

Abstract Submitted
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Modifying Mesoscopic 1/f Noise Via Surface Chemistry. A. TRIONFI, Rice University Dept. of Physics and Astronomy, J.W. CISZEK, J.M. TOUR, Rice University Dept. of Chemistry, D. NATELSON, Rice University Dept. of Physics and Astronomy — Attempts to extrinsically control the 1/f noise related to Universal Conductance Fluctuation Theory in quasi-one dimensional Au wires were made using self-assembled monolayer (SAM) molecules. Measurements before and after the deposition of the SAM molecule comparing the noise power amplitude and the phase coherence of the devices via the weak localization magnetoresistance and noise power amplitude versus magnetic field were performed. The resulting data were used to determine if the 1/f noise is approaching the so-called saturated limit as the system is lowered from 14 to 2 K. The results may also shed light on the microscopic details of the two level systems responsible for time-dependent conductance fluctuations in normal metals. Preliminary results will be reported.

Aaron Trionfi
Rice University

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