Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Indium substitution effect on the topological crystalline insulator (Pb,Sn)Te RUIDAN ZHONG, JOHN SCHNEELOCH, JOHN TRANQUADA, GENDA GU, Brookhaven Natl Lab — Topological crystalline insulator has been of great interest in the area of condensed matter physics. We investigated the indue substitution effect on the crystal structure, transport properties in the topological crystalline insulators (Pb,Sn)InTe. By introducing different amount of indium, the system shows quite divergent resistivity behaviors at low temperatures. As the doping level increases, the system changes from weakly metallic to truly bulk-insulating, and then become superconducting with a transition temperature Tc positively correlated to the indium concentration. We address this issue from the view of bulk electronic structure. The current work summarizes the indium substitution effect on the (Pb,Sn)Te compound, and discusses those effects from two aspects of topological and superconducting properties.

Ruidan Zhong
Brookhaven Natl Lab

Date submitted: 12 Nov 2016 Electronic form version 1.4