**Abstract**

Semiconductor nanoparticles doped with transition metal ions have attracted much attention because of its applications in the field of electroluminescence devices, phosphors, light emitting displays and optical sensors. In the present work, iron doped Nickel sulphide nanopartciles are synthesized using chemical precipitation method. Nickel chloride and Ferric chloride are used as precursors and sodium sulphide as a stabilizing agent. The synthesized nanoparticles are characterized using FT-IR, XRD, SEM, UV-Vis, and PL studies. The presence of function groups are confirmed from FT-IR spectral analysis. The optical properties are characterized using UV-Vis spectral analysis and PL study. The XRD analysis shows the crystalline nature of nanoparticles and the average nano-crystalline size is calculated using Debye – Scherrer formula. The morphology of the samples are analyzed using scanning electron microscope. The synthesized nanoparticles may be used for waste water treatment.