

STM INVESTIGATIONS OF SELF-ORDERED
n-OCTANE ACID FILMS ON Au(111) SURFACE

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S u m m a r y

It has been shown that highly ordered monolayer films of *n*-octane acid $\text{CH}_3-(\text{CH}_2)_6-\text{COOH}$ can be obtained by the deposition from its solutions in methanol CH_3OH or *n*-tetradecane $n\text{-C}_{14}\text{H}_{30}$. Using the scanning tunneling microscopy (STM), it has been found that the ordered monolayers have a brush-like structure on a reconstructed Au(111) surface. In this structure, the main molecular axes are tilted with respect to the surface, and the packing of alkyl chains corresponds to the $c(4 \times 2)$ -structure. The bonding between the molecules and the surface is implemented through the interaction between COOH groups and Au atoms. The stability of *n*-octane acid films and a relatively low concentration of defects in the lateral direction allow the homologous series of saturated organic acids to be considered as a promising class of adsorbates for the surface functionalization, in particular, for the creation of dielectric buffer layers.