Micronano System Workshop

MSW 2014

Innovation Arena for Research & Industry

10th Micronano System Technology Event

15-16 May, Uppsala

Detailed Preliminary Programme

Thursday May 15

9.00 Registration opens

10:00 Opening of MSW 2014

10:20 Invited speaker Aydogan Ozcan, UCLA

I1	COMPUTATIONAL MICROSCOPY, SENSING AND DIAGNOSTICS Aydogan Ozcan Electrical Engineering Department, Bioengineering Department, California NanoSystems Institute University of California, Los Angeles, CA

11:00 Session 1 Chair: Klas Hjort, Uppsala University

O1	RF TO MILLIMETER-WAVE MEMS AT KTH Joachim Oberhammer School of Electrical Engineering, KTH Royal Institute of Technology, Stockholm, Sweden
O2	ROBUST MICRODEVICE MANUFACTURING BY DIRECT LITHOGRAPHY AND ADHESIVE-FREE BONDING OF OSTE+ POLYMER Alexander Vastesson KTH Royal Institute of Technology, Micro and Nanosystems, Stockholm, Sweden
O3	COMSOL MULTIPHYSICS SIMULATIONS FOR MICRO/NANO SYSTEMS APPLICATIONS Mikael Fredenberg COMSOL AB, Stockholm, Sweden

12:00 Lunch

13:20 Session 2 Chair: Jonas Tegenfeldt, Lund University

O4	FAST REVERSIBLE PHOTO-SWITCHING FROM CASSIE TO WENZEL WETTING STATES USING A MICROHOODOO-STRUCTURED SURFACE Sasha Hoshian Aalto University, School of Chemical Engineering, Department of Material Science, Espoo, Finland
O5	PROBING PHYSICAL PROPERTIES OF DNA-PROTEIN COMPLEXES USING NANOFLUIDIC CHANNELS Fredrik Westerlund Chalmers University of Technology, Department of Chemical and Biological Engineering, Gothenburg, Sweden

14:00 Poster presentations Chair: Greger Thornell, Uppsala University

Each poster presenter is given one minute to orally present her/his work, following in order of poster number.

15:00 Poster session 1, Coffee

15:40 Session 3 Chair: Cristina Rusu, Acreo

O6	OPTICAL MAPPING OF SINGLE DNA MOLECULES IN NANOCHANNELS: A NOVEL METHOD FOR IDENTIFICATION AND CHARACTERIZATION OF ANTIBIOTIC RESISTANCE Lena Nyberg Chalmers University of Technology, Dept. of Chemical and Biological Engineering, Gothenburg, Sweden
O7	NON-CONTACT ACOUSTIC TRAPPING PLATFORM FOR BEAD INCUBATION FOR MULTIPLEX ASSAYS Maria Tenje
O8	INTEGRATION OF POLYMER MICROFLUIDIC SWITH SILICON PHOTONIC SENSORS BY COMBINED PHOTOPATTERNING AND MOLDING OF OSTE Carlos Errando-Herranz KTH Royal Institute of Technology, Micro and Nanosystems, Stockholm, Sweden.
O9	MYFAB – SWEDEN'S OPEN-ACCESS NANOTECHNOLOGY RESEARCH INFRASTRUCTURE Thomas Swahn Microtechnology and Nanoscience – MC2, Chalmers, SE-412 96 Gothenburg, Sweden

17:00 end of session

17:10 visit the MSL Cleanroom

17:20 Bus to central Uppsala

18:20 Bus to central Uppsala

19:00 Banquet at the Botanical Garden

Friday May 16

9:00 Session 4 Chair: Göran Stemme, KTH

O10	BIOCHEMICAL SENSING BASED ON PLASMON ENHANCED SILVER QUANTUM CLUSTER FLUORESCENCE Klaus B. Mogensen Technical University of Denmark (DTU), Dept. of Micro- and Nanotechnology, Lyngby, Denmark
O11	SYMMETRIC, PLANAR WAVEGUIDE PLATFORM FOR EVANESCENT-WAVE MICROSCOPY IN AQUEOUS ENVIRONMENTS B. Agnarsson Department of Applied Physics, Division of Biological Physics, Chalmers University of Technology, Gothenburg, Sweden
O12	FABRICATION TECHNIQUES FOR NANO-FOCUSING X-RAY ZONE PLATES Jussi Rahomäki KTH Royal Institute of Technology, Department of Applied Physics, Stockholm, Sweden

