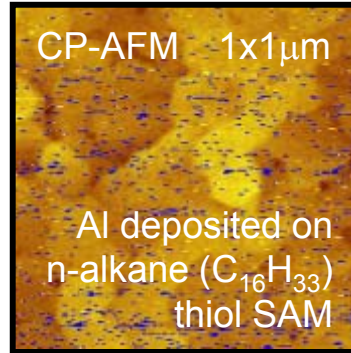
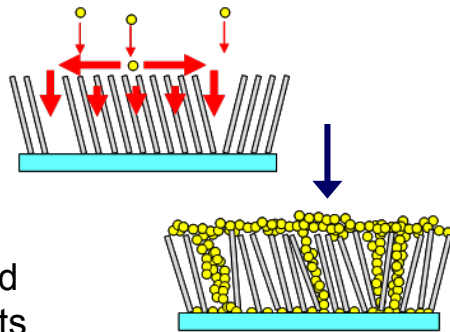
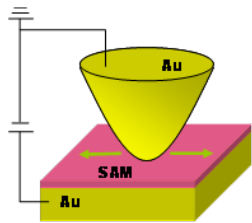


# SAM Contacts and Nanoscale Junctions

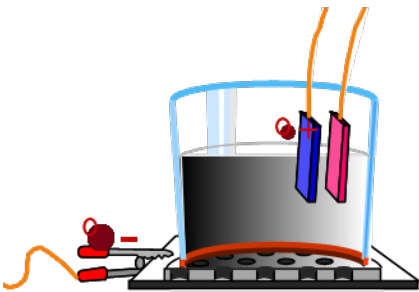
M. Maitani, T. A. Daniel, O. M. Cabarcos, H. Yoon, L. Cai, T. Mallouk, T. Mayer, C. Keating, and D. Allara, *Center for Nanoscale Science, Penn State University, University Park*



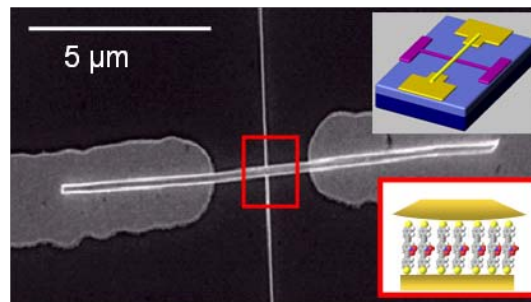
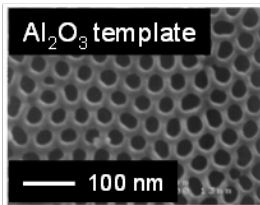
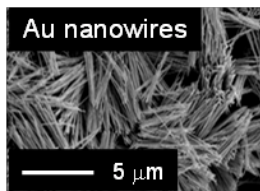
FTIR & CP-AFM used to study SAM contacts

FTIR and scanning probe techniques used to study interface between vapor deposited metal and hydrocarbon SAMs

e.g., Z. Zhu, *et al.*, *J. Am. Chem. Soc.* 128(42) 13710 (2006), T. B. Tighe, *et al.*, *J. Phys. Chem. B*, 109(44) 21006 (2005).



Template-based metal nanowire synthesis



nanoscale metal-SAM-metal junction assembly

Template-based nanowire synthesis permits bottom-up fabrication of nanoscale molecular junctions for basic electrical transport studies in SAMs

e.g., Cai, *et al.*, *Nanoletters* 5(12) 2365 (2005), Selzer, *et al.*, *Nanoletters* 5(1) 61 (2005).