

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Structural Recovery of Epoxy Films Subjected to CO₂ Pressure Jumps SHANKAR KOLLENGODU-SUBRAMANIAN, Texas Tech University, MATAZ ALCOUTLABI, University of Utah, LAMECK BANDA, The Dow Chemical Company, GREGORY MCKENNA, Texas Tech University — This group has previously investigated the impact of structural recovery and physical aging on thermodynamic and mechanical properties of polymers after temperature jumps and compared with plasticizer jumps [1]. Increasing plasticizer content depresses the glass transition temperature (T_g) in glassy polymers and this results in changes in the mechanical, optical and dielectric properties. Plasticizer jumps using a strong polar molecule have been previously studied by our group and have shown qualitatively similar behavior to temperature jump experiments [2]. In the current work, we report the results on plasticization effects using a weakly polar molecule (CO₂) on the structural recovery of glassy polymers after plasticization jumps and compare the behavior with temperature formed glasses.

[1] Banda, L., Alcoutlabi, M., and McKenna, G.B, *J. Polym. Sci. Part B: Polym. Phys.*, **44**, 801-814, 2006

[2] Zheng Y, and McKenna, G.B., *Macromolecules*, **36**, 2387-2396, 2003

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Date submitted: 29 Nov 2007

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