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Magnetic properties and magneto-caloric effect of Co substituted Mn rich Ni_2MnGa

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Fyzikální ústav AVČR

Abstract. The Ni_2MnGa Heusler compound are very promising smart materials with many applications. We have prepared polycrystalline samples of Co-doped off-stoichiometric Ni_2MnGa alloys with interesting magnetic properties of their martensitic phases, where a paramagnetic gap has been observed and tuned by composition. Saturated magnetisation of martensitic phases of these alloys strongly decreases with increasing Co and Mn content, transition into paramagnetic state occurs in the alloys with a rich Co-doping. We have prepared the Er-doped $\text{Ni}_{1.72}\text{Co}_{0.28}\text{Mn}_{1.24}\text{Ga}_{0.76}$ alloy with suppressed structural transition, to study magnetic properties of austenite phase of our studied alloys in large temperature range down to low temperature. MCE of the prepared polycrystalline samples of Co-doped off-stoichiometric Ni_2MnGa alloys has been measured by the direct method.