

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Rheology and Relaxation Timescales of ABA Triblock Polymer Gels** ANDREW PETERS, TIMOTHY LODGE, Univ of Minn - Minneapolis — When dissolved in a midblock selective solvent, ABA polymers form gels composed of aggregated end block micelles bridged by the midblocks. While much effort has been devoted to the study of the structure of these systems, the dynamics of these systems has received less attention. We examine the underlying mechanism of shear relaxation of ABA triblock polymer gels, especially as a function of chain length, composition, and concentration. Recent work using time-resolved small-angle neutron scattering of polystyrene (PS)-block-poly(ethylene-alt-propylene) (PEP) in squalane has elucidated many aspects of the dynamics of diblock chain exchange. By using rheology to study bulk relaxation phenomena of the triblock equivalent, PS-PEP-PS, we apply the knowledge gained from the chain exchange studies to bridge the gap between the molecular and macroscopic relaxation phenomena in PS-PEP-PS triblock gels.

Andrew Peters  
Univ of Minn - Minneapolis

Date submitted: 05 Nov 2015

Electronic form version 1.4