Observation of the Magnetostriction in Ferromagnetic Amorphous Thin Ribbons

$Ni_{10}P_{13}C_7$ shows fairly broad peak and the peak almost smears out for $Fe_{70}Cr_{10}P_{13}C_7$.

Observation of the Magnetostriction in Ferromagnetic Amorphous Thin Ribbons

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Physics Letters, **51A** (1975), 121.

The first observation of the magnetostriction of the amorphous thin ribbons was made at room temperature, and it was found that in $Fe_{0.8}P_{0.13}C_{0.07}$, the saturation magnetostriction λ in the plane was 18.5×10^{-6} which was several times bigger than that of bulk iron in the polycrystalline state.

Spin Wave Excitation in Amorphous Fe-P-C Alloys

Noriaki KAZAMA, Tsuyoshi MASUMOTO and Hiroshi WATANABE

J. Phys. Soc. Japan, **37** (1974), 1171.

The temperature dependence of the magnetization at low temperatures has been examined in order to obatin the information about the magnetic excitation in amorphous Fe-P-C ferromagnets. The result reveals clearly the $T^{3/2}$ temperature dependence for the magnetization change, which is characteristic of low energy spin wave excitation with quadratic dispersion $\hbar\omega_q=D\cdot q^2$ for the wave vector q. The value of D for $Fe_{80}P_{13}C_7$ amorphous alloy is calculated to be 98 meV·Å^2. The diminuation of the dispersion coefficient shows the increase of spin wave excitation in the amorphous state.

Study of a Magnetic Phase Transition in Amorphous Ferromagnets with Polarized Neutrons

Noriaki KAZAMA and Hiroshi WATANABE

J. Phys. Soc. Japan, **39** (1975), 1411.

Magnetic phase transition of amorphous ferromagnets Fe-P-C and Co(Fe)-Si-B has been investigated by means of a neutron depolarization method. The Curie temperature at H=0 is determined with accuracy for the amorphous Fe-P-C alloy which includes only one magnetic atom. It turns out that the measured data for Fe-P-C alloy obey the power laws (i) $B_s^2\delta\cong|(T_c-T)/T_c|^{2\beta}$ with $\beta=0.36\pm0.02$ below T_c, (ii) $B_s^2\delta\cong|(T-T_c)/T_c|^{\nu}$ with $\nu=0.55\pm0.05$ above T_c, if simplified assumptions are used about ferromagnetic domain structures.

On the Magnetization Process in an Iron-Phosphorus-Carbon Amorphous Ferromagnet

Hiroyasu FUJIMORI, Tsuyoshi MASUMOTO, Yoshihisa OBI and Michio KIKUCHI

Japan. J. Appl. Phys., **13** (1974), 1889.

The B-H hysteresis loop and the magnetic domain structure have been examined for an amorphous $Fe_{80}P_{13}C_7$ ribbon alloy produced by the centrifugal solidification technique. The as-quenched alloy exhibits soft-ferromagnetic properties which