

ABSTRACT

A composite polymer was prepared from polyvinyl alcohol (PVA) and zinc oxide (ZnO) deposited onto a glass substrate to form a thin film PVA/ZnO nanocomposite polymer. PVA/ZnO thin films were annealed at 80 - 200°C to study the effect of annealing temperature on the formation of nanocomposite polymers on thin films along with their electrical properties and crystal structure. I-V curve Characterization of has been carried out to determine the electrical properties and show the effect of annealing temperature on conductivity. The crystal structure of thin film were examined using X-Ray Diffraction (XRD) and showed that the PVA/ZnO thin film has a polycrystalline structure which is characterized by the presence of sharp diffraction peaks that match the standard reference pattern of the hexagonal wurtzite ZnO crystal structure. Photoluminescence spectroscopy shows an increase in intensity and shift in the emission peak as the annealing temperature increases.

Keywords: *Nanocomposite polymer, PVA/ZnO, annealing temperature, electrical properties, crystal structure*