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The Influence of Reaction Parameters on Magnetic Properties of Synthesized Strontium Ferrite

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Abstract : The conventional ceramic route was utilized to prepare a hard magnetic powder (M-type strontium ferrite, SrFe12O19). The stoichiometric mixture of iron oxide and strontium carbonate were calcined at 1000°C and then fired at various temperatures. The influence of various reaction parameters such as mixing ratio, calcination temperature, firing temperature and firing time on the magnetic behaviors of the synthesized magnetic powder were investigated.The magnetic properties including Coercivity (Hc), Magnetic saturation (Ms), and Magnetic remnance (Mr) were measured by vibrating sample magnetometer. Morphologically the produced magnetic powder has a dense hexagonal grain shape structure.

Keywords : hard magnetic materials, ceramic route, strontium ferrite, magnetic properties
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