

**STM INVESTIGATIONS ON THE ADSORPTION AND MANIPULATION OF
METAL ATOMS ON ULTRATHIN INSULATING FILMS**

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While scanning tunneling microscopy has been proven to be a powerful technique to study surfaces of conducting substrates on the atomic scale it is unfortunately not applicable to the study of bulk insulators. Ultrathin insulating films on the other hand can be grown thin enough to be studied by scanning tunneling microscopy. The high lateral resolution in combination with local electronic spectroscopy allows the study of metal/insulator interfaces down to the atomic scale. Moreover the adsorption of atoms and molecules on these films, including effects of the film strain and the image force induced by the underlying metal substrate, can be studied in detail. We have investigated 1- 4 ML ultrathin films of NaCl epitaxially grown on different copper substrates. The ultrathin NaCl films have been used as substrate to investigate the adsorption of single metal atoms and metal dimers. The binding sites of Cu, Ag, Au and Pd were determined, local spectroscopy performed and atomic manipulation processes were studied.