



JSPS – UNT Winterschool on Nanophotonics

Hosted by the University of North Texas
Department on Physics
February 14-15, 2008



With the advent of nanofabrication and nanoscale characterization, photonics in the nanoscale limit plays an increasingly significant role on an increasing number of sectors, including optoelectronics, biotechnology, or non-conventional energy related industrial products. As scientists and engineers exploit the tools of nanotechnology to design closer to the molecular level, nanophotonics will have an increasingly role in the studying the development of novel devices and characterizing new phenomena. For training young researchers in the field of Nanophotonics, (including materials, technology and phenomenology) this winter school aims to capture the excitement of research on the rapidly growing number of optical and electronic phenomena in newly structured and disordered materials fashioned from sub-wavelength elements. The format of the symposium will be a "school" that provides both fundamental learning and promotes scientific discussions leading to discoveries.

Main Topics:

- Micro & Nano Optics, Photonic Devices, Imaging & Sensing
- Materials for Optoelectronics
- Optical Communications, Semiconductor Optoelectronic Devices
- Molecular Materials, Hybrid Materials for Photonics and Integrated Optics
- Non-linear Optics and Ultrafast Phenomena
- Fluorescence Spectroscopy and Imaging Optics
- Plasmonics, Meta Materials and Nanoscale Semiconductor and Electronic Materials

Some of invited lectures from imminent researchers include:

Hybrid Nanomaterials for optoelectronics

- V. Agronovich, *University of Texas, Dallas, USA*

Ultrafast Optoelectronics

- O. Wada, *Kobe University Japan*

Surface Plasmon Interaction in Nitride Nanostructures

- K. Okamoto, *Kyoto University, Japan*

Molecular Organic Transistors

- T. Somaya, *University of Tokyo, Japan*

Surface Plasmon Enhanced Fluorescence Spectroscopy of Biological Molecules

- I. Grycznski, *University of North Texas, Health Science Center, USA*

Towards polariton lasers: Cavity polaritons in ZnO-based hybrid microcavities

- R. Shimada, *Virginia Commonwealth University, Richmond, Virginia, USA*

Growth and Synthesis of Spatially Localized Quantum Dots for Nanophotonics

- Z. Wang, *University of Arkansas, USA*

Low-Loss and Small Refractive-Index Metamaterials at Optical Wavelengths

- M. Iwanaga, *Tohoku University, Japan*

Organizing Committee

Arup Neogi, Department of Physics, University of North Texas

Akira Masaike, Japan Society for Promotion of Sciences, Washington DC

Chris Littler, Department of Physics, University of North Texas

Tae-You Choi, Department of Mechanical and Energy Engineering, University of North Texas

Purnima Neogi, Department of Biology, University of North Texas

Makoto Naruse, NICT/Department of Electronics Engineering, University of Tokyo

The Winter school is sponsored by the Japan Society for Promotion of Sciences and supported by the University of North Texas.

Lectures will be held at the Gateway Center, UNT, Denton.

Contact Dr. Arup Neogi at arup@UNT.Edu for more information