

## **Investigation of the influence of voltage, applied to the semiconductor substrate of liquid crystal cell, on the birefringence**

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The investigation results of the influence of longitudinal voltage, applied along the semiconductor substrate of the planar-oriented liquid crystal cell, on the birefringence of nematic liquid crystal (NLC) are given.

On the basis of experimental results it is shown that at the fixed value of transverse field the application of longitudinal voltage gives additional possibility for control of the electro-optically induced phase delay of radiation, passing through NLC. The dependence of phase delay on control voltages is obtained. The results of simulation of the longitudinal voltage influence on the NLC reorientation process are given.

The obtained results can be used for development and creation of liquid-crystal phase modulators.