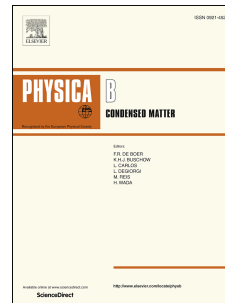


# Accepted Manuscript

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# Significantly large magnetocaloric effect in polycrystalline $\text{La}_{0.83}\text{Sr}_{0.17}\text{MnO}_3$ near room temperature

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## Abstract

We have observed a significantly large magnetocaloric effect near room temperature for polycrystalline ferromagnetic  $\text{La}_{0.83}\text{Sr}_{0.17}\text{MnO}_3$  compound. The maximum value of the magnetic entropy change at the vicinity of the paramagnetic to ferromagnetic ordering temperature is about 8.0 J/kg-K in the presence of a 70 kOe external magnetic field. The present study indicates that the magnetic entropy change near room temperature is comparable to (or larger than) that for the suggested refrigerant materials reported earlier.

PACS numbers: 75.47.Lx, 73.63.Bd

Keywords: Manganite, Magnetocaloric effect

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## 1. Introduction

In order to avoid the increasing tendency of using environmentally harmful gases in cooling technology, search for environment friendly technologies has been intense over the past few decades. In this context magnetic cooling technology, based on magnetocaloric effect, gets priority for several beneficial aspects, namely, higher efficiency, environment friendliness, recycling operation etc. In magnetic cooling technology, selection of magnetic refrigerants with large magnetocaloric effect is primarily important. Magnetocaloric effect (MCE) is almost a generic nature of magnetic materials. MCE is the isothermal magnetic

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