

Large magnetic entropy change in Cu-doped manganites

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Abstract: Magnetic entropy change above 300 K, which is larger than that of gadolinium (Phys. Rev. B 57 (1998) 3478), has been observed in a Cu-doped manganites of $\text{La}_{0.7}\text{Sr}_{0.3}\text{Mn}_{1-x}\text{Cu}_x\text{O}_3$ ($x = 0.05, 0.1$). The large magnetic entropy change originated from a sharp magnetization jump is associated with a first-order crystallographic phase transition of the sample near the Curie temperature. These results suggest that the present Cu-doped manganites are suitable candidate materials for magnetic refrigerants in the room temperature magnetic-refrigeration technology. ?? 2004 Elsevier B.V. All rights reserved.

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