# Columbia Optics and Quantum Electronics IGERT Seminar

## "Nanophotonics towards quantum information techniques with diamond and NV centers: fabrication and detection"

Date/Time: February 24th (Friday), 10 am to 11 am
Location: Room 750 Schapiro

**Professor Fangwen Sun, Department of Physics**
**University of Science and Technology of China**

**Abstract:** In this talk, I will present our recent research results on diamond and Nitrogen-Vacancy (NV) centers. We fabricate NV centers in diamond with nitrogen ions implantation. On this sample, we develop a quantum imaging method to distinguish two nearby NV centers without the restriction of diffraction limit. Also, low temperature measurement on NV centers shows that optical and electronic transition energies tend to be constant for temperature below 100 K, which indicates higher stability and performance for quantum information techniques and high resolution detection of electronic and magnetic field. At the end, I will give a brief introduction to our research on surface plasmon for nanophotonic device.

**Biography:** Fang-Wen Sun earned BS and PhD degrees from Department of Physics in University of Science and Technology of China (USTC) in 2001 and 2007 respectively. During 2007.7-2009.6, he worked as a postdoctoral researcher with Prof. Chee Wei Wong at Columbia University. In 2009.6, he joined back to USTC as an associate professor at Department of Optics and Optical Engineering and Key Lab of Quantum Information. Now, Dr. Sun is working on quantum optics and nano-photonics towards quantum information techniques, especially on micro-cavity, diamond and NV centers, and surface plasmon.

Hosted by Professor Chee Wei Wong • For further information: call 854-4462