser Karlsruhe Institute of Technology, DEU	Details on coupling various simulation methods for a holistic model of laser powder bed fusion process for metals (PBF-LB/M) Bastien Dietemann Fraunhofer IWM, DEU
10:15	Poster Flash Presentations * Stability analysis in binary colloidal dispersions of Au noble metal and ZnS semiconductor nanoparticles Azita Rezvani University of Duisburg-Essen, DEU * Studying particle-particle interactions during sedimentation of heterogeneous systems with analytical centrifugation Paola Ivonne Cardenas Lopez Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Experimental and mesoscale modelling of process parameters in selective laser sintering of PA12 powder Massimo Poletto University of Salerno, ITA	Modelling granulation technologies Yashodh H. Karunanayake University of Sheffield, GBR	Aspects in ore residue filtration Bernd Fränkle Karlsruhe Institute of Technology, GBR		Modification of particle structure and material properties to enhance shelf-life of encapsulated beta carotene powders Teresa Kurtz TU Hamburg, DEU	Surface and volume characteristics of Pt/Fe nanoparticles (hetero aggregates) obtained from spark discharge synthesis Vinzent Olszok TU Clausthal, DEU	CFD-DEM based investigation of particle segregation during spray drying of bidisperse suspension droplets Silas Wolf TU Braunschweig, DEU
10:35	Modifying the mechanical properties of spray-dried composites by surface functionalization Sophia Rothberg TU Hamburg, DEU	Novel approaches for production and process-adapted characterization of thermoplast feedstocks for laser powder bed fusion of polymers Jochen Schmidt Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Process-determined local coat porosity as crucial structural parameter for properties of press-coated tablets Jan Henrik Finke TU Braunschweig, DEU	Recovery of collection performance in a truncated cyclone particle separator using a rotating classifier Mark J. Parker University of Western Ontario, CAN		Modelling of fat and moisture migration in compacted food powders Luc Dewulf University of Sheffield, GBR	Production of mixed Pd-Hf nanoparticles by atmospheric-pressure spark ablation Klito Petallidou The Cyprus Institute, CYP	Fluidized bed drying using a CFD-DEM coarse-graining technique Martikn J.A. de Munck TU Eindhoven, NLD
10:55	Coffee Break							
	Synthesis of Particles I Room Tokio Moderation: Georg Garnweitner, TU Braunschweig, DEU	Powder Handling & Conveying I Room Shanghai Moderation: Sergiy Antonyuk, University of Kaiserslautern-Landau, DEU	Advancements in Processing & Formulation Technologies I Room Seoul Moderation: Ulrich Teipel, TH Nuremberg, DEU & Rachel Smith, University of Sheffield, GBR	Separation in Liquid Room Kopenhagen Moderation: Urs Peuker, TU Bergakademie Freiberg, DEU		Battery Cell Production Room Kiew Moderation: Hermann Nirschl, Karlsruhe Institute of Technology, DEU	Spray Flame Synthesis II Room Istanbul Moderation: Lutz Mädler, University of Bremen, DEU	Coupling Simulation Methods II Room St. Petersburg Moderation: Ruud van Ommen, TU Delft, NLD
11:25	Keynote Inhibition of calcium carbonate precipitation on cooling surfaces: from laboratory scale to industrial pilot plant Béatrice Biscans LGC Toulouse, FRA	Spreading behavior of wetted particle heaps under vibration: Experimental study and DEM-simulations Fabian Krull University of Kaiserslautern-Landau, DEU	Electrostatic spray drying: a promising technology for thermosensitive compounds at industrial scale Jean-Maxime Eдорh Fluid Air Europe, FRA	Upscaling methods of dielectrophoretic separators Laura Weirauch University of Bremen, DEU		Numerical investigation on the influence of intensive-dry-mixing on the effective properties of NMC based lithium-ion battery cathodes Anshuman Chauhan Karlsruhe Institute of Technology, DEU	Investigation of bipolar coagulation in bipolar electrosprays Matthias Kawalek Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Mesh independent discretisations of fluids using a discrete differential geometric formulation for multiphase simulations in particulate systems Stefan C. Endres University of Bremen, DEU
11:45	Poster Flash Presentations * Development of a population balance equation for aluminium-doped zinc oxide nanocrystal synthesis via the benzylamine route Guohui Yang Karlsruhe Institute of Technology, DEU * Automated hot injection synthesis of metal chalcogenide particles Thomas Schubert TU Chemnitz, DEU * Polyamide 11 nanocomposite feedstocks for powder bed fusion additive manufacturing Florentin Tischer Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Analysis of fine powder transport and deposition in a complex swirl-type dry powder inhaler Martin Sommerfeld Otto-von-Guericke University Magdeburg, DEU	Are the Jedi from “Star Wars” masters of brewing coffee? Anna Ziefuss University of Duisburg-Essen, DEU	Scale-bridging separation of gold nanoclusters and plasmonic nanoparticles by liquid chromatography Lukas Gromotka Friedrich-Alexander-University Erlangen-Nuremberg, DEU		Dry mixing and its impact on the dry coating process of electrodes for lithium-ion batteries Marcella Horst TU Braunschweig, DEU	The role of micro explosion for nanoparticle formation during single droplet combustions Jan Derk Groeneveld University of Bremen, DEU	Modeling and simulation of particulate fluid flows with complex shapes and four-way coupling using the homogenized lattice Boltzmann method Jan Eric Marquardt Karlsruhe Institute of Technology, DEU

