**Abstract**

Copper substituted Cobalt ferrite nano particles (Co0.8Cu0.2Fe2O4) are synthesized using co-precipitation method. Cobaltous Chloride [CoCl2.6H2O], Cupric Chloride [CuCl2.2H2O] and anhydrous Ferric Chloride [FeCl3] along with sodium hydroxide [NaOH] are used as the raw materials. Cobalt-Copper ferrite sample sintered at 900○C is subjected to X-ray diffraction to calculate the average nano-crystallite size using Debye – Scherrer formula. The FT-IR spectra of the samples are recorded to ensure the presence of metallic compounds. The magnetic properties of the copper doped cobalt ferrite nano particles are studied using Vibrating Sample Magnetometer (VSM). The morphological analysis of the sample is done using SEM.