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Topography and Wetting of Dotriacontane Films on Graphite Surfaces[1] MATTHEW SIMPSON, MENGJUN BAI, KLAUS KNORR, HAIDING MO, HASKELL TAUB, U. Mo.-Columbia, STEVEN EHRLICH, Brookhaven Nat. Lab., ULRICH VOLKMANN, P. U. Católica Chile, FLEMMING HANSEN, Tech. U. Denmark — We have used Atomic Force Microscopy (AFM) in the noncontact mode and synchrotron x-ray diffraction to investigate the structure, morphology, and wetting of dotriacontane (n-$C_{32}H_{66}$ or C32) films deposited from a heptane solution onto highly-oriented pyrolytic graphite (HOPG). Consistent with previous neutron diffraction measurements,[2] the x-ray patterns indicate one to two layers immediately adjacent to the HOPG surface in which the molecules are oriented with their long axis parallel to the interface. Above these parallel layers, the AFM images show a partial layer of C32 molecules oriented with their long axis perpendicular to the surface. Upon heating above room temperature, we observe the area occupied by the perpendicular monolayer first to increase and then to decrease. Just above the bulk melting point, the perpendicular monolayer dewets the underlying parallel layers as we have found for C32 films adsorbed on a SiO_2substrate. [2]K. W. Herwig, B. Matthies, and H. Taub, Phys. Rev. Lett. **75**, 3154 (1995).

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