

Abstract Submitted
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Spectroscopic Observation of Fluid Molecular Alignment in a Molecularly-Thin Confined Geometry MINSU KIM, SHAN JIANG, SUNG CHUL BAE, STEVE GRANICK, Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign — For the first time, we present data of molecular alignment of a linear chain (1,3-dicyanopropane) under confinement. Confinement was produced between two mica surfaces within a surface forces apparatus (SFA) and measurements employed confocal Raman spectroscopy. We focused on the CH₂ symmetric stretch vibrations and CN triple bond stretch vibrations. A polar plot of Raman band intensity as a function of incident light polarization allows us to determine the orientation and order parameter of alignment. It is confirmed that alignment can be achieved in molecularly-thin films. The decrease of alignment as the film thickness increases will be mentioned. Also, the effect of shear on molecular alignment will be discussed.

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