

Magnetocaloric properties of the Fe₂MnGa Heusler alloy

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Magnetocaloric effect in Fe₄₆Mn₂₄Ga₃₀ Heusler alloy (HA) was investigated. This alloy exhibits martensitic transformation accompanied with paramagnetic to ferromagnetic transition with a huge increase in magnetization at martensite start temperature $M_S = 166$ K. M_S is shifted up to 190 K by the external magnetic field of $\mu_0 H = 5$ T. Significant isothermal entropy change $\Delta S_M = 13.4$ J/K kg and refrigerant capacity $RC(\Delta\mu_0 H = 5\text{T}) = 208$ J/kg make this HA perspective for practical applications.