

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Observation of the interplay between Photoinduced Magnetization and Pressure Induced Electron Transfer in Cobalt Hexacyanoferrate Prussian Blue Analogue¹ M.K. PEPRAH, M.F. DUMONT, M.W. MEISEL, Dept. of Physics and NHMFL, Univ. of Florida, C.H. LI, D.R. TALHAM, Dept. of Chemistry, Univ. of Florida — The Prussian blue analogue $K_iCo[Fe(CN)_6]_j \cdot nH_2O$ (CoFe-PBA) has been studied in both its light and dark states as a function of pressure up to 2.23 GPa. The material is known to undergo photoinduced magnetization (PIM) where irradiation leads to an increase in magnetization.² On the other hand, application of pressure results in a pressure induced electron transfer (PIET) where a decrease in magnetization is observed.³ Both phenomena involve a spin transition between the low spin ($S = 0$) and the high spin ($S = 2$) states, and our work encompasses the application of both light and pressure to study the interplay between these two external stimuli. Our magnetic results indicate the suppression of the PIM at 2.23 GPa, but below this pressure, the coexistence of PIET and PIM is observed. Furthermore, in the high temperature region, we observe a increase in the temperature at which the charge transfer induced spin transition (CTIST) occurs.⁴

¹Supported by NSF DMR-1005581 and DMR-1405439 (DRT), DMR-1202033 (MWM), and DMR-1157490 (NHMFL).

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Date submitted: 10 Nov 2014

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