Development of Co-Ni-Al-based Ferromagnetic Shape Memory Alloys

A ferromagnetic shape memory alloys has been developed in Ni-Co-Al system. The alloys exhibit a paramagnetic/ferromagnetic transition besides a thermoelastic martensitic transformation from the B2 to L1₀ structure. The Curie and the martensitic start temperatures in the L1₀ phase can be individually controlled in a range from -150 to 150°C. Some of the specimens were found to undergo the martensitic transformation from the ferromagnetic B2 to the ferromagnetic L1₀, accompanied by a shape memory effect. The workability of the new alloys is quite better than other ferromagnetic shape memory alloys.

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