

Abstract Submitted
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Contact spectroscopy on S/TI/N devices: Induced pairing on the surface of a topological insulator¹ MARTIN P. STEHNO, PROSPER NGABONZIZA, MARIEKE SNELDER, University of Twente, HIROAKI MYOREN, Saitama University, YU PAN, ANNE DE VISSER, Y. HUANG, MARK S. GOLDEN, University of Amsterdam, ALEXANDER BRINKMAN, University of Twente — Translating concepts of topological quantum computation into applications requires fine-tuning of parameters in the model Hamiltonians of candidate systems. Such level of control has proven difficult to achieve in devices where superconductors are used to induce pairing in topological insulator (TI) materials. While local probe experiments have indicated features of p-wave superconducting correlations in TIs (as suggested by theory), results on extended devices often remain ambiguous. We present contact spectroscopy data on superconductor/topological insulator/normal metal devices with bulk-insulating TI material and compare these with bulk conducting samples. We discuss the magnitude of the induced gap and unusual features in the conductance traces of the bulk-insulating samples that may suggest the presence of p-wave type correlations in the TI.

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