



### Weekly Seminar

#### Nano Spin Conversion Science

**YoshiChika Otani**

**ISSP University of Tokyo & RIKEN CEMS, Japan**

**Time:** 4:00 pm, May 13, 2015 (Wednesday)

**时间:** 2015年5月13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

#### Abstract

Spin conversion is a generic term for all the conversion phenomena based on the principle of angular momentum conservation, including recently discovered phenomena, i.e. the spin Hall effect, the inverse spin Hall effect, the spin Seebeck effect, the spin Peltier effect, the pure spin current induced magnetic switching, the spin injection into insulators, the electric field controlled magnetic anisotropy in ultra-thin ferromagnetic films, and so on. Most of the above mentioned spin conversion phenomena take place at simple nano-scale interfaces between two different materials of magnets, non-magnets, semiconductors, or insulators. So that spin conversion phenomena are versatile for designing device functionalities in spintronic applications. In this seminar we will show some of our efforts to realize new spin conversion properties by exploiting magnetic dilute alloys, superconductors, and metal/oxide interfaces.

#### About the Speaker

**YoshiChika OTANI** was born in Tokyo Japan in 1960. He obtained his B.Sc. (1984), M. Sc. (1986) and Ph. D. (1989) degrees from physics department, Keio University. He was a research fellow (1989-1991) at Physics Department of the Trinity College, University of Dublin, a researcher (1991-1992) at the Laboratoire Louis Néel, CNRS. Then he was appointed to a research instructor (1992-1995) at the Department of Physics, Keio University, an associate professor at the Department of Materials Science, Graduate School of Engineering, Tohoku University, and a team leader of Nano-Magnetics Research Team at FRS-RIKEN since 2002 and of Nano-Magnetism Research Team at CEMS-RIKEN since 2013. He has also been a professor at ISSP University of Tokyo since 2004. He has been primarily working on experimental studies on spin electronics such as magnetic and transport properties of nano-structured magnetic/non-magnetic (superconductive) hybrid systems.