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Synthesis and Characterization of Chiral Magnetic Oxide: MnMoTeO₆

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Abstract

Synthesis and Characterization of Chiral Magnetic Oxide: MnMoTeO_6

Presenter: Chase Hames

Advisor: Chetan Dhital

The chiral materials lack mirror reflection symmetry in their crystal structures like right and left hands. Such materials often host unique non-collinear or topological magnetic textures such as magnetic skyrmions. If such magnetic textures are formed in insulating oxides with coupled electric and magnetic properties, then such magnetic structures can be controlled and manipulated using electric fields rather than electric current. With this motivation, we are synthesizing and characterizing chiral materials belonging to MMoTeO_6 (M=Mn, Co, Fe, Cu, Ni) family. I will discuss about the phase formation and solid-state synthesis of MnTeMoO_6 along with its structural, electrical and magnetic properties characterization.