

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Dynamics of Main Chain Liquid Crystalline Polysiloxanes Containing *p*-Phenyleneterephthalate Mesogens¹ KEVIN MASSER, Penn State University, HARSHAD PATIL, RONALD HEDDEN, Texas Tech University, JAMES RUNT, Penn State University — The dynamics of three main-chain liquid crystalline polysiloxanes were investigated using broadband dielectric relaxation spectroscopy. The liquid crystalline polymers (LCP) differ regarding the substituents on the rigid mesogens, and the nature of the substituents is found to influence the relaxation behavior. Within the temperature and frequency range examined, five relaxations are observed; two glassy state processes are associated with motions of the spacer segments (γ relaxation) and the substituted phenyl rings (β relaxation). The segmental (α) relaxation time changes with the nature of the mesogen substituent. A relaxation assigned to interfacial polarization between domain boundaries was observed, which disappears at the LCPs clearing temperature.

¹Supported by the NSF Polymers Program.

Kevin Masser

Date submitted: 17 Nov 2009

Electronic form version 1.4