Special Issue

Advanced Synchrotron Techniques for Soft and Nanomaterials

Message from the Guest Editor

Faster detectors and higher-brightness sources have recently improved the time resolution of in-situ studies. Micro- and nano-sized beams can be applied to obtain local spatially-resolved data. The improved coherence of X-ray beams promotes the application and further development of coherent techniques such as X-ray photon correlation spectroscopy (XPCS) and coherent diffraction imaging (CDI). Grazing-incidence SAXS (GISAXS) and x-ray reflectivity (XRR) allow researchers to study surfaces including soft and liquid interfaces. Spectromicroscopy using X-rays close to the adsorption edge of a specific element has been shown to provide element-specific chemical information with nanometric resolution. The hard X-ray microscopy with a much larger penetration depth is shifting to the nanoscale. X-ray spectroscopy is slowly progressing to meet the challenges of nanomaterials, soft matter and biological materials. Much progress has recently been seen in the development of the sample environment. I believe that this issue will contribute to the discussion of recent developments of techniques similar to those mentioned above and of their recent applications for soft matter and nanomaterials.

Guest Editor

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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