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Determination of Optical Constants of Nanocluster CdO Thin Films Deposited by Sol-Gel Technique

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Abstract

The optical properties of the CdO and Pt doped CdO thin films synthesized by sol gel technique were investigated. The lowest grain size value (81.34 nm) was found to be for CdO thin film. The Pt doped CdO films are transformed to clusters with nanopaxticles. The transparency properties of the CdO thin film is changed with Pt doping. The plots of refractive index indicate abnormal and normal dispersion regions. The refractive index values of the CdO thin film are changed with Pt doping. The direct optical band gap values of the films were changed with doping of Pt. The film of 0.5% Pt doped CdO indicates the lowest optical band gap value (2.421 eV). The imaginary parts of the optical conductivity of the CdO and Pt doped CdO thin films are higher than that of the real parts of the optical conductivity.

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