

Probing the Dirac Electrons in Condensed Matter: Graphene and Topological Insulators

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Recent discoveries of graphene and topological insulators have shown that charge carriers in these materials form two-dimensional gas of massless quasiparticles whose dynamics can be described by the relativistic Dirac's equation. Due to the nearly linear electronic bands and special topological constraints, these systems show a wide range of exotic phenomena, some of which could be utilized for quantum computing and low-power electronic devices. Here, we will present angle-resolved photoemission studies of these materials.