	Synthesis of Particles I Room Tokio	Powder Handling & Conveying I Room Shanghai	Advancements in Processing & Formulation Technologies I Room Seoul	Separation in Liquid Room Kopenhagen		Battery Cell Production Room Kiew	Spray Flame Synthesis II Room Istanbul	Coupling Simulation Methods II Room St. Petersburg
12:05	<div>Wet synthesis and formation of particles</div> <div>Aminophosphine-based synthesis of InP based quantum dots: flow synthesis and population balance model Zhuang Wang University of Duisburg-Essen, DEU</div>	<div>Bulk powder technologies, gas-solid-multiphase flow</div> <div>M²E³D: Evolutionary equation discovery and its applications in the powder-handling industries Andrei Leonard Nicusan University of Birmingham, GBR</div>	<div>Comminution, breakage, agglomeration and granulation</div> <div>DEM/CFD modelling of jet-based mixing gas phase hetero-aggregation for the analysis of process parameter sensitivities Victor Kolck TU Berlin, DEU</div>	<div>Separation, fractionation and sorting</div> <div>Development of a dynamic process model for the mechanical fluid separation in disc stack separators Helene Baust Karlsruhe Institute of Technology, DEU</div>		<div>Particle technologies for sustainable products</div> <div>Hot-melt kneading of sulfur and conductive additive for all-solid-state lithium sulfur batteries Motoshi Iwao Osaka Metropolitan University, JPN</div>	<div>Nano and aerosol particle technology</div> <div>Characterization of metal-oxide particles in spray flame synthesis by wide-angle light scattering (WALS) and laser-induced incandescence (LII) Peter Lang Friedrich-Alexander-University Erlangen-Nuremberg, DEU</div>	<div>Innovations in modelling and simulation</div> <div>Assessing the applicability of one-way coupled CFD-DEM simulations Christoph Goniva DCS Computing GmbH, AUT</div>
12:25	<div>Wet synthesis and formation of particles</div> <div>Targeted color design of silver-gold alloy nanoparticles Nabi E. Traoré Friedrich-Alexander-University Erlangen-Nuremberg, DEU</div>	<div>Bulk powder technologies, gas-solid-multiphase flow</div> <div>Influence of particle shape on segregating binary mixtures in a Freeman FT4 rheometer Shishir Shekhar Deakin University, AUT</div>	<div>Comminution, breakage, agglomeration and granulation</div> <div>Influence of process parameters on the formulation of a dry water-in-air dispersion Leigh Duncan Hamilton TU Braunschweig, DEU</div>	<div>Separation, fractionation and sorting</div> <div>Material specific separation of fine particles at liquid-liquid interfaces Claudia Heilmann TU Bergakademie Freiberg, DEU</div>		<div>Particle technologies for sustainable products</div> <div>All-solid-state sodium-ion batteries: Simulating the effects of particle properties on polymer-ceramic hybrid electrolytes Felix Gerbig Karlsruhe Institute of Technology, DEU</div>	<div>Nano and aerosol particle technology</div> <div>Spray-flame synthesis of niobium-doped titanium oxide nanoparticles to enhance the energy storage capability and stability of sodium-ion batteries Ahmed K. Al-Kamal University of Duisburg-Essen, DEU</div>	<div>Innovations in modelling and simulation</div> <div>Modelling multiphase flow in axial cyclones through CFD-DEM simulations Francesca Orsola Alfano University of Calabria, ITA</div>
12:45	Lunch Break & Exhibition Visit							
14:05	<div>Plenary</div> <div>Particle Technology Enabling the Transition to a Regenerative Food System Stefan Palzer, Nestlé, CHE</div>							
	<div>Particle Shape Analysis Room Tokio Moderation: Frank Kleine-Jäger, BASF, DEU</div>	<div>Flow Properties of Bulk Solids Room Shanghai Moderation: Evangelos Tsotsas, Otto-von-Guericke-University Magdeburg, DEU</div>	<div>Advancements in Processing & Formulation Technologies II Room Seoul Moderation: Colin Hare, Newcastle University, GBR & Paul Mort, Purdue University, USA</div>	<div>Energy Efficiency Room Kiew Moderation: Stefan Heinrich, TU Hamburg, DEU</div>		<div>Synthesis of Particles II Room Riga Moderation: Béatrice Biscans, LBC Toulouse, FRA</div>	<div>Heteroaggregation II Room Istanbul Moderation: Christian Lübbert, Friedrich-Alexander-University Erlangen-Nuremberg, DEU</div>	<div>Data driven approaches of Simulation and Modelling Room St. Petersburg Moderation: Stefan Pirker, Johannes Kepler University Linz, AUT</div>
