

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
-

