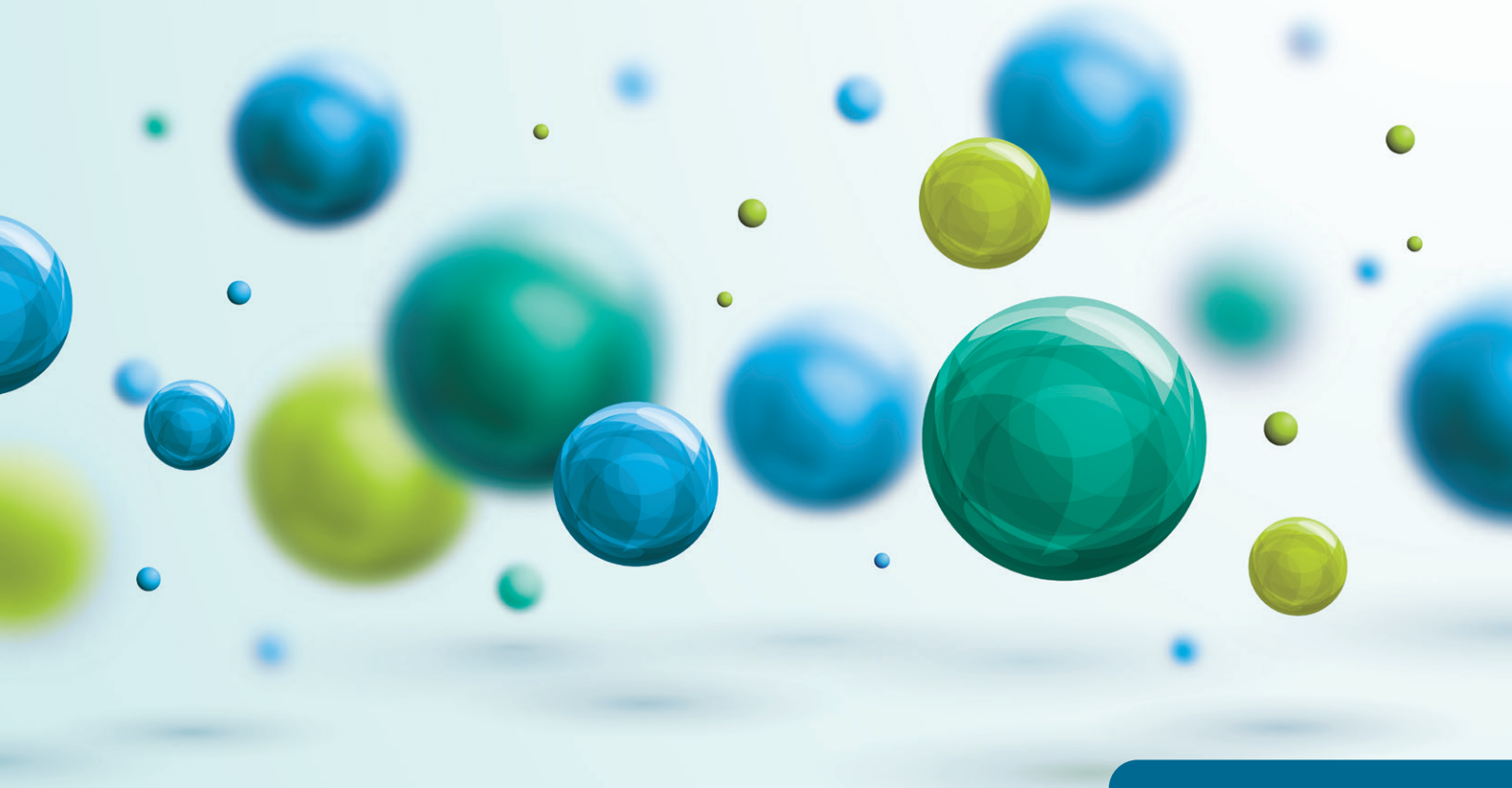
PARTEC 2025

International Congress on Particle Technology

September 23–25, 2025, Nuremberg, Germany

PARTICLES EMPOWERING TOMORROW: INNOVATIONS FOR OUR GLOBAL WORLD



PROGRAM

Together with

POWTECH TECHNOPHARM

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PURPOSE

Today, particles are the building blocks of traditional industries such as chemicals, pharmaceuticals and minerals and also driving forces in the substantial sector of energy transition technologies, including hydrogen and energy harvesting and storage as well as advanced production methods such as powder and spray-based materials processes.

In this ever-evolving landscape of particle technology, we combine innovation and global impact.

As we convene for the PARTEC 2025, one of the largest international gatherings in the field, our focus extends beyond traditional realms to encompass both established and emerging research and applications in particle technology. Against the backdrop of climate change, our overarching theme, **"Particles Empowering Tomorrow: Innovations for our Global World"** reflects the commitment of our community to address the evolving needs of our world.

Our emphasis goes beyond product quality alone; we strive to maximize material utilization and energy efficiency in processes. The dynamics of climate change have underscored the importance of sustainability and circular economy principles, guiding our exploration of how particle technology can contribute to a more sustainable future.

PARTEC 2025 is a congress that brings together academia and industry.

The synergetic effects created here are unique and offer opportunities for intensive discussions and knowledge transfer. Our connection with POWTECH TECHNOPHARM, the international exhibition for process operations creates a unique bridge between research and application.

I cordially invite you from all parts of the world. Join us in Nuremberg for PARTEC 2025, where together we will push the boundaries of particle technology, drive progress and contribute to innovations that will shape a global future.

Looking forward to your active participation and valuable contributions.

Prof. Dr.-Ing. habil. Lutz Mädler
University of Bremen & Leibniz Institute
Chairman for PARTEC 2025

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Segets, D. – University of Duisburg-Essen, DEU

PROGRAM OVERVIEW

Tuesday, September 23, 2025

09:00 Opening & Welcome of NürnbergMesse

09:10 **Particulate Flow Modelling through Space and Time** — Plenary
Stefan Pirker, Johannes Kepler University, AUT

Room	Tokio	St. Petersburg	Istanbul	Kiew	Seoul	Shanghai	Riga	Kopenhagen
09:55	Particle Modelling and Simulation		Powder Flowability	Conveying I	Recycling	Flame Synthesis I	Granulation	Separation I
10:55	Coffee Break							
11:25	Particles for Materials I	Particle DEM I	Particle Measurements I	Conveying II	Particle in Batteries	Hetero-aggregation (SPP 2289) I		Complex Particles Phenomena I
12:45	Lunch Break & Exhibition Visit							
14:05	**Harnessing Plant Proteins: From Microencapsulation to Emulsion Gels** — Plenary Cordelia Selomulya, UNSW Sydney, AUS							
14:50	Autonomous Processes in Particle Technology (SPP 2364) I	Particle DEM II	Particle Measurements & Characteri-zation I	Gas Solid Flow I	Particle Technologies for Sustainable Products I	Hetero-aggregation (SPP 2289) II		Complex Particles Phenomena II
15:50	Coffee Break							
16:10/ 16:20	Filtration		Particle Spectroscopy	Triboelectric Effects	Particle Technologies for Sustainable Products II	Particles for Materials II	Autonomous Processes in Particle Technology (SPP 2364) II	Droplets & Jet Breakup
17:40	Poster Party							

Wednesday, September 24, 2025

09:00 Opening & Friedrich-Löffler-Price in Particle Technology

09:10 **Digitalizing Solids Process Engineering in R&D – a BASF Perspective** — Plenary
Frank Kleine Jäger, BASF, DEU

Room	Tokio	St. Petersburg	Istanbul	Kiew	Seoul	Shanghai	Riga	Kopenhagen
09:55	Particle Technologies for Sustainable Products III	Artificial Intelligence (AI)	Particle Measurements II	Particle Synthesis I	Gas Solid Flow II	Particles for Materials III	Agglomeration	
10:55	Coffee Break							
11:25	Particle Multiphase flow		Particle Measurements III	Design of Particulate Products (CRC 1411) I	Particle Technologies for Sustainable Products IV	Particles for Materials IV	Breakage / Grinding I	Separation II
13:55	EFCE-MPS Award							
14:00	**Pharmaceutical Manufacturing of Functional Nanoparticles** — Plenary Alexandra Teleki, Uppsala, SWE							
14:50	Innovative Analytical Methods	Data Driven Methods		Particle Synthesis II	Particle Technologies for Sustainable Products V	Particles for Materials V	Breakage / Grinding II	CFD-DEM Simulations
15:50	Coffee Break and ChemCar Competition in Hall 12							
16:10/ 16:20	Product Synthesis and Formulation I	Innovation in Modelling, Simulation I		Particle Measurements & Characteri-zation II	Particle Technologies for Sustainable Products VI	Flame Synthesis II	Breakage / Grinding III	Engineered Artificial Minerals (SPP 2315) I
17:40	Evening Reception "POWTECH TECHNOPHARM Party"							

