

Abstract Submitted
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Magnetic-field induced isotropic to nematic liquid crystal phase transition J.T. GLEESON, T.B. OSTAPENKO, Kent State University, D. B. WIANT, Wake Forest University, S.N. SPRUNT, A. JAKLI, Kent State University — We report on measurements of magnetic field induced nematic order in the bent-core liquid crystal 4-chlororesorcinol bis[4- (4-n-dodecyloxybenzoyloxy) benzoate]. Using the 31 Tesla solenoid at the National High Magnetic Field Laboratory, we have observed, at temperatures less than one degree above the clearing point, a first-order transition to the nematic phase. The critical magnetic field at which this occurs increases with temperature. We discuss these results within the context of both Maier-Saupe and Landau-deGennes mean field models for the nematic-isotropic transition. The implications of possible tetrahedric order are also discussed. To our knowledge, this is the first observation of such a magnetic field-induced transition in a thermotropic liquid crystal; the reasons for which this behavior is now attainable are discussed.

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