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The Glass Transition and Kinetics in Stacked Polystyrene Ultrathin Films YUNG P. KOH, SINDEE L. SIMON, Texas Tech University —
The effect of nanoconfinement on glass transition phenomena is still not fully understood in spite of extensive work by the scientific community. Results depend on measurement method and sample preparation method, as well as on the type of confinement and on the glass-forming material. In this study, polystyrene of high molecular weight is constrained in stacked ultrathin film samples. Differential scanning calorimetry is used to examine the cooling rate dependence of T_g , the timescale for diffusion, and the kinetics of aging (structural recovery) as a function of film thickness and sample preparation method. Results are compared to those in the literature.

Yung P. Koh
Texas Tech University

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