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LT-STM study of Nb islands on Bi2Se3 with W and Nb Tips
RAMI DANA, ANITA ROYCHOWDHURY, University of Maryland, IRENEUSZ MIOTKOWSKI, YONG P. CHEN, Purdue University, MICHAEL DREYER, University of Maryland — Proximity effect between an s-wave superconductor (SC) and a topological insulator (TI) are expected to induce px + ipy superconductor like state at the SC-TI interface. The vortex cores of that state are predicted to host Majorana fermions. In this work we study the TI Bi_2Se_3 using W and Nb tips at 4.2 K with and without Nb islands. The W tip shows no SC gap on top and around the islands. The Nb tip shows variable SC gaps and a verity of zero bias conductance peaks. The possible sources for these observations and the part of the TI, Nb islands and/or Nb tip will be discussed.

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