

Magneto-optical and Optical Investigation of the Surface Region of Ion implanted Garnet Films.

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In the present work we have shown the efficiency of complex investigation of the ion implanted garnet surface region by magneto-optical and optical methods [1]. With the aid of the odd-magnetization equatorial Kerr effect it has been found that implantation leads to a significant inhibition of the growth of anisotropy. The latter is expressed in the decrease of the amount of saturation fields in-plane films. It has shown that ion implantation influences significantly the magneto-optical properties of the garnet films and practically does not change its optical characteristics. We have also determined the spectral dependences of the component of the tensor of dielectric permittivity for the surface of ion implanted ferrite-garnet films before and after implantation process. These calculations let us evaluate the influence of implantation on an electronic energy structure of the surface layer for the sample.

References:

[1] L. Kalandadze: Influence of Implantation on the Magneto-Optical Properties of garnet surface. IEEE Trans. on Magnetics, vol. 44, No. 11, (2008), 3293-3295