Thursday, September 25, 2025

Room	Tokio	St. Petersburg	Istanbul	Kiew	Seoul	Shanghai	Riga	Kopenhagen
09:00	Poster Award							
09:10	**Powder Technology as Key for Sustainable Battery Electrode Production** — Plenary Arno Kwade, Technical University of Braunschweig, DEU							
09:55	Mixing and Dis-persing, Liquid-Solid-Multi-phase flow	Innovation in Modelling, Simulation II	Solid Inter-actions I	Particle Measurements & Characteri-zation III	Product Synthesis and Formulation II	Nanoparticles I		Engineered Artificial Minerals (SPP 2315) II
10:55	Coffee Break							
11:15/ 11:25	Comminution, Breakage, Agglomeration and Granulation	Innovation in Modelling, Simulation III	Solid Inter-actions II		Design of Particulate Products (CRC 1411) II	Nanoparticles II	Automated Process Chains in Particle Technology	Engineered Artificial Minerals (SPP 2315) III
12:55	Closing Ceremony							
13:10	Lunch Break							
14:00	Exhibition Visit							
17:00	Exhibition Closing							

TUESDAY, SEPTEMBER 23, 2025

09:00 Opening & Welcome of NürnbergMesse

09:10 **Plenary**

Particulate Flow Modelling through Space and Time
Stefan Pirker, Johannes Kepler University, AUT

	Particle Modelling and Simulation Room Tokio	Powder Flowability Room Istanbul	Conveying I Room Kiew	Recycling Room Seoul	Flame Synthesis I Room Shanghai	Granulation Room Riga	Separation I Room Kopenhagen
09:55	Innovation in modelling, simulation, machine learning and generative artificial intelligence (AI) **09:55–10:25 Keynote** **Bridging DEM Simulations and Data Science: New Frontiers in Industrial Powder Processing** Mikio Sakai Tokyo University, JPN	Innovative analytical methods for lab and production **A Combined Image Analysis and Density-Based Approach to Assess the Spreadability of Metal and Polymeric Powders in Additive Manufacturing** Bruno Nicola Dose University of Salerno, ITA	Bulk powder technologies, gas-solid-multiphase flow **Triboelectrification of Functionalised Glass Beads during Pneumatic Conveying** Mojtaba Ghadiri University of Leeds, GBR	Particle technologies for sustainable products **Powder Evolution during Successive Recycling for Additive Manufacturing Processes** Ayokunle Oluwatunmise Osowobi, Reza Baserinia, Meisam Abdi De Montfort University, GBR	Nano and aerosol particle technology **SiC-fiber-supported Droplet Burning for Nanoparticle Synthesis in Hele-Shaw Flow** Stephen Tse Rutgers University, USA	Comminution, breakage, agglomeration and granulation **Binder Distribution in Continuous Wet Granulation using a Novel Small Scale Ring Layer Granulator** Lukas Bahlmann Technical University of Braunschweig, DEU	Separation, fractionation and sorting **Hierarchical Iron-Oxide Supraparticles: A High-Efficiency Adsorbent for Water Pollution Remediation** Mohaned Hammad University of Duisburg-Essen, DEU
10:15	**Poster Flash Presentations** * Linking Powder Flowability Measurements to Spread Layer Quality Metrics in Additive Manufacturing via DEM Ben Jenkins Granutools/University of Birmingham, BEL * Discrete Differential Geometric Methods for Machine Precision Simulation and Parameterisation of Particle Liquid Bridges Stefan Endres Leibniz Institute for Materials Engineering – IWT, DEU	**Mechanistic Insights into the Shape Evolution and Influencing Factors of Repose Angle Heaps of Different Dairy Materials** Yongang Ma The University of Sheffield, GBR	**Influence of Bulk Properties on the Feeding and Conveying Behaviour of Mineral Fillers** Ivan Kibet University of Darmstadt/EUt+, DEU	**Multi-Stage Grinding for Efficient Recycling of Electrodes: Optimizing Process Parameters** Sima Hellmers, Patricia Mendes Technical University of Braunschweig, DEU	**Scalable Swirl Spray Flame Synthesis of Y_2O_3-MgO Composite Nano-Particles for High Temperature Mid-Infrared Windows** Yiyang Zhang Tsinghua University, CHN	**Streamlining Continuous Manufacturing: Wet Granulation of High-Dose Drug Formulations Without Subsequent Drying** Lukas Ries BASF SE, DEU	**Investigation on Removal of Ionomer from PEMEL Catalyst Particles and the Impact on Mechanical Separation Process Based on their (De)wetting Ability** Martin Rudolph Helmholtz Institute Freiberg for Resource Technology, DEU
10:35	* Numerical Modelling and Real-time Magnetic Resonance Imaging of Hydrodynamics in Vibrated Bubbling Fluidized Beds Nick Hildebrandt Hamburg University of Technology, DE * A Probability-Based Model for Particle Resuspension: Highlighting the Effect of Turbulence-induced Resonance Yiyang Zhang Tsinghua University, CN	**Microdynamic Flowability for Early API Characterisation: A Case Study on Palbociclib** David Blanco University of Helsinki, FIN	**Coating of Particles in Pneumatic Conveying** Gregor van den Berg Technical University of Rosenheim, DEU	**Closed Loop Recycling Approach for Aged Polyamide 12 Feedstock Powders for Additive Manufacturing via Precipitation Combined with Solvolysis** Jochen Schmidt Friedrich-Alexander-University Erlangen-Nürnberg, DEU	**One Step Synthesis of TiO2 Embedded Carbon Nano Onions via Flame Spray Pyrolysis: A Study on their Morphological and Optical Deatures** Muhammad Tanveer University of Eastern Finland, FIN	**Understanding Fluidised Bed Granulation of High Surfactant Content Powders using Experimental Approaches** Buddy Visetthernrakul University of Birmingham, GBR	**Fine Particle Flotation for Recycling Black Mass from Lithium Iron Phosphate Batteries** Aliza Salces Helmholtz Institute Freiberg for Resource Technology, DEU

10:55 Coffee Break

SUPPORTING ORGANISATIONS

International Association for Pharmaceutical technology (APV), DEU

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

DECHEMA, Gesellschaft für Chemische Technik und Biotechnologie e.V., DEU

The Chemical Industry an Engineering Society of China, CHN

Association for Aerosol Research (GAeF), DEU

Nano in Germany, DEU

SUPPORTING ORGANISATIONS

German Association of Biotechnology Industries (DIB), DEU

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

Deutscher Schüttgut-Industrie Verband (The German Powder and Bulk Association) (DSIV), DEU

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

IChemE PTSIG, GBR

The Society of Powder Technology, JPN

VDI – The Association of German Engineers, VDI Society Chemical and Process Engineering (VDI-GVC), DEU

TUESDAY, SEPTEMBER 23, 2025

Particles for Materials I
Room Tokio

Particles for Materials: Focus on Research in Japan

11:25

11:25–11:55 Keynote

Room-temperature Aqueous Synthesis of Pd-Ru Alloy Nanoparticles Using Microreactor

Satoshi Watanabe
University of Tokyo, JPN

11:45

Poster Flash Presentations

* Global Analysis of Multiwave-Length Analytical Ultracentrifugation Data Sets from Sedimentation Velocity Experiments
Christina Spruck
Friedrich-Alexander-University Erlangen-Nürnberg (FAU), DEU

12:05

* Control of Buckling of Colloidal Supraparticles
Lukas Römling
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

* The Effect of Seed Variation on the As-Synthesized and Aged Morphology and Optical Properties of Silver Patchy Particles
Monika Stadelmaier
Friedrich-Alexander-University Erlangen-Nürnberg (FAU), DEU

12:25

* Silica Particles with Hierarchical Porosity
Nicolás Salcedo Gálvez
Institute of Particle Technology, Friedrich-Alexander-University Erlangen-Nürnberg, DEU

