Abstract Submitted
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Glass transition temperatures as a function of composition in binary systems: Poly(ethylene oxide) + epoxy system VINCENT PARIS, WITOLD BROSTOW, University of North Texas, IOANNIS KALOGERAS, AGLAIA (LILA) VASSILKOU-DOVA, University of Athens, LAPOM-PHYSATHENS TEAM — The glass transition temperatures (T_g) of PEO + epoxy resin blends in the full concentration range were analyzed. They were obtained by differential scanning calorimetry (DSC) and thermally stimulated current (TSC) depolarization. We have focused on the deviation from a linear relationship defined as $\Delta T_g = T_g - X_A T_{g,A} - X_B T_{g,B}$, where T_g is the glass transition temperature of the blend, X_i is the weight fraction of i component in the blend, while $T_{g,i}$ is the glass transition temperature of the i component. A new equation for the Tg as a function of concentration was developed, based on an analysis of ΔT_g. The results predicted with the new equation are better than those from the earlier T_g equations, such as the Kwei equation, the Gordon-Taylor equation, and the Fox equation.

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