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Calorimetric investigations of ultrathin film of poly-vinylacetate under controlled humidity HEIKO HUTH, CHRISTOPH SCHICK, University of Rostock, Institute for physics, 18051 Rostock, Germany — The film thickness dependency of glass transition in polymer films is still controversially discussed. For different experimental probes different dependencies are observed and a generally accepted link to molecular mobility is not yet established. AC-chip calorimetry is used as a very sensitive tool for calorimetric investigations of such thin films as demonstrated for thin polymeric films in a wide frequency range [1]. In several cases a direct comparison with results from other dynamic methods like dielectric spectroscopy is possible giving further insights. There is also an increasing interest in thin films from a technological point of view. As these applications often include the presence of water the controlled humidity is used as a new parameter in addition to temperature for calorimetry. As a first example thin films of polyvinylacetate are measured where a large influence of humidity on the glass transition is known from literature.

[1] Huth, H., Minakov, A. A., Schick, C., J. Polym. Sci. B Polym. Phys. 2006 44: 2996.

Heiko Huth
University of Rostock, Institute for physics, 18051 Rostock, Germany

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