Abstract Submitted
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Photomagnetic and structural studies of Prussian blue analogue CoFe@CoCr core@shell heterostructures[1] P.A. QUINTERO, T.V. BRINZARI, M.W. MEISEL, Dept. of Physics and NHMFL, Univ. of Florida, O.N. RISSET, M.J. ANDRUS, D.R. TALHAM, Dept. of Chemistry, Univ. of Florida, M.W. LUFASO, Dept. of Chemistry, Univ. of North Florida — The photomagnetic and structural properties of core@shell nanostructures of Prussian blue analogues, $Rb_{0.24}Co[Fe(CN)_6]_{0.74}@K_{0.10}Co[Cr(CN)_6]_{0.70} \cdot nH_2O$, with different shell thicknesses have been studied as a function of temperature and under white light irradiation.[2] The nature of the charge transfer induced spin transition (CTIST) of the core was affected by the presence of the shell. Specifically, while a continuous and hysteretic CTIST was observed in the bare cores, a discontinuous and non-hysteretic behavior was observed for the core@shell systems. In addition, the core@shell nanoparticles show light-induced magnetization changes radically different from the bare cores. These changes were modeled as a combination of the expected light-induced magnetism change in the cores and a modification of the magnetism in a region of the shell close to the interface, where the depth of the modified region was found to be about 25 nm for all shell thicknesses investigated.

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[2]O. N. Risset *et al.*, J. Am. Chem. Soc. (2014) DOI:10.1021/ja5084283.

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