

Gabriel Veith
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SYNTHESIS AND CHARACTERIZATION OF B SITE SUBSTITUTED STRONTIUM FERRATES

This seminar will describe the synthesis and characterization of the $n = 2$ Ruddlesden-Popper phases $\text{Sr}_3\text{Fe}_{2-x}\text{B}_x\text{O}_{7-d}$ ($B = \text{Mn}, \text{Mo}$ and Co). These compounds have been prepared utilizing conventional Solid-State techniques. The physical properties of the material have been investigated using a variety of methods including both X-ray and neutron diffraction, resistivity, magnetic susceptibility, Mössbauer and X-ray absorption measurements. The Mössbauer data indicates that the Fe^{4+} under goes a disproportionation reaction in the Mn containing samples to Fe^{3+} and Fe^{5+} .