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Advancements in X-ray Optics for High-Resolution Imaging: Bridging Commercial Innovation and Research Collaboration

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XRnanotech, born from the collaborative spirit of the Paul Scherrer Institut, is a vanguard in the evolution of X-ray optics. Our foundation in advanced nanolithography techniques has enabled us to craft optical elements with an unparalleled level of precision, reaching into the single-digit nanometer territory. We harness a diverse array of sophisticated methodologies, including electron-beam nanolithography, two-photon polymerization, and direct laser writing, to forge diffractive optical elements that are pivotal for high-resolution X-ray imaging across premier research facilities worldwide.

Our endeavor transcends the commercial sphere, as we engage in fruitful collaborations with leading research institutions like the Paul Scherrer Institut. These partnerships are the bedrock of our mission to continuously push the boundaries of diffractive optics, especially within the exacting high-energy X-ray spectra. Our journey also explores the frontiers of refractive optical elements and reflective optics, navigating their inherent challenges to unveil groundbreaking developments.

The essence of diffractive optics lies in their precision in controlling the optical wavefront, facilitating the creation of complex functionalities. Our contributions span an extensive array of applications, from sophisticated beam-shaping optics to spiral zone plates and achromatic optical elements. By leveraging innovative fabrication techniques, novel materials, and creative designs, we aim not only to advance the commercial landscape of nanotechnology in X-ray optics but also to catalyze research and development in this dynamic field.

This presentation will highlight XRnanotech's recent strides in the fabrication of X-ray optical elements, focusing on their enhanced resolution, efficiency, and optical functionality. Our vision is to ignite a dialogue with fellow researchers and industry partners, inspiring collaborative endeavors, joint grant proposals, and innovative projects that strive to elevate the capabilities of high-resolution imaging. Join us in exploring the future of X-ray optics, where commercial ingenuity meets collaborative research excellence.

I plan to submit also conference proceedings

No

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