

Abstract Submitted
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Landau potential of polymer stabilized ferroelectric liquid crystals PAUL ARCHER, INGO DIERKING, The University of Manchester — Polymer stabilized liquid crystals (PSLC) [1] consist of a relatively low concentration of a photo-polymerized monomer (typically less than 10%wt) which is phase separated from the continuous liquid crystal medium. For the case of a polymer stabilized ferroelectric liquid crystal, photo-polymerized in the SmA* phase, the network forms parallel to the smectic layer normal. This results in an elastic coupling between the polymer network and the liquid crystal which alters the characteristics of the SmA* to SmC* phase transition. The generalized model of ferroelectric liquid crystals has been modified to encompass this additional interaction through a polymer coupling coefficient. Analysis of experimental tilt angle and polarization data allows the determination of the polymer coupling coefficient and hence the full Landau potential. Results will be shown and discussed for varying polymer concentration.

[1] I. Dierking, *Adv. Mater.* **12**, 167 (2000)

Paul Archer
The University of Manchester

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