Particle-Based Materials Symposium
20 - 21 September 2018, Erlangen

Venue:
Lecture Hall C1
Chemikum
Nikolaus-Fiebiger-Straße 10
91058 Erlangen

Preliminary Program
August 16, 2018 (subject to modifications)

Thursday, 20 September 2018

08:30 - 09:15 Registration

09:15 - 09:25 Welcome: Robin Klupp Taylor, FAU Erlangen-Nürnberg

09:25 - 09:55 Introductory Lecture: Opportunities for particle-based materials: Printed soft devices, nonlinear mixing rules, and active composites
Tobias Kraus, Leibniz Institute for New Materials

Session 1
Synthesis and Functionalization
Session Chair: Alla Synytska, Leibniz Institute of Polymer Research

09:55 - 10:15 Monica Distaso, FAU Erlangen-Nürnberg
In situ monitoring of complex particle formation with spectroscopic and analytical techniques

10:15 - 10:35 Marco Sarcletti, FAU Erlangen-Nürnberg
Superoleophilic magnetic iron oxide nanoparticles as efficient sorbent for the hydrocarbon remediation from water

10:35 - 11:05 Coffee Break

11:05 - 11:25 Johann Köhler, TU Ilmenau
The electric soul of metal nanoparticles

11:25 - 11:45 Simon Bettscheider, Leibniz Institute for New Materials
Geometric stability of ultrathin metal nanowires: Role of the organic ligand shell

11:45 - 12:00 Alberto Leonardi, FAU Erlangen-Nürnberg
Particle shape control via etching of core-shell nanocrystals

12:00 - 13:00 Lunch Break
Session 2
Fabrication and Processing
Session Chair: Karl Mandel, Fraunhofer ISC and University of Würzburg

13:00 - 13:20 Ralph Sperling, Fraunhofer Institute for Microengineering and Microsystems
Microreaction Technology for the Continuous Synthesis of Nanoparticles

A multidimensional study on the influence of mixing using high throughput methodologies

13:40 - 14:00 Shuai Jiang, Max Planck Institute for Polymer Research
Designing functional nanofibers via electrospinning from colloidal dispersions

14:00 - 14:20 Yaseen Qawasmi, University of Stuttgart
Towards polymer nanofoams and hybrid nanoporous materials via closed-packed colloidal crystals of nanoparticles

14:20 – 14:40 Claudia Stauch, University of Würzburg
Nanostructured micro-raspberry supraparticles from silica nano-building-blocks and their mechanical functionalities for applications

14:40 - 15:10 Coffee Break

Session 3
Supraparticles
Session Chair: Nicolas Vogel, FAU Erlangen-Nürnberg

15:10 - 15:30 Karl Mandel, Fraunhofer ISC and University of Würzburg
Supraparticles: A suggestion to define the term and an outline on how they can be made and what they are good for

15:30 – 15:50 Michael Maas, University of Bremen
Self-assembly of mixed nanoparticle/surfactant thin films in colloidosome shells

15:50 - 16:10 Wendong Liu, Max Planck Institute for Polymer Research
Liquid repellent surface mediated fabrication of superparticles

16:10 - 16:30 Michael Engel, FAU Erlangen-Nürnberg
Colloidal clusters from confined self-assembly

16:30 - 16:50 Thomas Rieger, Aalen University
Cemented carbide powder and suspension development for Additive Manufacturing (AM) processes

17:00 - 18:30 Poster Session (with light refreshments)

19:30 - 22:30 Symposium Dinner
Unicum, Carl-Thiersch-Str. 9, 91052 Erlangen
Friday, 21 September 2018

**Session 4**

**Advanced Characterization**

*Session Chair:* Doris Segets, FAU Erlangen-Nürnberg

09:00 - 09:20  Markus Retsch, University of Bayreuth  
*Thermal transport in colloidal mesostructures*

09:20 - 09:40  Georg Fytas, Max Planck Institute for Polymer Research  
*Colloid based hypersonic phononics*

09:40 - 10:00  Alexander Wittmann, University of Konstanz  
*Knowledge of shape-related hydrodynamic properties is the key to sorting colloidal assemblies in a centrifugal field*

10:00 - 10:20  Simon Wawra, FAU Erlangen-Nürnberg  
*Two dimensional size distributions of gold nanorods obtained by multiwavelength analytical ultracentrifugation*

10:20 - 10:50  *Coffee Break*

**Session 5**

**Optics and Plasmonics**

*Session Chair:* Tobias Kraus, Leibniz Institute for New Materials

10:50 - 11:10  Gilles Bourret, University of Salzburg  
*Nanostructuring Si using colloidal lithography*

11:10 - 11:30  Reza Mohammadi Eslami, FAU Erlangen-Nürnberg  
*Colloidal particles meet plasmonic nanostructures: From 2D symmetry to 3D asymmetric chirality*

11:30 - 11:50  Fabian Goßler, Leibniz Institute of Polymer Research  
*Statistical study of strong plasmon-exciton interactions in nanocube-to-metallic film coupled cavities*

11:50 - 12:10  Judith Wittmann, FAU Erlangen-Nürnberg  
*Tunable fluorescence of mixed shell monolayers on oxide nanoparticles*

12:10 - 12:30  Sushma Yadav, Leibniz University Hannover  
*Photoluminescence in core/shell nanoplatelets as a function of cation and anion terminated surface*

12:30 - 13:30  *Lunch Break*
**Session 6**

**Dynamic and Stimuli-Responsive Particles**  
*Session Chair: Alexander Kühne, Leibniz Institute for Interactive Materials*

13:30 - 13:50  
**Bart Ravoo**, University of Münster  
*Stimulus-responsive assembly of nanoparticles using host-guest interactions of cyclodextrins*

13:50 - 14:10  
**Miguel Fernandez-Rodriguez**, ETH Zurich  
*2D microgel binary alloys and their use for colloidal lithography*

14:10 - 14:30  
**Ann-Kathrin Steppert**, Leibniz Institute for Interactive Materials  
*Reversibly light-switchable and monodisperse conjugated polymer particles*

14:30 - 14:50  
**Daniel Klinger**, Freie Universität Berlin  
*From striped ellipsoids to Janus nanoparticles: Controlling colloid shape, morphology and function via phase separation of functional polymers*

14:50 - 15:10  
**Alla Synytska**, Leibniz Institute of Polymer Research  
*Dynamic and regulating assemblies of hybrid colloids with isotropic and Janus design*

15:10 - 15:25  
**Closing Remarks and Poster Prize**