

Conical Shaped Polycapillary Optics for X-ray Imaging Applications

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Polycapillary X-ray optics are high-end components used to enhance performance, across many different applications such as XRF, XRD, X-ray imaging, etc., by redirecting photons through multiple external total reflections. Different geometries of polycapillary optics are required, depending on the application, to achieve the desired results. For imaging applications, a conical shaped polycapillary optic is used to transfer x-rays from the sample into an imaging detector with some magnification factor. Compared to the conventional pinhole imaging technique, the use of a polycapillary optic can significantly improve the image resolution and contrast.

This poster will highlight the experimental characterization and performance evaluation of different conical shaped polycapillary X-ray optics for imaging applications. The benefit of using this type of optic in comparison with a pinhole collimator will be discussed and demonstrated.