Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Molecular Conductance of oligophenylene-vinylene in Metallic Break Junctions PATRICK WHEELER, MENG LU, DAVID CORLEY, JAMES TOUR, DOUG NATELSON, Rice University — Break junctions between a metallic tip and a metallic substrate have proven to be extremely useful tools for characterizing single-molecule electrical conductance. Conductance measurements while repeatedly breaking and reforming junctions are conducive to rapid statistical characterization. We will present preliminary results of room temperature break junction conductance measurements on amine-terminated oligophenylene-vinylene (OPV) oligomers. Recent low temperature measurements of OPV oligomers in the electromigrated gap configuration imply a large renormalization downward of the HOMO-LUMO gap. Since the HOMO-LUMO gap is correlated with the conductance and the tunneling coefficient, beta, break junction measurements should provide clarification about the HOMO-LUMO gap in these molecules.

Patrick Wheeler
Rice University

Date submitted: 05 Dec 2007 Electronic form version 1.4