Abstract Submitted
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Low Temperature, High Pressure Cell for the Study of Single-Molecule Magnets[1] MIGUEL BENCOMO[2], DANIEL M. PAJEROWSKI, ERIC L. DANIELSON, MARK W. MEISEL, Dept. of Physics and the NHMFL, Univ. of Florida — We present a low temperature (T > 1.5 K), high pressure (P < 25 kbar) cell [1] configured to study the pressure dependence of the spin state of single-molecule magnets (SMMs). More specifically, the work focuses on two different Mn_7 samples with ground state spin states of S = 11 and S =16 arising from the subtle differences in their structures [2]. The change of the magnetic states is detected by using a resonant tank-circuit that operates between 2 – 20 MHz and employs a tunnel-diode oscillator. The resonant frequency of the tank-circuit is sensitive to subtle changes in the inductor element, which are directly related to the magnetic susceptibility of the sample. [1] J.D. Thompson, *Rev. Sci. Instrum.* 55 (1984) 232. [2] T.C. Stamatatos, K.M. Poole, D. Foguet-Albiol, K.A. Abboud, T.A. O'Brien, G. Christou, *Inorg. Chem.* 47 (2008), 6593.

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