

New research opportunities at ID01 using coherence and submicron focusing

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Traditionally ID01 is a beamline dedicated to combine (GI)WAXS and (GI)SAXS experiments with anomalous scattering on nanostructured samples (quantum dots, nanostructured thin films, nano-crystallites, etc). In these experiments, the x-ray beam illuminates a large number of nanostructures and thus reveals information about their average properties. In recent years, inhouse research and the interest of the user community has moved towards experiments using the coherence of the synchrotron beam, i.e. for coherent diffraction imaging (CDI) to characterize the structure of a single object. CDI can be combined with a submicron focused beam to achieve the necessary local high flux density. For these purposes, a new channel-cut monochromator has recently been installed at ID01, providing a very stable beam, well suited to be used for microdiffraction, CDI and X-ray Photon Correlation Spectroscopy (XPCS). These new research opportunities will be explained together with first results from the commissioning of the monochromator and applications of the “new” beam.