14:50	<div>Innovative analytical methods for lab and production</div> <div><div>Keynote</div><div>Advances in automated high throughput workflows for catalysts and battery materials R&D Florian Huber hte GmbH, DEU</div></div>	<div>Bulk powder technologies, gas-solid-multiphase flow</div> <div>Flow and adhesion properties of pharmaceutical powders Fatemeh Talebi University of Leeds, GBR</div>	<div>Comminution, breakage, agglomeration and granulation</div> <div>Influence of material properties and process parameters on the agglomeration behavior of plant-based milk powder Kathrin Kramm TU Hamburg, DEU</div>	<div>Particle technologies for sustainable products</div> <div>Impact of milling parameters on flotation efficiency of LiAlO₂ formed in pyro-metallurgical slag of lithium-ion batteries Sima Hellmers TU Braunschweig, DEU</div>		<div>Wet synthesis and formation of particles</div> <div>Active drug sub-micrometer particles (SMP) synthesized by pulsed laser fragmentation in liquids (LFL) in a liquid-jet passage reactor with minimum degradation Tina Friedenaer University of Duisburg-Essen, DEU</div>	<div>Nano and aerosol particle technology</div> <div>CFD simulation and experimental validation of a hetero-aggregation process of sub-micron particles by mixing and desublimation Marc Weirich University of Kaiserslautern-Landau, DEU</div>	<div>Innovations in modelling and simulation</div> <div>Methods from machine learning and stochastic modeling for the characterization of irregularly shaped particles Orkun Furat University of Ulm, DEU</div>
15:10	<div>Innovative analytical methods for lab and production</div> <div><div>Poster Flash Presentations</div><div><ul style="list-style-type: none">* Measurement approach for aerodynamic diameter distribution of nanostructured powders Franz Lohse, TU Dresden, DEU* Quantification of the leakage mechanisms of pharmaceutical blister packages Anna Márton INVITE GmbH, DEU* Development of new methodologies for the characterization of particle shape by single particle light scattering analysis Moritz Moß Friedrich-Alexander-University Erlangen-Nuremberg, DEU</div></div>	<div>Bulk powder technologies, gas-solid-multiphase flow</div> <div>Transient dynamics of density-driven particle segregation in a rotating drum Theodoros Nestor Papapetrou Helmholtz-Zentrum Dresden – Rossendorf, DEU</div>	<div>Comminution, breakage, agglomeration and granulation</div> <div>Improvement of packing powders of principle active ingredient by a new grinding technology using cryogenic suspension Stephane Vaudez CEA, FRA</div>	<div>Particle technologies for sustainable products</div> <div>Powder cryptography: Can particles impact blockchain technology? Lothar Seidemann BASF, DEU</div>		<div>Wet synthesis and formation of particles</div> <div>Synthesis of nickel-rich cathode active materials using secondary materials Martin Menzler Fraunhofer-Institute for surface engineering and thin-film technology, DEU</div>	<div>Nano and aerosol particle technology</div> <div>Quantification of the mixing process of two nanoparticle producing flames for the design of functional hetero-contacts Jakob Stahl University of Bremen, DEU</div>	<div>Innovations in modelling and simulation</div> <div>Development of a hybrid model for battery electrode production with a physics-inspired data-driven approach Somayeh Hosseinhshemi TU Braunschweig, DEU</div>
15:30	<div>Innovative analytical methods for lab and production</div> <div>A possible way to organize and share 3D particle data at different levels of aggregation using relational databases Ralf Ditscherlein TU Bergakademie Freiberg, DEU</div>	<div>Bulk powder technologies, gas-solid-multiphase flow</div> <div>Effect of particle size and shape on flowability and cohesiveness of powder Koichiro Ogata National Institute of Technology, Oita College, JPN</div>	<div>Comminution, breakage, agglomeration and granulation</div> <div>A novel mechanistic model to describe the swelling of disintegrating granules Neeru Bala University of Sheffield, GBR</div>	<div>Particle technologies for sustainable products</div> <div>Optimizing and improving the sustainability of porcelain tile manufacturing using flow-sheet simulation Carine Lourenco Alves TU Hamburg, DEU</div>		<div>Wet synthesis and formation of particles</div> <div>Au nanoparticle growth: From simple approach to complex behaviour Markus Biegel Friedrich-Alexander Universität Erlangen-Nuremberg, DEU</div>	<div>Nano and aerosol particle technology</div> <div>Mixing of two turbulent flame jets for hetero-particle generation Tobias Tabeling Leibniz Institute for material-oriented technologies, DEU</div>	<div>Innovations in modelling and simulation</div> <div>Development of a dynamic grey box model for a digital twin of decanter centrifuges Erwin Ouwen Zhai Karlsruhe Institute of Technology, DEU</div>
15:50	Coffee Break							

