International Center for Quantum Materials, PKU

Seminar

Surface conduction of topological Dirac electrons in bulk insulating Bi_2Se_3

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Time: 16:00pm, Jul. 31, 2014 (Thursday)
时间： 2014年7月31日（周四）下午16:00
Venue: Room 607, Science Building 5
地点： 理科五号楼607会议室

Abstract

The three dimensional strong topological insulator (STI) is a new phase of electronic matter which is distinct from ordinary insulators in that it supports on its surface a conducting two-dimensional surface state whose existence is guaranteed by topology. I will discuss experiments on the STI material Bi_2Se_3, which has a bulk bandgap of 300 meV, much greater than room temperature, and a single topological surface state with a massless Dirac dispersion. We study the evolution of doping in films of Bi_2Se_3 grown by molecular beam epitxay (MBE), using *in situ* transport measurements to probe the carrier concentration and mobility during film growth in UHV on $SrTiO_3$ substrates[1,2]. We find that Bi_2Se_3 is