

Abstract Submitted
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Determination of Total X-ray Absorption Coefficient using Non-Resonant X-ray Emission ANDREW ACHKAR, University of Waterloo, TOM REGIER, Canadian Light Source, ERIC MONKMAN, KYLE SHEN, Cornell University, DAVID HAWTHORN, University of Waterloo — Inverse partial fluorescence yield (IPFY) is a newly developed x-ray absorption spectroscopy (XAS) that utilizes non-resonant emission processes to measure the x-ray absorption of a material. Unlike XAS by traditional transmission, total electron yield and total fluorescence yield, IPFY is free of pinhole, saturation, and self-absorption effects. Moreover, IPFY exhibits a simple angle dependence that can be exploited to deduce the total x-ray absorption coefficient from a series of measurements performed with different experimental geometries. We quantitatively determine the total x-ray absorption coefficient of insulating NiO and NdGaO₃ single crystals at soft x-ray energies using this approach.

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