**ABSTRACT**

Hybrid PVA-In2O3 transparent nano thin film (293 nm) was prepared by very simple and cost effective dip coating method. The effect of annealing temperature on the functional group, structure, morphology and optical properties was investigated. The presence of metal-oxide (In-O) bond was confirmed from Fourier transform infrared spectroscopy. X-ray diffraction patterns revealed the predominantly amorphous in nature of the films. Scanning electron microscopy images revealed spherical shaped uniform grains distributed over the entire film surface. The sizes of the grains increased with increase of annealing temperature. The percentage of transmittance (80 to 90%) increases whereas band gap energy (3.80 to 3.76 eV) values decreases with increase of annealing temperature. The obtained results indicated that the amorphous nature and high transmittance with wide band gap of the prepared transparent hybrid nano thin films indicated the feasibility of utilizing these nano thin films in transparent optical device applications.