

Pushing the limits of SAXS home lab instrumentation

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The attractiveness of synchrotron sources is, among other reasons, the extremely high brilliance provided. Traditional lab X-ray sources in this respect are limited by the melting of their solid target. By using liquid metal jet targets (e.g. Gallium alloy) instead of fast spinning solid metal targets much higher power loads can be achieved. In addition, this new technology enables focal spot sizes below 20 micron. The resulting brilliance is comparable to bending magnet sources.

Converting this high source brilliance into highest flux-density at the sample requires dedicated multilayer optics. Further combination with latest beam collimation technologies and state-of-the-art 2D detectors substantially extend the capabilities of SAXS home lab systems for measuring weakly scattering samples, or with very high spatial resolution.

This presentation will discuss the technical advances made, and demonstrate the capabilities of modern SAXS home lab instrumentation.