Basic Studies for the Ferromagnetic Shape Memory Alloys

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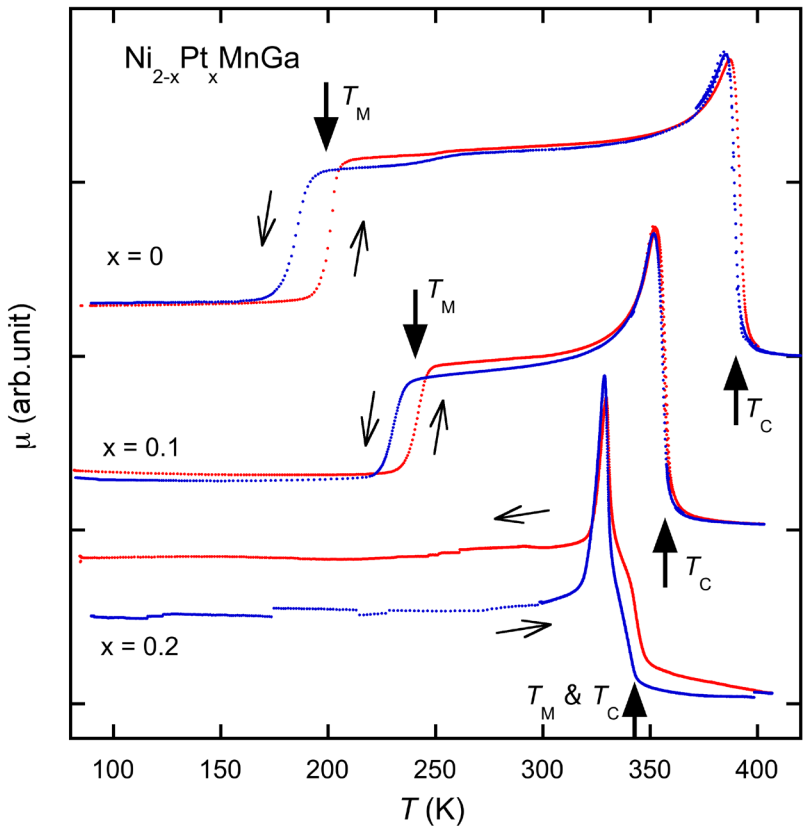

Temperature dependence of the permeability of the Ferromagnetic Shape Memory Alloys $Ni_{2-x}Pt_xMnGa$ (x= 0, 0.1, 0.2). T_M's (martensitic transition temperature) are increased and T_C's (Curie temperature) are decreased with the Pt substitution, x.

Content:

An usual shape memory alloy can transform into the memorized shape due to the temperature change. A ferromagnetic shape memory alloy (FSMA) can transform into the memorized shape due to also the magnetic field. The mechanism of transformation is caused by the martensitic transition (Mar. Tr.) which is one of the crystalline phase transition. The Mar. Tr. involves the change of magnetic property in FSMA. By the using of the effects, magnetic actuators and magnetic refrigerant materials have been developing.

I have been studying the basic physical property and the mechanism of FSMA to develop the new materials. I perform preparing the single or poly- crystalline samples and measuring the thermal, electric, and magnetic property. I have been collaborating with IMR, Tohoku Univ. and ISSP, Tokyo Univ.

I have been trying to clear the physical property associated with magnetism for the magnetic materials.

Appealing point:

My specialty is the basic experimental study of magnetism, but I will contribute to the growth of industry-university collaborations.

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Research Interest : : Solid State Physics
(Magnetic Materials)

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