

Magnetic anisotropy of multilayer [Fe/Pt] n structures

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Abstract

The possibility of controlling the magnetic anisotropy of multilayer [Fe/Pt] n structures grown by magnetron sputtering of Fe and Pt plates by varying number n of layers is studied. Mössbauer spectroscopy data and measured magnetic hysteresis loops demonstrate that the multilayer [Fe/Pt] n structures at $n = 16$ have a predominantly perpendicular magnetic anisotropy. The results of X-ray photoelectron spectroscopy and micromagnetic simulation point to the presence of intermediate layers enriched in iron ions in the structures. The magnetic anisotropy perpendicular to the surface of the [Fe/Pt] n films at $n = 16$ is found to be caused by the anisotropy of the intermediate layers. © 2014 Pleiades Publishing, Ltd.

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