**ABSTRACT**

Indium zinc oxide (InZnO) nano thin film was prepared from InZnO nanoparticles (NPs) by [thermal evaporation](https://www.sciencedirect.com/topics/physics-and-astronomy/thermal-evaporation) technique. Fourier transform infrared spectroscopy showed the presence of metal-oxide bond. X-ray diffraction pattern revealed the mixed phase structure. The presence of elements In, Zn and O were identified from energy dispersive X-ray analysis. Size of the NPs was found to be 171 and 263 nm by transmission electron microscopy. Scanning electron microscopy image showed the spherical shape uniform morphology with uniform distribution grains. Photoluminescence spectrum exhibited a broad green emission for InZnO nano thin film. The acquired results of structure, smooth morphology and photoluminescence property suggested that the InZnO nano thin film to be a promising material for room temperature green emissive optoelectronic, laser diodes, solar cells and other optical devices.