



# 中心系列讲座 ICQM Weekly Seminar Series

## “STM Study of Topological Insulators Grown by MBE”



**Prof. Xi Chen 陈曦**  
Tsinghua University

**Time: 4:00pm, Mar. 9, 2011 (Wednesday)**

**时间: 2011年3月9日 (周三) 下午4:00**

**Venue: Room 607, Conference Room A, Science Building 5**

**地点: 理科五号楼607会议室**

### Abstract

I will summarize our recent activity in the molecular beam epitaxy (MBE) growth and characterization of the nontrivial surface states of topological insulator films of  $\text{Bi}_2\text{Te}_3$  and  $\text{Bi}_2\text{Se}_3$ . We demonstrate the atomically flat morphology and intrinsic topological property of the resulted films by angle resolved photoemission spectroscopy (ARPES) and scanning tunneling microscopy/spectroscopy (STM/STS). By direct imaging standing waves associated with nonmagnetic impurities and steps on  $\text{Bi}_2\text{Te}_3$  and  $\text{Bi}_2\text{Se}_3$  (111) surfaces, we show that the topological states have a surface nature and are protected by the time reversal symmetry. The Dirac cone structure is also indicated by the Landau quantization of the topological states in high magnetic field.

### About the Speaker

1993年, 清华大学物理系, 学士; 1996年, 清华大学物理系, 硕士; 2004年, Cornell大学物理系, 博士; 2004—2006年, 加州大学Irvine分校物理系, 博士后; 2006—2010年, 清华大学物理系, 助理教授; 2011年起, 清华大学物理系, 教授。

**All are welcome. Light refreshments served.**