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**“Small-angle X-ray scattering as a method to follow nanostructures and evolution of nanostructures in-situ”**

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Small-angle X-ray scattering (SAXS) is a powerful tool to describe the size, shape, orientation and arrangement of nanoscaled objects. SAXS has – in comparison to concurrent or complementary techniques – specific advantages such as the easy sample preparation, the high resolution in reciprocal space and the good statistical accuracy. The main advantage, however, is the possibility to perform in-situ measurements to follow the evolution of nanostructures at different temperatures or loads, in different environments or under processing conditions.

Selected examples from materials physics and materials chemistry (pristine and surface functionalized nanoparticles in polymers) as well as from nature (feather keratin) are presented.