

Channeling 2018



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Channeling X-Rays: Applied Polycapillary Optics

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Polycapillary optics (polyCO) is a commonly utilized optical device for a wide variety of applications that operates by collecting X-rays and efficiently propagating them down to the channels by total external reflection in order to form both focused and parallel beams. The development of a compact source-detector system with characteristics to match the requirements of polyCO allows substantial reduction in a size, weight, and power of complete units. The latter becomes crucial for development of portable, remote and in-line sensors for applications in industry, material science, chemical/environmental and bio-medical applications.

In this short overview presentation we are going to discuss X-ray optics, in general, and polyCO, in details, paying attention to important beam parameters such as its flux, focal spot-size and divergence. The work is dedicated to the state of the art for PolyCO-based researches and applications at different centres within international and national collaborations. Providing a comparative analysis for various polyCO-based techniques, future possible developments in PolyCO-like technologies will be presented.

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