北京大学量子材料科学中心

International Center for Quantum Materials, PKU

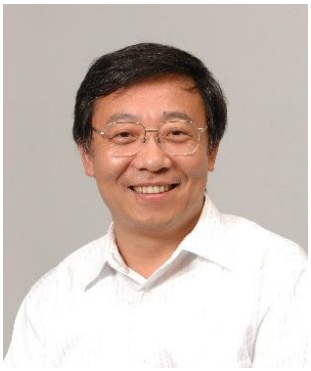
Seminar

Simple Route toward Topological Photonics

Xiao Hu

International Center for Materials Nanoarchitectonics (WPI-MANA)
National Institute for Materials Science (NIMS), Tsukuba, Japan

Time: 4:00pm, April 20, 2015 (Monday)
时间：2015年04月20日 （周一）下午4:00
Venue: Room W563, Physics Building, Peking University
地点：北京大学物理楼 W563



Abstract

Photonic topology manifests itself even above room temperature and thus is important for study of topology physics and future applications. We design a photonic crystal with Z2 topology purely based on dielectric material, such as silicon, by deforming honeycomb lattice of dielectric cylinders. The key point is to identify in the Maxwell system an emergent time-reversal symmetry similar to that of electronic systems without any gyromagnetic, bi-anisotropic or piezo-magnetic material. The topological photonic crystal can be fabricated easily by means of the well-established nanotechnology. Our work is expected to stimulate further activities in fields of topological physics and related materials science.

About the speaker

胡晓教授,东京大学理学博士、世界顶级计划材料纳米结构学研究中心（WPI-MANA）PI、日本国立物质材料研究机构(NIMS)研究主管、筑波大学教授、中组部千人计划。胡晓教授从事理论物理研究，曾先后在日本东京大学、东北大学、美国国家标准技术研究所(NIST)等研究机构从事教学科研工作。1996年加盟日本国立物质材料研究机构，担任研究主管，2011年入选中组部千人计划。他在铜氧化物高温超导Abrikosov磁通格子的融化相变，本征约瑟夫森结THz电磁波辐射，新奇拓扑态及物质设计等研究领域取得了一系列重要成果。至今已在Superconductor Science and Technology、Advanced Materials等重要期刊发表综述文章。