

**MECHANICAL AND CHARGE TRANSPORT PROPERTIES OF SELF
ASSEMBLED ORGANIC MONOLAYERS**

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We are interested in measuring and correlating electronic and mechanical properties of molecules. We will report on progress in the fabrication of insulating test substrates with embedded coplanar metallic nanoelectrodes. In this manner a monolayer of molecules can bridge two electrodes and be accessible to an AFM or STM tip. This approach may lead to a better understanding the nature of the molecule – electrode contact. The use of AFM with conducting tips provides the ability to vary the load on the nano-contact and also opens the way for exploring electron transfer as a function of molecular deformation. Initial results will be presented on the influence of mechanical stress on the structural and electrical properties of self-assembled alkylthiols on gold surfaces as a function of the chain length and tip pressure.