

Search for two-dimensional topological insulators with large gap

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In this talk I will focus on how to realize 2D topological insulator (TI) phases with large energy gap. Three new materials in this catalog will be introduced in detail, including ZrTe₅, Oxygen Functionalized MXene and ZrSiO family with the structure similar to iron pnictides. Different band inversion mechanisms will be introduced and compared, which leads to general principles on material design for 2D TI.