

Abstract Submitted
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Observation of butterfly hysteresis loops in Ru dimer with large zero-field splitting CHRIS RAMSEY, Dept. of Chemistry, Florida State University, F.A. COTTON, Dept. of Chemistry, Texas A&M University, WOLFGANG WERNSDORFER, Laboratoire Lois Neel, Grenoble, France, IRINEL CHIORESCU, National High Magnetic Field Laboratory, Tallahassee, FL, NARESH DALAL, Dept. of Chemistry, Florida State University — We present the magnetic characterization of a metal-metal bonded $[\text{Ru}_2]^{5+}$ dimer with $S = 3/2$ and a large zero-field splitting of +114 K. This large splitting yields an approximately isolated $S = 1/2$ state at low temperature. Field sweep rate dependent hysteresis loops yield unusual butterfly hysteresis loops which pass through a minimum with increasing field strength. This is attributed to a large phonon bottleneck effect.

Naresh Dalal
Dept. of Chemistry, Florida State University

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