Structural and optical properties of Ni doped ZnO thin ?lms using sol–gel technique

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Abstract : Development and characterization of ZnO thin films is of high interest because of its single electrical properties, optics which make it suitable for applications in different fields of technology, optics, electronics, photovoltaic, In this work, the spin coating sol–gel technique has been successfully used to deposit highly uniform and good adhesion of nanostructure thin ?lms of ZnO doped with different Ni concentrations.0%, 1%, 3%, 5%, 7% and 9% on microscope glass substrates by spin coating technique. X-ray diffraction (XRD) revels that all samples have a polycrystalline in nature with hexagonal wurtzite structure. The structural parameters such as crystallite size, dislocation density and micro strain were calculated from XRD studies. UV-vis has shown that the films were highly transparent in the visible range (400–800 nm).

Keywords : ZnO; Ni; thin ?lms; XRD; UV-vis