

Program for the 1st Annual Meeting of the SPP 2364

28.-29.11.2022

Hörsaal 6, Geb. 44

Otto-von-Guericke University in Magdeburg

Zschokkestraße

39106 Magdeburg

10 minutes oral presentation for each subproject plus 5 minutes discussion for the whole project; Sequence of individual contributions within the project as desired; presentations can preferably be made by Ph.D.s or PostDocs in english.

Monday, 28.11.2022

12.00-13.00 Reception and short lunch

13.00-13.30 Organisational issues and introduction: Prof. Nirschl

Particle synthesis:

13.30-14.05 Autonomous control of a process chain for CO₂ carbonation by use of mine waste

Subproject 1: Prof. Bajcinca

Subproject 2: Dr. Gleiss

Subproject 3: Prof. Sundmacher

14.05-14.30 Model-based Process Control for Transferred Arc Synthesis of Nanoparticles

Subproject 1: Prof. Ding

Subproject 2: Prof. Kruis

14.30-15.00 Coffee break

15.00-15.25 Synthesis of highly functional nanoparticles via a sol-gel process using X-ray scattering methods: from process development to process control

Subproject 1: Prof. Nirschl

Subproject 2: Prof. Meurer

15.25-15.50 Model-based control of the dynamics during fine grinding in wet-operated stirred media mills

- Subproject 1: Prof. Kirches
 Subproject 2: Prof. Schilde
- 15.50-16.15 ARCO-CRYSTAL: Adaptive robust predictive control of continuous slug flow cooling crystallization
 Subproject 1: Prof. Lucia
 Subproject 2: Prof. Wohlgemuth
- 16.15-16.45 Coffee break

Particle handling:

- 16.45-17.20 Autonomous structure formation processes in spray fluidized bed agglomeration
 Subproject 1: Prof. Bück
 Subproject 2: Prof. Kienle
 Subproject 3: Prof. Tsotsas
- 17.20-17.45 Adaptive Optimal Control of Continuous Aqueous Two-Phase Flotation (ATPF)
 Subproject 1: Prof. Diehl
 Subproject 2: Prof. Nirschl
- 17.45-19.00 Hotel Check-in
- 19.00 Dinner

Tuesday, 29.11.2022

- 8.15-9.00 Developments in DEM modeling for Particle-Laden Flows
 Mercator fellow: Prof. Jennifer Sinclair Curtis
- 9.00-9.25 Model-based process control for dynamic and efficient operation of liquid/liquid mixer-settler systems
 Subproject 1: Prof. Knorn
 Subproject 2: Prof. Kraume
- 9.25-9.50 Optimization of Gas-Solid Fluidized Beds Operation using Machine Learning
 Subproject 1: Prof. Mostaghim
 Subproject 2: Prof. van Wachem

9.50-10.10 Coffee break

Formulation:

10.10-10.35 Autonomous and self-adapting, high-resolution 3D additive manufacturing by high energy impacts of fine particles

Subproject 1: Prof. Antonyuk

Subproject 2: Prof. Palis

10.35-11.00 Adaptive data-driven predictive control using behavioral approach for autonomous powder compaction

Subproject 1: Prof. Bajcinca

Subproject 2: Prof. Thommes

11.00-11.20 Coffee break

11.20-11.45 Model-based quality control in continuous manufacturing of pharmaceutical granules (QC4CM)

Subproject 1: Prof. Abel

Subproject 2: Prof. Breitzkreutz

11.45-12.20 Formulation of dispersed systems via (melt) emulsification: Process design, in situ diagnostics and regulation

Subproject 1: Prof. Graichen

Subproject 2: Dr. Huber

Subproject 3: Dr. Schmidt

12.20-12.45 Model-based control of spray synthesis of structured granules with specified properties, using transfer functions derived by multivariate stochastic models and machine learning

Subproject 1: Prof. Peuker

Subproject 2: Prof. Schmidt

12.45-13.15 Short lunch

13.15 Departure of the PIs