

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Volume Recovery of Polymeric Glasses N. SAKIB, S.L. SIMON,
Texas Tech University — Following the seminal work of Kovacs, capillary dilatometry has been used for the last fifty years to study volume recovery of polymeric glass formers. Our capillary dilatometer, which previously used a Linear Variable Differential Transducer (LVDT) to measure the height of the Hg column in the capillary, has been modified following the work of Richert. The current study demonstrates the use of a capacitance bridge as the transducer. A metallic layer of silver sputtered on the exterior of the dilatometer serves as the outer electrode, mercury (the confining fluid) serves as the inner electrode, and the glass in between serves as the dielectric of the capacitor. The Andeen-Hagerling 2550A 1kHz ultraprecision capacitance bridge is used for the measurements. Volume recovery of various glass formers will be used to test the new design; new measurements are planned to test models of structural recovery.

Nazam Sakib
Texas Tech University

Date submitted: 14 Nov 2014

Electronic form version 1.4