10:00 Invited speaker Roland Zengerle, IMTEK, University of Freiburg

I2	MICROFLUIDIC PLATFORMS, MICROFLUIDIC APPS AND MICROFLUIDIC FOUNDRY SERVICES Roland Zengerle HSG-IMIT - Institut für Mikro- und Informationstechnik, Georges-Koehler-Allee 103, Freiburg, Germany IMTEK - Department of Microsystems Engineering, University of Freiburg, Germany

10:40 Poster session 2, Coffee

11:20 Session 5 Chair: Klaus Bo Mogensen, DTU

O13	MEMS GYRO FOR INERTIAL MEASUREMENT UNIT Cristina Rusu, Gert Andersson, Acreo Swedish ICT AB, Sensor Systems Department, Gothenburg, Sweden
O14	A FAST LIQUID ALLOY PATTERNING TECHNIQUE FORMICROFLUIDIC STRETCHABLE ELECTRONICS Seung Hee Jeong Uppsala University, Department of Engineering Sciences, Uppsala, Sweden
O15	TOWARDS INTEGRATION OF PCR AND CE WITH PNEUMATIC MEMBRANE PUMP AND VALVE K. Kolari VTT Technical Research Centre of Finland, Nanotechnologies and Microsystems, Espoo, Finland

12:20 Poster session 3 with lunch wraps

13:20 Session 6 Chair: Sami Franssila, Aalto University

O16	WATER MIST-INDUCED PARALLEL SELF-ALIGNMENT OF MICROCHIPS ON HYDROPHILIC/SUPER-HYDROPHOBIC NANOSTRUCTURED SURFACE Bo Chang Department of Electrical Engineering and Automation, Aalto University, Finland
O17	DROPLET MICROFLUIDICS BASED DIRECTED EVOLUTION DOUBLES PRODUCTION OF INDUSTRIAL ENZYMES IN YEAST CELL FACTORIES Håkan Jönsson Royal Institute of Technology KTH, Division of Proteomics and Nanobiotechnology, Stockholm, Sweden Novo Nordisk Foundation Center for Biosustainability, Technical University of Denmark, Denmark
O18	MICRO SYSTEM ASSISTED HIGH PRESSURE GAS STORAGE Prof. em. Lars Stenmark, Jonas Flädjemark Gastore AB, Björsberg gård, 311 65 Vessigebro
O19	APPLICATION OF INKJET DEPOSITION IN MICROSYSTEMS FABRICATION K. Eiroma VTT Technical Research Centre of Finland, Printed and hybrid functionalities, Espoo, Finland

14:40 Poster session 4, Coffee

15:20 Session 7 Chair: Kai Kolari, VTT

O20	THERMOMECHANICAL BEHAVIOUR AND PRESSURE SENSING OF CERAMIC WIRELESS DEVICES FOR HIGH-TEMPERATURE ENVIRONMENTS Peter Sturesson Ångström Space Technology Centre, Department of Engineering Sciences, Uppsala University, Uppsala, Sweden
O21	A REVIEW OF NON-INVASIVE CONTINUOUS BLOOD GLUCOSE MEASUREMENT TECHNIQUES Per Øhlckers Dep of Micro and Nano Systems Technology, University College Buskerud and Vestfold, Raveien 215, 3184 Borre, Norway
O22	TOWARD THE REALIZATION OF AN ELECTRICALLY DRIVEN SOURCE OF SINGLE PHOTONS Houssaine Machhadani Semiconductor Materials, IFM, Linköping University, S-58183 Linköping, Sweden
Final	POSTER PRIZE CERMONY SUMMARY

