

Abstract Submitted
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Dynamical simulation of disordered micelles in a diblock copolymer melt with fluctuations RUSSELL SPENCER, ROBERT WICKHAM, University of Guelph — By including composition fluctuations in our dynamical simulation of the time-dependent Landau-Brazovskii model for a diblock copolymer melt, we find that disordered micelles form above the order-disorder transition to a BCC phase. At high-temperatures, the micelle number density is effectively zero, and the melt is disordered at the molecular level. As we lower the temperature, the micelle number density increases gradually and approaches the number density in the BCC phase. If we increase the strength of the fluctuations, the temperature range over which disordered micelles exist broadens, and the onset of BCC order is suppressed. We examine the dynamics of crystallization of disordered micelles into the BCC phase. By tracking trajectories, we also investigate the dynamical behaviour of individual micelles in an environment of disordered micelles.

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