

Abstract Submitted
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Effects of Pressure on the Magnetic Properties of Prussian Blue Analogue Heterostructures¹ MARCUS K. PEPRAH, MARK W. MEISEL, Dept. Physics and NHMFL, Univ. Florida, CARISSA H. LI, DANIEL R. TALHAM, Dept. Chemistry, Univ. Florida — Magnetic studies on the Prussian blue analogues (PBAs), $\text{Li}_x\text{Cu}[\text{Fe}(\text{CN})_6]_y \cdot m\text{H}_2\text{O}$ (CuFe-PBA) and $\text{Li}_k\text{Ni}[\text{Cr}(\text{CN})_6]_l \cdot n\text{H}_2\text{O}$ (NiCr-PBA), as well as CuFe@NiCr-PBA core-shell heterostructures, have been conducted under pressures ranging from ambient to ≈ 1.4 GPa and at temperatures of 2 - 90 K. Our results for the single phase CuFe-PBA indicate robust magnetic properties under the range of pressures studied: a T_c of 20 K was observed at all pressures.² However, our pressure studies of single phase NiCr-PBA are consistent with the results of Zentková *et al.* up to 1 GPa.³ At pressures above 1.0 GPa, the decrease in magnetization is accompanied by a decrease in the T_c , an indication of changes in the superexchange value, an effect not reported by Zentková *et al.* Lastly, our results on the effects of pressure on the magnetic properties of heterostructured PBAs, specifically CuFe@NiCr-PBA, will be presented.

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²M. Verdaguer, G. S. Girolami, *Magnetism: Molecules to Materials V*, (Wiley 2005) p 303; M. Okubo *et al.*, *Angew. Chem. Int. Ed.* **50** (2011) 6269.

³M. Zentková *et al.*, *J. Phys.: Condens. Matter* **19** (2007) 266217.

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