

Program for the 4th annual workshop
arranged by the
Norwegian PhD Network on Nanotechnology for Microsystems
Bergen Student Centre, Bergen,
17. - 19. June 2013

Monday 17 June

10:00	Registration opens
11:30 12:30	Lunch
12:30 12:40	Welcome: Jostein Grepstad, NTNU
12:40 12:50	Opening address: Dag Rune Olsen, Dean Faculty of Mathematics and Natural Sciences and President elect, UoB

Oral session 1: Nano materials I

Chair: Helge Weman, NTNU	
12:50 13:20	Sang Wook Lee, Konkook Univ., Seoul <i>Carbon based nanoelectromechanics</i>
13:20 13:50	Edouard Monakhov, UoO, Dept. of Physics <i>Electronic properties of defects in semiconductors: Deep Level Transient Spectroscopy studies</i>
13:50 14:05	Ethan Long, UoO, Dept. of Physics <i>Nanostructuring and Ge redistribution in thin films of Si-Ge by thermal oxidation</i>
14:05 14:20	Saroj Kumar Patra, NTNU, Dept. of Electronics and Telecommunication <i>Dopant incorporation in Te-doped Al_{0.9}Ga_{0.1}As_{0.06}Sb_{0.94} grown by molecular beam epitaxy</i>
14:20 14:50	Phil Denby, EnSol AS <i>Introduction to Nano Material Engineering by Physical Vapour Deposition – with applications in solar cell technology and cancer treatment</i>
14:50 15:10	Coffee break

Oral session 2: Microfluidics

Chair: Jostein Grepstad, NTNU	
15:10 15:25	Martin A. Fernø, UoB, Dept. of Physics and Technology <i>Vizualization of fluid flow using etched silicon wafer micromodels</i>
15:25 15:40	Spiros Kotopoulos, UoB, Dept. of Physics and Technology <i>Fabrication of a micro-channel device for the generation of therapeutic microbubbles</i>

Special guest

15:40 16:10	Nikolai Østgaard, UoB, Birkeland Centre for Space Science <i>Terrestrial gamma ray flashes, the most energetic photon phenomenon in our atmosphere</i>
16:10 16:30	Coffee break

Poster session

Chair: Nils Høivik, Vestfold University College	
16:30 18:30	Poster session
19:30	Dinner at the hotel

Tuesday 18 June

Oral session 3: Circuits and Devices

Chair: Trond Ytterdal, NTNU	
09:00 09:30	Julius Georgiou, Univ. of Cyprus <i>Vestibular implant; the next commercial bionic device</i>
09:30 10:00	Tor Sverre Lande, UoO, Dept. of Informatics <i>Nanoelectronics for biomedical systems</i>
10:00 10:15	Peng Wang, NTNU, Dept. of Electronics and Telecommunication <i>Low-noise, low-power SC-VGA design for ultrasound imaging applications</i>
10:15 10:30	Nitin Goyal, NTNU, Dept. of Electronics and Telecommunication /UNIK <i>Design, simulation, and modeling of AlGaIn/GaN high-electron mobility transistors</i>
10:30 11:00	Hermann Kohlstedt, Univ. of Kiel <i>Memristive Devices in Analog Neuromorphic Circuits</i>
11:00 11:15	Coffee break

Oral session 4: Advanced microscopy and lithography

Chair: Knut Aasmundtveit, Vestfold University College	
11:15	11:45 Todd Hastings, Univ. of Kentucky <i>New Approaches to Electron-Beam Lithography and Focused Electron-Beam Induced Processing</i>
11:45	12:00 Martin Greve, UoB, Dept. of Physics and Technology <i>Optimization of an electron beam lithography instrument for fast, large area writing at "low" voltage</i>
12:00	12:15 Kristin Høidalsvik, NTNU, Dept. of Physics <i>In situ coherent x-ray diffractive imaging of CO₂-storing nanoparticles</i>
12:15	12:30 Sabrina Eder, UoB, Dept. of Physics and Technology <i>Seeing with helium atoms; the neutral helium microscope NEMI</i>
12:30 13:30 Lunch	

