

FEATURES  
OF THE ELECTROMAGNETOOPTICAL EFFECT  
IN EPITAXIAL FILMS OF FERRITE-GARNETS

*V. F. Kovalenko, V. E. Koronovskii*

Taras Shevchenko Kyiv National University  
(2, Academician Glushkov Prosp., Kyiv 02022, Ukraine)

S u m m a r y

The quadratic electromagneto-optical effect (EMO) on the double frequency of an a.c. electric field is experimentally studied in epitaxial ferrite-garnet films. Applying of the d.c. voltage or mechanical strain in the direction perpendicular to the film surface caused a linear EMO effect (arisen with a threshold) on the base frequency of the electric field. An EMO effect linear in electric field is also observed for the first time in lanthanum manganites. The volume and the film-substrate interface make separate contributions to the mechanism of breaking the inversion. The EMO effect is considered as an effective tool for investigations of granular materials in addition to modern nonlinear optical methods.