16:40 Workshop ends

16:50 visit the MSL Cleanroom

17:00 Bus downtown

17:50 Bus downtown

Oral Contributions

I1	COMPUTATIONAL MICROSCOPY, SENSING AND DIAGNOSTICS Aydogan Ozcan Electrical Engineering Department, Bioengineering Department, California NanoSystems Institute University of California, Los Angeles, CA
I2	MICROFLUIDIC PLATFORMS, MICROFLUIDIC APPS AND MICROFLUIDIC FOUNDRY SERVICES Roland Zengerle HSG-IMIT - Institut für Mikro- und Informationstechnik, Georges-Koehler-Allee 103, Freiburg, Germany IMTEK - Department of Microsystems Engineering, University of Freiburg, Germany
O1	RF TO MILLIMETER-WAVE MEMS AT KTH Joachim Oberhammer, Umer Shah, Zargham Baghchehsaraei, Fritzi Töpfer, Mikael Sterner, Nutapong Somjit, Sergej Dudorov School of Electrical Engineering, KTH Royal Institute of Technology, Stockholm, Sweden
O2	ROBUST MICRODEVICE MANUFACTURING BY DIRECT LITHOGRAPHY AND ADHESIVE-FREE BONDING OF OSTE+ POLYMER Alexander Vastesson*, Xiamo Zhou1, Niklas Sandström, Farizah Saharil, Omkar Supekar®, Göran Stemme, Wouter van der Wijngaart and Tommy Haraldsson1 KTH Royal Institute of Technology, Micro and Nanosystems, Stockholm, SWEDEN ®Indian Institute of Technology, Bombay, INDIA
O3	COMSOL MULTIPHYSICS SIMULATIONS FOR MICRO/NANO SYSTEMS APPLICATIONS Mikael Fredenberg COMSOL AB, Stockholm, Sweden
O4	FAST REVERSIBLE PHOTO-SWITCHING FROM CASSIE TO WENZEL WETTING STATES USING A MICROHOODOO-STRUCTURED SURFACE Sasha Hoshian[1], Ville Jokinen[1], Klas Hjort[2,3], Robin H. A. Ras[4], Sami Franssila[1] [1]Aalto University, School of Chemical Engineering, Department of Material Science, Espoo, Finland [2]VTT Technical Research Centre of Finland, Micronova, Espoo, Finland [3]Uppsala University, Div. Microsystem Technology, Uppsala, Sweden [4]Aalto University, School of Science, Department of Applied Physics, Espoo, Finland
O5	PROBING PHYSICAL PROPERTIES OF DNA-PROTEIN COMPLEXES USING NANOFLUIDIC CHANNELS Karolin Frykholm[1], Mohammadreza Alizadehheidari[1], Louise Fornander[1], Joachim Fritzsche[1], Jens Wigenius[1], Penny Beuning2, Mauro Modesti3, Fredrik Persson4 and Fredrik Westerlund1* 1Chalmers University of Technology, Gothenburg, SWEDEN 2Northeastern University, Boston, USA 3Université Aix-Marseille, Marseille, FRANCE 4Uppsala University, Uppsala, SWEDEN
O6	OPTICAL MAPPING OF SINGLE DNA MOLECULES IN NANOCHANNELS: A NOVEL METHOD FOR IDENTIFICATION AND CHARACTERIZATION OF ANTIBIOTIC RESISTANCE Lena Nyberg1, Gustav Emilsson1, Adam Nilsson2, Erik Lagerstedt2, Charleston Noble2, Liselotte Svensson Stadler3, Nahid Karami3, Fei Sjöberg3, Edward R. B. Moore3, Joachim Fritzsche4, Erik Kristiansson5, Jonas O. Tegenfeldt6, Tobias Ambjörnsson2, Fredrik Westerlund1 1 Chalmers University of Technology, Department of Chemical and Biological Engineering, Göteborg, Sweden 2 Lund University, Department of Astronomy and Theoretical Physics, Lund, Sweden