* Size and Composition Controlled Synthesis of Bimetallic Silver-Gold Alloy Nanoparticles
Nabi E. Traoré
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Particle DEM I
Room St. Petersburg

Innovation in modelling, simulation, machine learning and generative artificial intelligence (AI)

11:25

An Automated Calibration Tool for Uncertainty Quantification in DEM Simulations

Thomas Forgber
RCPE GMBH, ATU

11:45

CFD-DEM Analysis of Droplet Drying and Solidification in Spray Drying Processes

Riccardo Togni
DCS Computing GmbH, ATU

12:05

Multilayer Recoating and Flexible Blade Dynamics in Metal AM: A DEM Approach

Gustav Kettil
Fraunhofer-Chalmers Centre, SWE

12:25

Efficient DEM Simulations of Polarizable Particles Including Tribocharging and Electrostatic Interactions

Maria Giordano
University of Calabria (UNICAL) ITA

Particle Measurements I
Room Istanbul

Innovative analytical methods for lab and production

11:25

Towards a True Measurement of Powder Rheology

Colin Hare
Newcastle University, GBR

11:45

And make Measurable that which is not: How to Deal with Terrible Samples in Powder Flow Measurements

Denis Schuetz
Anton Paar GmbH, ATU

12:05

Diffuse Reflectance Measurements and Simulations for In-Line Characterizing Concentrated Liquid Dispersions

Sebastian Boldt
Karlsruhe Institute of Technology, DEU

12:25

CDMA: Centrifugal Differential Mobility Analyzer – Measurement of two-dimensional particle property distributions

Daniel Tappe
University of Paderborn, DEU

Conveying II
Room Kiew

Bulk powder technologies, gas-solid-multiphase flow

11:25

Pneumatic Conveying of Hydrated Lime: Between Anecdotal Experience and Rigorous Research Efforts – An Exploration of the State of the Art

Andreas Prüfer
KS-Engineering GmbH, DEU

11:45

Pressure Loss Prediction of Powder Pneumatic Conveying Systems in Straight Pipes and Bends and Development of New Pressure Model Utilizing Euler-Euler Approach

Reza Osloob, RAPCO, IRN

12:05

Eccentric Discharge Behaviour in the Small-Scale Model Silo of a Silo Centrifuge

Merle Schröder, Technical University of Braunschweig, DEU

12:25

The Evolution of Continuous Melt Granulation: from One to Two Stages to Decode the Complexity?

Jens Bartsch
Technical University of Dortmund, DEU

Particle in Batteries
Room Seoul

Particle technologies for sustainable products

11:25

Challenges of Dry Coating: How do Fibrils and Powder Properties shape Electrode Properties for Lithium-Ion Batteries?

Franziska Beverborg
Technical University of Braunschweig, DEU

11:45

Particle Processing in Solid-State Battery Cathode Development: A Physico-Chemical Perspective

Maximilian Kissel
Justus-Liebig-University Gießen, DEU

12:05

Electronic Pathways within Cathode Microstructures Through Carbon-Coated NMC via Dry Mixing

Guo Jung Lian
University of Sheffield, GBR

12:25

On the Role of Polymer Binders for the Electrochemical Properties of Dry-Processed Electrodes

Zhaoran Xin
Evonik, DEU

Heteroaggregation (SPP 2289) I
Room Shanghai

Nano and aerosol particle technology

11:25

Engineering Cellulose Nanofiber-Fe3O4 Nanocomposites for Superior Magnetic Responsiveness and Binding Affinity in Biomedical Innovations

Nur Syakirah Nabilah Saipul Bahri
Hiroshima University, JPN

11:45

Poster Flash Presentations

* Introduction to SPP 2289
Lutz Mädler, University of Bremen & Leibniz Institute, DEU

* An AFM-Based Approach for Quantification of Guest Particle Deformation During Mechanofusion
Phillip Gräfensteiner
Ulm University, DEU

* On the Importance of Mixer Stressing Conditions during the Production of Solid-State Battery Cathodes
Finn Frankenberg
Technical University of Braunschweig, DEU

* Experimental Investigations into a Jet-Based Direct Mixing Process for Solid State Battery Cathode Production in a Turbulent Pipe Flow
Joscha Witte
University of Wuppertal, DEU

* Formation and Characterization of Nanostructured TiO2-ZrO2 Hetero-Aggregates in Opposed Jet Fluidized Bed
Raul Favaro Nascimento
Technical University of Braunschweig, DEU

* Assessment of the Mixing Quality of Carbon Nlack – Silica Hetero-Aggregates
Simon Buchheiser
Karlsruhe Institute of Technology (KIT), DEU

* Experimental and Smulative Studies on the Structure Formation of SiO2-PS Heteroagglomerates
Nane Kühn
Technical University of Braunschweig, DEU

* CFD Investigations of Multiphase Mixing of Heterogeneous Nanoparticles in an Opposed Jet Fluidized Bed
Muhammad Usman Farid
Friedrich-Alexander-University Erlangen-Nürnberg (FAU), DEU

* Mixing Mechanisms in Intersecting Spray Flames for Hetero-Aggregate Particle Production
Tobias Tabeling
University of Bremen, DEU

Complex Particles Phenomena I
Room Kopenhagen

Mixing and Dispersing, Liquid-Solid-Multiphase flow

11:25

Transport, Deposition and Interaction of Aerosol Droplets and Chips in Drilling Processes

Teresa Tonn
Leibniz Institute for Materials Engineering – IWT, DEU

11:45

Exploring the Internal Dynamics of Resonant Acoustic Mixing using Positron Emission Particle Tracking

Hazal Sezer
University of Birmingham, GBR

12:05

Polymer Suspensions under Uniaxial Extension – A Novel Way to Produce Core-Shell-Particles?

Moritz Neukötter
Paderborn University, DEU

12:25

Comparative Analysis of Particle Behaviour with Different Stirrer Geometries in a Capsule Filling Machine using DEM Simulations

Isabel Gallego
Syntegon Technology GmbH, DEU

TUESDAY, SEPTEMBER 23, 2025

12:45 Lunch Break & Exhibition Visit

14:05 **Plenary**

Harnessing Plant Proteins: From Microencapsulation to Emulsion Gels
Cordelia Selomulya, UNSW Sydney, AUS

Autonomous Processes in Particle Technology (SPP 2364) I
Room Tokio

Automated process chains in particle technology

14:50 **14:50–15:00 Keynote**

Autonomous Processes in Particle Technology
Hermann Nirschl
Karlsruhe Institute for Technology, DEU

15:10 **Poster Flash Presentations**

* Online Velocity Estimation in Cold Gas Spraying using Acoustic Measurements
Yannik Sinnwell , Anton Maksakov
University of Kaiserslautern-Landau (RPTU), DEU

* Data-driven Soft-Sensor for Real-Time Process Control in Stirred Media Mills
Christoph Thon
Technical University of Braunschweig, DEU

* Influence of Filter Cleaning Frequency on the Particle Size Distribution of Granules in Continuous Wet Granulation
Alana Delvos
Heinrich Heine University Düsseldorf, DEU

15:30 * Stochastic Modeling of Particle Structures in Spray Fluidized Bed Agglomeration using Methods from Machine Learning
Sabrina Weber
Ulm University, DEU

Particle DEM II
Room St. Petersburg

Innovation in modelling, simulation, machine learning and generative artificial intelligence (AI)

14:50 **Coarse-Grained DEM-CFD Simulation of a Wet Bead Mill for Industrial Applications**
Yuki Tsunazawa
National Institute of Advanced Industrial Science and Technology, JPN

15:10 **Analysis of DEM-Calendered Anode Microstructures for Electronic and Ionic Conductivity**
Caroline Willuhn
Technical University of Braunschweig, DEU

15:30 **Using Simulation, HPC and Machine Learning to virtual Optimize Rotary Dryer Operations for Enhanced Efficiency**
Marcus Schierle
Altair Engineering GmbH, DEU

Particle Measurements & Characterization I
Room Istanbul

Innovative analytical methods for lab and production

14:50 **Innovative Method Evaluating Permeability for Tableting Process Improvement**
Salvatore Pillitteri
Granutools, BEL

15:10 **Real-Time Dynamic Extinction Spectroscopy Sensor for Monitoring Precipitation and Crystallization in Phosphorus Recovery from Wastewater**
Jan Ludorf
University of Kaiserslautern-Landau (RPTU), DEU

