MAGNETIC PROPERTIES OF THIN FILMS OF SOME IRON-BASED AMORPHOUS ALLOYS OF THE Fe-Zr-X-B (X: Cu, Mo, Al, Y) CLASS

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9.7 cm

Thermal stability and magnetic properties of thin films, of a few Fe-based amorphous alloys, have been studied. The alloys belong to the class Fe-M-B, whose representatives are: $Fe_{86}Zr_7Cu_1B_6$, $Fe_{87}Zr_4Cu_1B_8$, $Fe_{87}Zr_7B_6$, $Fe_{87}Zr_7Al_1B_5$ and $Fe_{81}Zr_7Mo_7B_5$, $Fe_{81}Zr_7Y_7B_5$ enjoy particular interest because of their wide variety of magnetic properties. The films were prepared by flash evaporation on liquid nitrogen cooled substrates or heated substrates. Measurements of the Kerr effect, the Hall effect and ferromagnetic resonance in the films were carried out as functions of the annealing temperature. It was found that the changes in the coercive field H_c, resonance line width ΔH_{pp}, effective magnetisation M_{eff}, Hall parameters and resistance well correlated with the structural changes in the studied films.

13.4 cm

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