Oral Session 5: MEMS devices and sensor development

Chair: Erik Johannessen, Vestfold University College	
13:30	14:00 Angela Kok, SINTEF <i>Recent development of radiation sensors at SINTEF MiNaLab</i>
14:00	14:30 Per Ohlckers, Vestfold University College, Dept. of Micro and Nano Systems Technology <i>Supercapacitors: Principles of Operation, Application Examples and Future MEMS-based Supercapacitors</i>
14:30	14:45 Fjodor Tjulkins, Vestfold University College, Dept. of Micro and Nano Systems Technology <i>3-axis accelerometer-based heart monitoring system with improved epicardial fixation</i>
14:45	15:00 Srinavasa R. Kuppireddi, UoO, Dept. of Informatics <i>Post-process actuation gap reduction method and analysis for square plate resonator</i>
15:00	15:30 Knut Aasmundtveit, Vestfold University College, Dept. of Micro and Nano Systems Technology <i>Direct Integration of Carbon Nanotubes in Si Microsystems – towards truly integrated micro/nano systems</i>
15:30	16:00 Ralph Bernstein, IDEX <i>Methods, technology and applications of miniaturize fingerprint sensors</i>

17:30	Concert at Troidhaugen and workshop dinner at Bellevue Restaurant
--------------	--

Wednesday 19 June

Oral session 6: Nanomaterials II

Chair: Terje Finstad, UoO	
09:00	09:30 Helge Weman, NTNU, Dept. of Electronics and Telecommunication <i>Semiconductor nanowires grown on graphene</i>
09:30	09:45 Vidar Tonaas Fauske, NTNU, Dept. of Physics <i>Structural and electrical characterization of nanowire-substrate interfaces</i>
09:45	10:00 Maryam Gholami Mayani <i>Optical properties of bimodal InAs/GaAs QDs grown at low temperature</i>
10:00	10:15 Magnus Nord, NTNU, Dept. of Physics <i>Study of electronic reconstruction in La_{0.7}Sr_{0.3}MnO₃/SrTiO₃ thin film interface using transmission electron microscopy</i>
10:15 10:30 Coffee Break	

Oral session 7: Optical micro- and nanosystems

Chair: Kristin Imenes, Vestfold University College	
10:30	11:00 Olav Solgaard, Stanford Univ. <i>Fiber Optic Sensors Based on Photonic Crystal Fabry Perot Resonators</i>
11:00	11:15 Aasmund Sudbø (for Jon O. Grepstad), NTNU, Dept. of Electronics and Telecommunication <i>Single nanoparticle sensing exploiting crossed polarizers to improve the signal-to-noise ratio</i>
11:15	11:45 Erik Mannseth, ProAnalysis <i>Oil in water monitoring - big challenges, small solutions</i>
11:45	12:15 Randi Haakenasen, NDRE, Kjeller <i>Infrared detector technology at FFI</i>
12:15	12:30 Windup: Jostein Grepstad, NTNU
12:30 Lunch	

Poster session

Monday 17 June, 16:30 - 18:30

Optical micro- and nanosystems

1	Juan Antonio Lenero-Bardallo, UoO, Dept. of Informatics <i>A bio-inspired bi-operation mode vision sensor</i>
2	Kim Trinh Tran Thi, VUC, Dept. of Micro and Nano Systems Technology <i>Demonstration of speckle reduction by microelectromechanical diffuser device</i>

