Condensed Matter Physics Seminar
Department of Physics, National Taiwan University

Diffraction-Unlimited Plasmonic Metamaterials and Nanolasers

Date **Monday, March 4th , 2013**

Time **14:20-16:20**

Location **R833**
Dept. of Physics / Center for Condensed Matter
National Taiwan University

Shang Jr Gwo
Tsing-Hua Chair Professor,
National Tsing-Hua University

All Are Welcome!

Abstract

Optical diffraction limits the spatial resolution of light focusing and guiding by conventional lenses, fibers, and waveguides to about the light wavelength. To date, this fundamental limitation remains an insurmountable barrier for optical imaging, lithography, data storage, and integrated systems. Recently, technologies based on plasmon excitation of metal nanostructures by light (nanoplasmonics) has been introduced to overcome the diffraction barrier. In this presentation, I will present new breakthroughs in nanoplasmonics, including plasmonic metamaterials and nanolasers. By using novel metal nanoparticle films and metal–oxide–semiconductor nanostructures, we have realized diffraction-unlimited perfect absorbers and ultralow lasing-threshold plasmonic nanolasers. These are developments represent significant progress toward practical, diffraction-unlimited nanophotonics, which can offer unparalleled capabilties in nanoscience and nanotechnology.

Course TA: Chun Yen Liao Tel: 02-3366-5128 Email: yen90024@hotmail.com