	Calibration Room Tokio Moderation: Jin Ooi, The University of Edinburgh, GBR	Powder Handling and Conveying II Room Shanghai Moderation: Ruud van Ommen, TU Delft, NLD	New Technologies and Analysis Room Seoul Moderation: Magnus Evertsson, Chalmers University of Technology, SWE & Shuji Ohsaki, Osaka Metropolitan University, JPN	Particle Characterization Room Kopenhagen Moderation: Denis Schütz, Anton Paar GmbH, DEU		Material Efficiency Room Kiew Moderation: Sabrina Zellmer, Fraunhofer-Institute for surface engineering and thin-film technology, DEU	Wet Synthesis and Processing of Particles Room Riga Moderation: Robin Klupp Taylor, Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Particle Gas Synthesis Room Istanbul Moderation: Einar Kruis, University of Duisburg-Essen, DEU
16:20	Keynote Physical inspired data-driven modelling of particulate processes Carsten Schilde TU Braunschweig, DEU	Parametric study of a rotary freeze dryer Daniel Schiochet Nasato TU Munich, DEU	Formulation and characterization of hetero-aggregates from continuously operated opposed-jet fluidized beds Ali Massomi Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Analysis and interpretation of nanoscopic surface properties of crystalline pharmaceutically active synthetic small molecules supports formulation and processing development Cédric Cattin F. Hoffmann-La Roche AG, CHE		Particle-based information and reversibility in materials for sustainable products. Part 1: Communicating particles to equip materials with information Karl Mandel Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Tuning the characteristics of magnetic thin films via combination of different nano-particle building blocks Marion Görke TU Braunschweig, DEU	Control and model of drop size distribution of spiraling jet breakup at lab and industrial scale Kilian Schnoor Kreber, NLD
16:40	Poster Flash Presentations * DEM-CFD simulation of unwanted particle deposition in a cordless chainsaw Thomas Köllner CADFEM, DEU * Hybrid modelling approach for an electrode coating process using neural networks and genetic algorithms Marvin Röhl TU Braunschweig, DEU * Identification of the minimal coating amount and evaluation of the coating homogeneity by a Monte-Carlo-Simulation Natalie Schöning TU Munich, DEU	Stirrer design for improving fluidization of cohesive powder Rens Kamphost TU Delft, NLD	Influence of different stress types on the mechanochemical CaCO₃ synthesis Victor Marcus Oldhues TU Braunschweig, DEU	CDMA: Centrifugal differential mobility analyzer measurement theory and data inversion Torben Rütther University of Paderborn, DEU		Particle-based information and reversibility in materials for sustainable products. Part 2: Reversible interfaces for reusable and recyclable components Tobias Kraus Leibniz Institute for New Materials, DEU	Morphological control of starch using gelatinization and retrogradation phenomena and its application to pore-forming agents for porous ceramics Kento Ishii Nagoya Institute of Technology, JPN	Inline SiO₂-coating of different stoichiometry Fe_xO_y nanoparticles produced in a gas-phase flame reactor Claudia-F. Lopez-Camara University Duisburg-Essen, DEU
17:00	Top-bottom method for the calibration of DEM simulation based on a set of complementary measurements Geoffroy Lumay University of Liège, BEL	CONSIGMA 25 continuous manufacturing line: investigating the effect of pneumatic conveying on particle size Shengda Hou University of Sheffield, GBR	Numerical analysis of the packing structures on elastoplastic compression processes Takeru Yano Osaka Metropolitan University, JPN	Classification of multimodal nano- and microparticle suspensions of different materials by single particle light scattering Dietmar Lerche LUM GmbH, DEU		Fabrication and characterization of novel casein-based microparticles Ronald Gebhardt RWTH Aachen, DEU	Sustainable particle-based aluminum-doped zinc oxide (AZO) thin films through the benzyl alcohol route Sherif Okeil TU Braunschweig, DEU	Acoustic signatures of disrupting isolated FSP-droplets in a heated oxygen atmosphere Arne Witte University of Bremen, DEU
17:20	ACCES: autonomous characterisation and calibration using evolutionary simulation Jack Sykes University of Birmingham, GBR	Effect of Cyclic Water Content Changes during Long-term Storage on the Properties of Biomass Pellets Abdullah Sadeq TU Hamburg, DEU	Influence of solid substrate in morphological modeling of spray fluidized bed agglomeration Björn Düsenberg Friedrich-Alexander University Erlangen-Nuremberg, DEU	AI-enhanced online characterization of particles Helge Hattermann Q.ANT GmbH, DEU		Influence of particle size in standardizing traditional building material for heritage conservation Amit Sharma Associated Soapstone Dist. Co. Pvt. Ltd., IND	Impinging jet microreactor for continuous high-throughput synthesis of nanoscaled photo- and electrocatalysts Klaus Stöwe TU Chemnitz, DEU	Constraints of C/O ratios for the plasma synthesis of few-layer graphene Paolo Fortugno University of Duisburg-Essen, DEU
17:40	Evening Reception "POWTECH – Feierabend"							

