

Abstract Submitted
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Dynamics of thin liquid polystyrene films¹ HYUNJUNG KIM, YOUNG JOO LEE, HEEJU LEE, Dept. of Physics and Program of Integrated Biotechnology, Sogang Univ., Korea, ZHANG JIANG, S. K. SINHA, Dept. of Physics, UC San Diego and LANSCE , XUESONG JIAO, L. B. LURIO, Dept. of Physics, Northern Illinois Univ., A. RUEHM, Metallforschung, MPI, Germany, K. SHIN, Dept. of Materials Science and Engineering, GIST, Korea, C. LI, M. RAFAILOVICH, Dept. of Materials Science and Engineering, SUNY Stony Brook — We have applied x-ray photon correlation spectroscopy (XPCS) to study the dynamics of surface fluctuations in thin supported polystyrene films. Film thicknesses, ranging from four times the radius of gyration (R_g) to two times R_g , were used in this study. We found different behaviors in the relaxation times as a function of wave vector with different molecular weight. The observed behavior shows a deviation from the conventional capillary wave predictions. The analysis will be discussed in terms of surface tension, viscosity and effective interactions with the substrate.

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