PROPERTIES OF A NON-EQUILIBRIUM STATE OF THE PHOTOACTIVE MAGNET $K_{0.2}CO_{1.3}[FE(CN)_6]\cdot 1.2H_2O$

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Prussian blue analogues (PBAs) form a class of magnetic coordination polymers some of which exhibit photoinduced changes in magnetism. The PBA $K_{0.2}Co_{1.3}[Fe(CN)_6]\cdot 1.2H_2O$ (CoFe) is known to exhibit a charge transfer induced spin transition (CTIST) that can be induced by light, temperature, or pressure. This is described as a charge transfer from $Fe^{III}_{(LS)}$-CN-$Co^{II}_{(HS)}$ to $Fe^{II}_{(LS)}$-CN-$Co^{III}_{(LS)}$ followed by a change in spin state on the cobalt ion. We have previously demonstrated a cooling rate dependence in which a meta-stable strained high spin state can be attained at low temperature. Similar to the low spin state it is photoactive but exhibits changes not previously observed. The chemical and physical properties of this meta-stable state will be reported.