

PROGRAM MSW '04

MARCH 30 (TUESDAY)

9.00 Start of registration

Session 1: Setting the scene.

9.45 Welcome and opening of the workshop

10.00 INVITED: A vision of MEMS for the future, Kurt Petersen (Cepheid).

10.40 Ultrasonic particle switching in microfluidic channels, Filip Pettersson¹, Andreas Nilsson¹, Henrik Jönsson¹, Thomas Laurell² (¹ErySave AB, ²LTH)

10.55 ☕ Coffee

Session 2: Bio-MEMS and fluidics.

11.15 Strategies and implementations for integrated optical elements in bio/chemical microdevices, Jörg P. Kutter (MIC)

11.30 Micro-contact printed luminescent polymeric reporters for bioanalysis, Peter Åsberg, Peter Nilsson, Karin Enander, Olle Inganäs (LiU)

11.45 Flow sensor for dosing applications and microfluidics at SINTEF, Liv Furuberg¹, Dag Wang¹, Andreas Vogl¹, Lars Solli² (¹SINTEF, ²NTNU)

12.00 Microfluidic systems for sensitive protein analysis in small sample volumes, Karin Hermansson, Christian Vieider (Acreo)

12.15 Microfluidic nebulizer chip for mass spectrometry, Sami Franssila¹, Pekka Östman², Seppo Marttila¹, Tapio Kotiaho², Risto Kostianen² (¹HUT, ²Univ. of Helsinki)

12.30 ✕ Lunch

Session 3: Electro-mechanical MEMS.

13.45 SUMMIT – The VINNOVA competence center, Klas Hjort (UU)

14.00 High Resistivity (HiRes™) silicon for RF MEMS technology, Thomas Clausen, Jan Vedde, Leif Jensen (Topsil)

14.15 Processing and evaluation of RF-MEMS switches, Ros-Marie Lundh², Yangjian Chen¹, Shimul Chandra Saha¹, Peter Enoksson¹, Erik Kollberg¹, Piotr Starski¹, Niklas Rorsman¹, Anders Demeryd³ (¹CTH, ²Ericsson Microwave AB, ³Ericsson AB)

14.30 Summit RF MEMS packaging, Anders Thorsén (Acreo)

14.45 A splitted micro mirror for scanning applications, Hector B. Soosalappu (Vestfold Univ. Collage)

15.00 ☕ Coffee

Session 4: Applications, visions and posters.

15.30 INVITED: The LEGO Mindstorms concept, Tormod Askildsen (LEGO Community Development)

16.10 Micro system technology at Imego Institute, Cristina Rusu (Imego)

16.25 Late news contribution: Ion track enabling of microsystems in printed circuits boards, Mikael Lindeberg, Marek Skupinski, Hanna Yousef and Klas Hjort (UU)

16.35 Short poster presentations

17.10 Poster session

19.00 ✕ Dinner

POSTERS

- A capillary filling microsystem for solid-phase extraction and dispensing of proteomic samples, Simon Ekström, Lars Wallman (LTH)
- Computed electro-mechanical behavior of long, narrow silicon mirrors, Klaus Magnus Johansen¹, Oddvar Søråsen¹, Liv Furuberg², Andreas Vogl², Chris Merveille³, Stein Ivar Hansen³, Hans Brudal⁴ (¹Univ of Oslo, ²SINTEF, ³SensoNor, ⁴MicroComponents AS)
- Electrochemical etching of deep silicon micro pore arrays, Jan Linnros, Xavier Badel, Thangavelu Rajendra Kumar, Robert Juhasz, Pascal Kleimann (KTH)
- Fabrication of uncooled quantum well microbolometers for infrared imaging using hybridization, Bengt Jacobson, Olof Öberg, Linda Höglund, Jan Andersson (Acreo)
- Guidance of neurons on porous patterned silicon – is pore size important?, Lars Wallman, Fredrik Johansson (LTH)
- Micromechanical ultrasonic transducers for air applications, Marcus Tömdahl (LTH)
- Modelling of Transport Phenomena and Chemical Reactions in Microfluidics, Anders Thorsén (Acreo)
- Polymer filters for sample handling of blood in steroid screening, Sara Thorslund, Oliver Klett, Jonas Bergquist, Fredrik Nikolajeff (UU)
- Seat microvalve nozzle design for optimal gas flow capacity, Wouter van der Wijngaart¹, Anders Thorsén², Göran Stemme¹ (¹KTH, ²Acreo)
- Size-reduction of silicon nanowires in a micro-electrochemical cell, Robert Juhasz, Jakob Wiström, Jan Linnros (KTH)
- Ultrasonic bead trapping for bioassay, Mikael Nilsson (LTH)
- Some of the oral presentations will be displayed as posters as well
- **There is space left for more posters, contact the organisers.**

EXHIBITORS

- Acreo AB
- Im ego
- Erysave AB
- MicroPlast AB
- LRI Instruments AB
- Comsol AB
- proDesign
- tekniQ
- **There is space left for more exhibitors, contact the organisers.**

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MARCH 31 (WEDNESDAY)

Session 5: The SSF-MST research program.

