

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

In-situ characterization of vapor-deposited glasses of toluene by differential AC chip nanocalorimetry MATHIAS AHRENBURG, University of Rostock, KATIE WHITAKER, University of Wisconsin-Madison, HEIKO HUTH, University of Rostock, MARK D. EDIGER, University of Wisconsin-Madison, CHRISTOPH SCHICK, University of Rostock, UNIVERSITY OF ROSTOCK TEAM, UNIVERSITY OF WISCONSIN-MADISON TEAM — We use ac nanocalorimetry to investigate extraordinarily stable glasses of toluene prepared by vapor deposition. For that purpose we've built a vapor deposition chamber that allows in-situ characterization of vapor-deposited organic glasses down to liquid nitrogen temperature. With highly sensitive nanocalorimeters in a differential setup, we are able to measure ng-samples over a frequency range from 0.1 Hz up to 8 kHz. The device was used to investigate the transformation of as-deposited stable toluene glasses into ordinary glasses. For films about 100 nm thick, the transformation was studied as a function of time at constant temperature above the common glass transition and as function of temperature at constant heating rate. The stability of the thin films was investigated as a function of substrate temperature and deposition rate.

Mathias Ahrenberg
University of Rostock

Date submitted: 18 Nov 2010

Electronic form version 1.4