

Abstract Submitted
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Superconductivity and disorder in the potential topological superconductor (Sn,In)Te¹ MATTHEW SMYLIE, Univ of Notre Dame, BING SHEN, HELMUT CLAUS, ALEXEY SNEZHKO, ULRICH WELP, WAI-KWONG KWOK, Argonne National Lab, MORTEN ESKILDSEN, ELIZABETH DE WAARD, Univ of Notre Dame, MICHAEL SUSNER, ATHENA SEFAT, Oak Ridge National Lab — In-doped SnTe has been proposed as a candidate topological superconductor. It has been suggested that the superconducting critical temperature (T_c) is strongly enhanced with impurity scattering in this material, with the pairing mechanism perhaps changing with doping. To access information on the pairing symmetry of the superconducting order parameter, ultra-sensitive magnetic field penetration measurements have been conducted by means of a Tunnel-Diode-Oscillator (TDO) technique. Particle irradiation with low MeV protons was used as a controllable source of disorder, but no enhancement of T_c was observed in cubic-phase material as scattering increased. Detailed characterization measurements and analysis were performed before and after irradiation of the samples.

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