MEMS devices and sensors

3	Quoc-Huy Nguyen, VUC, Dept. of Micro and Nano Systems Technology <i>Carbon nanotubes based gas sensor for detecting decaying food</i>
4	Van Khanh Nguyen, VUC, Dept. of Micro and Nano Systems Technology <i>Acoustic resonator for the investigation of the mass loading effect from immobilised bioactive components</i>
5	Cuong Phu Le, VUC, Dept. of Micro and Nano Systems Technology <i>Wide tuning range resonant frequency control by combining electromechanical softening and hardening springs</i>
6	Tung Manh, VUC, Dept. of Micro and Nano Systems Technology <i>15 MHz ultrasound transducers with multiple acoustic matching layers based on silicon micro-machining</i>
7	Lars Holhjem, VUC, Dept. of Micro and Nano Systems Technology <i>Development of biomedical sensor for measuring ischemia</i>

Circuits and devices

8	Kin Keung Lee, UoO, Dept. of Informatics <i>A study of bandgap references in state-of-the-art CMOS</i>
9	Hourieh Atarzadeh, NTNU, Dept. of Electronics and Telecommunication <i>Low power OTA-less I-V converter with single-ended to differential conversion for capacitive sensor interfaces</i>
10	Thanh Trung Nguyen, UoO, Dept. of Informatics <i>Energy optimized transponder for a wireless glucose monitoring micro-implant</i>
11	Ali Zaher, UoO, Dept. of Informatics <i>Single-polynon-volatile memories for miniaturized sensors</i>
12	Umair Najeed Mughal, UoO, Dept. of Physics <i>Multidimensional atmospheric icing sensor</i>
13	Tuan Anh Vu, UoO, Dept. of Informatics <i>A 3–5 GHz IR-UWB receiver front-end for high-precision ranging and localization</i>

Microfluidics

14	Duy Hoang Le, VUC, Dept. of Micro and Nano Systems Technology <i>A novel FBAR-based glucose sensor for liquid environment</i>
15	Nhut Tran-Minh, VUC, Dept. of Micro and Nano Systems Technology <i>Design and optimization of micromixer for laminar blood mixing in painless sample collection</i>

Microsystems packaging

16	Anh Tuan Nguyen Thai, VUC, Dept. of Micro and Nano Systems Technology <i>Miniaturization of package for an implantable heart monitoring device</i>
17	Thi-Thuy Luu, VUC, Dept. of Micro and Nano Systems Technology <i>Optimization of Cu/Sn wafer level bonding</i>
18	Hoang-Vu Nguyen, VUC, Dept. of Micro and Nano Systems Technology <i>Interconnection technologies based on metal-coated polymer spheres</i>

Nano-materials science

19	Federico Mazzola, NTNU, Dept. of Physics <i>Electron-phonon coupling in sigma band of graphene</i>
20	Xin Song, UoO, Dept. of Physics <i>Characterization methods of thermoelectric materials</i>
21	Thanh-Nam Tran, NTNU, Dept. of Electronics and Telecommunication <i>High-reflection coating for high power and long-term stability of laser diodes</i>
22	Anthonius van Helvoort, NTNU, Dept. of Physics <i>Solar cells based on GaAs/AlGaAs core-shell nanowires</i>
23	Junghwan Huh, NTNU, Dept. of Electronics and Telecommunication <i>Electrical properties of III-V semiconductor nanowires for solar cell applications</i>
24	Abdul Mazid Munshi, NTNU, Dept. of Electronics and Telecommunication <i>Semiconductor nanowires grown on silicon and graphene substrates for solar cell application</i>
25	Jiantuo Gan, UoO, Dept. of Physics <i>Silvaco simulation of heterojunction solar cell base don ZnO/Cu₂O</i>
26	Ying Zhao, VUC, Dept. of Micro and Nano Systems Technology <i>Modulation of TiO₂ nanotube arrays morphology and its application for photoelectrical nano-devices</i>
27	Fredrik A. Martinsen, NTNU, Dept. of Physics <i>Segregation in metallurgical grade silicon micro-flakes</i>

Advanced microscopy

28	Xiaodong Guo, UoB, Dept. of Physics and Technology <i>Fabrication of free-standing atom sieves and their application in neutral helium microscopy</i>
----	--