**Abstract**

Gallium doped tin oxide (Ga doped SnO2) thin films have been coated on silica glass substrates at 400 \_C by the spray pyrolysis technique. The relative various volumes of Ga precursor solution, 0.5, 1.0, 1.5 and 2.0 were mixed with Sn precursor solution. The structural, morphological and optical properties of Ga doped SnO2 thin films are investigated. SnO2 and Ga doped SnO2 films showed well defined structures and polycrystalline nature and they showed orthorhombic and monoclinic structures. The variations of the surface morphology were observed by SEM results. The elemental compositional analysis of the Ga doped SnO2 thin films were confirmed using EDAX analysis. The transmittance spectra of the Ga doped SnO2 films were measured and a variation in the average transmittance, which is about 65–75% for the Ga doped SnO2 films. Maximum band gap value of 3.70 eV is obtained for Ga doped SnO2.