

Nanoobjects microscopy

STM-study of Self-Assembled Organic Monolayers on Atomically Flat Surfaces

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Ultrathin organic films are widely used in modern technologies as a basis for design of optoelectronic devices [1,2] and for surface functionalization [3]. Physical properties of such films depend on degree of their ordering and are determined by the epitaxy of first monolayer. Therefore, a special attention is given to the study of the structure of monolayers and their interaction with the substrate.

Since the discovery of scanning tunneling microscopy (STM) this method has been a unique tool for investigations of monolayer structures with molecular and intramolecular resolution. In the case of STM adapted to a liquid medium, organic films are deposited from solution. The solution plays the role of a tunneling medium and protects the interface from the action of atmosphere [4].

We present results of comparative STM-study of organic molecules (*n-alkanes and their derivatives, liquid crystals, fullerenes*) self-assembled at the liquid/solid interface. The highly oriented pyrolytic graphite and reconstructed Au(111) surfaces were used as substrates.

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