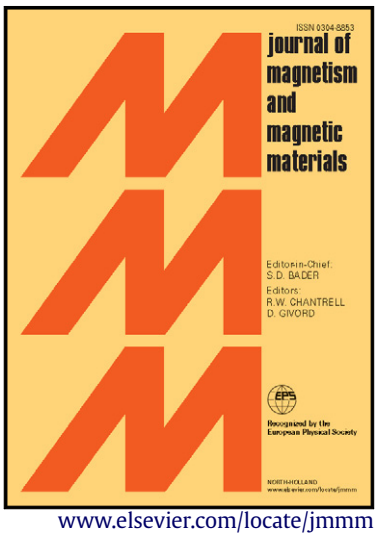

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ABSTRACT

The effective-field theory with correlations (EFT) has been used to study the various shapes of the hysteresis loop for a ferromagnetic core of spin-1 and a ferromagnetic shell of spin-3/2 with ferrimagnetic interface coupling on a cubic nanowire. The magnetizations and phase diagrams of the nanowire have been investigated in the previous work (J. Magn. Magn. Mater. 324 (2012) 4034–4042). A number of characteristic behaviors are obtained especially for the triple and multiple hysteresis loop patterns for certain values of the system parameters at low temperature. We also examine the effect of the system parameters on coercivity of the nanowire.

PACS: 61.46.Km; 75.50.Gg; 75.60.Ej.