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## High Spatial Resolution Small Angle X-ray Scattering Experiments using the SOPHIAS Detector

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Small angle X-ray scattering (SAXS) is a powerful tool for material and biological science. SAXS is a method to measure the scatterings at small scattering angles, typically  $0.1^{\circ}$ . The high spatial resolution SAXS data can be obtained by changing experimental setup as follows; enlarging a distance between a sample and a detector position, employing X-ray with lower energy (longer wave length) or using a higher-resolution detector. The large experimental hutch is required for enlarging a camera distance. The light source and optical system for generating low-energy X-ray are also needed if one uses low-energy X-ray. Thus, in order to conduct the high spatial resolution SAXS experiments, it is the most simple to exchange a detector having high resolution. In this presentation, we used the SOI photon-imaging array sensor (SOPHIAS) detector to investigate the nanometer-scale complicated structure observed in polymer materials. An experimental comparison of data quality obtained from the SOPHIAS and the PILATUS3 detector was carried out. It was found that the SAXS profile obtained from the SOPHIAS detector showed higher quality than PILATUS3.

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