



Program

The Norwegian PhD Network on Nanotechnology for Microsystems

2nd annual workshop, Rica Helsefyr Hotel, 15-17 June 2011

Wednesday 15. June

10:30 Registration opens

11:30 Lunch

Oral session 1: "Materials, Nanocharacterization and -structuring"

Chair: Jostein Grepstad

12:30 Welcome

12:45 **Epitaxial ferroelectric nanostructures: challenges and possibilities,**
Thomas Tybell, Dept. of Electronics and Telecomm., NTNU

13:10 **Growth-mode monitoring: a tool for optimized heteroepitaxy of functional oxides,**
Jos Boschker, Dept. of Electronics and Telecomm.,

13:25 **Tailoring the antiferromagnetic domain structure in LaFeO₃ thin films by nanostructuring,**
NTNU Erik Folven, Dept. of Electronics and Telecomm., NTNU

13:40 **Nanostructured back-side reflector for thin silicon solar cells,**
Jo Gjessing, Dept. of Physics, UiO / University Graduate Center, UNIK

13:55 Coffee break

Oral session 2: "RF MEMS" and "Energy Harvesting"

Chair: Trond Ytterdal

14:15 **SAW Technology for Space Applications - Challenges in Submicron Processing,**
Øystein Johansen, Norspace

14:40 **Device Geometry Scalable Thermal Resistance Model for GaN HEMT devices on Sapphire Substrate,**
Sourabh Khandelwal, Dept. of Electronics and Telecomm., NTNU / University Graduate Center, UNIK

14:55 **Different Methods Of Biasing Transducers In MEMS Energy Harvester,**
Sukdeep Kaur, Vestfold University College

- 15:10 **Screen Printed PZT/PZT Thick Film Bimorph MEMS Cantilever Device for Vibration Energy Harvesting**
Erik Vilain Thomsen, Dept. of Micro and Nanotechnology, Technical University of Denmark, DTU.
- 15:50 **Poster presentations (short presentation of all poster contributions)**

Poster session

16:05 **Poster session**

18:30 **Dinner at the hotel**

Thursday 16. June

Oral session 3: "Optical Micro- and Nanosystems"

Chair: Dag T. Wang

- 08:30 **Optical MEMS technology in microcameras,**
Lars Henriksen, Polight
- 08:55 **Consecutive structural and optical characterization of III-V semiconductor nanowire heterostructures,**
Fervin Moses Anthonysamy, Dept. of Electronics and Telecomm., NTNU
- 09:10 **Binary Diffuser Generated by Orthogonal Array for Laser Speckle Reduction,**
Zhaomin Tong, Vestfold University College
- 09:25 **System for optical characterization of photonic crystal membranes, designed for biological sensing with single molecule sensitivity,**
Jon Olav Grepstad, Dept. of Electronics and Telecomm., NTNU / University Graduate Center, UNIK
- 09:40 **Micro optics in applied spectroscopy,**
Ib-Rune Johansen, SINTEF ICT MiNaLab
- 10:05 Coffee break

Oral session 4: "Materials, Nanocharacterization and -structuring"

Chair: Terje Finstad

- 10:25 **Building structures by atomic layer deposition,**
Ola Nilsen, Dept. of Chemistry, University of Oslo
- 10:50 **SiGe oxidation for nanowire construction,**
Ethan Long, Dept. of Physics, University of Oslo
- 11:05 **Size effect of MEMS/NEMS materials,**
Zhiliang Zhang, Dept. for Structural Engineering, NTNU
- 11:30 **Lunch**
- 12:30 Bus to Blindern, NorFab opening

NorFab opening at Ole Johan Dahls hus (new informatics building) at Blindern

- 13:15 **Welcome**
Bjørn Torger Stokke, board leader of NorFab
- 13:20 **General introduction of NorFab**
Kay Gastinger, leader of NorFab
- 14:00 **Opening ceremony**
by the Minister of Research and Higher Education Tora Aasland
- 14:15 **NorFab in a national perspective**
Anders Hanneborg, The Research Council of Norway
- 14:30 **Strategic foundation of NorFab**
Rectors and presidents (NTNU, UiO, HiVE, SINTEF)
- 15:10 **Coffee break**
- 15:40 **Experiences from Myfab – the Swedish Open Access Research Infrastructure**
Thomas Swahn, director MyFab
- 16:00 **The importance of NorFab for the users**
Stein Ivar Hansen, NCE Micro- and Nanotechnology
- 16:20 **What value does the industry have from NorFab?**
Kristian Hovet, Presens
- 16:40 **NorFab as a vehicle for quality graduate education in nanoscience and related technologies**
Jostein Grepstad, the Norwegian PhD Network on Nanotechnology for Microsystems
- 17:00 **Social gathering with champagne and fruit**
Poster session & Tour at the MiNaLab
- 19:00 **Dinner at Sporten by Frognerseteren in collaboration with NorFab**

Friday 17. June

Oral session 5: "3D integration"

Chair: Nils Høivik

- 08:30 **Integration of meso and nanoscale objects by capillary assembly and adhesive transfer,**
Heiko Wolf, IBM Zurich Research Laboratory
- 09:10 **Temperature Dependence of Mechanical Properties of Isotropic Conductive Adhesive Filled with Metal Coated Polymer Spheres,**
Hoang-Vu Nguyen, Vestfold University College
- 09:25 **Au-Sn SLID bonding for harsh environments,**
Torleif A. Tollefsen Seip, SINTEF ICT/Vestfold University College
- 09:40 **Future funding of nanotechnology research**
Dag Høvik, Research Council of Norway
- 10:00 **Coffee Break**

Oral session 6: "Micro- and Nanotechnology for Biosystems" and "ASICs for MEMS"

Chair: Trond Ytterdal

10:30 Force probes with picoNewton sensitivity applied to study carbohydrate – carbohydrate self interactions,

Kristin Elisabeth Haugstad, Dept. of Physics, NTNU

10:45 Development of an Implantable Dehydration Sensor,

Luis André Lourenco Fernandes, Vestfold University College

11:00 Lab-on-a-chip and biosensors,

Liv Furuberg/Michal Mielnik, SINTEF ICT MiNaLab

11:25 Impulse Radar Technology – Essentials and Applications,

Olav E. Liseth, Novelda

11:50 Design of an Energy Efficient CMOS Preamplifier Using a Figure-of-Merit Based Approach,

Hans Herman Hansen, Dept. of Electronics and Telecomm.

12:05 Next Generation Medical Ultrasound Imaging Systems,

Thomas Halvorsrød, GE Vingmed Ultrasound

12:30 Closing remarks

12:45 Lunch