Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Interactions in the NOBOW and 8CB Mixtures[1] DONG CHEN, CHENHUI ZHU, NOEL CLARK, Department of Physics, University of Colorado, Boulder — Mixtures of a bent-core mesogen (NOBOW) and a calamitic mesogen (8CB) are studied using X-ray diffraction (XRD), polarized light microscopy and freeze fracture electron microscopy (FFEM). XRD shows that as the 8CB concentration increases, the transition temperature of Iso-B4 decreases and the correlation length of NOBOW B4 decreases while the correlation length of 8CB SmA increases. Polarized light microscopy reveals that the mixtures have larger chiral domains than pure NOBOW and when the phase of 8CB changes to SmA, they show the same boundary as the chiral domains. FFEM images show more details on the structure of the mixtures. Along with the experiments, we will present theoretical studies on the interactions in the NOBOW and 8CB mixtures.

[1]This work is supported by NSF MRSEC Grant DMR-0213918

Noel Clark
Department of Physics, University of Colorado, Boulder

Date submitted: 27 Nov 2007 Electronic form version 1.4