	3 Göteborg University, Department of Infectious Diseases, Göteborg, Sweden 4 Chalmers University of Technology, Department of Applied Physics, Göteborg, Sweden 5 Chalmers University of Technology, Department of Mathematical Sciences, Göteborg, Sweden 6 Lund University, Department of Physics, Lund, Sweden
O7	NON-CONTACT ACOUSTIC TRAPPING PLATFORM FOR BEAD INCUBATION FOR MULTIPLEX ASSAYS Maria Tenje1, Hongyan Xia2,3, Mikael Evander1, Björn Hammarström1, Axel Tojo1, Sándor Belák2,3,4, Thomas Laurell1,5 and Neil LeBlanc3,4 1 Department Biomedical Engineering, Lund University, S-221 00 Lund, Sweden 2Department of Biomedical Sciences and Veterinary Public Health (BVF), Swedish University of Agricultural Sciences, S-750 07 Uppsala, Sweden 3 The World Organization for Animal Health (OIE) Collaborating Centre for the Biotechnology-based Diagnosis of Infectious Diseases in Veterinary Medicine, Uppsala, Sweden 4 Department of Virology, Immunobiology and Parasitology, The National Veterinary Institute (SVA), S-751 89, Uppsala, Sweden 5 Department of Biomedical Engineering, Dongguk University, Seoul, 100-715 Korea
O8	INTEGRATION OF POLYMER MICROFLUIDIC SWITH SILICON PHOTONIC SENSORS BY COMBINED PHOTOPATTERNING AND MOLDING OF OSTE Carlos Errando-Herranz 1, Farizah Saharil 1, Albert Mola Romero 2, Niklas Sandström 1, Reza Zandi Shafagh 1, Wouter van der Wijngaart 1, Tommy Haraldsson 1, and Kristinn B. Gylfason 1 1 KTH Royal Institute of Technology, Micro and Nanosystems, Stockholm, Sweden. 2 University of Barcelona, Barcelona, Spain
O9	MYFAB – SWEDEN'S OPEN-ACCESS NANOTECHNOLOGY RESEARCH INFRASTRUCTURE Thomas Swahn1, Christina Caesar1, Peter Modh1, Nils Nordell2, Stefan Nygren3 1Microtechnology and Nanoscience – MC2, Chalmers, SE-412 96 Gothenburg, Sweden 2KTH Electrum Laboratory, Electrum 229, SE-164 40 Kista, Sweden 3Ångström Microstructure Laboratory, Uppsala University, Box 534, SE-751 21 Uppsala, Sweden
O10	BIOCHEMICAL SENSING BASED ON PLASMON ENHANCED SILVER QUANTUM CLUSTER FLUORESCENCE Sylvain Bernard1, Jörg P. Kutter2 and Klaus B. Mogensen1 1. Technical University of Denmark (DTU), Dept. of Micro- and Nanotechnology, 2800 Kgs. Lyngby, Denmark 2. University of Copenhagen (KU), Dept. of Pharmacy, 2100 Copenhagen, Denmark
O11	SYMMETRIC, PLANAR WAVEGUIDE PLATFORM FOR EVANESCENT-WAVE MICROSCOPY IN AQUEOUS ENVIRONMENTS B. Agnarsson, A. Lundgren and F. Höök Department of Applied Physics, Division of Biological Physics, Chalmers University of Technology, Fysikgrand 3, SE-412 96 Göteborg, Sweden
O12	FABRICATION TECHNIQUES FOR NANO-FOCUSING X-RAY ZONE PLATES Jussi Rahomäki, Fredrik Uhlén, Karolis Parfeniukas, and Ulrich Vogt KTH Royal Institute of Technology, Department of Applied Physics, Stockholm, Sweden
O13	MEMS GYRO FOR INERTIAL MEASUREMENT UNIT Cristina Rusu, Gert Andersson, Acreo Swedish ICT AB, Sensor Systems Department, Göteborg, Sweden
O14	A FAST LIQUID ALLOY PATTERNING TECHNIQUE FORMICROFLUIDIC STRETCHABLE ELECTRONICS Seung Hee Jeong, Klas Hjort, and Zhigang Wu Uppsala University, Department of Engineering Sciences, Uppsala, Sweden
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O16	WATER MIST-INDUCED PARALLEL SELF-ALIGNMENT OF MICROCHIPS ON HYDROPHILIC/SUPER-HYDROPHOBIC NANOSTRUCTURED SURFACE Bo Chang1), Ali Shah2), Harri Lipsanen2), Quan Zhou1) 1) Department of Electrical Engineering and Automation, Aalto University, Finland 2) Department of Micro and Nanosciences, Aalto University, Finland
O17	DROPLET MICROFLUIDICS BASED DIRECTED EVOLUTION DOUBLES PRODUCTION OF INDUSTRIAL ENZYMES IN YEAST CELL FACTORIES Håkan Jönsson°†, Staffan Sjöström°†, Yunpeng Bai°†, Mingtao Huang*†, Jens Nielsen*† andHelene

