

**ELECTRICALLY AND MAGNETICALLY CONTROLLED BIREFRINGENCE
OF OPTICAL ACTIVE LIQUID CRYSTALS**

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Abstract: *In this paper, we propose a general method to calculate the dependence of optical birefringence of liquid crystals on external electric or magnetic field. Our method, based on a transmission experimental technique, may be used for optical inactive as well as optical active media. Using this method, we have computed the birefringence of a LC mixture, with planar alignment, as function of the magnetic field. The LC mixture was investigated under polar Faraday configuration. This method may be also adjusted in order to investigate homeotropically aligned LC samples.*