

## **Abstract**

The incorporation of two or more active components as a one nanomaterials with uniform size and different morphology gives the several changes in optical, electrical properties due to this reason needed to facile and environmentally friendly strategy for production of nanoparticles. Thin film technology consider as a promising avenue by their various advances like defect state, Low temperature activation and high performance. Metal oxides (ZnO, SnO<sub>2</sub>, NiO, CdO, etc) are posses various intrinsic physiochemical character. Nanocomposites of electrically conducting metal oxide thin films are providing various nanostructures by the synthesis of spray pyrolysis method. The synthesized nanoparticles is detailed characterized by UV-Vis spectroscopy (UV-Vis), Fourier transform spectrometer (FT-IR), X-Ray diffraction analysis (XRD) and scanning electron microscopy (SEM) which reveals the basic formation of nanoparticles. The prepared nanoparticles will be found as an excellent photo catalyst for removal of hazards from wastewater treatment in various industries and used in energy storage applications.

Keywords: metal oxides, thin film, nano composite, photo catalyst, energy storage.