15:30 **The Potential of Micro-Structure Diagnostics for Particle Analysis**
Katrin Thieme
Fraunhofer Institute for Microstructure of Materials and Systems IMWS, DEU

Gas Solid Flow I
Room Kiew

Bulk powder technologies, gas-solid-multiphase flow

14:50 **Advancing in Compaction Simulation: Key Insights into the Scale Transfer of Die Filling**
Ben Kohlhaas
Technical University of Braunschweig, DEU

15:10 **Simulation of Lunar Regolith Particle Motion Behaviour during Spacecraft Landing with a Supersonic Multiphase Solver**
Tobias Laming
Technical University of Braunschweig, DEU

15:30 **Time-extrapolation of CFD-DEM Simulations for Iron Ore Reduction**
Daniel Queteschiner
Johannes Kepler University, ATU

15:50 Coffee Break

Particle Technologies for Sustainable Products I
Room Seoul

Particle technologies for sustainable products

14:50 **Synthesis of Monomodal, Magnetic Interference Pigments**
Markus Nickisch
Ulm University, DEU

15:10 **Mechanochemical Synthesis of Urea-Gypsum-Cocrystals**
Roman Würl
Technical University Nürnberg
Georg Simon Ohm, DEU

15:30 **Mechanical Activation of Coal Gangue for Geopolymer Application – Process Investigation and Characterization**
Sandra Breitung-Faes
University of Miskolc, HUN

Heteroaggregation (SPP 2289) II
Room Shanghai

Nano and aerosol particle technology

14:50 **Poster Flash Presentations**

* Characterization and Structure Reconstruction of Aggregates from Two-Dimensional Scale
Hantao Yu
Otto-von-Guericke University Magdeburg, DEU

* Prediction of the Number of Heterocontacts in Two-Component Systems
Anjul Pandey
University of Stuttgart, DEU

* A novel Approach to Model the Particle Dynamics for the Synthesis Process of Hetero-Aggregates
Amir Karimi Noughabi
University of Duisburg-Essen, DE

* Characterization of Mixing and Structure in Nanoparticle Hetero-Aggregates using Convolutional Neural Networks: 2D-Projection versus 3D-Reconstruction
Florian Krause
University of Bremen, DEU

15:30 * Investigation of the Nano Particle Formation Mechanics in a Hetero-Aggregation Process by Desublimation and Supersonic Flow
Malte Nestriepke
RPTU Kaiserslautern – Landau, DEU

* Numerical Simulation and Validation of Electrospray Deposition Patterns
Georgios Koukougkelis
Otto-von-Guericke-University, DEU

* Determination of Droplet Size from Wide-Angle Light Scattering Image Data using Convolutional Neural Networks and Synthetic Training Data
Tom Kirstein
Ulm University, DEU

* Tracking Hetero-Aggregate Formation in Jet-Based Tube Mixing via Optical In Situ Detection
Felix Luc Ebertz
University Duisburg-Essen, DEU

* Tailored Hetero-Aggregates from Gas Phase Synthesis for Heterogeneously Catalyzed Transient Reactions
Xiao-Xue Wang
University of Bremen, DEU

Complex Particles Phenomena II
Room Kopenhagen

Mixing and Dispersing, Liquid-Solid-Multiphase flow

14:50 **Experimental Study on the Shape-Dependent Mixing Behavior of Binary Mixtures**
Tiaan Friedrich
Technical University of Munich, DEU

15:10 **Suspension Application on Heated, Structured Surfaces for Smart-Alloying Purposes**
Anne Katharina Geppert
Leibniz Institute for Materials Engineering – IWT, DEU

15:30 **Suspension Flow and Dispersibility of Soft Swollen Particles: Physically Correct Determination of the Disperse Phase Volume**
Reinhard Kohlus
University of Hohenheim, DEU

TUESDAY, SEPTEMBER 23, 2025

Filtration
Room Tokio

Separation, fractionation and sorting

16:10–16:40 Keynote

Particle properties and Fine Filtration – the Gaps between Science and Practise
Riina Salmimies
University of Sheffield, GBR

Novel Green Fibrous Filter Media for High-Efficiency Air Filtration
Hui Li
Xinjiang Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, CHN

Numerical Analysis of Fine Particle Impaction and Deposition on a Single Fibre and a Fibre Matrix in a Hot Gas Environment
Martin Sommerfeld
Otto-von-Guericke-University Magdeburg, DEU

Viscoelastic Phenomena at the Receding Three Phase Contact Region during Final Stage of Solid Liquid Filter Cake Formation
Gernot Krammer
Graz University of Technology, ATU

Particle Spectroscopy
Room Istanbul

Innovative analytical methods for lab and production

Powder Photoemission-Current-Spectroscopy at Atmospheric Pressure
Alfred Weber
Technical University of Clausthal, DEU

Hetero-Aggregates Produced by Bipolar Electrospray: Particle Characterization via UV-Vis Absorption Spectroscopy and Wide-Angle Light Scattering (WALS)
Franz J.T. Huber
Friedrich-Alexander-University Erlangen-Nürnberg (FAU), DEU

Operando Dynamic Light Scattering of Ultrasonic Dispersion of Nanoparticles
Martin A. Schroer
University of Duisburg-Essen, DEU

Visualizing Wetting Dynamics in Powder Beds using Terahertz Time-Domain Spectroscopy
Teodor Manne de Val Weywadt
Novo Nordisk / Technical University of Denmark, DKN

Triboelectric Effects
Room Kiew

Bulk powder technologies, gas-solid-multiphase flow

Experimental Analysis of Triboelectric Behaviour of Cellulose and Lactose-Based Dry Powder Inhaler Formulations
Rahutosh Ranjan
University of Salerno, ITA

Effect of Surface Functional Groups on Triboelectrification of Glass Beads
Maria Giordano
University of Calabria (UNICAL), ITA

Gasification Behavior of Biochar in the Chemical Looping Process
Marian Schmitt
Technical University of Hamburg (TUHH), DEU

Neutron Imaging of Dynamic Microwave Freeze-Drying of bulk material
Mathias Hilmer
Technical University of Munich, DEU

Particle Technologies for Sustainable Products II
Room Seoul

Particle technologies for sustainable products

Transformation of Pharmaceutical Manufacturing of Drug Substances with the Continuous Vacuum Screw Filter (CVSF)
Marc Meier
Technical University of Dortmund, DEU

Ferrimagnetic Nano Susceptors for Sustainable Adhesive Technologies using High-fFrequency Induction Heating
Benedikt Schug
Fraunhofer ISC, DEU

Interfacial Influence of Filler Particles on Polymer-based Electrolytes for Solid-state Lithium Batteries
Sharif Haidar
Technical University of Braunschweig, DEU

Integration of La0.8Sr0.2CoO3 Supraparticles as Structured Anode Materials for Enhanced Oxygen Evolution Reaction in Alkaline Conditions
Blaz Toplak
University of Duisburg-Essen, DEU

17:40 Poster Party

Particles for Materials II
Room Shanghai

Particles for Materials: Focus on Research in Japan

Better Structural Color with the Help of a Computer
Nicolas Vogel
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Synthesis of Highly-Dispersed Hollow Silica Nanoparticles and their Application to Composite Materials
Kento Ishii
Nagoya Institute of Technology, JPN

Kinetic Monte Carlo Simulations for Nanocrystal Shape Control
Carlos L. Bassani
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Advanced Textural and Wettability Characterization by Combining Adsorption and Liquid Intrusion with NMR Relaxometry
Carola Vorndran
Institute of Separation Science and Technology, Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Autonomous Processes in Particle Technology (SPP 2364) II
Room Riga

Automated process chains in particle technology

Poster Flash Presentations

* Model-Based Optimization of Process Parameters in High Energy Impact Additive Manufacturing Processes
Thomas Wilhelm
University Ulm, DEU

* Introducing a Novel Autonomous Process Chain for Selective Precipitation of $CaCO_3$ and $MgCO_3$ using Extracted Mine Tailings
Chinmay Hegde
Otto von Guericke University Magdeburg, DEU

* Control and Optimization of Spray-Drying Parameters for Alumina: Influence of Spray Rate on Particle Descriptors
Rahul Mitra, Leon Schröder
Ulm University, DEU

* Real-Time Control of Nanoparticle Synthesis by Spark Ablation
Jonah V. Weidemann, Danijel Čuturić
University of Duisburg-Essen, DEU

