Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Magnetic field-induced suppression of the amorphous Blue Phase[1] PAVAN CHALLA, SAMUEL SPRUNT, Department of Physics, Kent State University, ANTAL JAKLI, Liquid Crystal Institute, Kent State University, JAMES GLEESON, Department of Physics, Kent State University — We present magneto-optical measurements on two liquid crystals that exhibit a wide temperature-range amorphous blue phase (BPIII). Magnetic fields up to 25T are found to suppress the onset of BPIII in both materials by almost 1 °C. This effect appears to increase non-linearly with the field strength. The effect of high fields on established BPIII's is also reported, in which we find significant hysteresis and very slow dynamics. Possible explanations of these results are discussed.

[1]The authors acknowledge support from the NSF under Grants No. DMR-0964765 and 1307674. This work utilized the facilities of the NHMFL, which is supported by NSF cooperative agreement No. DMR-0084173, the State of Florida, and the US Department of Energy.

Antal Jakli
Kent State University

Date submitted: 15 Nov 2013 Electronic form version 1.4