

PREPARATION AND PROPERTIES  
OF A FERROMAGNETIC NEMATIC SUSPENSION

*O. Buluy, E. Ouskova, Yu. Reznikov, P. Litvin*<sup>1</sup>

Institute of Physics, Nat. Acad. Sci. of Ukraine  
(46, Nauky Prosp., Kyiv 03028, Ukraine),

<sup>1</sup>Institute of Semiconductor Physics,

Nat. Acad. Sci. of Ukraine

(41, Nauky Prosp., Kyiv 03028, Ukraine)

S u m m a r y

A stable ferromagnetic suspension based on a nematic liquid crystal (LC) doped with nano-particles of ferric oxide is obtained for the first time. In the outward appearance, the suspension does not differ from a pure LC. Using AFM spectroscopy, the size of nano-particles is determined, and their concentration in the matrix is estimated. The basic characteristics of the suspension such as the phase transition temperature (nematic-isotrope), LC director pretilt angle on the orienting surface, and azimuthal anchoring energy are determined. A high sensitivity of the suspension to a magnetic field makes it promising for applications in the devices for information storage and display.