



第7回トポロジカル物質科学セミナー
Topological Material Science Seminar (7)

**Spectroscopy of Andreev bound states in
topological insulator / superconductor junctions**

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Place: Room 332, Department of Applied Physics, Graduate School of Engineering Building No. 3, Nagoya University

Date: March 24 (Thursday), 2016

Time: 10:30am-

Abstract:

This talk consists of two parts. The first part is devoted to an overview of hybrid structures involving superconducting junctions on surfaces of topological insulators and to the results of recent experimental and theoretical studies. Then, in the second part, I will present the results of our recent theoretical and experimental studies of proximity effect in a topological insulator (TI) $\text{Bi}_{1.5}\text{Sb}_{0.5}\text{Te}_{1.7}\text{Se}_{1.3}$ in direct contact with an s-wave superconducting Nb electrode. The conductance and shot noise spectra of the devices show the presence of a large induced superconducting correlations in the TI at the energy scale of the order of Thouless energy [1]. Theoretical interpretation of the observed phenomena will be discussed.

[1] M. Snelder, M.P. Stehno, A.A. Golubov, et al., arXiv: 1506.05923.