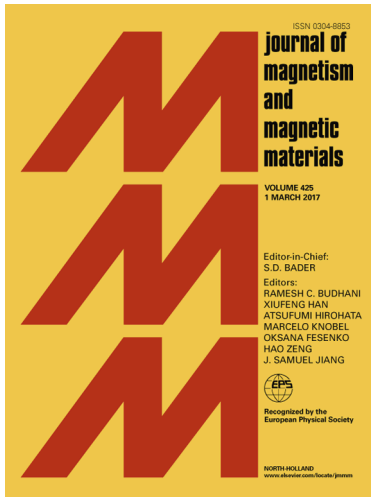

Research articles

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PII: S0304-8853(18)31579-8
DOI: https://doi.org/10.1016/j.jmmm.2018.07.039
Reference: MAGMA 64145

To appear in: *Journal of Magnetism and Magnetic Materials*

Received Date: 24 May 2018
Revised Date: 4 July 2018
Accepted Date: 10 July 2018

Please cite this article as: M. Arejdal, A. Abbassi, A. Kadiri, A. Slassi, L. Bahmad, The magnetic properties and magneto-caloric effect inthe compound MnBi: The Monte Carlo study, *Journal of Magnetism and Magnetic Materials* (2018), doi: https://doi.org/10.1016/j.jmmm.2018.07.039

The magnetic properties and magneto-caloric effect in the compound MnBi: The Monte Carlo study

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Abstract

In this research paper, we determine and analyze the magnetic properties and the magneto-caloric effect in the compound MnBi. To do so, we firstly establish the magnetic properties of the studied compound by using Monte Carlo simulations method, and then we determine the transition temperature through studying the magnetization, the susceptibility, the specific heat, and the Binder's fourth-order cumulate of order parameter. This latter result is only one among a number of results attained in this paper. To cite but an example, the plotting of the magnetic entropy change, adiabatic temperature change and the relative cooling power for the different external magnetic field.

Keywords: MnBi compound; Magneto-caloric effect; Magnetic entropy change; Monte Carlo simulations; Adiabatic temperature change; Hysteresis loop.

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