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Doped Lanthanum Hafnates as Scintillating Materials for High-Energy Photon Detection¹ KAREEM WAHID, MADHAB POKHREL, YUAN-BING MAO, University of Texas Rio Grande Valley — Recent years have seen the emergence of nanocrystalline complex oxide scintillators for use in X-ray and gamma-ray detection. In this study, we investigate the structural and optical properties of $\text{La}_2\text{Hf}_2\text{O}_7$ nanoparticles doped with varying levels of Eu^{3+} or Ce^{3+} by use of X-ray diffraction, Raman spectroscopy, scanning electron microscopy, transmission electron microscopy, and optical photoluminescence. In addition, scintillation response under X-ray and gamma-ray exposure is reported.

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