

Abstract Submitted
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**Effect of Confinement on Glass Transition Behavior in Polymeric
Nanotubes and Nanorods: Comparison of DSC and Fluorescence Mea-
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The effects of nanoscale confinement on the glass transition temperature, T_g , and related behavior are studied in polystyrene nanotubes and nanorods made using anodized aluminum oxide templates. Tube thickness as small as 19 nm has been achieved by melt infiltration methods. Substantial T_g reductions are observed with both DSC and fluorescence measurements of nanotubes supported by the templates, with confinement effects being comparable in magnitude to those obtained via ellipsometry and fluorescence for supported polymer films. Free-standing nanotubes can also be characterized by DSC, yielding much larger T_g reductions than observed in supported nanotubes. Effects of confinement on fragility and physical aging in the supported polystyrene nanotubes and nanorods will also be discussed.

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