

Magnetocaloric effect in antiferromagnetic half-Heusler alloy DyNiSb

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The low-temperature magnetic, thermal and magnetocaloric properties of the half-Heusler compound DyNiSb were studied on polycrystalline samples. The temperature variations of the magnetization and the heat capacity reveal a phase transition from paramagnetic to antiferromagnetic state at the Néel temperature $T_N \approx 3.1$ K. The compound exhibits normal and inverse magnetocaloric effect with the isothermal magnetic entropy change reaching 5.2 J/kg K at 4.5 K for a magnetic field change of 30 kOe. The estimated refrigerant capacity is about 58 J/kg.

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