

Hydrogen-induced changes of the magnetic properties of copper-cobalt multilayers

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Abstract

The influence of hydrogen implantation on the structural, magnetic and electrical properties of cobalt-copper multilayers was investigated. Hydrogen implantation increases the bi-layer thickness, the separation of crystal planes, the remanence and saturation resistivity, but reduces the magnetoresistance ratio, coercive force, saturation magnetic field and saturation magnetic moment of the multilayers. The magnetoresistance of the multilayers is relatively unaffected by hydrogen implantation.

Author keywords

Copper-cobalt multilayer; GMR; Hydrogen; Interlayer coupling; Magnetoresistance

Indexed keywords

Engineering controlled terms: Coercive force; Copper alloys; Crystal structure; Electric conductivity of solids; Hydrogen; Magnetic fields; Magnetic moments; Magnetic properties; Magnetoresistance; Molecular structure; Remanence

Engineering uncontrolled terms: Giant magnetoresistance (GMR)

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