



# 北京大学量子材料科学中心

International Center for Quantum Materials, PKU

## Weekly Seminar

### Ultrafast Spectroscopy Characterization toward Next Generation High Performance Electronic and Optoelectronic Devices

## Dong Sun

*ICQM, Peking University*



**Time: 4:00pm, April. 26, 2017 (Wednesday)**

**时间: 2017年4月26日 (周三) 下午4:00**

**Venue: Room w563, Physics building, Peking University**

**地点: 北京大学物理楼, 西563会议室**

### Abstract

Ultrafast science & technology is one of the most exciting fields in science and engineering today. In this talk, first I'll introduce basic aspects about ultrafast spectroscopy technologies and their role towards the development of next generation high performance electronic and optoelectronic devices. Then I'll describe several representative works regarding ultrafast spectroscopy characterization of two dimensional materials and topological materials that were performed by our group in ICQM during the past few years. These work includes the following: valley polarization dynamics and exciton dynamics of transitional metal dichalcogenides  $\text{MoS}_2$ ; anisotropic response of black phosphorus under high electric field and high magnetic field; and ultrafast photo response of three dimensional Dirac semimetallic  $\text{Cd}_3\text{As}_2$ .

### About the speaker

Dong Sun received his Bachelor degree from University of Science and Technology of China in 2004, and his PhD degree from the University of Michigan, in 2009. He was a research fellow at the Center for Ultrafast Optical Science in University of Michigan, USA (2009-2010, 2011-2012) and Research Scientist in University of Washington (2011). From 2012, he was recruited by 2<sup>nd</sup> Batch of Youth Thousand Talent Program and worked as associated professor at International Center for Quantum Materials (ICQM), Peking University, where he has lead the ultrafast nano-optoelectronics laboratory in ICQM. His current research interests include using versatile ultrafast spectroscopy tools to study various two dimensional materials and topological materials, targeting on next generation functional device applications, especially in the optoelectronic aspects.