* Participation in the POWTECH – Feierabend is possible after prior registration. You will receive an invitation in time with the possibility to register.

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Characterization of
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	Multiphase Agglomeration Processes Room Tokio Moderation: Lutz Mädler, University of Bremen, DEU	Modelling Bulk Powder Behaviour I Room Shanghai Moderation: Colin Hare, Newcastle Univeristy, GBR	Stirred Media and Ball Mills Room Seoul Moderation: Michael Juhnke, F. Hoffmann-La Roche Ltd, CHE & Horacio Andrés Petit, Universidade Federal de Rio den Janeiro, BRA	Image Analysis Room Kopenhagen Moderation: Hermann Nischl, Karlsruhe Institute of Technology, DEU		Recycling Room Kiew Moderation: Harald Zetzener, TU Braunschweig, DEU	Numerical Upscaling Methodologies (TUSAIL) Room Riga Moderation: Vanessa Magnanimo, University of Twente, NLD	Artificial Intelligence Room St. Petersburg Moderation: Carsten Schilde, TU Braunschweig, DEU
9:00	Keynote Gas phase coating of particles: towards ton-scale production with nano-precision Ruud van Ommen TU Delft, NLD	Particle circulation and mixing kinetics in bubbling fluidised beds using PEPT Dominik Werner University of Birmingham, GBR	Properties and performance of silicon grinding media in auto-genous stirred media milling Marcel Möller TU Braunschweig, DEU	Nanomaterial identification by electron microscopy with the example of TiO₂ pigment powders sample preparation measurement and validation of results Thomas Koch KRONOS INT. Inc., DEU		Characterization and recycling of eroded particles from electro discharge machining for additive manufacturing Oliver Voigt TU Bergakademie Freiberg, DEU	Modelling fluidization by data-based recurrence CFD (rCFD) Varun Dongre Johannes Kepler University, AUT	Hybrid population balance modeling of agglomeration processes in multi-component suspensions Frank Rhein Karlsruhe Institute of Technology, DEU
9:20	Poster Flash Presentations * Coating of nano and micron sized particles in a vibrated fluidized bed with injection of an aerosol Zhi Cheng Hua TU Hamburg, DEU * Adhesion force measurement and resuspension of glass particles from a wall surface functionalized with well-defined microasperities Gregory Lecrivain Helmholtz-Zentrum Dresden-Rossendorf, DEU * Tuning the morphology of spray-dried supraparticles: Effects of building block size and concentration Huanhuan Zhou Friedrich-Alexander-University Erlangen-Nuremberg, DEU	Comparison of erosion and pressure drops for different bend geometries as part of pneumatic conveying in four-way coupled CFD-DEM simulations Eric Drescher TU Berlin, DEU	Producing micro-fibrillated cellulose in a stirred media mill Javier Rodriguez-Rodriguez University of Birmingham, GBR	Standardization of particle shape analysis using images Ulrich Köhler Sympatec GmbH, DEU		Recycling of PEM water electrolyzer Decoating of Electrodes Malena Staudacher TU Bergakademie Freiberg, DEU	Development of a hybrid discrete-continuum method for multiscale modelling of gas-solid systems Behrad Esgandari Johannes Kepler University Linz, AUT	Self-Optimizing high shear wet granulation with DeepMPC Marino Sergi Eigengran SRL, ITA
9:40	Pulsed multiphase flows – Investigation of the influence of frequency and amplitude induced flow conditions on the agglomeration behavior of particles Arne Teiwes Glatt Ingenieurstechnik GmbH, DEU	Modelling extraction kinetics of espresso marker compounds from a swelling packed bed Mauricio Vaca Guerra TU Hamburg, DEU	Formulation screening, parameter optimization and scale-up of grinding processes with agitator bead mills Stefan Mende NETZSCH Feinmahltechnik GmbH, DEU	Deep learning enhanced algorithm for the evaluation of in-situ image-based measurements in particulate processes Sarah Daus TU Bergakademie Freiberg, DEU		Smart centrifuges: Model-based control challenged with a direct recycling process chain for Li-ion batteries Marco Gleiss Karlsruhe Institute of Technology, DEU	CFD-DEM modelling of dense phase pneumatic conveying with non-spherical particles Oguzhan Erken The University of Edinburgh, GBR	Development and application of a hybrid model for fluidized bed granulation Hagen Münkler Novartis, CHE
10:00	Determination of operating parameters of a cold gas spraying process for high-resolution deposition of fine particles Yannik Sinnwell University of Kaiserslautern-Landau, DEU	Charge neutralizing effect of aluminium stearate in tribo-eletrification by aerodynamic dispersion James R. Middleton University of Leeds, GBR	Multi-instrumentation of a ball mill to optimize the mixing-grinding stage in nuclear fuel fabrication Bastien Fossé CEA, FRA	Particle detection and particle size distribution measurement using deep learning and image synthesis Xuebei Zhu University of Duisburg-Essen, DEU		Influence of the cell type on the mechanical recycling process of lithium-ion batteries Christian Wilke TU Bergakademie Freiberg, DEU	Poster Flash Presentations * Representing rotation on continuum level in simulations and experiments Max Winkelmann University of Twente, NLD * Investigating the benefits and limitations of coarse grained, upscaled particles for mixing and segregation in a rotating drum Balázs Füvesi University of Twente, NLD * Investigation of the effect of process and material parameters on wet granulation process Roxana Saghafian Larijani University of Twente, NLD * Continuum modelling of non-uniform flows in industry Retief Lubbe University of Twente, NLD	AI based DEM surrogate modelling Christoph Thon TU Braunschweig, DEU
10:20	Coffee Break							

