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Soft matter at and beyond the limits of soft x-ray microscopy

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Zone-plate based soft x-ray microspectroscopy has developed into a routine technique to analysing all kind of materials. Specifically the investigation of molecule-based materials gains from the chemical fingerprint sensitivity of near-edge x-ray absorption fine structure. We will discuss various applications of the SLS PolLux-STXM to soft matter specimens, ranging from polymer materials, polymer blends, organic nanocrystals and organic electronic thin film devices. Since spatial resolution in state-of-the-art zone plate-based microscopy is limited, complementary techniques are required that offer chemical insight also beyond the present STXM resolution level. Therefore, soft x-ray resonant scattering has been employed to resolve structures in the sub-10 nm regime.