

Scattering of light and X-rays: Revealing insights of nanostructures *in situ* and in-operando

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Scattering has developed as a standard method to investigate nanostructures in the range of 0.1 to hundreds of nanometers occurring in pharmaceutical, chemical, metalworking or semiconductor industries. The enormous benefit of scattering compared to many other structural methods e.g. *in situ* TEM is the limited requirements for sample preparation and environment. This quality enables to study liquids, solids, aerosols and thin films close to the conditions occurring in chemical reactions, temperature treatments and even in more complicated constrains of in operando investigations such as in Li-batteries or micro chambers for nanomaterials growth. As such scattering is an attractive method for research and industry to optimize processes, investigate preparation procedures, metrology or failure conditions.

This presentation will discuss highlights of the academic and industrial research program conducted at the scattering facilities of CERIC-ERIC consortium: the Austrian SAXS beamline at ELETTRA and the light scattering facilities in Graz.