



2D and 3D Topological Materials

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Message from the Guest Editor

A topological insulator (3D) is a material as an insulator in its interior with conducting states at the surface, resulting in electrons only being able to move along the surface of the material. Meanwhile the conducting surface states, which are protected by symmetry with a non-trivial topological order, exhibit spin-momentum locking behavior suitable for spintronics. The 2D counterpart of the topological insulator, i.e., the quantum spin Hall material, also exhibits symmetry-protected non-trivial topological order spin-momentum locking states at the edges of a 2D thin film. Besides the 3D and 2D topological insulators, researchers have also discovered many topologically-protected materials such as magnetic topological insulators, topological Dirac, Weyl, and nodal-line semimetals. Furthermore, several topological superconductors, which can host Majorana Fermions for fault-tolerant quantum computers, have also been proposed recently. As such, this Special Issue is dedicated to discovering new types of 2D or 3D topological matters, to achieve a better understanding of their intriguing properties, and to develop potential applications based on topological materials.





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Message from the Editor-in-Chief

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