Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Universal Scaling of Zero-Bias Conductance Peaks in Single-Molecule Transistors Incorporating Tetra[2,3-thienylene] ZACHARY KEANE, GAVIN SCOTT, DOUGLAS NATELSON, Rice University — There is significant interest in exploring universal scaling laws as they apply to the Kondo state in diverse physical systems. One such system is GaAs quantum dots, in which Grobnis et al. have demonstrated that the conductance follows a universal scaling function in temperature and source-drain bias. More recently, Scott et al. have demonstrated that the same scaling law applies to single molecule transistors incorporating both C60 and bis(2,5-di-[2]pyridyl-3,4-dithiocyanto-pyrrolate)Cu(II), despite the fact that the relevant energy scales in these systems can differ by 3 orders of magnitude. We will report measurements and universal scaling analysis of the Kondo conductance as a function of temperature and source-drain bias in a fourth system, single molecule transistors incorporating tetra[2,3-thienylene].

Zachary Keane
Rice University

Date submitted: 21 Nov 2008 Electronic form version 1.4