

Abstract Submitted  
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**Diffuse scattering study of the elastic effect on thin polystyrene films at melt**<sup>1</sup> YOUNGSUK BYUN, DAEYONG EOM, YOUNG-JOO LEE, HEEJU LEE, SANGHOON SONG, HYUNJUNG KIM, Dept. of Physics & Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, ZHANG JIANG, S.K. SINHA, Dept. of Physics, Univ. of California San Diego — We have measured x-ray diffuse scattering of thin polystyrene films at melt. We carried out the measurements with varying thicknesses and molecular weights as a function of temperature. We observed a deviation from conventional capillary wave theory for viscous liquids when the film thickness is close to the radius of the polymer. We shall discuss the deviation and modification of liquid theory with the model considering elastic effect.

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