

Abstract Submitted
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Properties of Thermo Responsive Polymer Particles KATHLEEN ANDERSON, BRIAN SIMPSON, KYRIAKI KALAITZIDOU, Georgia Institute of Technology — The formation of thermally responsive polymer particles is done by utilizing the strain of two dissimilar materials at the interface of a bilayer. The inherent strain forces the bilayer to curl into a scroll configuration. When these scrolls are triggered by use of heat, the geometry changes and there are abrupt changes in their properties. The viscosity of solutions containing the scrolls is measured as a function of temperature in the range of 25°C to 120°C using a spindle and cup viscometer. It is found that although the viscosity of the silicone oil solvent decreases with temperature, there is a “hump” in the viscosity upon addition of scrolls. The viscosity increase is due to the geometry change associated with the opening of the scrolls. The geometry changes are also reflected in the electrical conductivity and the optical properties of the scroll solutions.

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