Poster Presentation

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Improvement of SAXS Lab Equipment by Using Scatterless Apertures

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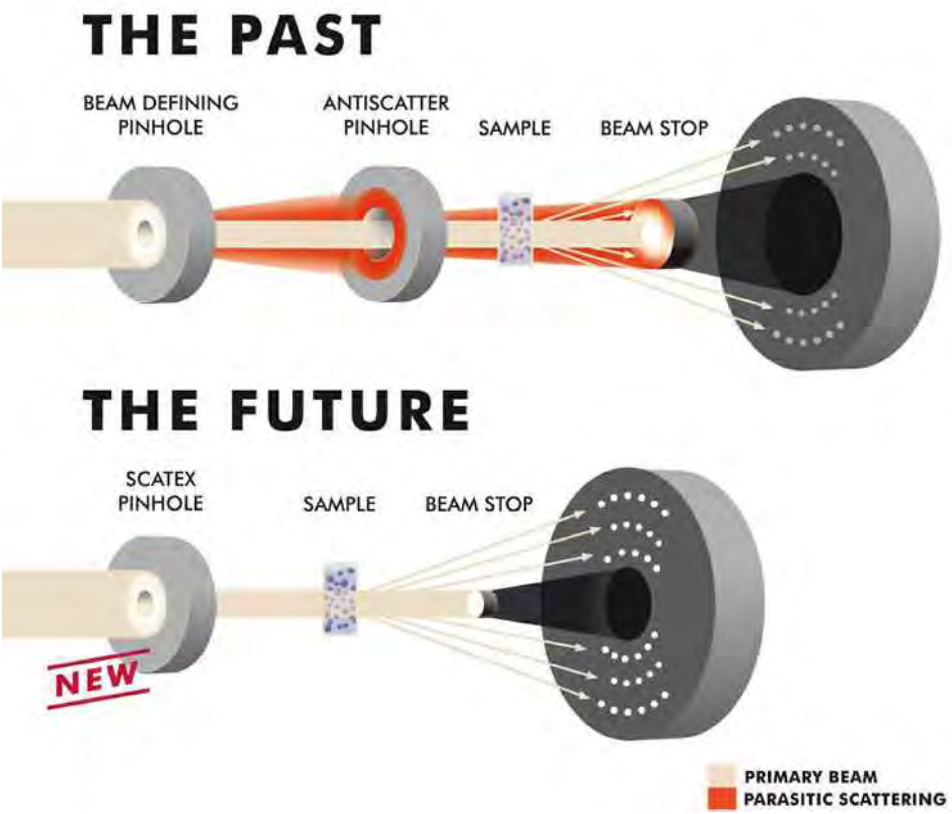
Parasitic scattering caused by apertures is a well-known problem in X-ray analytics, which forces users and manufacturers to adapt their experimental setup to this unwanted phenomenon. Increased measurement times due to lower photon fluxes, a lower resolution caused by an enlarged beam stop, a larger beam defining pinhole-to-sample distance due to the integration of an antiscatter guard and generally a lower signal-to-noise ratio leads to a loss in data quality. In this presentation we will explain how the lately developed scatterless pinholes called SCATEX overcome the aforementioned problems. SCATEX pinholes are either made of Germanium or of Tantalum and momentarily have a minimum diameter of 30µm. Thus, these novel apertures are applicable to a wide range of different applications and X-ray energies. We will show measurements which were performed either at home-lab small angle X-ray scattering (SAXS) systems such as the NANOSTAR of Bruker AXS or at synchrotron beamlines. At the PTB four-crystal monochromator beamline at BESSY II data was collected for a comparison of conventional pinholes, scatterless Germanium slit systems and SCATEX pinholes. At the Nanofocus Endstation P03 beamline at PETRA III we compared the performance of our SCATEX apertures with conventional Tungsten slit systems under high flux density conditions.



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