	Polymer Waste Room Tokio Moderation: Arno Kwade, TU Braunschweig, DEU	Modelling Bulk Powder Behaviour II Room Shanghai Moderation: Daniele Sofia, University of Salerno, ITA	Impact Mills and High Pressure Grinding Rolls Room Seoul Moderation: József Fajtli, University of Miskolc, HUN & Ali Hassanpour, University of Leeds, GBR	Dust and Granulate Characterization Room Copenhagen Moderation: Andreas Bück, Friedrich- Alexander-University Erlangen- Nuremberg, DEU		Numerical Upscaling Methodologies (TUSAIL) Room Riga Moderation: Massimo Poletto, University of Salerno, ITA	Particle Formation by Drying Room Istanbul Moderation: Eberhard Schmidt, University of Wuppertal, DEU	Modelling Granular Processes III Room St. Petersburg Moderation: Jin Sun, The University of Edinburgh, GBR
10:50	Keynote Continentals sustainability ambition and implications for particulate filler materials Anne Windberg Baarup, Hubert Hirschlag Continental Reifen Deutschland GmbH, DEU	Modelling and characterization of metal powders for additive manufacturing with discrete element method – influence of the particle size distribution Kai Drechsel Karlsruhe Institute of Technology, DEU	Crushing of plastics for the recycling of battery periphery in a hammer mill Sandra Boekhoff TU Braunschweig, DEU	Novel technique for economic and continuous analysis of dust exposure levels in real-life production Michael Pilz BASF SE, DEU		Modelling of high-pressure powder compaction with account of surface aserity and intra-particle porosity using a DEM-based elasto-plastic cohesive model Afshin Taghizadeh The University of Edinburgh, GBR	Drying of biologicals at room temperature Maksim Mezhericher Princeton University, USA	Numerical study of mixing characteristics for equally sized nanoparticle systems dispersed in a gas flow Amir Karimi Noughabi University of Duisburg-Essen, DEU
11:10	Poster Flash Presentations * Composite particles of active- material/solid-electrolyte/ conductive-additives for all-solid- state battery Hideya Nakamura Osaka Metropolitan University, JPN * A fluidised bed pyrolysis process for chemical recycling of mixed plastic waste Dominik Werner University of Bermingham, GBR * Thermal processing of particles for innovative powder materials Johannes Buchheim Glatt Ingenieurtechnik GmbH, DEU	Detailed Euler/Lagrange modelling of fibre-like particle transport and wall collisions: application to cyclone sepa- rators Manuel A. Taborda Otto-von-Guericke-University Magdeburg, DEU	Effect of the impact breakage type on the properties of white fused mullite particles László Tamás Refra-System Ltd., HUN	DEM simulation of the effect of particle adhesion on die- filling efficiency in a rotary tablet press Mohammadreza Alizadeh, University of Surrey, GBR		CFD-DEM simulations to determine collision energies and capture probability in wet stirred media mills Yeswanth Sai Tanneru TU Braunschweig, DEU	Continuous synthesis of drug nanoparticles via spray-drying method Shuji Ohsaki Osaka Metropolitan University, JPN	Extended DEM modelling of electrostatic interactions between tribocharged polarizable particles Alberto Di Renzo University of Calabria, ITA