	Andersson Svahn°† °Royal Institute of Technology KTH, Division of Proteomics and Nanobiotechnology, Stockholm, Sweden * Department of Chemical and Biological Engineering, Chalmers University of Technology, Sweden † Novo Nordisk Foundation Center for Biosustainability, Technical University of Denmark, Denmark
O18	MICRO SYSTEM ASSISTED HIGH PRESSURE GAS STORAGE Prof. em. Lars Stenmark, Jonas Flädjemark Gastore AB, Björsberg gård, 311 65 Vessigebro
O19	APPLICATION OF INKJET DEPOSITION IN MICROSYSTEMS FABRICATION 1Eiroma K., 2Viljanen H., 1Hakola L., 1Smolander M. VTT Technical Research Centre of Finland, Printed and hybrid functionalities1 and Microelectronic systems2, 02150 Espoo, Finland
O20	THERMOMECHANICAL BEHAVIOUR AND PRESSURE SENSING OF CERAMIC WIRELESS DEVICES FOR HIGH-TEMPERATURE ENVIRONMENTS Peter Sturesson1, 2,3, Zahra Khaji2, Stefan Knaust2, Lena Klintberg2, and Greger Thornell1, 2 1Ångström Space Technology Centre, Department of Engineering Sciences, Uppsala University, Uppsala, Sweden 2Division of Microsystems Technology, Department of Engineering Sciences, Uppsala University, Uppsala, Sweden 3Division of Military Technology, Department of Military Sciences, Swedish National Defence College, Stockholm
O21	A REVIEW OF NON-INVASIVE CONTINUOUS BLOOD GLUCOSE MEASUREMENT TECHNIQUES Asmat Nawaz a, Per Øhlckers a, M. Nadeem Akram a, Steinar Sælid b, Morten Jacobsen c a Dep of Micro and Nano Systems Technology, University College Buskerud and Vestfold, Raveien 215, 3184 Borre, Norway b Prediktor Medical AS, Habornveien 48B N-1630 Gamle Fredrikstad c Sykehuset Østfold, N-1603 Fredrikstad
O22	TOWARD THE REALIZATION OF AN ELECTRICALLY DRIVEN SOURCE OF SINGLE PHOTONS Houssaine Machhadani, Tomas Jemson, Fredrik Karlsson, Per Olof Holtz Semiconductor Materials, IFM, Linköping University, S-58183 Linköping, Sweden

Poster Contributions

P1	AN EFFICIENT ELECTROSTATIC PRECIPITATION SAMPLER FOR BREATH-BASED POINT-OF-CARE DIAGNOSTICS Laila Ladhani, Gaspard Pardon, Niklas Sandström, Maxime Ettori, Gleb Lobov, and Wouter van der Wijngaart. KTH Kungliga Tekniska Högskolan, Micro- and Nanosystems, Stockholm, Sweden
P2	DEVELOPMENT OF NEW METALLIZATION PROCESSES FOR HIGH ASPECT RATIO THROUGH-SILICON-VIA S. Moulodi, J. Fredlund, T. Ebefors Silex Microsystems AB; Bruttovägen 1, Järfälla, SE-175 26, Sweden
P3	QUANTUM PHASE SLIPS Adem Ergül† ‡ Muhammet S. Toprak† David B. Haviland‡ † Department of Materials and Nano Physics, KTH Royal Institute of Technology, Sweden ‡ Nanostructure Physics, KTH Royal Institute of Technology, Sweden
P4	HIGH TEMPERATURE THERMOELECTRIC ENERGY HARVESTERS FOR WIRELESS SENSORS J.E. Köhler1, R. Heijl1, L.G.H. Staaf1, S. Zenkic2, E. Svenman2, A.E.C. Palmqvist1 and P. Enoksson1 1 Chalmers University of Technology, Göteborg, Sweden 2 GKN Aerospace, Trollhättan, Sweden
P5	A BIOCOMPATIBILITY STUDY OF OSTE POLYMERS BY CELL GROWTH EXPERIMENTS Carlos Errando-Herranz1, Alexander Vastesson1,2, Marina Zelenina1, Gaspard Pardon1, Gunnar Bergström2, Wouter van der Wijngaart1, Tommy Haraldson1, Hjalmar Brismar1, and Kristinn B. Gylfason1 1 KTH Royal Institute of Technology, Micro and Nanosystems, Stockholm, Sweden 2 Linköping University, Linköping, Sweden

