Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Reactions on surfaces for the creation of stable templates M. MATENA, M. WAHL, M. STOEHR, Univsersity of Basel, Switzerland, T.A. JUNG, Paul-Scherrer-Institute, Switzerland, T.-L. LEE, J. ZEGENHAGEN, ESRF Grenoble, France, T. RIEHM, L.H. GADE, University of Heidelberg, Germany — Molecular assemblies on surfaces can be used as templates that allow the study of host guest interactions and thus provide a starting point for the generation of complex hierarchic structures. An important prerequisite besides the regularity of such structures is their stability. We reported the formation of a molecular network generated by thermal dehydrogenation of a perylene derivative (DPDI) on a Cu(111) surface [1]. By thermal activation, these molecules become autocomplementary H-bond donors/acceptors and form a honeycomb structure. Besides utilizing this network for the incorporation of guest molecules [2], NIXSW (normal incidence x-ray standing wave) experiments were carried out to determine the height of DPDI above the substrate surface before and after the thermal activation. The formation of the network involves a lowering of the height difference between the molecular end groups and the perylene core what is required to enable H-bonding between the molecules. [1] M. Stöhr et al., Angew. Chem. Int. Ed., 44 (2005) 7394; [2] M. Stöhr et al., Small 3 (2007) 1336

Manfred Matena
University of Basel

Date submitted: 21 Nov 2008 Electronic form version 1.4