Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Kondo resonances and anomalous gate dependence of electronic conduction in single-molecule transistors D. NATELSON, L.H. YU, Z.K. KEANE, Rice University, Dept. of Physics and Astronomy, J.W. CISZEK, L. CHENG, J.M. TOUR, Rice University, Dept. of Chemistry, T. BARUAH, M.R. PEDERSON, Naval Research Laboratory — We report Kondo resonances in the conduction of single-molecule transistors based on transition metal coordination complexes. We find Kondo temperatures in excess of 50 K, comparable to those in purely metallic systems. The observed gate dependence of the Kondo temperature is inconsistent with observations in semiconductor quantum dots and a simple single-dot-level model. We discuss possible explanations of this effect, in light of electronic structure calculations.

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Date submitted: 30 Nov 2005 Electronic form version 1.4