Nanocomposites and nanomaterials

Study of ZnO thin films prepared by sol–gel spin coating method: Effect of sol concentration

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Transparent zinc oxide (ZnO) thin films have been fabricated by a simple sol–gel spin-coating technique on glass substrates with different solution concentrations (0.3–1.5 mol/L), by using zinc acetate dehydrate [Zn(CH3CO O)2. 2H2O] as precursor and isopropanol and monoethanolamine (MEA) as solvent and stabilizer, respectively. The molar ratio of zinc acetate dehydrate to MEA was 1.0. X-ray diffraction, ultraviolet–visible spectroscopy and photoluminescence (PL) spectroscopy were employed to investigate the effect of solution concentration on the structural, optical, and electrical properties of the ZnO thin films. The obtained results of all thin films were discussed in details and compared with other theoretical and experimental ones.

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