

## FC and ZFC Studies of Nickel Nano Ferrites and Ni Doped Lithium Nano Ferrites by Citrate-Gel Auto Combustion Method

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**Abstract :** Nickel ferrites and Ni doped Lithium nano ferrites  $[\text{Li}_{0.5}\text{Fe}_{0.5}]_{1-x}\text{Ni}_x\text{Fe}_2\text{O}_4$  with  $x= 0.8$  and  $1.0$  synthesized by citrate-gel auto combustion method. The broad peaks in the X-ray diffraction pattern (XRD) indicate a crystalline behavior of the prepared samples. Low temperature magnetization studies i.e Field Cooled (FC) and Zero Field Cooled (ZFC) magnetic studies of the investigated samples are measured by using vibrating sample magnetometer (VSM). The magnetization of the prepared samples as a function of an applied magnetic field 10 T was measured at two different temperatures 5 K and 310 K. Field Cooled (FC) and Zero Field Cooled (ZFC) magnetization measurements under an applied field of 100 Oe and 1000 Oe in the temperature range of 5-375 K were carried out.

**Keywords :** ferro-spinels, field cooled (FC), Zero Field Cooled (ZFC) and blocking temperature, superpara magnetism, drug delivery applications

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