

POLYX@SOLARIS: layout, specification & first results

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PolyX (polychromatic X-rays and polycapillary X-ray optics) is a newly developed bending magnet beamline at SOLARIS National Synchrotron Radiation Centre in Kraków, Poland. SOLARIS is a 1.5 GeV synchrotron (circumference 96m) build with unique collaboration between MAX IV Laboratory and Jagiellonian University [1]. The beamline is dedicated to X-ray microimaging and X-ray spectromicroscopy [2] and is open for regular users since 1st March 2024.

PolyX offers several techniques: μ CT ($\sim 0.7\mu\text{m}$ resolution), μ XRF, μ XAS and μ XES [3]. Imaging resolution $\sim 200\text{ nm}$ will be possible via recently developed X-ray tomography with multiple ultranarrow cone beams [4]. The end station can be easily reconfigured; therefore, in addition to implementing other synchrotron methods at short notice, PolyX will also work as a test station for innovative hard X-ray methods or new solutions of X-ray optics, new imaging geometries or detection systems. PolyX can also provide a dedicated area for user experiments and/or user end-stations. The beamline operates in three modes: high flux (DMM, bandwidth 2%), high resolution (DCM, Si(111), bandwidth 0.02%) and a white beam mode. Polycapillary and monocapillary optics are used to generate hard X-ray beam in the energy range of 5-15keV with spot sizes in range $\sim 5\mu\text{m}$ - $100\mu\text{m}$.

In this contribution the current status of the beamline will be presented as well as the beamline layout (optical, acquisition and detection systems). Additionally, first, commissioning results will be presented, to give an overall view on the beamline capability.

Type of presence

Presence online

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