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**Fabrication and Characterization of
Vanadium Doped Nanostructured Cdo Thin
Films to Improve the Energy Band Gap**

Abstract

CdO and CdO: V with 1% and 3% concentrations were prepared using spray pyrolysis technique SPT. The impacts of vanadium (V) content on structural, morphology, and optical properties were obtained. XRD analysis assures that CdO films are polycrystalline cubic structure with recognized peak at (111). Crystallite size increases from 13.3 nm to 17.2 nm as vanadium concentration increases. Surface topography and nanostructural signalizes cluster grain size and porosity decreased substantially with an increase of Vanadium (V) content in CdO films. The transmittance is more than 80% in the visible range for 1 to 3% Vanadium (V) doping. The optical bandgap of CdO: V film for direct allowed transition has been decreased from (2.75 to 2.55) eV.