P6	PLASMONIC SENSING BASED ON SURFACE SCREENING OF SMALL SILVER NANOPARTICLE FILMS DURING CONTROLLED DISSOLUTION IN AQUEOUS SOLUTION. Klaus B. Mogensen1 and Katrin Kneipp2 1. Technical University of Denmark (DTU), Dept. of Micro- and Nanotechnology, 2800 Kgs. Lyngby, Denmark, Phone: +45 45256304, E-mail: klaus.mogensen@nanotech.dtu.dk 2. Technical University of Denmark (DTU), Dept. of Physics, 2800 Kgs. Lyngby, Denmark.
P7	ENHANCEMENT OF FLORESCENT SIGNAL FROM QUANTUM-DOT APTAMER BEACONS USING 3D PHOTONIC CRYSTAL STRUCTURES Chae Young Lim1, Eunpyo Choi1, Youngkyu Park2, Jungyul Park1 1Sogang University, Mechanical Engineering, Seoul, Korea 2Agency for Defense Development, Daejeon, Korea
P8	SUSPENDED GRAPHENE MEMBRANES FOR PIEZORESISTIVE SENSING OF PRESSURE A.D. Smith1, F. Niklaus1, S. Vaziri1, A.C. Fischer1, M. Sterner1, F. Forsberg1, S. Schröder1, M. Östling1, M.C. Lemme2 1KTH Royal Institute of Technology, Stockholm, Sweden, 2University of Siegen, Germany
P9	MICROMACHINED GAP WAVEGUIDE DEVICES FOR ABOVE 100 GHz S. Rahiminejad, E. Pucci, A. U. Zaman, H. Raza, A. Algaba-Brazalez, A.M. Saleem, V. Vassilev, V. Desmaris, S. Haasl, P. Enoksson, P.-S. Kildal Chalmers University of Technology, Department of Microtechnology and Nanoscience, Gothenburg, Sweden Chalmers University of Technology, Department of Signals and Systems, Gothenburg, Sweden Royal institute of Technology, School of Technology of health, Stockholm, Sweden
P10	FLIP-CHIP BONDING: KEY APPROACH FOR HYBRID INTEGRATION Qin Wang*, Susanne Almqvist, Sirpa Persson, Helena Strömberg, Olof Öberg, Stéphane Junique, Bertrand Noharet, Björn Samel and Jan Y. Andersson Acreo Swedish ICT AB, Box 1070, 164 25 Kista, Stockholm, Sweden
P11	DEVELOPMENT OF A DROPLET GENERATOR TOWARDS APPLICATIONS USING ACOUSTOPHORETIC SORTING Linus Jonsson1, Anna Fornell1, Haakan Joensson2, Johan Nilsson1, Maria Tenje1 1 Department of Biomedical Engineering 2 Div of Proteomics and Nanobiotechnology Lund University Royal Institute of Technology (KTH), Science for Life Laboratory S-221 00 Lund, Sweden Box 1031 S-171 21 Solna, Sweden
P12	MP-SPR NEW CHARACTERIZATION METHOD FOR SURFACE INTERACTIONS AND NANOLAYER PROPERTIES Annika Jokinen, Johana Kuncova-Kallio, Niko Granqvist, Willem M. Albers and Janusz Sadowski BioNavis Ltd, Ylöjärvi, Finland
P13	CHARACTERIZATION OF MICROMACHINED MILLIMETERWAVE MEDICAL PROBE USING SILICON TEST SAMPLES WITH TAILOR-MADE PERMITTIVITY PATTERN Fritzi Töpfer, Sergey Dudorov, and Joachim Oberhammer KTH Royal Institute of Technology, Stockholm, Sweden
P14	RAPID FABRICATION OF OSTE+ MICROFLUIDIC DEVICES WITH LITHOGRAPHICALLY DEFINED HYDROPHOBIC/ HYDROPHILIC PATTERNS AND BIOCOMPATIBLE CHIP SEALING Xiamo Zhou, Fredrik Calborg, Niklas Sandström, Abdul Haleem, Alexander Vastesson, Farizah Saharil, Wouter van der Wijngaart and Tommy Haraldsson KTH Royal Institute of Technology, Dept. of Micro and Nanosystems, Stockholm, SWEDEN
P15	IMAGE-BASED MEASUREMENTS OF PAPER FIBERS FOR AUTOMATIC MANIPULATION Juha Hirvonen and Pasi Kallio Tampere University of Technology, Department of Automation Science and Engineering, Tampere, Finland
P16	MAREX - EXPLORING MARINE RESOURCES FOR BIOACTIVE COMPOUNDS Kristina Fogel, Dag Ilver, Jakob Blomgren Acreo Swedish ICT AB, Sensor Systems department, Gothenburg, Sweden
P17	DEVELOPING A POINT OF CARE DEVICE FOR RAPID TUBERCULOSIS DIAGNOSTICS Dag Ilver, Johan Stigwall, Corina Zörgiebel, Cristina Rusu Acreo Swedish ICT AB, Sensor Systems department, Gothenburg, Sweden

