

## Magneto-Optical Properties in Transparent Region of Implanted Garnet Films

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**Abstract :** We investigated magneto-optical Kerr effect in transparent region of implanted ferrite-garnet films for the  $(\text{YBiCa})_3(\text{FeGe})_5\text{O}_{12}$ . The implantation process was carried out at room temperature by  $\text{Ne}^+$  ions with energy of 100 KeV and with various doses  $(0.5-2.5) \times 10^{14} \text{ ion/cm}^2$ . We discovered that slight deviation of the plane of external alternating magnetic field from plane of sample leads to appearance intensive magneto-optical maximum in transparent region of garnet films  $\hbar\omega = 0.5-2.0 \text{ eV}$ . In the proceeding, we have also found that the deviation of polarization plane from P-component of incident light leads to the appearance of the similar magneto-optical effects in this region. The research of magnetization processes in transparent region of garnet films showed that the formation of magneto-optical effects in region  $\hbar\omega = 0.5-2.3 \text{ eV}$  has a rather complex character.

**Keywords :** ferrite-garnet films, ion implantation, magneto-optical, thin films

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