* Continuous Aqueous Two-Phase Flotation (ATPF): Adaptive Optimal Control for Autonomous Enzyme Separation
Kim Carina Lohfink
Karlsruhe Institute of Technology (KIT), DEU

* Towards Autonomous Control of Slug Flow Crystallization
Maximilian Rainer Kattner
Technical University of Dortmund, DEU

* Towards an Autonomous Powder Compaction Process
Jens Bartsch
Technical University of Dortmund, DEU

* Real-Time Prediction of Aggregate Structure Based on Bivariate Aerosol Dynamics
Lukas Fuchs , Jonah V. Weidemann
University of Duisburg-Essen, DEU

* Autonomous Structure Formation in Fluidized Bed Spray Agglomeration
Andreas Bück
Friedrich-Alexander-University Erlangen-Nürnberg (FAU), DEU

* Towards Autonomous Nanoparticle Synthesis: Model-based Control and Al-Doped ZnO Crystallization
Marcel Kévin Jiokeng Dongmo, Guohui Yang
Karlsruhe Institute of Technology / Institute of mechanical process engineering and mechanics, DEU

Droplets & Jet Breakup
Room Kopenhagen

Product synthesis and formulation, particle interactions, and stabilization in liquid media

Prilling of Polymers – Investigation of Viscoelastic Jet Breakup
Vasileios Champilomatis, Yavuz Emre Kamis, Toon Nieboer Kreber, NLD

Prilling Slurries – Determining the Influence of Particle Size and Solid Content on Jet Breakup and Droplet Formation.
Kilian Schnoor
Kreber, NLD

Investigating the Role of Long-Range Interaction Forces on Segregation in Drying Droplets via CFD-DEM Coupling
Silas Wolf
Technical University of Braunschweig, DEU

Molten Metal Droplets as a Versatile Tool for Alloy Development
Nils Ellendt
Leibniz Institute for Materials Engineering – IWT and University of Bremen, DEU

WEDNESDAY, SEPTEMBER 24, 2025

09:00 Opening & Friedrich-Löffler-Price in Particle Technology

09:10 **Plenary**

Digitalizing Solids Process Engineering in R&D – a BASF perspective
Frank Kleine Jäger, BASF, DEU

Particle Technologies for Sustainable Products III
Room Tokio

Particle technologies for sustainable products

9:55 **09:55–10:25 Keynote**

Particle Based Challenges in Li-Ion Battery Electrode Production
Cecile Tessier
SAFT Bordeaux, FRA

10:15 **Poster Flash Presentations**

* Effects of Extrusion Mixing on Powder Properties and Processability of LFP Mixtures
Milena Lux
Fraunhofer IWS, DE

* From Pores to Performance: Multi-Scale Analysis of Catalyst Layers for PEM Fuel Cells
Fatih Özcan
University of Duisburg-Essen, DEU

10:35 * Proof of Physical Work for a More Sustainable Decentralized Consensus in Blockchain Technology
Frank Rhein
Karlsruhe Institute of Technology (KIT), DEU

* Microplastic Pollution in Aquatic Environments: A Meta-Analysis of Influencing Factors and Methodological Recommendations
Linus Hartz
FH Münster, DEU

* Synthesis of Iron-Oxide Supraparticles for Enhanced Antibacterial and Photothermal Therapy
Mohaned Hammad
University of Duisburg-Essen, DEU

Artificial Intelligence (AI)
Room St. Petersburg

Innovation in modelling, simulation, machine learning and generative artificial intelligence (AI)

9:55 **AI-Enhanced particle model generation: Generative Adversarial Networks and Diffusion Transformers in particle technology**
Konstantinos Giannis
Technical University of Braunschweig, DEU

10:15 **AI-Assisted Characterisation of Pharmaceutical Powders**
Mozhdeh Mehrabi
University of Leeds, GBR

10:35 **AI-Assisted Prediction of Particle Impact Deformation Simulated by Material Point Method**
Saba Saifoori
University of Leeds, GBR

Particle Measurements II
Room Istanbul

Innovative analytical methods for lab and production

9:55 **Development of a Lagrangian Sensor for In-Line Measurements in Fluidized Bed Spray Granulation**
Maike Orth
Hamburg University of Technology, DEU

10:15 **Opti-CountTM Particles: Number Concentration Nanoparticle Standards with Certified Number and Size Using the Optical Single Particle Counter LUMiSpoc®**
Matthew Hood
Dr. Lerche KG, DEU

10:35 **Phase Tracking in Fluidized Beds via Electrical Capacitance Volume Tomography and Borescopic High-Speed Camera Imaging**
Lennard Lindmüller
Hamburg University of Technology, DEU

Particle Synthesis I
Room Kiew

Product synthesis and formulation, particle interactions, interfaces and stabilization in liquid media

9:55 **Innovative Development of Metal Sulfide Nanoparticles in the Gas-Phase**
Suman Pokhrel
University of Bremen/
Leibniz Institute for Materials Engineering – IWT, DEU

10:15 **Bottom-Up Synthesis of Core@Shell Catalysts for Particle Size Effect Investigations: Current Status and Perspective**
Robert Güttel
University of Ulm, DEU

10:35 **Synthesis of Carbon-coated Aluminum Nanoparticles by Laser Ablation in Liquids**
Stephen Tse
Rutgers University, USA

Gas Solid Flow II
Room Seoul

Bulk powder technologies, gas-solid-multiphase flow

9:55 **Predicting Powder Flows in Convective Mixers through Multi-Scale Rheology**
Hayfa Boussoffara
Tetra Pak PP&T, FRA

10:15 **Recurrence CFD Application to Study the Mixing Behavior of Particles in Fluidized Bed**
Shaik Asif
Hamburg University of Technology, DEU

10:35 **Small-Scale Acoustic Mixing of Cohesive Powders – Challenges and Solutions**
Andreas Kottlan
Research Center Pharmaceutical Engineering GmbH, ATU

Particles for Materials III
Room Shanghai

Particles for Materials: Focus on Research in Japan

9:55 **Atomic Force Microscopy Measurements for Guest-Induced Structural Transition Behavior of a Single MOF Particle**
Satoshi Watanabe
Kyoto University, JPN

10:15 **Engineering Supraparticles via Spray-Drying to Achieve Advanced Functionalities**
Karl Mandel
Friedrich-Alexander-University Erlangen-Nürnberg (FAU), DEU

10:35 **Nanoparticles Dispersion and Aggregation Behavior Control for Easily Degradable Adhesion under Electrical Pulse Stimulation**
Hidehiro Kamiya
Waseda University, JPN

Agglomeration
Room Riga

Comminution, breakage, agglomeration and granulation

9:55 **Analytical Investigations Related to Agglomeration Phenomena and its Causes and Mitigation**
Stephanie Marchal
Switzerland, CHE

10:15 **A Doe-Based Population Balance Model for Fluidized Bed Spray Agglomeration**
Jhoan Sebastian Giraldo Yepes
Hamburg University of Technology, DEU

10:35 **Agglomeration in Multistage Spray Dryer: A Comparison of Nozzle Zone and Fluid Bed Agglomeration**
Reinhard Kohlus
University of Hohenheim, DEU

10:55 Coffee Break

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WEDNESDAY, SEPTEMBER 24, 2025

Particle Multiphase flow
Room Tokio

Bulk powder technologies, gas-solid-multiphase flow

11:25 — 11:25–11:55 **Keynote**

Multi-scale Modelling of Dense Gas-particle Flows with Wet Particle-particle Interactions
Hans Kuipers
Technical University of Eindhoven, NLD

11:45 — **Poster Flash Presentations**

* Short fibre reinforcement in Selective Cement Activation: Challenges of powder handling in the printing process
Niklas Meier
Technical University of Braunschweig, DEU

* Under(-)pressure – Analyzing the Driving Forces behind the Die Filling under Suction on Rotary Tablet Presses
Lars Wagner
Technical University of Braunschweig, DEU

12:05

* CFD-Simulation of CO_2 Adsorption for Carbon Capture in a Packed Bed Based on Geometry Creation by the Discrete Element Method
Tzu-Yang Huang
Technical University of Rosenheim, DEU

* Spreadability vs. Flowability: Measurements of Metal Powders for Additive Manufacturing
Arne Lüddecke
Technical University of Braunschweig/Institute for Particle Technology, DEU

