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Temperature dependence of coercivity and magnetization of Sr1/3Mn1/3Co1/3Fe2O4 nanoparticle ferrites

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Abstract content
   (Max 300 words)
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Single phase Sr1/3Mn1/3Co1/3Fe2O4 nano-particle ferrite was obtained by glycol thermal technique. The phase formation was confirmed by x-ray diffraction. The particle size distribution and the quality of the nanoparticles were observed by transmission electron microscopy. Scanning electron microscope was used to monitor the particle shapes and surface morphology. Magnetic properties as a function of the measuring temperature were investigated using mini cryogen free VTI system in the temperature range of 4 K to 300 K in an external magnetic field of up to 5 T. The magnetic investigations revealed significant increase in the coercivity from 0.02 T to 1.12 T 300 K and 4 K, respectively. The temperature dependence of the coercive are fields are discussed in terms of Kneller's law and the magnetization in terms of Bloch's law.

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Yes

Level for award
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PhD

Main supervisor (name and email)
and his / her institution

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