

Abstract Submitted  
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**Characterization of the Early Stages of Phase Separation in PS/PVME Blends Using Fluorescence** ANNIKA KRIISA, SUNG PARK, CONNIE ROTH, Dept of Physics, Emory University — Controlling the early stages of phase separation in polymer blends provides a potentially easy route towards obtaining interconnected nanostructured domains. We present results of thermally induced phase separation in polystyrene (PS) / poly(vinylmethylether) (PVME) blends using different fluorophores covalently attached to the PS component. Fluorescence identifies the phase separation temperature  $T_c$  at earlier stages than the more traditional method of light scattering. At  $T_c$ , a large increase in fluorescence intensity is observed due to a strong reduction in the fluorescence quenching caused by the intimate presence of the more polar PVME component. We discuss the spectral red shifts of pyrene associated with the dissolution of the weak hydrogen bonding in this blend and the change in polarity of the local environment during phase separation.

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