

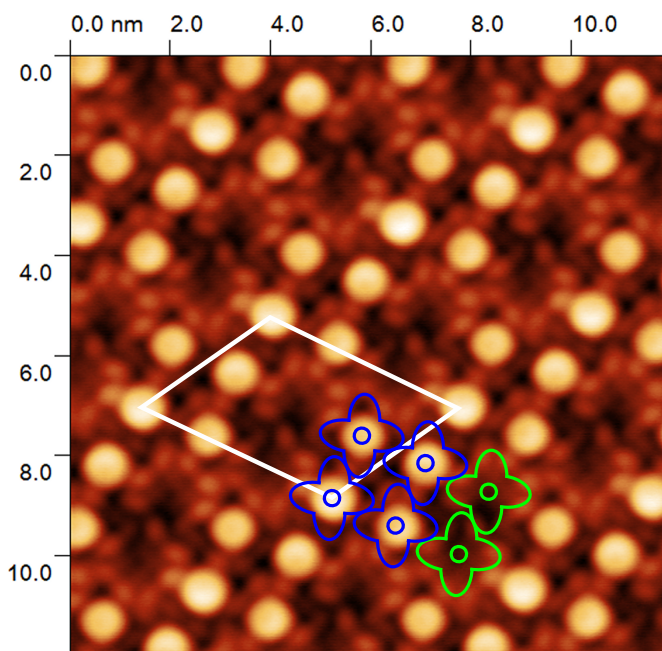
EPITAXIAL ORGANIC THIN FILMS OF LARGE AROMATIC HYDROCARBONS - STRUCTURE AND PHYSICAL PROPERTIES

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A promising alternative to silicon-based electronics has been found in organic molecules for applications such as solar cells or light-emitting diodes. These devices typically consist of multiple layers, and their performance is strongly influenced by the interfaces. Therefore we focus on basic aspects of interface formation between highly ordered molecular films and crystalline surfaces (organic-inorganic heteroepitaxy) as well as between different molecular layers (organic-organic heteroepitaxy).

Structures are characterized with STM and MCP-LEED, and optical differential reflectance spectroscopy (DRS) is applied *in situ* during the actual film growth. We obtain film-thickness-dependent spectroscopic information on the interface formed which allows deep insights into coupling effects below and above monolayer coverage. Some selected examples are discussed and compared to literature results obtained with complementary methods, such as ultraviolet photoelectron spectroscopy (UPS).



Commensurate growth of 1 monolayer SnPc on PTCDA/Ag(111) as observed by LT-STM @ 1.1 K. The SnPc unit cell comprises 6 molecules where 4 SnPc are pointing up (blue) and 2 SnPc are pointing down (green).