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A giant magnetocaloric effect in $\text{EuTi}_{0.875}\text{Mn}_{0.125}\text{O}_3$ compound

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Abstract: The magnetic properties and magnetocaloric effect of $\text{EuTi}_{0.875}\text{Mn}_{0.125}\text{O}_3$ compounds are investigated. $\text{EuTi}_{0.875}\text{Mn}_{0.125}\text{O}_3$ compounds show the ferromagnetic to paramagnetic magnetic transition at $T_c = 5.5$ K. There are 15.48% Eu^{2+} ions that change into Eu^{3+} , because the concentrations of Mn^{2+} and Mn^{4+} are 7.74% and 4.76% in the $\text{EuTi}_{0.875}\text{Mn}_{0.125}\text{O}_3$ compounds. Although, the magnetic moments were decreased, the utilization of spin entropy of $\text{Eu}^{2+}: 4f^7$ localized moments was improved. A giant reversible magnetocaloric effect was observed in $\text{EuTi}_{0.875}\text{Mn}_{0.125}\text{O}_3$ compounds. The maximum value

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