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STRUCTURAL, ELECTRICAL AND MAGNETORESISTANCE OF $La_{0.7}Ca_{0.28}Sr_{0.02}MnO_3$ AT DIFFERENT SINTERING TEMPERATURES

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ABSTRACT
The structural, electrical and magnetoresistance of $La_{0.7}Ca_{0.28}Sr_{0.02}MnO_3$ perovskites have been investigated. The materials were prepared using co-precipitation method (COP) at sintering temperature of 1120 ^oC, 1220 ^oC and 1320 ^oC, respectively. Characterization by X-Ray diffraction showed that they have orthorhombic structure with Pbnm space group. Insulator metal transition, Tim increased from 261 K to 272 K with increasing of sintering temperature. Magnetoresistance (MR) measurements were carried out in the presence of magnetic fields from 0.1 T to 1 T at room temperature. In the present investigation, the percentage of MR of all the materials are found to increase with increasing magnetic field. MR values almost increase with increasing sintering temperature and this trend can be explained by the conduction mechanism due to the grain growth of materials.

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