- 8.30 A novel technique for integration of optical elements onto silicon, Gert Andersson¹, Jörgen Bengtsson², Leif Bergstedt¹, Peter Enohsson², Karin Hedsten², Mikael Löfgren¹, Björn Löfving¹, Anders Magnusson², Jonas Melin³, Fredrik Nikolajeff³, Richard Nilsson¹, Cristina Rusu¹, Henrik Rödjegård¹ (¹Imego, ²CTH/MC2, ³UU)
- 8.45 Doping of electrochemically etched deep macro pore arrays in silicon: Processing and electrical characterization, Xavier Badel, Jan Linnros (KTH)
- 9.00 Novel technology platforms with expandable microspheres, Niclas Roxhed, Björn Samel, Patrick Griss, Göran Stemme (KTH)
- 9.15 Phase change devices for on-chip drive and control of microfluidic systems, Marcus Lehto (UU)
- 9.30 A study of biological particles in a bio-MEMS device using dielectrophoresis, Mats Jönsson¹, Fredrik Aldaeus², Lars-Erik Johansson³, Ulf Lindberg¹, Johan Roeraade², Ylva Bäcklund³, Sven Hamp³, Gunnar Jonsson³ (¹UU, ²KTH, ³MdH)
- 9.45 Array transducer for ultrasonic manipulation of particles, Tobias Lilliehom¹, Mikael Nilsson², Urban Simu¹, Linda Johansson¹, Monica Almqvist², Thomas Laurell², Stefan Johansson¹, Johan Nilsson² (¹UU, ²LTH)
- 10.00 MedChip – Doping analysis on the chip level, Sara Thorslund, Sara Bergström, Nina Johannesson, Gustav Liljegren, Andreas Pettersson, Kristina Magnusson, Mathias Hallberg, Oliver Kleit, Jonas Bergquist, Leif Nyholm, Karin Markides, Fred Nyberg, Fredrik Nikolajeff (UU)
- 10.15 ☕ Coffee

Session 6: Stimulating the industrial use of MEMS.

- 10.45 INVITED: Commercial microstructure efforts, Edvard Kälvesten¹, Ove Öhman² (¹Silex Microsystems AB, ²Amic AB)
- 11.25 SATS – An innovation and market-based perspective on the future of Sweden's electronics-based industry, Kåre Gustafsson¹, Andreas Jönsson², Kjell Lindén³, Tommy Skoog⁴, Jan Söderkvist⁵, Karl-Einar Sjödin⁶ (¹Ericsson AB, ²Venabler AB, ³InView AB, ⁴Acreeo AB, ⁵Colibri Pro Development AB, ⁶VINNOVA)
- 11.35 MINUT – Microsystems for Innovation in the Nordic region stimulating the use of micro system technologies (MST), Cristina Rusu¹, Dag Ausen², Jens Branebjerg³, Hannu Kattelus⁴ (¹Imego, ²SINTEF, ³Delta, ⁴VTT)
- 11.50 Expert Training for Sweden's small and medium sized firms, KK-stiftelsen (The Knowledge Foundation)
- 12.00 Micro systems for industrial growth, Sven-Ingmar Ragnarsson (VINNOVA)
- 12.10 Open discussion on how to get SME to use MEMS
- 12.20 ✕ Lunch

Session 7: Understanding phenomena in MEMS.

- 13.30 Characterisation of mechanical sensors using multiple pieces of equipment, Henrik Rödjegård, Gert Andersson (Imego)
- 13.45 Pure and technology imposed diffraction effects in a slotted micro mirror, Svein Husa (Vestfold Univ. Collage)
- 14.00 Scaling properties and MEMS implementation of acoustic gas sensors, Bertil Hök¹, Anders Blücker¹, Vegar Dalsrud², Per Gerhard Gløersen², Geir Uri Jensen³, Daniel Lapadatu², Andreas Vogl³, Dag T. Wang³, Trond Inge Westgaard², Per Åkerlund¹, Niels Peter Østbø³ (¹Hök Instrument AB, ²SensoNor AS, ³SINTEF)
- 14.15 Examples of complications in fluid-structure analysis for MEMS, Jari Hyvärinen (Anker-Zemer Engineering AB)
- 14.30 ☕ Coffee

Session 8: Processes and components.

- 15.00 Fabrication of microfluidic devices from SU-8, Santeri Tuomikoski and Sami Franssila (HUT)
- 15.15 Self-organization of polymer film from liquid induce by naked PDMS stamping, Xiangjun Wang, Kristoffer Tvingstedt, Olle Inganäs (LiU)
- 15.30 Thermal polymer V-shaped actuators for optical alignment applications, Sjoerd Haas¹, Patrick Griss¹, Thorbjörn Ebefors², Hans Sohlström¹, Edvard Kälvesten², Göran Stemme¹ (¹KTH, ²Silex Microsystems AB)
- 15.45 Integrated pressure sensors on SOI, Jyrki Kiihamäki, Hannu Kattelus, Ari Häärä, Miikka Ylismaa (VTT)
- 16.00 Measurements of heart motion using accelerometers, Lars Hoff¹, Ole Jakob Elle², Morten Grimnes¹, Steinar Halvorsen², Hans Jørgen Alker¹, Erik Fosse² (¹Vestfold Univ. Collage, ²Rikshospitalet University Hospital)
- ~16.15 Closing of the workshop