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Structure of Confined Fluid between an Elastomer and a Flat Surface[1] KUMAR NANJUNDIAH, The University of Akron, ALI DHINOJWALA — The behavior of simple fluids under spatial restrictions is of considerable technological and fundamental interest. Experiments using force measurements have indicated that viscosity of confined fluids is different from that in the bulk. We have studied the confinement of linear alkanes between a poly (dimethyl siloxane) and a sapphire surface using surface sensitive infrared sum frequency generation spectroscopy (SFG). The results indicate ordering of the alkane molecules upon confinement above their bulk melting temperature. The SFG spectra of confined alkanes cooled below the bulk melting temperature shows a structure that is very different from the crystal structure of unconfined alkanes. A simple model will be presented that shows the alkane molecules crystallizing with the chains lying flat next to the sapphire surface.

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