

Role of domain wall dynamics in itinerant ferromagnet: NdCrGe₃

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Abstract

Polycrystal of NdCrGe₃, which crystallizes with a hexagonal perovskite BaNiO₃ - type structure was investigated by means of XRD and magnetization. dc magnetization gives evidence for the long-range ferromagnetic magnetic ordering at $T_C \sim 115$ K due to the 3d – Cr moments and short-range ordering below 100 K as result of polarization of Nd sublattices in the exchange field of ordered Cr sublattices. Further, ZFC-magnetization curves below 0.15 T were found to be almost temperature-independent ($T < 20$ K) and $M(H)$ curves below 20 K were found to be almost field-independent close to the origin ($H < 0.25$ T) imply that magnetization is determined mainly by the domain-wall configuration i.e., presence of narrow domain walls [1].

[1] T. V. Chandrasekhar Rao, P. Raj, Sk. Mohammad Yusuf, L. Madhav Rao, A. Sathyamoorthy & V. C. Sahni, Phil. Mag. B 74 (1996) 275