P18	INVESTIGATION FOR MEASUREMENTS OF BODY PARAMETERS WITH SENSORS Jiaying Du12, Christer Gerdtman1 and Maria Lindén2 1Motion Control AB, Ängsgärdsgatan 10, SE-721 30 Västerås, Sweden 2School of Innovation, Design and Engineering, Mälardalen University, Gurksaltargatan 9, SE-722 18 Västerås, Sweden
P19	MICROROBOTIC PLATFORM FOR CHARACTERIZATION OF MICROSCALE FIBROUS MATERIALS: EXEMPLARY CASE ON PAPER FIBERS Pooya Saketi and Pasi Kallio Tampere University of Technology, Department of Automation Science and Engineering, Tampere, Finland
P20	TOWARDS SELF-ASSEMBLED ELECTRONICS; CONDUCTING DNA ORIGAMI USING METALLIC POLYMERS Erik Benson*, Mahiar Hamedi*, Anders Elfwing**, David Jullesson**, Patrik Johansson**, Olle Inganäs**, Björn Högberg* *Karolinska Institute, Department of Neuroscience Stockholm, Sweden **Linköping University, Biomolecular and Organic Electronics, Linköping, Sweden
P21	FABRICATION OF NANOPORE ARRAYS IN SILICON Miao Zhang, Torsten Schmidt, and Jan Linnros Royal Institute of Technology (KTH), Department of Materials and Nano-Physics, Stockholm, Sweden
P22	MICROFLUIDIC ACOUSTIC TRAPPING FOR SEPSIS DIAGNOSIS USING MALDI-MS S. Ekström1,4, B. Hammarström1*, B Nilson2, T. Laurell1,3,4, J. Nilsson1 1Department of Measurement Technology and Industrial Electrical Engineering, Lund University, SWEDEN 2Clinical Microbiology, Labmedicin Skåne, SWEDEN 3Department of Biomedical Engineering, Dongguk University, KOREA 4CREATE Health, Lund University, SWEDEN
P23	SEPARATION OF BACTERIA FROM BLOOD CELLS BY ACOUSTOPHORESIS FOR RAPID SEPSIS DIAGNOSTICS Pelle Ohlsson, Klara Petersson, Per Augustsson and Thomas Laurell Lund University, Deparment of Bimedical Engineering, Lund, Sweden
P24	INDIUM TIN OXIDE THIN FILMS FOR FORMALDEHYDE AND ACETALDEHYDE SENSING P. C. Lansåker, U. Cindemir, L. Österlund, G. A. Niklasson and C. G. Granqvist Department of Engineering Sciences, The Ångström Laboratory, Uppsala University, P.O. Box 534, SE-751 21 Uppsala, Sweden
P25	CELL CULTURE ENVIRONMENTS FOR STEM CELL STUDIES IN VITRO Joose Kreutzer1,2 and Pasi Kallio1,2 1Department of Automation Science and Engineering, Tampere University of Technology, Tampere, Finland 2BioMediTech, Biokatu 10, 33520, Tampere, Finland
P26	LOW STRESS PACKAGING FOR MEMS DEVICES USING DOUBLE-SIDED WIRE BONDING S. Schröder1, A. Nafari2, K. Persson2, E. Westby3, A. C. Fischer1, G. Stemme1, F. Niklaus1and S. Haasl1 1KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden 2Imego – Acreo AB, Arvid Hedvalls Backe 4, SE-400 14 Gothenburg, Sweden 3Sensonor AS, Knudsrødveien 7, N-3192 Horten, Norway
P27	LITHIUM NIOBATE BASED OPTICAL DEVICES Mohammad Amin Baghban1, Matthias Bremer2 and Katia Gallo1,* 1 Quantum Electronics and Quantum Optics division, Department of Applied Physics, School of Engineering Sciences, KTH Royal Institute of Technology, 10691 Stockholm, Sweden 2 Integrated Systems and Photonics division, Christian-Albrechts-University of Kiel
P28	POLYMER FUNCTIONALIZATION OF NANOSTRUCTURES Gustav Emilsson, Andreas Dahlin Chalmers University of Technology, Applied Physics, Göteborg, Sweden
P29	A DISPOSABLE MICROFLUIDIC IMMUNOASSAY CARTRIDGE FOR POINT OF CARE APPLICATIONS Jari Väliahoa, Jarkko Mutanenb, Martti Silvennoinenb, Lasse Välimaac and Pasi Kallioa a) Tampere University of Technology, Department of Automation Science and Engineering, Tampere, Finland b) University of Eastern Finland, Department of Physics and Mathematics, Joensuu, Finland c) University of Turku, Department of Biochemistry, Turku, Finland

