



Contribution ID: 85 Contribution code: TUP54

Type: **Poster Presentation**

Technical developments of the microfocus endstation at Beamline P03/ PETRAIII

Tuesday 16 September 2025 17:00 (1 hour)

P03 is the MiNaXS Beamline at PETRA III covering a variety of techniques, e.g. Gi/T-S/W-AXS, XRF and XRR*. An adaptive flight-tube enables changes of the SAXS detector distance (from 1.5 - 9.7 m). Another key feature of P03 is the operation of a customized L-shaped LAMBDA 9M detector system (X-Spectrum). Different sample environments can be implemented at the P03 beamline, e.g. a RF sputter equipment (HASE)**, printing setup* * *, a flow cell and a myoSAXS (muscle research) setup. In addition, we have recently employed an X-ray reflector setup for GIUSAXS/GTUSAXS at air/liquid interfaces. At the microfocus endstation EH1, a flexible heavy-load 5-axes goniometer is operated, which can be optionally equipped with a linear translation stage and/or a hexapod for precise alignment. We implemented a frontend-compatible system with a fast pneumatically-actuated beam shutter and an Ionisation chamber. In the near future, P03 is planning to develop a low energy ion beam irradiation chamber. Recently, we commissioned an additional CRL in close vicinity to the sample position. Furthermore, we plan to parallelize the beam after monochromator by a new transfocator.

Footnotes

- * A. Buffet et al., J. Synchr. Rad. 19, 647 (2012)
- ** Döhrmann et al., Rev. Sci. Instrum. 84, 043901 (2013)
- * * * Reus et al., Rev. Sci. Instrum. 95, 043907 (2024)

Funding Agency

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Session Classification: Tuesday Poster Session

Track Classification: BEAMLINES: End Stations