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Viscoelastic behavior of polymer in confined system GUIDUK YU, BONG SEOCK KIM, JUNGWOOK KIM, KYUSOON SHIN, Department of Chemical and Biological Engineering, Seoul National University — Materials under nanoconfinement have been studied to exhibit interesting static and dynamic behaviors deviated from those in bulk state. In this study, we analyzed viscoelastic behavior of polymer confined to mesoscopic space. Polystyrene was adopted as the material to be probed, and anodized alumina was used as the substrates providing mesoscopic confinement. Controlling the confining conditions, the viscoelastic behavior of polystyrene was examined. Analyzing the surface tensions of the materials, we also considered the effect of interfacial tension on the thermodynamic stability of polymer in the confined geometry. In this presentation, we qualitatively explain the effects of confinement dimension and interface in comparison with that not in confined system.

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