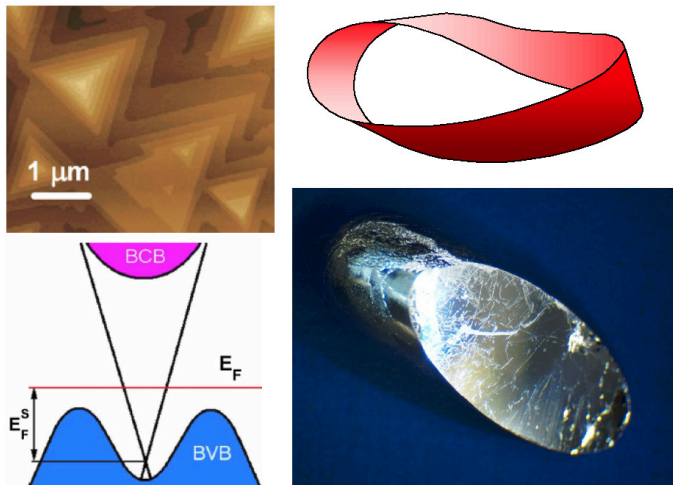


Topological Insulators and Superconductors

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Topological Insulator



Topological insulators and superconductors are new quantum states of matter that are characterized by nontrivial topological structures of the Hilbert space [1]. Recently, they attract a lot of attention because of the appearance of exotic quasiparticles such as spin-helical Dirac fermions or Majorana fermions on their surfaces, which hold promise for various novel applications [2]. In this talk, I will introduce the basics of those materials and present some of the key contributions we have made in this new frontier.

[1] Y. Ando, *Topological Insulator Materials*, *J. Phys. Soc. Jpn.* 81, 102001 (2013).

[2] Y. Ando and L. Fu, *Topological Crystalline Insulators and Topological Superconductors: From Concepts to Materials*, *Annu. Rev. Condens. Mater. Phys.* 6, 361 (2015).