

Abstract Submitted
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High-pressure neutron scattering of Prussian blue analogue magnets DANIEL PAJEROWSKI, Oak Ridge National Laboratory — Pressure sensitive magnetism is known to be useful in sensors, and while applications tend to use metallic alloys, molecule based magnets (MBMs) have been shown to have large inverse magnetostrictive (IMS) response. A promising group of MBMs are the Prussian blue analogues (PBAs), in which magnetic ordering can be tuned by external stimuli such as light, electric field, and pressure. Previously, high pressure neutron scattering of nickel hexacyanochromate hydrate has shown direct evidence for isomerization of the cyanide linkage with applied pressure. Other probes have suggested a similar effect in iron hexacyanochromate hydrate, although there has yet to be direct crystallographic evidence. Neutron diffraction is sensitive to organic elements, even while in the presence of metals, and we have performed experiments above 1 GPa to look for linkage isomerism in iron hexacyanochromate. These results are supported by bulk probes and calculations.

Daniel Pajerowski
Oak Ridge National Laboratory

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