

Temperature Dependent Resistance of Molecular Wires

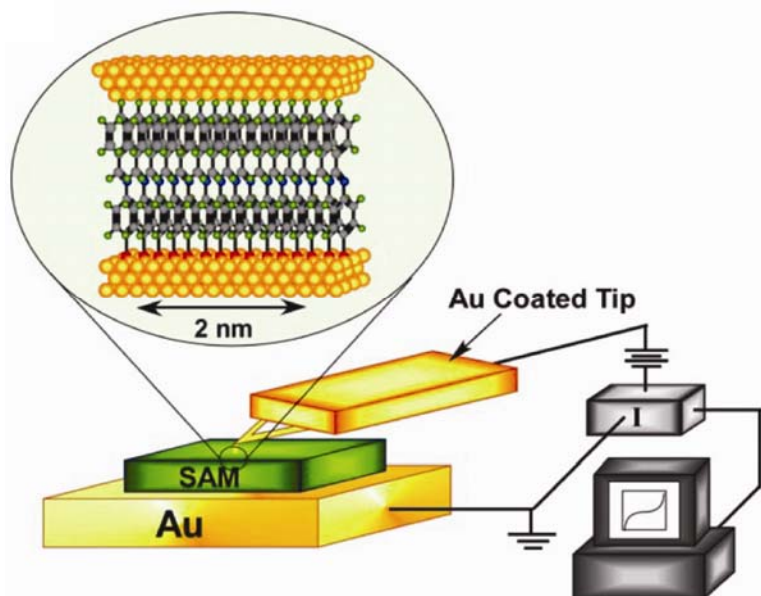
C. Daniel Frisbie (PI), Seong Ho Choi, BongSoo Kim

Department of Chemistry, University of Minnesota

NNIN Facility utilized: Characterization Facility

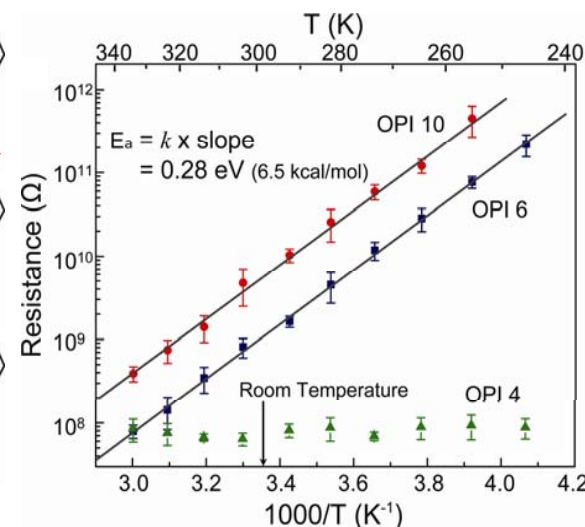
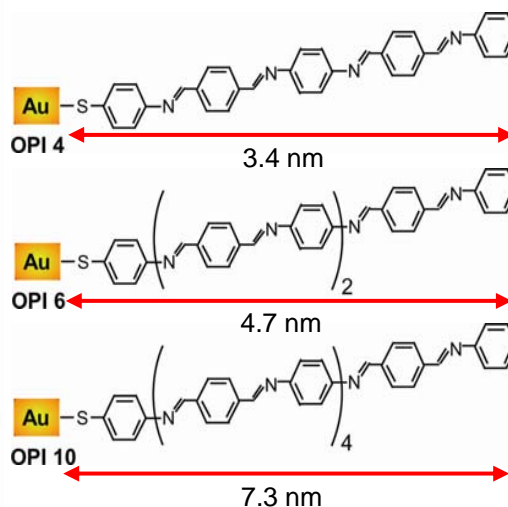
● Conducting probe AFM Junction

- ◆ A simple and fast manner measurement
- ◆ Variable temperature conductance measurements with Peltier and hot sample stages



● MAJOR OBSERVATIONS

- ◆ Resistance for OPI 4 is independent of temperature, as expected for tunneling.
- ◆ Long molecules (OPI 6 and 10, > 4.0 nm) displayed strongly thermally activated transport, characteristic of hopping.



● Publications

- ◆ Submitted to **Science** (2008)