

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

The Glass Transition and Dynamics in Athermal Poly(α -Methyl Styrene)/Oligomer Blends WEI ZHENG, SINDEE SIMON, Texas Tech University — The glass transition and dynamics in athermal blends of poly(α -methyl styrene) (PaMS) and its short chain oligomers are investigated using differential scanning calorimetry (DSC). A methodology is described to partition the calorimetric transition in order to obtain effective Tgs for each component of the blend. The dependences of these effective Tgs on overall blend composition are described by the Lodge-McLeish model although the self-concentration effect is less than expected based on the Kuhn length. The kinetics associated with the glass temperature, T_g , are examined by studying the cooling rate dependence of T_g for the pure components and the blends, as well as by examining the enthalpy overshoots in the heating DSC scans. Extension of Colmenero's model to describe the dynamics in these materials will be discussed.

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Date submitted: 15 Dec 2007

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