

**PHASE SEPARATION STUDY IN BINARY SELF-ASSEMBLED  
MONOLAYERS OF ALKYL CHAINS AND CONJUGATED  
MOLECULES CO-ADSORBED ON SI**

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The preparation of active nano-islands into molecular self-assembled monolayers (SAMs) on Si is a key point in molecular electronics. Nevertheless, very few works addressed this subject [1]. In order to control the formation of such nano-domains, we present a study of phase separation between conjugated molecules of short phenyl-alkyltrichlorosilane and octadecyltrichlorosilane co-adsorbed from a liquid phase as a SAM onto Si covered with its natural oxide. The efficiency of phase separation driven by the different molecular interactions (van der Waals, Pi stacking) is studied as a function of the preparation parameters (concentration ratio of the two molecules, temperature,...) combining ellipsometry, contact angle measurements, atomic force microscopy and infrared spectroscopy techniques. Results are compared with the ones obtained using conjugated molecules of penta-fluoro-phenyl-alkylsilanes.

**References:**

[1] F. Fan, C. Maldarelli, A. Couzis, Langmuir **19** (2003) 3254-65.