

Abstract Submitted
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Interactions Between Thin Metallic Films and Mn₁₂-Acetate.¹

JOEL MEANS, WINFRIED TEIZER, Texas A and M University, Dept. of Physics, KIM R. DUNBAR, Texas A and M University, Dept. of Chemistry — Single-molecule magnets are a novel class of materials which have been extensively studied in recent years. One such molecule is Mn₁₂-Acetate, [Mn₁₂O₁₂(CH₃COO)₁₆(H₂O)₄] \cdot 2CH₃COOH \cdot 4H₂O. Its high-spin ground state (S=10) at low temperatures leads to many interesting phenomena. Here we explore the effect these molecules have on the electronic transport properties of a normal-conducting, metallic thin film in the temperature range from 0.2K to 1K and magnetic fields up to 3T. The magnetoresistance of Au films is measured in agreement with published results. Measurement of Au films with a few monolayers of Mn₁₂-Ac on the surface show a different behavior.

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