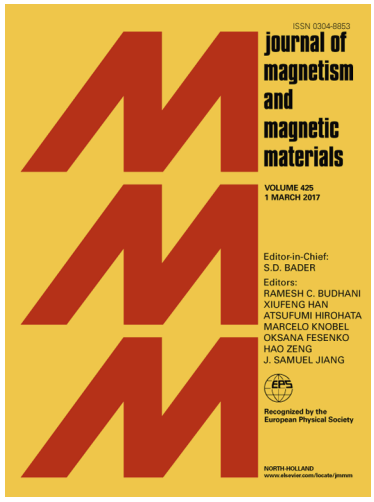

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Abstract

Structural, magnetic and magnetocaloric properties of the nanocrystalline $La_{0.7}Te_{0.3}Mn_{0.7}Co_{0.3}O_3$ perovskite manganite were investigated. X-ray diffraction pattern indicated that the nanocrystalline sample crystallized in orthorhombic crystal structure with *Pbnm* space group. The average particle size was calculated using scanning electron microscope and it was found to be ~ 150 nm. Temperature dependence magnetization measurements revealed ferromagnetic - paramagnetic phase transition and the Curie temperature (T_C) was found to be ~ 201 K. Field dependence magnetization showed the hysteresis at low temperature with a coercive field of ~ 0.34 T and linear dependence at high temperature corresponds to paramagnetic region. Based on the magnetic field dependence magnetization data, the maximum entropy change and relative cooling power (RCP) were estimated and the values were 1.002 J kg^{-1} K^{-1} and 90 J kg^{-1} for a field change of 5 T respectively. Temperature dependent resistivity ρ(T) data exhibited semiconducting-like behavior at high temperature and the electrical transport was well explained by Mott's variable-range hopping (VRH) conduction mechanism in the temperature range of 250 K -