

Abstract Submitted
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Thermal Programmed Desorption of C₃₂H₆₆ M. CISTERNAS, Pontificia Univ. Catolica de Chile, V. DEL CAMPO, Univ. Tecnica Federico Santa Maria, Chile, A.L. CABRERA, U.G. VOLKMANN, Pontificia Univ. Catolica de Chile, F.Y. HANSEN, Technical Univ. Denmark, H. TAUB, Univ. of Missouri-Columbia — Alkanes are of interest as prototypes for more complex molecules and membranes. In this work we study the desorption kinetics of dotriacontane C32 adsorbed on SiO₂/Si substrate. We combine in our instrument High Resolution Ellipsometry (HRE) and Thermal Programmed Desorption (TPD). C32 monolayers were deposited in high vacuum from a Knudsen cell on the substrate, monitoring sample thickness *in situ* with HRE. Film thickness was in the range of up to 100 Å, forming a parallel bilayer and perpendicular C32 layer [1]. The Mass Spectrometer (RGA) of the TPD section was detecting the shift of the desorption peaks at different heating rates applied to the sample. The mass registered with the RGA was AMU 57 for parallel and perpendicular layers, due to the abundance of this mass value in the disintegration process of C32 in the mass spectrometers ionizer. Moreover, the AMU 57 signal does not interfere with other signals coming from residual gases in the vacuum chamber. The desorption energies obtained were $\Delta E_{des}=11,9$ kJ/mol for the perpendicular bilayer and $\Delta E_{des} = 23,5$ kJ/mol for the parallel bilayer.
[1] V. del Campo et al., *Langmuir* **25** (22), 12962 (2009); E. A. Cisternas et al., *J. Chem. Phys.* **131** (11), 114705 (2009).

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