

Press release



International Online Workshop on Multidimensional Particle Characterisation 27-29 January 2021

Berlin, 18 January 2021:

Multidimensional particle characterisation is of key importance for the understanding of complex multiphase products across all length scales from molecules to particles, complex materials and devices. Unifying principles for the comprehensive design of particulate products in particular include the characterisation of the particles along the five dimensions of size, shape, surface, structure and composition.

Cutting-edge tomographic TEM- and X-ray-microscopy-based techniques open unique views into the internal microstructure of single particles, particle agglomeration, porous materials and photonic structures on different length scales. Analytical ultracentrifugation with its unprecedented accuracy, resolution and reproducibility allows determination of the band gap vs. size dependencies of quantum dots or the measurement of the full 2-dimensional distributions of plasmonic nanorods in one single experiment. Particle formation processes can be monitored in situ by advanced spectroscopic and scattering techniques to enable the tailoring of particle properties in continuous processes in several reaction setups. Gas phase analytics serve as powerful tool to characterise air born particles as well as particles from liquid phase using spraying technologies.

From 27 to 29 January 2021, the Erlangen Collaborative Research Centre 1411 on “Design of Particulate Products” (www.crc1411.research.fau.eu), the Priority Programme 2045 “Highly specific and multidimensional fractionation of fine particle systems with technical relevance” (www.tu-freiberg.de/fakult4/mvtat/SPP2045) and the LUM company (www.lum-gmbh.com) jointly organise an international workshop on multidimensional characterisation of particle systems. Experts from industrial and academic perspectives will review the status quo of multidimensional particle characterisation using state-of-the-art and newly developed methodologies. A special focus is laid upon the identification of key challenges and intersections of the different techniques. The latter is of particular importance, as particle systems of continuously increasing complexity require diverse and multi-instrumental approaches to tackle their multidimensional properties. In the session 6: *Sedimentation analysis for dispersions II* Prof. Dr. Dr. Dietmar Lerche, Managing Director of LUM GmbH, talks about the "Progress of analytical centrifugation: Multidimensional characterization of nanoparticles" using the new multi-wavelength functionality of the LUMiSizer photocentrifuge.

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The scientific exchange between the different experts in the field of particle characterisation will aim in this way for the identification of future prospects of particle characterisation. Overall, the workshop format will promote intense discussions and exchange between the participants and may thus become further the nucleus of future joint activities. Participation at the workshop is free of charge but registration is mandatory to log into the online event via ZOOM.

Further information and registration are available on the workshop website:

www.crc1411.research.fau.eu/international-workshop-multidimensional-particle-characterisation/

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