

Study of dynamic magnetic susceptibility of strontium ferrite nanoparticles

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Abstract

Substituted strontium ferrite $\text{SrFe}_9(\text{Mn}_{0.5}\text{Co}_{0.5}\text{Zr})_{3/2}\text{O}_{19}$ has been prepared from sol-gel method. X-ray diffraction (XRD), transmission electron microscope (TEM) and AC susceptometer, were used to analyze the structures and dynamic magnetic susceptibility properties. Powders of sample show a hexagonal fine platelet structure and narrow particle size distribution (Fig.1). It is observed that real and imaginary parts of effective magnetic susceptibility have linear change with variation of H_{AC} . The imaginary component of the dynamic susceptibility curve was curve fitted for one peak in the frequency range of 10-40 Hz. Ferrimagnetic fine particles show most of the features of glassy systems (Fig.2).

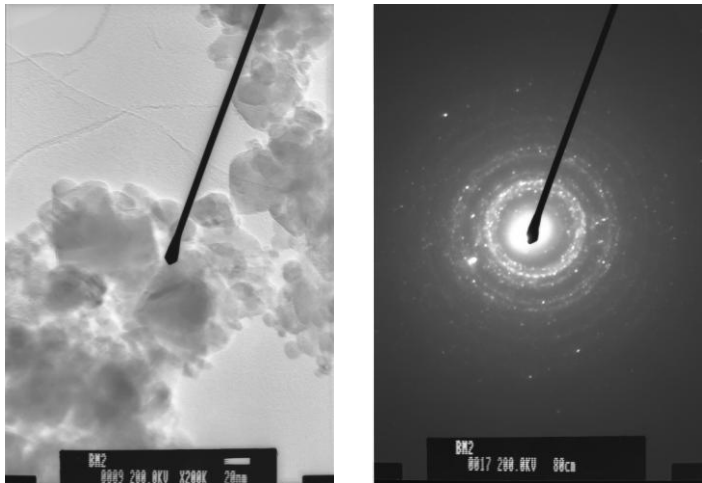


Fig. 1 TEM micrograph along with EDP of prepared nanoparticles

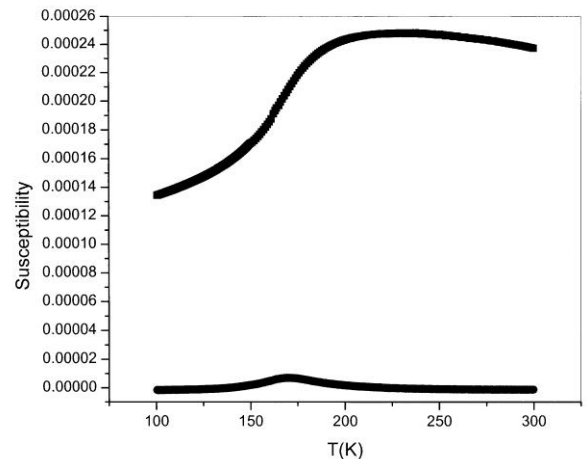


Fig. 2. Magnetic susceptibility versus temperature

References

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