

Abstract Submitted  
for the MAR06 Meeting of  
The American Physical Society

**Clusters at Surfaces Studied with Low-Temperature STM and UPS**<sup>1</sup> T. IRAWAN, S. KRAUSE, M. BIELETZKI, H. HÖVEL, Universität Dortmund, Experimentelle Physik I, 44221 Dortmund, Germany, C. YIN, B. V. ISSENDORFF, Universität Freiburg, Fakultät für Physik, 79104 Freiburg, Germany — We study the electronic structure of cluster/surface systems and the nature of charge transfer processes between the cluster and the surface. STM/STS and UPS on size selected large clusters in contact with a surface will be combined with photoemission on the same clusters in the gas phase. For metal islands (Au, Pb) on different surfaces (HOPG, Au(111) and Pb(111)) we observed significant energetic shifts in UPS if the islands were decoupled from the surface by a thick rare gas layer and different materials for the substrate and the islands were used [1]. In addition we measure mass spectra of size selected Ag clusters with a cluster machine consisting of a magnetron sputter gas aggregation source, a differential pumping stage with a cryo pump and a high transmission infinite range mass selector. In current experiments we extend these studies to the deposition of mass selected clusters on rare gas layers and different substrate systems. For these samples low-temperature STM and UPS will be compared with photoemission on the same clusters in a free cluster beam. [1] T. Irawan, D. Boecker, F. Ghaleh, C. Yin, B. v. Issendorff and H. Hövel, Appl. Phys. A (published online Sept. 2005)

<sup>1</sup>Work supported by the DFG (SPP 1153, GK 726)

Thomas Irawan

Date submitted: 29 Nov 2005

Electronic form version 1.4