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Influence of Gd-doping in La_{0.7}Ca_{0.3}MnO₃ on its structural and Magneto-Electrical Properties SEVGI POLAT ALTINTAS, Abant Izzet Baysal University, ABDERREZAK AMIRA, Université de Jijel, CABIR TERZIOGLU, Abant Izzet Baysal University — We present a study of the structural and electrical properties of lanthanum-based manganite, La_{0.7}Ca_{0.3}MnO₃ with $x=0.0$ and 0.1 . The samples synthesized by the conventional solid state reaction method. The samples are characterized by X-ray diffraction, scanning electron microscope and energy dispersive X-ray spectrometer. The electrical and magneto-transport properties of bulk samples have been investigated in the temperature range 5-300 K and a magnetic field up to 7 T. Although the replacement of La ion by Gd results a decrease in metal-insulator transition temperature TMI, the magnetoresistance and resistivity are found to be increased. The electrical resistivity in the entire temperature range fit well with the phenomenological percolation model, which is based upon an approach that the system consists of the phase separated ferromagnetic metallic and paramagnetic insulating regions.

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