# EFFECTS OF UV RADIATION ON HELICAL TWISTING IN CHOLESTERIC SYSTEMS CONTAINING PHOTOSENSITIVE AZOXY NEMATICS

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S u m m a r y

For cholesteric liquid crystal systems containing photosensitive nematic ZhK-440 and a mixture of cholesterol derivatives, the changes in helical twisting induced by UV radiation are studied. The UV-induced shift of the selective reflection maximum $\lambda_{\max}$ is shown to depend on the concentration of the nematic component. For low concentrations of ZhK-440, $\lambda_{\max}$ increases, which correlates with the corresponding temperature-induced changes. For higher azoxy nematic concentrations, $\lambda_{\max}$ decreases, regardless of the temperature behavior of the system. To explain the experimental data, a theoretical description is proposed on the basis of the development of molecular models of helical twisting. Good agreement was obtained between calculated and measured values of the UV-induced shift as a function of the azoxy nematic concentration, with two extrema and an inversion point. The extra twisting arises from the cholesteric mesophase-induced orientation of short molecular axes of *cis*-isomers formed as a result of irradiation.