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Strain-Mediated Photocontrol in Core-Shell Prussian Blue Analogue Particles[1] ELISABETH S. KNOWLES, MARCUS K. PEPRAH, MARK W. MEISEL, Dept. Phys. and NHMFL, Univ. Florida, CARISSA H. LI, OLIVIA N. RISSET, MATTHEW J. ANDRUS, DANIEL R. TALHAM, Dept. Chem., Univ. Florida — The Prussian blue analogue (PBA), $A_iNi[Cr(CN)_6]_j \cdot nH_2O$ (**A**), has been shown to exhibit a pressure-induced decrease in magnetization under both external isotropic pressure [2] and internal photoinduced structural strain when layered with $Rb_iCo[Fe(CN)_6]_j \cdot nH_2O$ (**B**).[3] Current investigations of a series of core-shell PBAs, consisting of the photoactive ferrimagnetic **B** surrounded by ferromagnetic **A**, quantitatively model this photoinduced phenomenon, which is shown to affect both the magnetic moment and superexchange of roughly half the volume of the **A** shells. An accurate understanding of the mechanism of strain-mediated photocontrol in these heterostructures will allow the pursuit of rationally designed room temperature photocontrol systems by incorporating pressure-sensitive materials with higher magnetic ordering temperatures.

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[2]M. Zentková *et al.*, J. Phys.: Condens. Matter **19** (2007) 266217;
M. K. Peprah *et al.*, in preparation.
[3]M. F. Dumont *et al.*, Inorg. Chem. **50** (2011) 4295; D. M. Pajerowski *et al.*, J. Am. Chem. Soc. **132** (2010) 4058.

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