12:25

Modification of Powder Properties by Liquid Additives
Sofiia Dibrova
Ohm Technical University of Nürnberg, DEU

Particle Measurements III
Room Istanbul

Innovative analytical methods for lab and production

Powder Rheological Characterization of Dry Battery Electrode Materials
Helena Weingrill
Anton Paar GmbH, ATU

Radiation-Based Techniques for Detailed Investigation of Cohesive Particle Flows
J. Ruud van Ommen
Delft University of Technology, NLD

Powder Mixing and Segregation in a Cylindrical Bladed Mixer
Anna Magdalena Baecke
Helmholtz Institute Freiberg for Resource Technology, DEU

Morphology Matters: Enhancing Powder Characterization with Advanced 3D Scanning
Rasmus Fjordbak Nielsen
ParticleTech ApS, DKN

Design of Particulate Products (CRC 1411) I
Room Kiew

Product synthesis and formulation, particle interactions, interfaces and stabilization in liquid media

Amphiphilic Nanogels as Versatile Stabilizers for Pickering Emulsions
Ruiguang Cui
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Continuous Flow Synthesis of Au Nanoparticles Directly Combined with Chromato-Graphic Separation
Cornelia Damm
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Silver-Lined Gold Patches: Continuous Flow Synthesis of Particles with Long-Term Stable Visible and Infrared Resonances
Robin Klupp Taylor
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Structure Formation in Binary, Self-Assembling Particles by Diffusiophoresis
Frederic Rudlof
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Particle Technologies for Sustainable Products IV
Room Seoul

Particle technologies for sustainable products

Gentle, Sustainable and Innovative Encapsulation and Drying for New Powder
Jerome Vallejo
Lis By Lesaffre, FRA

Reconditioning of Spent Graphite from End-of-Life Lithium-Ion Batteries through High-Temperature Treatment
Felix Frobart
Technical University of Braunschweig, DEU

Influence of Defects and Mechanical Damage on the Antifouling Behaviour of Slippery Liquid-Infused Porous Surfaces (SLIPS)
Daniel Platzer
Institute of Particle Technology – Friedrich-Alexander University Erlangen-Nürnberg, DEU

DEM-CFD Study on the Impact of Cross-Shaped Internals on Biomass Drying in Rotary Drums
Alina Clara Lange
Technical University of Berlin, DEU

12:45 Lunch Break & Exhibition Visit

13:55 **EFCE-MPS Award**

14:00 **Plenary**

Pharmaceutical Manufacturing of Functional Nanoparticles
Alexandra Teleki, Uppsala, SWE

Particles for Materials IV
Room Shanghai

Particles for Materials: Focus on Research in Japan

Chromatographic Fractionation and Characterization of Functional Nanoparticles
Wolfgang Peukert
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Scale-Bridging, Correlative Lab-Based X-Ray Micro- and Nano-Computed Tomography for Quantitative Analysis of Complex, Hierarchical Particle Systems
Allison Götz
Institute of Micro- and Nano-structure Research, DEU

Synthesis of Ultrafine Metal Oxide Nanoparticles using Continuous Flow Hydro-thermal Reactions
Akira Yoko
Tohoku University, JPN

Japanese Process Science Project Toward Design and Control of Nanomaterials
Takaaki Tomai
Tohoku University, JPN

Breakage / Grinding I
Room Riga

Comminution, breakage, agglomeration and granulation

Decoding Breakage Mecha-nism under Impact and Compression in Slags from Pyrometallurgical Recycling of Lithium-Ion Batteries via Mineral Liberation Analysis
Sima Hellmers
Technical University of Braunschweig/ Institute for Particle Technology, DEU

Influence of Compaction Kinetics on Dynamics-Depen-dent Material Deformation and Machine Artefacts
Marie Brunotte
Institute for Particle Technology, DEU

Improving Particle Morpho-logy in Fluidized Bed Spray Granulation
Ansgar Oelmann
Evonik Industries, DEU

DEM Simulation of Roller Mill Feeding and Performance
Magnus Evertsson
Chalmers University of Technology, SWE

Separation II
Room Kopenhagen

Separation, fractionation and sorting

Screw Design in Decanter Centrifuges by Experiment, Discrete Element Method and Computational Fluid Dynamics
Tzu-Yang Huang
Technical University of Rosenheim, DEU

LES-Euler/Lagrange Computations of Irregular-Shaped Particle Separation in a Hot-Gas Cyclone Based on a Random Transport Model
Syed Muhammad Hassan Khalid
Otto von Guericke University Magdeburg, DEU

Innovative Recycling of Lithium-Ion Batteries using Dielectrophoresis
Georg Pesch
University College Dublin, IRL

PEM Fuel Cell Recycling – A Case Study on Mechanical Separation via Air Classifi-cation
Nico Lüdtke
Fraunhofer IST, DEU

WEDNESDAY, SEPTEMBER 24, 2025

Innovative Analytical Methods
Room Tokio

Innovative analytical methods for lab and production

14:50–15:20 Keynote

Innovative Analytical Methods for the Production of Batteries and Fuel Cells

Sabrina Zellmer, Fraunhofer IST Braunschweig, DEU

Poster Flash Presentations

* EIT Based Visualization of Gas-Liquid Flow Patterns in a Horizontal Pipe
Giulio Tribbiani
University of Padova, IT

* Particle Sizing of Polydisperse Nano-Suspensions using a Broadband Elastic Light Scattering (BELS) Setup
Stefan Buchstaller
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

* High-Resolution Cameras and Enhanced Data Transfer and Processing Techniques in Dynamic Image Analysis
Ulrich Köhler
Sympatec GmbH, DEU

* A Novel 4-in-1 Airflow Cytometer for Real-Time Analysis of Particles
Erny Niederberger
Swisens AG, CHE

Data Driven Methods
Room St. Petersburg

Innovation in modelling, simulation, machine learning and generative artificial intelligence (AI)

Enhancing Powder Technology with Hybrid Physics-Inspired and Data-Driven Modeling

Somayeh Hosseinhashemi
Technical University of Braunschweig, DEU

A Data-Driven Process Modelling Toolbox for an Enhanced Materials Production Understanding – Grinding Use case

Ahmed Eisa
Technical University of Braunschweig/ Institute for Particle Technology, DEU

Machine Learning Methods for Intelligent Digital Twins of Fluidized Bed Spray Granulation

Robert Kräuter
Hamburg University of Technology, DEU

Particle Synthesis II
Room Kiew

Product synthesis and formulation, particle interactions, interfaces and stabilization in liquid media

Submerged Plasma Synthesis of Graphitic Nanoparticles

Stephen Tse
Rutgers University, USA

Resynthesis of Layered Oxide Cathode Active Materials from Recycled Batteries by Coprecipitation

Martin Menzler
Fraunhofer Institute for Surface Engineering and Thin Films IST, DEU

Particle Technologies for Sustainable Products V
Room Seoul

Particle technologies for sustainable products

Interface-Enhanced Performance of Noble-Metal-Free Perovskite Electrocatalysts for Alkaline Water Electrolysis with Mechanistic Insights

Blaz Toplak
University of Duisburg-Essen, DEU

Modelling Microwave-Assisted Fluidized Bed Drying through DEM-CFD

Francesca Orsola Alfano
University of Calabria (UNICAL), ITA

Improved Bag Filter Operation with Engineered Particle Properties and the Challenges of Correlating Industrial Data to Lab Scale Tests

Rodney Foo
Lhoist, BEL

15:50 Coffee Break and ChemCar Competition in Hall 12

Product Synthesis and Formulation I
Room Tokio

Product synthesis and formulation, particle interactions, interfaces and stabilization in liquid media

16:10–16:40 Keynote

Colloidal and Aerosol Routes to Shape- and Compositionally Defined Nanoparticles

Sara E. Skrabalak
Indiana University Bloomington, USA

Tuning the Spacing between Inorganic Nanoparticle Cores in Functional Particle-Based Materials

Tobias Kraus
INM – Leibniz Institute for New Materials, DEU

Rationalisation of the Interaction Interplay among Silica Nanoparticles at Surfactant-Laden Water-Oil Interfaces

Lucio Colombi Ciacchi
University of Bremen, DEU

Measuring the Stickiness of Powders in Relation to their Temperature and Moisture Content

Gabrie M.H. Meesters
Technical University of Delft, NLD

Innovation in Modelling, Simulation I
Room St. Petersburg

Innovation in modelling, simulation, machine learning and generative artificial intelligence (AI)

