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Melting Point Measurement of Polycaprolactone Thin Films<sup>1</sup> CLIVE LI, SUNY at Stony Brook, VICTOR WANG, Great Neck South High School, JONATHAN SOKOLOV, SUNY at Stony Brook, MIRIAM RAFAILOVICH, SUNY at Stony Brook, GARCIA TEAM, GREAT NECK SOUTH HIGH SCHOOL COL-LABORATION — We investigated the melting point of Polycaprolactone (PCL) thin films as a function of film thickness by using three different techniques, namely, Shear Modulation Force Microscopy (SMFM) technique, Atomic Force Microscopy (AFM) topographic technique, and optical birefringence technique which consisted of laser, polarizers, photoelasitc modulator (PEM), and a lock- in amplifier. The optical and the AFM topography results show PCL to behave similarly for film thicknesses of 215.8 and 37.0 nm, both melting around 331 - 335 K. However, the SMFM show an approximate 8 K decrease in melting point, suggesting that the polymer may get softer at this lower temperature before it changes in structure for 37.0 nm PCL films. Possible explanations for the differences are discussed.

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Clive Li SUNY at Stony Brook

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