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MAGNETOTRANSPORT AND ELECTRICAL PROPERTIES OF COLOSSAL MAGNETORESISTIVE $La_{0.8}Sr_{0.2}MnO_3$ AT DIFFERENT SINTERING TEMPERATURE

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ABSTRACT

The magnetotransport and electrical properties of $La_{0.8}Sr_{0.2}MnO_3$ (LSMO) compounds prepared by simple chemical co-precipitation route and sintered at 1120°C, 1220°C and 1320°C were studied. All the samples are indexed in the rhombohedral structure with R3C space group. From this study, *T*IM remained nearly constant (~290K) for samples sintered at 1120°C and 1220°C. Resistivity values were fitted with several equations in the metallic (ferromagnetic) region. Whereas at insulating (paramagnetic) region, variable range hopping (VRH) and small polaron hopping (SPH) models were used to estimate the density of states at Fermi level, *N* (*EF*), and activation energy of the electron.

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