Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Construction of Chiral Propeller Architectures from Achiral Molecules KWANG-UN JEONG, DENG-KE YANG, MATTHEW J. GRAHAM, BRIAN S. KNAPP, FRANK W. HARRIS, STEPHEN Z.D. CHENG, Maurice Morton Institute and Department of Polymer Science, The University of Akron, Akron, Ohio 44325 , LIQUID CRYSTAL INSTITUTE, KENT STATE UNIVERSITY, KENT, OHIO 44242 COLLABORATION — Achiral BPCA-Cn-PmOHs construct chiral propeller structures in an N phase. The origin of chiral N phases in these achiral molecules comes from the twisted conformation of head-to-head dimers, indicating that neither molecular chirality, nor molecular bends, nor molecular tilting is necessary to form a chiral phase. The Frank-Pryce spherulitic N droplets and finger-print textures result from the single-twisting of chiral conformers, while the first-time observed propeller-patterned chiral N droplets are attributed to the double-twisting of chiral conformers in the N phase.

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Date submitted: 14 Nov 2006 Electronic form version 1.4