

Abstract Submitted
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Broadening the Smectic C* Sub-Phases by Chiral and Achiral Doping J. KIRCHHOFF, L.S. HIRST, Florida State University — Materials exhibiting the liquid crystal smectic (Sm) C* sub-phases have been a topic of great interest for several years and recent work has shown that by mixing chiral and achiral dopants with these materials it is possible to broaden the SmC* subphases significantly, in particular, the intermediate phases (ferrielectric) which typically have a very narrow temp. range [1]. Mixtures of smectics with chiral or achiral dopants were studied to investigate phase stability in the SmC* sub-phases. As dopant conc. is increased, both phase width and the temp. range over which the transition occurs is broadened. These effects have been measured via calorimetry (DSC), and optical microscopy. Electro-optical characteristics of mixtures as a function of dopant conc. were also studied to investigate the effects of phase and transition broadening on material properties as it is not yet clear what role the addition of chiral dopants will play. By controlling phase widths, we hope to expand the possibilities, through carefully formulated mixtures, of generating commercially interesting materials in these phases.

[1] S. Jaradat et al. J. MATER. CHEM. **16**, 3753, (2006)

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