Abstract Submitted
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Transport Measurements on Topological Insulators with Superconductor Electrodes[1] YANG XU, TAI-LUNG WU, Department of Physics, Purdue University, West Lafayette, IN 47907, LUIS A. JAUREGUI, School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN 47907, IREK MITKOWSKI, Department of Physics, Purdue University, West Lafayette, IN 47907, YONG P. CHEN, Department of Physics, Purdue University, West Lafayette, IN 47907; — Interplay between topological insulators (TIs) and superconductors (SCs) is interesting to study novel physics such as Majorana fermions. Here we report transport measurements on bulk TI interfaced with superconducting electrodes, including indium (In) and niobium (Nb). The TI crystals are high quality $Bi_2Te_3, Bi_2Se_3, Bi_2Te_2Se$ grown by the Bridgman method. Multiple superconducting transitions have been observed in Bi_2Te_3/In systems, possibly due to the superconducting alloys formed by In and Bi. Below the superconducting temperature of In (or Nb), the resistance of TI/Sc structure shows a pronounced upturn which may be a probe of spin-polarized surface states in TI and the interplay with SC.

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