Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

The Long Forgotten Compound: CoTe, and its Epitaxial Film Growth and Properties[1] ZHIWEI ZHANG, ZHIHAI ZHU, WILLIAM A. HINES, JOSEPH I. BUDNICK, BARRETT O. WELLS, Physics Department, University of Connecticut — As part of our investigation of Co-doped, Fe-chalcogenide superconductors, we have synthesized films of CoTe; a long forgotten binary compound. Using pulsed laser deposition, we have grown epitaxial films on MgO, CaF_2, and $SrTiO_3$ and have found that careful control of growth conditions allows for the synthesis of either (001) or (101) oriented films. X-ray diffraction shows the structure of the films is hexagonal. However, we also find the surprising presence of the nominally disallowed (001) peak. We also report temperature dependent transport and magnetic properties. This material may be of interest as a magnetic semiconductor and for its relationship to chemically doping Fe-based superconductors.

[1]DOE/BES contract DE-FG02-00ER45801

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Date submitted: 06 Nov 2015 Electronic form version 1.4