

Birefringence of Magnetic Fluid Thin Film Induced by Lateral Magnetic Field

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Abstract. The first result of the investigation of the effect of magnetic field on the birefringence of a magnetic fluid thin layer is presented in the paper. Two samples of thicknesses 250 μm and 530 μm are placed between two crossed plane polarizers and illuminated with white light. A current-fed solenoid is used for generating the lateral magnetic field and a change of intensity of light that passed through the sample and crossed polarizers is observed. The spectral dependence of light intensity transmitted through the sample is measured as a function of magnetic flux density.