

Hydrogen-induced changes of magnetic properties of iron-chromium multilayers

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Abstract

The influence of hydrogen implantation on the structural, magnetic and electrical properties of iron-chromium (Fe/Cr) multilayers was investigated. Hydrogen implantation increases the bi-layer thickness, lattice constant, remanent magnetic moment and saturation resistivity but reduces the saturation magnetic field, magnetoresistance and the giant magnetoresistance of multilayers. Changes in the saturation magnetic moments of multilayers after hydrogen implantation are also observed.

Indexed keywords

Engineering controlled terms: Chromium; Crystal structure; Electric properties; Hydrogen; Ion implantation; Iron; Lattice constants; Magnetic fields; Magnetic moments; Magnetic properties; Magnetoresistance; Mechanical properties

Engineering uncontrolled terms: Giant magnetoresistance; Hydrogen implantation; Interlayer coupling

Engineering main heading: Multilayers