Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Dielectric and Optical Properties of Nematic ODBP-Ph-C7[1]
BOHDAN SENYUK, HUGH WONDERLY, SERGII SHIYANOVSKII, OLEG LAVRENTOVICH, Liquid Crystal Institute and Chemical Physics Interdisciplinary Program, Kent State University, VICTOR PERGAMENSHCHIK, Display and Semiconductor Physics, Korea University, Kangwon 339-700, South Korea; Institute of Physics, Prospect Nauky 46, Kyiv 03039, Ukraine — Thermotropic biaxial nematic liquid crystals are promising for application in fast switching electro-optical devices.[1] In the present work, we study the optical and dielectric properties of the nematic phase of thermotropic LC material 4,4'(1,3,4oxadiazole2,5diyl) di*p*-heptylbenzoate (ODBP-Ph-C7) with boomerang-like molecules, reported to exhibit the biaxial nematic phase[2]. We study ODBP-Ph C7 in well-aligned "monocrystalline" states. The experiments show unusual optical and dielectric properties of the material, such as high dielectric permittivity and dielectric relaxation time that increases with temperature. We also analyze defect structures formed by ODBP-Ph- C7 in different geometries of confinement and boundary conditions. [1]G. R. Luckhurst, Thin Solid Films **393**, 40 (2001); [2] B. R. Acharya, A. Primak, T.J. Dingemans, E.T. Samulski and S. Kumar, Pramana J.Phys. **61**, 231 (2003).

[1]Supported by NSF Grant DMR-0504516 and DOE grant DE-FG02-06ER 46331.

Oleg Lavrentovich
Liquid Crystal Institute and Chemical Physics
Interdisciplinary Program, Kent State University

Date submitted: 26 Nov 2008 Electronic form version 1.4