**Abstract**

Magnesium ferrite nanoparticles are successfully prepared by co-precipitation method. Magnesium chloride [MgCl2.6H2O], anhydrous Ferric chloride [FeCl3] and sodium hydroxide are used as raw materials. Magnesium ferrite samples sintered at 130°C and 600°C are subjected to X-ray diffraction to calculate the average nano-crystalline size using Debye – Scherrer formula. The FT-IR spectra of the sample are recorded to ensure the presence of the metallic compounds. The morphological analysis of the sample is done using Scanning electron microscope (SEM).