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Atomic and Electronic Structure of a Novel Two-Dimensional Molecular Magnet System ANTHONY CARUSO, North Dakota State University, TREVOR TYSON, NJIT, DOUGLAS SCHULZ, North Dakota State University, WOLFGANG CALIEBE, Hasy Lab. DESSY — Molecular magnet systems show much promise to replace standard metals and metal oxide systems in a broad range of application due to the comparative simplicity of processing. Understanding the coupling of the spins in these systems is important to determine their full range of applicability. We have studied the local atomic and electronic structure of a recently synthesized Mn carboxylate system which forms two-dimensional interconnected rings. To understand the spin interactions, the local atomic and electronic structure about the Mn sites was investigated by x-ray absorption spectroscopy and high resolution x-ray emission spectroscopy. The valence and spin configuration are described. Comparisons are made between the coupling of Mn sites via the oxygen atom with standard magnetic oxide systems such as the manganties.

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