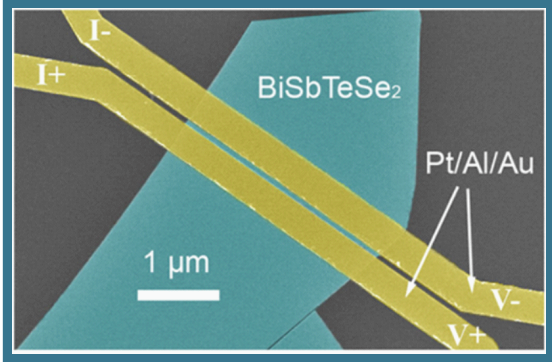
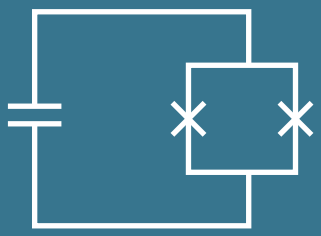
Projects looking for People

The Ando group works on realizing Majorana fermions for topological quantum computing. All steps towards this goal are performed in our lab, from materials synthesis and nanofabrication to low-temperature and high-frequency measurements. The main research direction combines 3D topological insulator (TI) materials with superconductors and uses techniques from circuit quantum electrodynamics (cQED) to study the mesoscopic physics for example inside TI Josephson junctions.



TI Josephson junction

transmon circuit



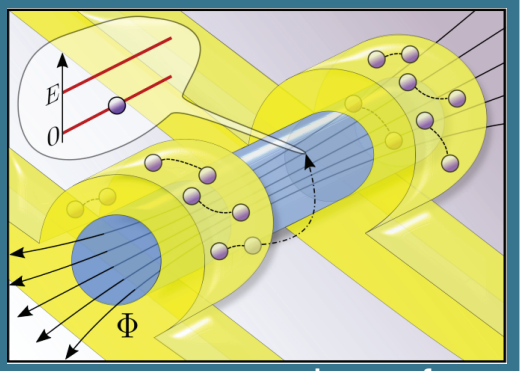
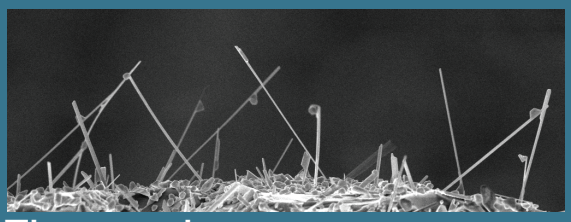


image from arXiv:1902.07229


TI nanowires

We are looking for ambitious Bachelor, Master and PhD students who want to face these challenges. Our lab offers a well-rounded hands-on education in material science, device fabrication, cryogenic experiments, and low-noise measurements. The vision of using our devices to realize more robust quantum information processors connects our research to the global effort of realizing a fault-tolerant quantum computer.

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Topological Matter Laboratory Cologne

ML4Q MATTER AND LIGHT FOR QUANTUM COMPUTING

University of Cologne