Magnetic-Induced Deformation of NiMnGa Alloy With Shape Memory Effect

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The experimental setup for studying thermomechanical properties [1,2] of ribbon samples or plates was placed in the field of the Beater magnet. For the sample of Ni2.16Mn0.84Ga alloy, the bending deformation versus temperature in different magnetic fields up to 10 T was measured. The martensite transformation temperatures shift was approximately 0.5 C/T. Also, the deformation dependencies on the magnetic field were obtained for various constant temperatures. It is established that for a given alloy sample there is almost complete transition back and forth from the austenite to martensitic phase at 41 C when the magnetic field 10 T is switched on and off.

References: