

MAR05-2004-000826

Abstract for an Invited Paper
for the MAR05 Meeting of
the American Physical Society

Tetrahedral Order in Banana Liquid Crystals¹

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Bent-core liquid crystal molecules can exhibit phases that require a third-rank symmetric-traceless tensor order parameter, as well as a vector order parameter and the usual second-rank nematic order parameter. The combination gives rise to a rich variety of spatially homogeneous phases ranging from the well-known nematic to novel tetrahedratic and chiral liquids. I discuss experimental signatures of these phases and phase transitions between them.

L. Radzihovsky and T.C. Lubensky, *Europhys. Lett.*54, 206 (2001); *Phys. Rev.E* 66, 031704 (2002).

¹supported by the NSF and Packard Foundation