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S E M I N A R
aus
Halbleiterphysik und Nanotechnologie

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Real-time view on self-assembled molecular phase transformations at metal surfaces

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Carboxylation (or deprotonation) of carboxylic groups on surfaces is one of basic reaction steps leading to phase transitions and formation of new molecular surface phases. After introduction to the topic and low energy electron microscopy (LEEM) in particular, I will describe the deprotonation induced irreversible phase transitions of 4,4'-biphenyl dicarboxylic acid on Ag(001) surface. The real-time view by LEEM is complemented with low energy electron diffraction (LEED), STM, non-contact AFM and XPS. In this way we were able to reveal and describe intermediate phases and describe how these phases are transformed in the subsequent ones. We point out to significant role of surface step-edges on this process and nucleation limiting kinetics.