

## **Fast response TN switch – numerical analysis of transmission function**

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In this work the fast response TN switch was analyzed. Such a switch is based on TN structure but his thickness must be very low, less then 2  $\mu\text{m}$ . Because of thickness of liquid crystal layer is such low, the interference phenomena and exact profile function should be taken into account to proper calculations of light propagation through such a structure. In our work the analysis of light propagation through such switch was done. This analysis was done for different polarizing films and for chosen set of director profile functions. In the other words, the transmission coefficients for particularly points of the switching process for given polarizing film were obtained.

To do such an analysis the computer program worked out in our Institute was used. This program makes it possible to obtain the transmission coefficient for any wavelength taking into account real director profile function in a liquid crystal layer and interference phenomena occurring there.

As a results the sets of transmission coefficients of such a switch, calculated for given set of director profile function were obtained. Even set was obtained for given properties of used polarizers. Obtained results show the influence of polarizing films on dynamic characteristic of such a switch.