P30	CARBON NANOFIBRES FROM CELLULOSE AS ELECTRODES FOR ELECTRONIC DEVICES V. Kuzmenko1,2*, H. Staaf1, O. Naboka1, M. M. Haque1, P. Lundgren1, P. Gatenholm2,3, P. Enoksson1,2 1Chalmers University of Technology, Department of Microtechnology and Nanoscience, Gothenburg, Sweden, 2Chalmers university of Technology, Wallenberg Wood Science Center, Gothenburg, Sweden, 3Chalmers University of Technology, Department of Chemical and Biological Engineering, Gothenburg, Sweden
P31	TOWARDS POLYMER GATES IN NANOPORES Andreas B. Dahlin,1 Kunli Xiong,1 Gustav Emilsson,1 Janne T. Hyötylä,2 Roderick Y. H. Lim2 1 Chalmers University of Technology, Department of Applied Physics, Göteborg, Sweden 2 Biozentrum and the Swiss Nanoscience Institute, University of Basel, Switzerland
P32	MICRONEEDLE BASED SAMPLING FOR LIPID ANALYSIS Ari Hokkanen1, Ingmar Stuns1, Philipp Schmid2, Annukka Kokkonen1, Alexander Steinecker2, Päivi Heimala1, Leena Hakalahti1 1VTT, PO Box 1000, FI-02044 VTT, Finland 2CSEM, Untere Gründlistrasse 1, CH-6055 Alpnach, Switzerland
P33	LOW GAS PERMEABLE AND NON-ABSORBENT RUBBERY OSTE+ FOR PNEUMATIC MICROVALVES Jonas Hansson, J. Mikael Karlsson, Carl Fredrik Carlborg, Wouter van der Wijngaart and Tommy Haraldsson KTH Royal Institute of Technology, Stockholm, SWEDEN
P35	LUND NANO LAB - NANOFABRICATION CENTER WITHIN THE NANOMETER STRUCTURE CONSORTIUM AT LUND UNIVERSITY Ivan Maximov, Peter Ramvall, Mariusz Graczyk, Søren Jeppesen, Anders Kvennefors, Håkan Lapovski, Bengt Meuller, George Rydnemalm, Peter Blomqvist and Lars Montelius Lund Nano Lab, Solid State Physics/Nanometer Structure Consortium at Lund University, Department of Physics, Lund University, Lund, S-221 00, Sweden
P36	A HIGH-PERFORMANCE MICROPLASMA SOURCE FOR HIGHLY SENSITIVE AND ROBUST GAS ANALYSIS Martin Berglund, Anders Persson and Greger Thornell Uppsala University, Ångström Space Technology Centre, Department of Engineering Sciences, Uppsala, Sweden
P36	MICROARRAY ON LAB-ON-DVD PLATFORM FOR NUCLEIC ACID ANALYSIS Harisha Ramachandraiah*, Mary Amasia *, Luis A. Tortajada-Genaro**, Sara Santiago Felipe** , Aman Russom* * Division of Proteomics and Nanobiotechnology, Science for life laboratory, KTH Royal Institute of Technology, SWEDEN **Instituto de Quı´mica Molecular Aplicada, Departamento de Quı´mica, Universidad Polite´cnica de Valencia, Spainuniversity of spain, SPAIN
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