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Optical Anisotropy of Iron Garnets With Growing Anisotropy

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Abstract: The theoretical analysis of the position of principal diachronic directions at magnetization rotation in (100) and (110) planes for the case of growing dichroism axes in random directions was made. The calculations of angular dependencies of dichroic axes (DA) position for different values of the magneto-optical anisotropy parameter, a , have been done. The relations between the growing and magneto-optical dichroism, K/M , and the angle δ characterizing the direction of principal growing dichroism axes were given. The angular dependences of DA position in epitaxial iron garnet films have been investigated experimentally. The measurements at the different light wavelengths permitted one to vary extensively the a and K/M parameters and to show that the experimental dependences are described successfully by the expressions obtained.

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