Single Step Multiphase Fluid-Solid Coupling for Simulation of Wetted Particulate Systems

Stefan Endres
Leibniz Institute for Materials Engineering – IWT, DEU

Generative Adversarial Networks and Stochastic Modeling for Reconstructing 3D Particle Morphologies from 2D Images

Orkun Furat
Ulm University, DEU

MORe than DPM: Model Order Reduction for the Discrete Particle Method

Anthony Thornton
University of Twente, NLD

Presentation of ECFE Award Winner

Particle Measurements & Characterization II
Room Kiew

Innovative analytical methods for lab and production

Development of Luminescent Metal-Organic Frameworks Particles as Ratiometric Thermometers

Lilong Wu
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

A Novel Approach for Microplastic Particles Detection and Differentiation

Pedro Faia
University of Coimbra, PRT

Particle Fingerprint: Reveiling Material Composition in Large-Scale Particle-Discrete Datasets

Ralf Ditscherlein
Technical University of Bergakademie Freiberg, DEU

Genetic Algorithms in Ultrasonic Extinction for Particle Size Analysis

Michael Schiller
Sympatec GmbH, DEU

Particle Technologies for Sustainable Products VI
Room Seoul

Particle technologies for sustainable products

Green Hydrogen via Alkaline Water Splitting: the Impact of Microstructure on Anode Layer Properties and Performance

Doris Segets
University of Duisburg-Essen, DEU

Solar Fuel Production by Thermochemical Particle Processes

Marc Petzold
German Aerospace Center, DEU

Sustainable Polymer Processing using Supercritical Fluids and Sustainable Additives in Particulate Form

Pablo García-Trinanes
University of Cádiz, ESP

Mechanochemically Assisted Enzymatic Processing of Cotton Textiles

Miriam Schaake
BASF SE, DEU

17:00 Evening Reception "POWTECH TECHNOPHARM Party"*

Particles for Materials V
Room Shanghai

Particles for Materials: Focus on Research in Japan

Nanoparticle Design for Energy, Environmental and Health Applications

Sanjay Mathur
Waseda University, JPN

Charge Generation from Shower Heads

Tatsushi Matsuyama
Soka University Japan, JPN

Electrostatic Separation of Nanoplastics from Wastewater

Nicolas Vogel
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Breakage / Grinding II
Room Riga

Comminution, breakage, agglomeration and granulation

Modeling the Complex Dynamic of Fine Grinding in Stirred Mills: A Unified Solid-Liquid Framework

Corlbert Ayuk
The Pennsylvania State University, USA

The Impact Mechanisms of Grinding Aid Additives on Dry Grinding

Tarek Sulaiman
Technical University of Braunschweig, DEU

Parameter Study and Optimization of Crusher Performance Using GPU-Accelerated DEM with Resolved Particle Fracture

Johannes Quist
Fraunhofer-Chalmers Centre, SWE

CFD-DEM Simulations
Room Kopenhagen

Mixing and Dispersing, Liquid-Solid-Multiphase flow

A Benchmark Study on Wet Fluidization using CFD-DEM: Effects of Restitution Coefficient

Nicola Vanzetto
Eindhoven University of Technology, NLD

CFD-DEM Simulation of Cake Formation and Compaction in a Centrifuge with an Elastic-Plastic Model

André Lier
University of Kaiserslautern-Landau (RPTU), DEU

On the Process and Property Function of Dry Water

Leigh Duncan Hamilton
Technical University of Braunschweig, DEU

Flame Synthesis II
Room Shanghai

Nano and aerosol particle technology

Influence of Dispersion Gas on FexOy formed in Spray Flame Synthesis

Orlando Massopo
Paderborn University, DEU

Flame-made Quantum Dots

Keroles Riad
Carleton University, CAN

Influence of Surface Impurities on the Catalytic Activity of Nanoparticles Synthesized by a Spray Flame Synthesis

Janis Beimdiek
Paderborn University, DEU

Pilot-Scale Spray-Flame Synthesis of Iron Oxide Nanoparticles: Investigation a Hydrogen-Based Burner Concept

Martin Underberg
Institute for Environment & Energy, Technology & Analytics e.V., DEU

Breakage / Grinding III
Room Riga

Comminution, breakage, agglomeration and granulation

Defects in Particles – a Widely Unknown Territory

Wolfgang Peukert
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Supraparticles for Enhanced Lithium-Ion Battery Anodes: Improved Processability and Electrochemical Performance of Si/C Materials via Hierarchical and Porous Structures

Fatih Özcan
University of Duisburg-Essen, DEU

When Particles get Wet – Micro Scale Insights into Particle Collisions

Falk Bunke
Technical University of Hamburg (TUHH), DEU

Green Chemistry in Ball Mills: Mechanical Stress Shaping Reaction Kinetics

Victor Marcus Oldhues
Technical University of Braunschweig, DEU

Engineered Artificial Minerals (SPP 2315) I
Room Kopenhagen

Separation, fractionation and sorting

Mechanistic Modelling of Multi-Component Comminution in Stirred Media Mills

Maximilian Tobaben
Technical University of Braunschweig, DEU

Multicomponent Breakage – a Combined Experimental and Numerical Approach

Simon Bahnmüller
Technical University of Braunschweig, DEU

Influence of different Surfactants on the Adhesion Forces between Oil-Based Binding Liquids and Minerals Measured with a FluidFM® System: Correlation of Selective Wet Agglomeration Behaviour and Agglomerate Structure

Laura Schwan
Environment Campus Birkenfeld, DEU

Microstructure Analysis and Determination of the Fracture Mechanism of Different Slag Types using X-Ray Computed Tomography

Thu Trang Vo
Institute of Mechanical Process Engineering and Mineral Processing, DEU

* please register separately

THURSDAY, SEPTEMBER 25, 2025

09:00 Poster Award

09:10 **Plenary**

Powder Technology as Key for Sustainble Battery Electrode Production
Arno Kwade, Technical University of Braunschweig, DEU

Mixing and Dispersing, Liquid-Solid-Multiphase flow
Room Tokio

Mixing and Dispersing, Liquid-Solid-Multiphase flow

09:55 **09:55–10:25 Keynote**
Towards High-Order CFD-DEM for Dense Particle-Laden Flows in Chemical Processes
Bruno Blais
Polytechnique Montreal, CAN

Poster Flash Presentations

* Leveraging Powder Characterisation to Predict Dissolution and Dispersion in Pharmaceutical Formulations
Khizra Abdul Wadood
University of Birmingham, GBR

* Insights into Pneumatic Conveying of a Granular Phase
Guillaume Dumazer
Mines Saint-Etienne, FRA

10:15 * Automated Process Optimization in Mixing with Adaptive and Dynamic Mixing Modes
Benedikt Schwarz
Technical University of Rosenheim – Campus Burghausen, DEU

* Coupling of Experiments and DEM Simulation for Powder Flow Understanding and Prediction
Anne-Charlotte Robisson
CEA, FRA

10:35

Innovation in Modelling, Simulation II
Room St. Petersburg

Innovation in modelling, simulation, machine learning and generative artificial intelligence (AI)

Design Space and Control Strategy for the Manufacturing of Drug Nanocrystal Suspension by Wet Media Milling
Michael Juhnke
F. Hoffmann-La Roche AG, CHE

Advancing Dynamic Flowsheet Simulation for Complex Solids Processes with Dyssol
Vasyl Skorych
Hamburg University of Technology, DEU

The Control strategy Evaluation Tool (CET): Theoretical Background
Peter Böhling
RCPE, AUT

Solid Interactions I
Room Istanbul

Bulk powder technologies, gas-solid-multiphase flow

Influence of Droplet Size Distribution on Coating Homogeneity in Hot Melt Coating
Natalie Schönig
Technical University of Munich, DEU

Characterizing the Particle Movement and Deposition during the Thermal Runaway of Lithium Ion Batteries in Confined Spaces
Alexander Krause
Technical University of Braunschweig, DEU

3D Hydrodynamics of a Draft Tube Spout-Fluid Bed: Insights from Magnetic Resonance Velocimetry
Jens Patrick Metzger
ETH Zürich, CHE

Particle Measurements & Characterization III
Room Kiew

Innovative analytical methods for lab and production

Laser Meter of Aerosol Microparticles Parameters during their Spontaneous Transformation
Volodymyr Zemlyanskyi
Institute of Information Technologies and Systems of the National Academy of Science of Ukraine, UKR

