IMPROVED SOURCE AND MULTILAYER OPTICS INTEGRATION FOR FAST AND LOCAL XRD MEASUREMENTS

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Low power high brightness microfocus source systems are increasingly used in XRD applications due to low maintenance requirements and good performance levels in particular for small sample area analysis.

We recently introduced our new beam delivery system platform: the GeniX 3D. It features optimized source-optic coupling with a high brightness tube combined with higher collection aspheric multilayer optics and an improved ease of integration. We will present how the design increases useful flux and the data quality.

The monochromatic high brilliance X-ray beams produced with these systems enable new XRD instrumentation implementation such as high spatial resolution measurements or fast polycristalline phase material analysis with good resolution. We will present two measurements techniques examples with the use of new photon counting detectors. The first is a microdiffraction application with a unique spatial resolution of 20 µm FWHM. We will also present several powder diffraction measurements on both thin films and archaelogical samples highlighting a mapping capability and good data quality. For both application examples, measurements will be compared to other standard source-optics configurations for these applications.