

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Alkane Self Assembling TOMAS CORRALES, MPI-P Mainz, Germany, PIA HOMM, PIERO FERRARI, MARIA JOSE RETAMAL, Pontificia Universidad Catolica de Chile, VALERIA DEL CAMPO, Universidad Tecnica Federico Santa Maria, Chile, ULRICH G. VOLKMANN, Pontificia Universidad Catolica de Chile — Self-assembling of organic molecules has awaken scientific and technological interest. In this work we study the self-assembling process of long chain hydrocarbons, mainly *n*-dotriacontane (*n*-C₃₂H₆₆). We dip-coated C₃₂ monolayers onto silicon wafers covered by their native silicon oxide layer (Si(100)/SiO₂). Our results show that withdrawing speed affects the coverage and morphology of the C₃₂ films. For slow withdrawing speeds, alkanes formed islands with a dragon-fly shape, while for fast withdrawing alkanes assembled in stripes with widths in the order of microns. When we quantified coverage and morphology versus withdrawing speed, we found an inflection, which we associate with a transition between two film deposition kinetics. These transitions have been previously described by de Gennes [1]. For slow withdrawing, film deposition follows the Langmuir-Blodgett process and above a threshold speed, solution on the solid enters a Landau-Levich regime. This work opens the possibility for growing microstructures with nanometric thickness using a very simple method. These organic microstructures could be used as templates or as grids for optical diffraction.

[1] P.G. de Gennes, Colloid & Polymer Sci. 264, 463-465 (1986).

Ulrich G. Volkmann
Pontificia Universidad Catolica de Chile

Date submitted: 23 Dec 2010

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