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# Advanced Synchrotron Techniques for Soft and Nanomaterials

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## 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.

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