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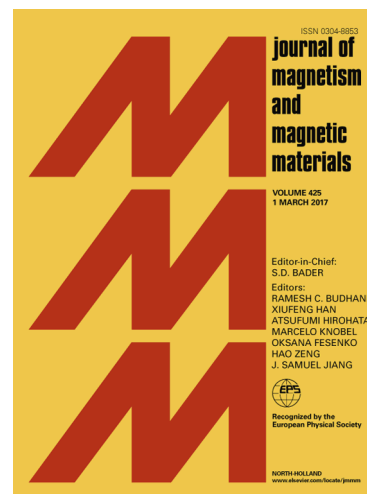
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Best Practices in Evaluation of the Magnetocaloric Effect from Bulk Magnetization Measurements

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Conventional magnetometry is irreplaceable in evaluating bulk magnetization of materials over broad temperature and field ranges. The technique is also effective in quantifying hysteresis that may be associated with magnetic and structural phase transitions that occur during the magnetizing/demagnetizing cycling, and the derived magnetic field-induced isothermal entropy change – one of the most important properties in the field of magnetocalorics. Both systematic and random errors present during the measurements of magnetization, however, may lead to erroneous conclusions. Using two well-known materials – elemental Gd and intermetallic Gd₅Si₂Ge₂ as examples, we consider best practices in performing reliable and rapid magnetization measurements for proper characterization of magnetocaloric properties.

Keywords: Magnetocaloric, magnetization, entropy change

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