**Abstract**

 Nano-crystalline Zn-Cu mixed ferrite is synthesized using co-precipitation method. Zinc nitrate [Zn(NO3)2.6H2O], copper nitrate [Cu(NO3)2.3H2O], ferric nitrate [Fe(NO3)3.9H2O] along with sodium hydroxide [NaOH] are used as raw materials. As prepared and sintered Zn-Cu mixed ferrite powders are subjected to XRD analysis to calculate average particle size. The consistency of Nano size of the particle is analyzed using TEM micrograph. The FT-IR spectrum of the sample is recorded at different sintering temperatures. The magnetic measurements of Zn-Cu­­­­­­­­­ mixed Ferrite nano particles are carried out using Vibrating Sample Magnetometer (VSM).