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Structural, morphological, optical properties of spin-coated La doped CdO thin films

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Abstract: The present work deals with the deposition of Cadmium oxide (CdO) and Lanthanum (La)-doped CdO thin films by sol-gel process using a spin coating technique. Structural, morphological, optical properties of undoped and La-doped CdO thin films were studied. From XRD measurements, it is evident that single phase CdO is formed for all doping concentrations. Surface morphology studies shows that higher concentration of La doped CdO thin films were of high quality and EDX mapping confirmed the doping of Lanthanum in to the films. The Raman spectra of the pure and doped thin films were analyzed over the range 250-1500 cm^{-1}. The optical studies confirm that as doping increases, transparency of the film increases and the band gap narrows which opens a window for optoelectronic devices.

Keywords: CdO, Lanthanum doped CdO, Thin films, Optical band gap.