Ultrasonic Monitoring of Zeolite and MOF Crystallization
Martin Hartmann
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Novel Options for the Prediction of Solid Oral Dosage Dissolution
Stephan Sacher
Research Center Pharmaceutical Engineering GmbH, AUT

Product Synthesis and Formulation II
Room Seoul

Product synthesis and formulation, particle interactions, interfaces and stabilization in liquid media

Production of Disperse Systems by (Melt-) Emulsification
Leah Ebner
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

The Complexity of Food Powders: Impact of Composition and Particle Morphology on Final Product Properties
Sheila Ruiz Barbero
Nestlé Research, CHE

Nanoparticles I
Room Shanghai

Nano and aerosol particle technology

Enhancing Particle Retention and Multiphase Mixing Performance in an Up-Flow AD Reactor
Muhammad Usman Farid
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Synthesis of Particle-Based Silica Aerogels and their Pharmaceutical use as Drug Carrier Systems
Jennifer Pierick
Technical University Braunschweig, DEU

Flame-Made Calcium Phosphate Nanoparticles: Synthesis, Surface Modification and Delivery of Antimicrobial Biological Molecules towards Healing Bacterial Skin Wound Infections
Niki Karouta
Karolinska Institute, SWE

Engineered Artificial Minerals (SPP 2315) II
Room Kopenhagen

Separation, fractionation and sorting

Prefunctionalization of Minerals by Dry Grinding in the Presence of Punicines for Selective Separation
Sandra Breitung-Faes
Technical University of Nürnberg
Georg Simon Ohm, DEU

Micro-CT-Based Computational Workflow for Multidimensional Particle Systems and Separation Process Characterization
Orkun Furat
Ulm University, DEU

Impact of Particle Morphology on Forced Triboelectric Charging Behavior: A Case Study with Manganese Oxide Particles
Mehran Javadi
Clausthal University of Technology, DEU

10:55 Coffee Break

Comminution, Breakage, Agglomeration and Granulation
Room Tokio

Comminution, breakage, agglomeration and granulation

11:15/ 11:25 **11:15–11:45 Keynote**
Spherical Agglomeration: Mechanistic Understanding for Process Design
Rachel Smith
University of Sheffield, GBR

Optimizing Process Parameters for Different Dismantling Levels in the Mechanical Battery Recycling Process
Steffen Fischer
Technical University of Braunschweig, DEU

12:05 **ChemPlant Competition**
Science Pitch & Award Ceremony

12:25

Innovation in Modelling, Simulation III
Room St. Petersburg

Innovation in modelling, simulation, machine learning and generative artificial intelligence (AI)

Transformer Models in Particle Technolgy
Carsten Schilde
Technical University of Braunschweig, DEU

Development of a New Particle Charge Classifying Chamber
Wei Pin Goh
University of Leeds, GBR

Packing Properties of Spherical, Nanoporous, and Deformable Gel Particles
Lara Gibowsky
Hamburg University of Technology, DEU

Probing the Underlying Mechanisms of the Triboelectric Effect with Density Functional Theory
James Middleton
University of Leeds, GBR

Solid Interactions II
Room Istanbul

Bulk powder technologies, gas-solid-multiphase flow

Numerical Investigation of Wet Particle Collision Dynamics
Arie Huijgen
Eindhoven University of Technology, NLD

Cohesion: Fact of Friction? Exploring the Nature of Poor Powder Flowability and how to Address it
Amalia Thomas
Freeman Technology, GBR

Evaluation of Powder Flow Stability using Powder Discharge Test by Pressurized Fluidization
Koichiro Ogata
National Institute of Technology, Oita College, JPN

Enhancing Flowability of Surface-Functionalised Glass Beads through Aerosil Coating
Wei Pin Goh
Doshisha University, JPN

Design of Particulate Products (CRC 1411) II
Room Seoul

Product synthesis and formulation, particle interactions, interfaces and stabilization in liquid media

Production of Supraparticles using Anisotropic Nanoparticles via Single Droplet Drying
David Herbert Panduro Vela
University of Erlangen-Nuremberg, DEU

Refractive Index Determination of Particulate Systems using Single Particle Light Scattering
Moritz Moß
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Characterization of Polydopamine Shells on Polystyrene Particles by Analytical Buoyant Density Equilibrium Experiments
Johannes Walter
Friedrich-Alexander-University Erlangen-Nürnberg, DEU

Nanoparticles II
Room Shanghai

Nano and aerosol particle technology

Thermomobility analysis (TMobA) of Airborne Nanoparticles
Matthias Kawalek
Friedrich-Alexander-University Erlangen-Nürnberg (FAU), DEU

On the Structure of Nanoparticle Clusters: Effects of Long-Range Interactions
Rens Kamphorst
Delft University of Technology, NLD

Green Fluorescent Protein as a Sensitive Model for Room-Temperature Biopharmaceutical Drying
Maksim Mezhericher
Princeton University, USA

Revealing Triboelectric Charging in Legume Powders: In-Situ Analysis of Environmental Impacts on Single Particle Charges
Joshua Greiner
Technical University of Munich, DEU

Automated Process Chains in Particle Technology
Room Riga

Automated process chains in particle technology

Optimization of Lactose Crystallization
Martin Barnickel
LVFZ Kempten, DEU

Challenges and Solutions for Data Communication in the Process Environment for Particle Size and Shape Analysis
Ulrich Köhler
Sympatec GmbH, DEU

Standardized and Unified Semantic Description for Particle Generation Processes
Henk Birkholz
Leibniz Institute for Materials Engineering – IWT, DEU

Automated Particle Removal System for Lab Equipment under Vacuum: A Case Study on Draft Tube Baffle Crystallizers
Laura Marsollek
Technical University of Dortmund, DEU

Engineered Artificial Minerals (SPP 2315) III
Room Kopenhagen

Separation, fractionation and sorting

Application of Flotation and Gravity Separation for the Recovery of Lithium from Slags addressing Multivariate Particle Properties
Franziska Strube
Helmholtz Institute Freiberg for Resource Technology, DEU

Understanding the Separation of Fine Printed Circuit Board Particles with X-Ray Computed Tomography and Particle-Based Separation Models
Martin Rudolph
Helmholtz Institute Freiberg for Resource Technology, DEU

Recovery of Tantalum through Engineerable Crystallization in Metallurgical Oxide Systems
Apet Nikoyan
Leibniz Institute for Materials Engineering – IWT, DEU

Sensitivity Study on the Effects of a Composition Dependent Breakage Criterion in Discrete Element Method (DEM) Simulations of High Pressure Grinding Rolls (HPGR)
Paul Hirschberger
Technical University of Berlin, DEU

12:55 Closing Ceremony

13:10 Lunch Break

14:00 Exhibition Visit

17:00 Exhibition Closing

GENERAL INFORMATION

PARTEC 2025 takes place at the Nuremberg Convention Centre East (NCC Ost) of the NurembergMesse exhibition

Exhibition Centre Nuremberg
Messezentrum, 90471 Nuremberg, Germany

HOTEL RESERVATION:

For booking please visit https://www.partec.info/en/venue/staying-in-nuremberg/hotels

Nuremberg and the surrounding region offer you many possibilities for overnight accommodation. You can also contact us directly:

PartnerHotels NurembergMesse
Exhibition Services
Tel.: +49 911 8606-8020
Email: exhibitor.hotels@nuernbergmesse.de

REGISTRATION

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

REGULAR PRICES 3-DAY TICKET

Industry:	EUR 1,450
Academics, Speaker and Poster Presenters:	EUR 895
Students:	EUR 545

SOCIAL EVENTS

With your registration for the PARTEC 2025 you will have the opportunity to register for the POWTECH TECHNOPHARM Party and the Poster Party. 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.

GUIDED TOURS

Join our guided tours at POWTECH TECHNOPHARM 2025! With the guided tour, we create an opportunity to obtain comprehensive information on the highlights of POWTECH TECHNOPHARM 2025. Get to know the exhibitors, the products, services and performances as well as the contact persons.
You will get a concentrated overview of the topics relevant to you. You will receive the invitation for registration in time or register dirctly 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

VDI Wissensforum GmbH, VDI-Platz 1, 40468 Düsseldorf, Germany

ORGANIZER

NürnbergMesse GmbH, Messezentrum, 90471 Nuremberg, Germany

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 2025 IN NUREMBERG!