

## ABSTRACT

### "Phase and amplitude retrieval from multi-energy near-field images"

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We present a new method for rapid quantitative phase and amplitude retrieval from near-field images collected at a fixed sample-to-detector distance, but at different radiation wavelengths. The method is based on the Transport of Intensity equation formalism, and allows reconstruction of the distribution of projected values of the complex refractive index in the sample from three images. A 3D distribution of the complex refractive index can be obtained by combining the above method with conventional tomographic techniques. The theory of phase retrieval is presented, as well as numerical and experimental examples using in-line hard X-ray images with sub-micron spatial resolution.

## REFERENCES

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