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Effect of an external field on nematic order in semiflexible polymers JUTTA LUETTMER-STRATHMANN, KIRAN KHANAL, Departments of Physics and Chemistry, University of Akron — Semiflexible polymers of sufficient stiffness exhibit liquid crystalline order at sufficient polymer concentrations. In this work, we investigate blends of flexible and semiflexible polymers under a uniform external field with the aid of Monte Carlo simulations of a bond-fluctuation model. The model is an extension of Shaffer's bond-fluctuation model, where chain stiffness is controlled by including different forms of bending penalties, and includes attractive interactions between monomers. From simulations for a range of values of the bending energy, density, and temperature, we determine the effect of an external field on liquid crystalline order and domain formation.

Jutta Luettmer-Strathmann
University of Akron

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