

Abstract Submitted
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Alignment of Mn₁₂-acetate in Suspension¹ D. SEO, W. TEIZER, Department of Physics, Texas A&M University, College Station, TX 77843-4242 — The magnetization of Mn₁₂-acetate single molecule magnets has been studied in an oriented Mn₁₂-acetate suspension that, unlike in prior work [1, 2], exceeds the solution saturation. We observe magnetic properties of the frozen suspension similar to large oriented single crystals, specifically several sharp steps in the low temperature hysteresis loop, indicating alignment. The surface morphology of a film made from this suspension, which was studied by atomic force microscopy, indicates micron-size crystals are likely the main source of the magnetization signal. The greater the external magnetic field during alignment, the sharper the steps in the low temperature hysteresis loops. Experimental data showed that ~5000 Oe was sufficient to orient the micro crystals in the organic solvent to a degree comparable to a single crystal. [1] D. M. Seo et al., J. Mag. Magn. Mater. in press (2005), doi:10.1016/j.jmmm.2005.06.005 [2] K. Kim et al., Appl. Phys. Lett. **85**, 3872 (2004).

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