# TWO-WAY SHAPE MEMORY EFFECT OF SPUTTERED Ni-rich $Ni_2MnGa$ FILMS

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The Ni-rich $Ni_2MnGa$ films were deposited at 400 W using $Ni_{52}Mn_{24}Ga_{24}$ target on an aluminium substrate with a radio-frequency magnetron sputtering apparatus. The thickness of the films is about 5 μm. The samples were annealed in vacuum at 1073 K for 36 ks and cooled in the furnace. The annealed films were fastened on a silica tube and then aged at 673 K for 3.6 ks in argon flow. The films show a two-way shape memory effect through structural phase transition and its reversion. The influence of a magnetic field on the temperature of the structural phase transition and on two-way shape memory effect is investigated. It is found that temperature hysteresis of the phase transition is about 7-9 K, the transition temperature increase caused by magnetic field is about 1 K/T. So it is possible to control structural phase transition and shape memory by magnetic field H=10 T switching off and on.

5. Phase Transitions and Critical Phenomena
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