

## Article Abstract

Title:	Dependence of magnetic and structural properties of $Ni_{0.5}M_{0.5}Fe_2O_4$ (M=Co, Cu) nanoparticles synthesized by citrate precursor method on annealing temperature
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Abstract:	$Ni_{0.5}M_{0.5}Fe_2O_4$ (M = Co, Cu) ferrite nanoparticles were synthesized using citrate precursor method. The citrate precursor was annealed at temperatures 400°C, 450°C, 500°C and 550°C. The annealed powders were characterized using X-ray diffractometer (XRD) and vibrating sample magnetometer (VSM). Observed XRD data was further analyzed using Rietveld analysis which showed that particles annealed at temperatures upto 450°C display cubic spinel structure while the particles formed at temperature higher than 450°C display a tetragonal spinel structure. Sharp changes were observed in particle size, lattice constant, magnetization and retentivity in the range 450-500°C temperature suggesting that nucleation/growth mechanism is different at temperatures above and below a critical temperature in this range.
Keywords:	Ferrites, magnetic nanoparticles, citrate precursor, magnetization.