

Abstract Submitted
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Magnetism **of**
Rubidium Cobalt Hexacyanoferrate Nanoparticles.¹ D.M. PAJEROWSKI,
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TALHAM, Department of Chemistry, University of Florida — Although photoin-
duced magnetism in nanoparticles of Prussian blue analogs has been reported, these
samples are superparamagnetic. We have generated and characterized nanoparti-
cles of $\text{Rb}_j\text{Co}_k[\text{Fe}(\text{CN})_6]_l \cdot n\text{H}_2\text{O}$, which exhibit photoinduced magnetism and, for the
largest particles, long-range ferrimagnetism with finite coercive fields. The synthesis
involves the variation of the concentration of the poly(vinylpyrrolidone), PVP, the
encapsulating polymer, which controls the resulting particle sizes. From HR-TEM,
the particle size distributions have been obtained for four batches of samples, with
mean diameters ranging from nominally 3 nm to 13 nm. Upon irradiation with white
light at 5 K, all samples exhibit photoinduced magnetism. Magnetization studies
indicate that the smallest particles are superparamagnetic, while the largest ones are
ferrimagnetic with long-range ordering temperatures ($T_c \sim 17$ K) and coercive fields
($H_c \sim 250$ G) varying with particle size in a manner consistent with the predictions
of finite-size scaling.

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