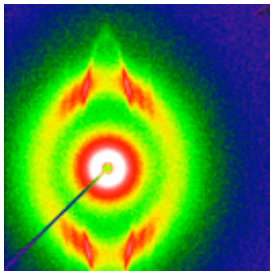

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Contr. Talk 13 - Studying slow dynamics with X-ray photon correlation spectroscopy

Wednesday 12 December 2018 11:30 (20 minutes)

Scattering experiments based on coherent X-ray beams have opened new possibilities for the investigation of soft and hard condensed matter. X-ray photon correlation spectroscopy (XPCS) allows to access a wide variety of dynamic phenomena at the nanoscale by studying the temporal correlations among photons that are scattered by a material when it is illuminated using a coherent X-ray beam.
We present two examples of XPCS studies on systems with slow dynamics that illustrate the capabilities of the technique in SAXS and GISAXS geometries: (a) Dynamics of ion beam eroded surfaces, which represent a paradigmatic case of sustained non-equilibrium dynamics governed by the complex interplay between the mechanisms that tend to roughen and smoothen the surface [1]; (b) An ongoing study on the initial steps of self-assembly mechanism and gelation of a pH-sensitive low molecular weight hydrogelator, controlling both assembly rate and morphology of the self-assembled structures.
We shall also discuss on the benefits and possibilities that the new diffraction limited storage rings bring about for XPCS studies.

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Session Classification: Late morning session - Associated systems