Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Imaging and Manipulation of Nanocars by STM A.J. OSGOOD, Y. SHIRAI, Y. ZHAO, J.M. TOUR, K.F. KELLY, Rice University — The nanocar molecule - four fullerene wheels connected by rotating alkyne axles to a central chassis - is the first molecule designed and fabricated specifically for nanoscale manipulation. We have investigated the imaging and manipulation of the nanocar molecule on Au(111) by variable-temperature STM. From the observed movement of the nanocars, we can show that their motion is due to rolling, not sliding, across the gold surface. Additionally, we have begun to explore the conditions for nanoscale rolling in a number of other molecules built from our set of "molecular tinker toys" with an eye towards remote manipulation and increased system complexity.

Andrew Osgood
Rice University, Department of Electrical and Computer Engineering

Date submitted: 06 Dec 2005 Electronic form version 1.4