



## UNDERSTANDING THE RHEOLOGY OF DYNAMICALLY ASYMMETRIC POLYMER BLENDS DURING PHASE SEPARATION

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Phase separation in polymer blends is an important process to control the morphology and structures of polymeric materials. A lot of efforts have been paid to understand the mechanism and the kinetics of phase separation using the methods such as optical microscopy, light scattering and rheology. Among all the methods, rheology has been found to be sensitive to early stage of phase separation especially in blends with dynamical asymmetry. Although different criteria have been suggested to determine the phase diagram, the theoretical foundation has never been well established. In this work, we take use of recently suggested constitutive model for polymer blends together with the rheological model of miscible polymer blends to know the rheological behaviors during phase separation. The relationship between the concentration fluctuation, morphology evolution and the rheological properties can be obtained by integrating the phase field simulation on phase separation with the constitutive models.