

PolyX@SOLARIS – beamline for multimodal microimaging and spectromicroscopy

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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 [1]. The beamline is dedicated to X-ray microimaging and X-ray spectromicroscopy [2].

PolyX offers several techniques: μ CT ($\sim 0.7\mu\text{m}$ resolution), μ XRF, μ XAS and μ XES. Imaging resolution $\sim 200\text{nm}$ will be possible via recently developed X-ray tomography with multiple ultranarrow cone beams [3]. 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 as well as 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. A photo of the experimental setup is presented in Fig. 1.

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 μm .

In this contribution a model experiment will be presented to show how to combine techniques available at the beamline to obtain complementary information about the sample (i.e. internal structure - μ CT, elemental distribution - μ XRF, speciation - μ XAS/ μ XES).

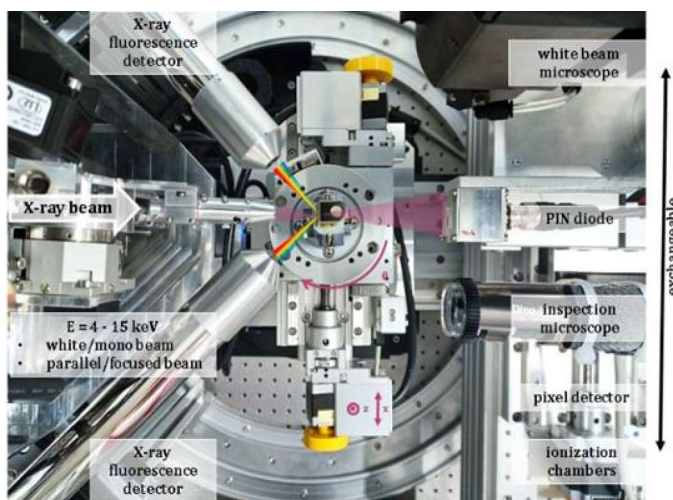


Figure 1 A photo of the PolyX experimental setup (top view).

Acknowledgements: The construction of PolyX is financed by Ministry of Polish Ministry of Science and Higher Education (6991/IA/SP/0010/2019). The work is supported under the Polish Ministry and Higher Education project: "Support for research and development with the use of research infrastructure of the National Synchrotron Radiation Centre SOLARIS" under contract nr 1/SOL/2021/2.

References

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