Finland-Japan Workshop on Nanophotonics and Related Technologies

Place: VTT Micronova, Tietotie 3, Espoo
Date: 1st and 2nd of July 2009

Nanophotonics is the combination of Photonics and Nanotechnologies, two highly multi-disciplinary fields and highly important enabling technologies for the 21st century. The use of nanostructures allows producing materials with completely new optical properties and gives new exciting possibilities in the design of photonic components. It is expected that nanophotonics will have a major impact on a wide variety of markets such as transport, communication, life sciences, manufacturing and information.

This workshop is jointly organized by VTT in Finland, the Secure-Life Electronics, Global Center-of-Excellence (GCOE) Program of the University of Tokyo and the Nanophotonics Research Center of the University of Tokyo to promote international collaborations between the participating organizations.

Prof. Ohtsu is a real reference in nanophotonic research. He is e.g. the author, coauthor, and editor of 22 books in English in the field! We welcome Prof. Ohtsu and colleagues to Finland.

The workshop is free of charge. Registration to Sari Mäläskä (sari.malaska@vtt.fi).

For more information, Research Professor Pentti Karioja (pentti.karioja@vtt.fi).

PROGRAM

Wednesday 1st of July, 2009

09.30 **Opening**
Pentti Karioja

09.45 **Rigorous Analysis of Light Polarization in a Light Guide with Sub-Wavelength Gratings**,
Tapani Levola, Nokia Research Centre

10.10 **Nanophotonics: Exchanging the Dressed Photons**,
Motoichi Ohtsu

10.35 **Essences of an Optical Near Field and Its Applications to Nanophotonic Devices and Fabrications**,
Tadashi Kawazoe

11.00 **Nanophotonic Fabrication and Operation**,
Takashi Yatsui

11.25 **Hierarchical Optical System Based on Nanophotonics**,
Naoya Tate

11.50 **Post-scaling CMOS Devices Heterogeneous Integration on Si Platform**,
Mitsuru Takenaka

11.50 LUNCH BREAK

13.00 **Optical Activity in Planar Nanostructures,**
Yuri Svirko, University of Joensuu

13.25 **Optical MEMS: From Fiber Telecommunication to Image Display,**
Hiroshi Toshiyoshi

13.50 **Nanophotonic Structures for Semiconductor Light Sources Fabricated by Nanoimprint Lithography,**
Tapio Niemi, Tampere University of Technology

14.15 **FDTD Modeling of Micro- and Nano-optical Systems,**
Juuso Olkkonen, VTT

14.40 COFFEE BREAK

15.00 **Optical and Electronic Properties of Self-organized Oxide Nanostructures,**
Munetoshi Seki

15.25 **Silicon Photonics,**
Timo Aalto, VTT

15.50 **Fabrication of Micro and Nano-photonics Devices Based on UV-curable Polymers,**
Jussi Hiltunen VTT

16.15 LAB TOUR & POSTERS & REFRESHMENTS

Thursday 2nd of July, 2009

09.00 **Introduction,**
Pentti Karioja, VTT

09.10 **"Green MEMS": An Autonomously Moving Micro Robot with Cutting Edge MEMS Technology**,
Yoshio Mita

09.35 **Crystal Growth Technology for the Integration of Multiple Materials and Functions,**
Masakazu Sugiyama

10.00 **Semiconductor Integrated Optical Switch for Future Photonic Network,**
Takuo Tanemura

10.25 **Overview of Research in Photonics Group at Helsinki University of Technology,**
Seppo Honkanen, Helsinki University of Technology

10.50 **System Architectures in Nanophotonics for Information and Communications Applications,**
Makoto Naruse

10.15 CLOSING

11.30 LUNCH

Secure-Life Electronics
Global COE