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**Effect of Chain Architecture on the Physical Aging of Thin Polymer Filims** BRADLEY FRIEBERG, EMMANOUIL GLYNOS, PETER GREEN, University of Michigan — Physical aging, glassy structural relaxations, is an important phenomenon that has an important influence on a range of physical properties, such as optical, mechanical and electrical, of polymeric materials properties. When a polymeric material is cooled below its glass transition temperature (Tg) it resides in a non-equilibrium state, and over time it attempts to return to equilibrium via a structural relaxation process. We have previously demonstrated that chain architecture can influence the Tg in supported thin films. Specifically, star-shaped molecules possessing sufficiently high functionality (f) and low molecular weight of the arm (Mw), exhibit significant differences in vitrification trends from their linear analogs. In this presentation we show that when f is sufficiently high, or Mw is sufficiently low, the physical aging rate is suppressed compared to linear chains. Moreover, the aging rates of thin, supported films of star shaped molecules are strongly thickness dependent.

Bradley Frieberg
University of Michigan

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