THE STRUCTURE AND PROPERTIES CHANGES OF DISPERGATED FILMS ON THE BASIC OF 3d-METAL

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Amorphous and crystalline Fe-Ge films (thickness on 50-200 nm) were prepared by thermal coevaporation on the dielectric substrate. The results obtained by means of a X-ray diffraction analysis method have shown the complete absence of diffraction peaks, corresponding to a crystalline state. Crystalline films were deposited on substrates at temperature above 500 T,K.

9.7 cm

The subject of this paper is the effect of a single-layer film structural condition, its thickness and the grain size on a coercive force quantity (H_c). It was used padding exterior magnetic (H=3103 Oe) and electrical ($E = 10^5$ V/m) fields for regulation the grain size in films. A dominant role of an electrical field at decrease of 3d-metal clusters size, and increase of specific share of antimagnetic matrix interlayer were established. Decrease the concentration Ge in system to lead to increase the coercive force quantity (H_c).

The present results on the microstructure and physical properties of dispergated films on the basic of 3d-metal has allowed to implement conditions to produce of the high resistance materials. Coercive force quantity depend primarily on the crystalline grain size and Ge-concentration of the alloys.

13.4 cm

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