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**Shear-Induced Phase Transitions in Ternary Polymer Blends**

VENKAT GANESAN, BHARAD NARAYANAN, The University of Texas at Austin — We present a theoretical study of flow-induced phase transitions in the microemulsion phases of ternary polymer blends. The results match qualitatively with recent experimental observations, and suggests that flow transforms the microemulsion phases into distinct lamellar phases at strong shears followed by a macrophase separation of the homopolymers at even stronger shear flows. These transitions are also accompanied by a strong shear-thinning behavior in the rheological response. The results suggest significant differences between ternary polymeric systems and oil-water- surfactant systems, which we rationalize from a molecular viewpoint.

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