

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Fluctuation Modes of a Bent-Core Nematic Liquid Crystal¹ MADHABI MAJUMDAR, S. CHAKRABORTY, B. SENYUK, O.D. LAVRENTOVICH, JAMES T. GLEESON, ANTAL JAKLI, SAMUEL SPRUNT, Kent State University — We present a dynamic light scattering study of the bent-core nematic liquid crystal compound *DT6Py6E6*. We utilize a “dark” scattering geometry, which allows us to search for fluctuation modes that are not purely associated with the uniaxial director. Indeed, we observe two modes (hydrodynamic and non-hydrodynamic) in addition to the expected twist-bend director mode. We present a model for the additional modes based on fluctuations of the biaxial order parameter, which leads to an estimate of 10-100 nm for the correlation length associated with these fluctuations.

¹Acknowledgement: DOE DE-SC0001412 and NSF DMR-0606160.

Madhabi Majumdar
Kent State University

Date submitted: 20 Dec 2010

Electronic form version 1.4