

2012

MAGNETO-ELECTRICAL PROPERTIES OF $\text{La}_{0.45}\text{Y}_{0.1}\text{Bi}_{0.15}\text{Ca}_{0.3}\text{MnO}_3$ MANGANITES

R. Chihoub, A. Amira, N. Mahamdioua, S. P. Altintas, A. Varilci, C. Terzioglu

Abstract : The physical properties of the $\text{La}_{0.45}\text{Y}_{0.1}\text{Bi}_{0.15}\text{Ca}_{0.3}\text{MnO}_3$ compound have been investigated, focusing on the magnetoresistance phenomenon (MR) studied by electrical transport measurements. X-ray diffraction and scanning electron microscopy (SEM) analysis of ceramic samples prepared by solid state reaction revealed that specimens are single phase and have average grain size between 3-10 μm . The temperature of magneto-resistivity curves are registered from room temperature down to 50K under a magnetic field up to 5 Tesla and showed that the ceramic sample present a transition insolentmetal (I-M) at a temperature $T_P \approx 89,10 \text{ K}$. Some physical parameters are extracted and their evolution with magnetic field are presented and discussed. The highest obtained MR value is about 81.73% at 5 Tesla.

Keywords : manganite, Doping, resistivity, colossal magnetoresistance