11:30	Pyrum: The way forward Pascal Klein Pyrum Innovations AG, DEU	CFD-DEM simulation and experiment of wet particle fluidization in liquid-injected fluidized bed Raffaella Ocone Heriot-Watt University, GBR	Geometrical optimization of hammer mills Jan-Philipp Fürstenau CADFEM Germany GmbH, DEU	UV/Vis spectroscopy as process analytical technology for tablet drug content, hardness, density and porosity in-line monitoring René Brands TU Dortmund, GER		Flowability assessment of weakly consolidated fine powders Rahul Sharma University of Salerno, ITA	Aerogels consisting of amorphous silica nanoparticles and their pharmaceutical use as drug carrier systems Jennifer Pierick TU Braunschweig, DEU	Economical map-based turbulence models: develop- ments and perspectives for the numerical analysis of electro- static precipitation Juan Medina BTU Cottbus-Senftenberg, DEU
11:50	Flocculation of microplastics with biofloculants from lignocellulosic materials Maria Graca Rasteiro University of Coimbra, PRT	Characterisation of shear- induced dilatancy effects in low-stress shear cell tests Amalia Thomas Freeman Technology, GBR	Spiral jet mill with individually controlled grinding gas nozzles and energy-efficient grinding method therewith Bartholomäus Luczak LANXESS Deutschland GmbH, DEU	Using imaging methods to evaluate mixing quality of a pulsed gas-solid multiphase flow Laura Engelbracht-Kloss University of Duisburg-Essen, DEU		Poster Flash Presentations * Implementation and calibration of breakage models in jet milling processes Jobin Raju TU Braunschweig, DEU * Effect of powder formulation on the mechanical properties and dissolution behaviour of food tablets Amine Ait Ouazzou TU Hamburg, DEU * New modeling approach for agglomeration in fluidized beds through CFD-DEM to PBM coupling Gero Stöckl TU Hamburg, DEU	Nanoencapsulation of 5-O- caffeoylquinic acid by spray drying Daniel Tobón Vélez Laboratoire de Génie Chimique, FRA	Dynamic modelling of fluidized bed spray granulation for its autonomous control with intelligent digital twin Xiye Zhou TU Hamburg, DEU
12:15	Poster Award					Room Tokio		
12:25	Plenary Solid-State Batteries – a Future Application of Advanced Particle Technology Jürgen Janek, Justus-Liebig-University Gießen, DEU							
13:05	Closing Ceremony							
13:15	Lunch Break							
14:00	Exhibition Visit and start of the digital Guided Tour*							
17:00	Exhibition Closing							

