

Abstract Submitted
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Self-Generated Fields and Morphogenesis in Polymer Crystallization JEROLD SCHULTZ, University of Delaware — Thermal, compositional and stress fields are created during the crystallization of polymers from the melt. The roles of the thermal and compositional fields are dictated by their Peclet number for crystallization: $Pe = \Lambda V/D$, where Λ is a characteristic length for the process, V is the velocity of the crystallization front, and D is the mass or thermal diffusivity. Pe is a measure of the ratio of the distance a molecule *must* move in the process to the distance it *can* move. If Pe is significantly greater than 1, the growth interface must restructure itself, to lower the Peclet number toward unity. Reviewed in this talk are numerical and analytical studies of the effects of compositional fields on morphological development during spherulite growth and the effect of thermal fields during high-speed spinning.

Jerold Schultz
University of Delaware

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