

THRESHOLD SPATIALLY  
PERIODIC REORIENTATION  
OF THE DIRECTOR IN THE PLANAR  
CELL OF A NEMATIC LIQUID CRYSTAL

*M.F. Ledney, I.P. Pinkevich<sup>1</sup>*

Taras Shevchenko Kyiv National University,  
Faculty of Physics  
(2, build. 1, Academician Glushkov Ave., Kyiv 03127,  
Ukraine; e-mail: ledney@univ.kiev.ua),

<sup>1</sup>School of Physics, University of New South Wales  
(Sydney 2052, Australia;  
e-mail: pinkevyc@phys.unsw.edu.au)

S u m m a r y

The influence of both the director anchoring energy at the surface of a nematic liquid crystal (NLC) planar cell and the ratio  $r$  between the Frank elastic constants on the threshold and the period of the spatially periodic (SP) reorientation of the director in an external dc electric field applied in parallel to the cell surface has been considered. The threshold value of the electric field and the spatial period of the director reorientation as functions of the polar and azimuthal anchoring energies and  $r$  have been calculated numerically. The range of  $r$ -values, where the SP reorientation of the director is possible, has been shown to broaden if the polar anchoring energy decreases and to narrow if the azimuthal anchoring energy decreases.