* Participation in the digital Guided Tour is possible after prior registration.

GENERAL INFORMATION

PARTEC 2023 takes place at the Nuremberg Convention Centre East (NCC Ost) of the Nuremberg exhibition
Exhibition Centre Nuremberg
Messezentrum, 90471 Nuremberg, Germany



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Registrations for conference attendance must be made via www.partec.info.

REGULAR PRICES 3-DAY TICKET

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SOCIAL EVENTS

With your complete registration for the PARTEC 2023 you will have the opportunity to register for the POWTECH Feierabend party and the posterparty. The registration is free of charge. Please note that an extra registration for the social events is obligatory in order to participate. You will receive an invitation in time with the possibility to register for both events.

DIGITAL GUIDED TOUR

Join our guided tours at POWTECH 2023! With the guided tour, we create an opportunity to obtain comprehensive information on the highlights of POWTECH 2023. Get to know the exhibitors, the products, services and performances as well as the contact persons. Be a part of the tour and register directly under: <https://www.partec.info/guided-tour>

FURTHER INFORMATION

For additional information and registration, please visit www.partec.info or scan the QR Code on the right-hand side.

CONFERENCE VENUE

Exhibition Centre Nuremberg, Messezentrum, 90471 Nuremberg, Germany

COOPERATION PARTNER – ABSTRACT MANAGEMENT

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ORGANIZER

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DELEGATE BENEFITS

The conference package includes the conference proceedings, coffee-break beverages, lunch and the social events.



WE'RE LOOKING FORWARD TO SEEING YOU AT PARTEC 2023 IN NUREMBERG!