SELF-ASSEMBLY OF BINARY SUPRAMOLECULAR NETWORKS ON AU(111): GEOMETRY AND ELECTRONIC STATES

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One-dimensional supramolecular structures with strong heterogeneous amine/imide H bonding are self-assembled on Au(111). The 1:1 mixture of linearly shaped naphthalene tetracarboxylic diimide (NTCDI) and 1, 4-di (4, 6-diamino-1, 3, 5-triazin-2-yl) benzene (BDG) gives rise to two-dimensional stacks of binary chains, which can be aligned along monoatomic steps using vicinal surfaces [1]. Here we will present a broad analysis of the different structures by means of STM, photoemission, X-ray absorption, and density-functional theory, thereby providing the atomic scale characterization of the geometries and the electronic states.

References:

[1] M. Ruiz-Osés, N. González-Lakunza, I. Silanes, A. Gourdon, A. Arnau, J. E. Ortega, J. Phys. Chem. B 110, 25573 (2006).