

Agenda of the International Workshop on Optics: Simulation and Optimization

organized by CRC1411 - Design of Particulate Products

7 - 9 November 2022

Monday, 07.11.2022		
Start	Topic	Speaker
09:30 - 10:00	Welcome + Introduction	Wolfgang Peukert
<i>Optical simulation methods (part 1)</i>		
10:00 - 10:40	Solving Maxwell's equations with the boundary element method: A new look on an old topic	Ulrich Hohenester
11:00 - 11:40	Considering nonlocal effects in light scattering by nanoparticles	Thomas Wriedt
11:40 - 12:20	Limits of classical simulations to describe optical properties of nanoparticles	Javier Aizpurua
<i>Applications and characterization of individual particles</i>		
13:30 - 14:10	Plasmonic pigments based on anisotropic metalodielectric particles	Robin Klupp Taylor
14:10 - 14:50	Synthesis of nano-alloys (targeted color design of Au/Ag particles)	Nabi Traore
<i>Model based optimization (part 1)</i>		
14:50 - 15:30	Topology and Material Optimization of Optical Properties of Particulate Products by Discrete Dipole Approximation and Sequential Global Programming	Nico Nees
15:50 - 16:30	Solving electromagnetic inverse problems using topology optimization	Rasmus Christiansen
16:30 - 17:10	Particle design by the continuous stochastic gradient method	Andrian Uihlein
17:10 - 18:00	Discussions	

Tuesday, 08.11.2022		
Start	Topic	Speaker
<i>Optical simulation methods (part 2)</i>		
08:30 - 09:10	Ray Tracing for Simulating Structural Color Motifs of Photonic Balls	Federico Tomazic
09:10 - 09:50	Electromagnetic modelling of complex nanostructured surfaces and application to visual appearance design	Kevin Vynck
09:50 - 10:30	Electron energy loss spectroscopy and cathodoluminescence in the discrete dipole approximation	Alexander Kichigin
<i>Applications and characterization of particle assemblies</i>		
10:50 - 11:30	Structure formation by colloidal self-assembly	Nicolas Vogel
11:30 - 12:10	Structure formation in dense colloidal suspensions	Hartmut Löwen
15:50 - 16:30	Designed Assembly in Two Dimensional Colloidal Materials	Martin Buzza
16:30 - 17:10	Simulating soft particle structures in the augmented ensemble	Simone Ciarella
<i>Characterization and/or optical simulations</i>		
17:10 - 17:50	Investigating the colors of the sunset: Combination of optical modelling and hydrodynamic characterization for multidimensional particle property characterization	Johannes Walter
17:50 - 18:30	Electron and X-ray nanotomography of optically active particulate and porous materials	Benjamin Apeleo-Zubiri

Wednesday, 09.11.2022		
Start	Topic	Speaker
<i>Optical simulation methods (part 3)</i>		
09:00 - 09:40	Modeling and simulation of the electric control of quantum dot photodiodes	Jens Förstner
09:40 - 10:20	T-matrix based techniques to describe photonic materials and metamaterials	Carsten Rockstuhl
10:40 - 11:20	Higher Harmonic Generation in Quantum Dots	Ulf Peschel
11:20 - 12:00	Capabilities of the ADDA code for nanophotonics	Maxim A. Yurkin
<i>Model based optimization (part 2)</i>		
13:50 - 14:30	First order approximation and Ewald sphere construction for photonic glass optimization	Alexander Petrov
14:30 - 15:10	On the optimization of process-property functions for particulate products	Lukas Pflug/Michael Stingl
15:20 - 16:00	Final discussions / Closing remarks	Michael Stingl
16:00 - 17:00	Discussions	