PROGRAM

COMMERCIALIZATION OF MICRO- AND NANOSYSTEMS

25-28 AUGUST 2013
ENSCHEDE THE NETHERLANDS

coms2013.com
Connecting different worlds, realizing creative systems

Twente

DEAR ATTENDEES OF COMS 2013

I welcome you at COMS 2013 in Enschede, the Netherlands, on behalf of MANCEF. MANCEF is the Micro and Nanotechnology Commercialization Education Foundation, a global membership association focused on the commercialization of small technologies. MANCEF's premier product is COMS, the Commercialization of Micro and Nano Systems conference, an annual event focused primarily on the process of commercialization, on entrepreneurship and marketable solutions. It is a hands-on, practical meeting to assist you in bringing your products to market, finding new customers, or the perfect development partner.
The strength of COMS is that it brings together leaders from all over the world and every sector of industry, from high tech companies, national labs, regional development and government agencies, investment and consulting groups, market researchers, educators and students. The common interest of this COMS community is in supporting and accelerating commercialization activities among established and emerging micro and nano businesses.

COMS travels around the world since 1994; it is carried by a global community of experts in nano and micro technologies and the respective businesses in small-tech. COMS provides its attendees with an unique opportunity to get to know each other personally and to expand their professional networks. Most COMS conferences in the past were organized by a local organizer together with MANCEF. For COMS 2013 the MESA+ Institute for Nanotechnology and Kennispark Twente assumed the responsibility for hosting the conference at Enschede, the Netherlands. Traditionally, COMS addresses issues of actual global interest to our community; the current approach towards successful commercialization of novel micro and nano products led this year to the overall conference theme connecting different worlds, realizing creative systems. Some topics to be discussed at COMS 2013 are entrepreneurship, applications and market opportunities for enabling micro- and nanotechnologies, the investor's and the company's point of view in commercialization, and new approaches in technology and innovation education.

Organizing an international COMS conference is a formidable challenge and task, which requires a highly dedicated team working hard through good times and bad times over at least one year. We are fortunate that Miriam Luizink, MESA+ Institute for Nanotechnology, and Kees Eijkel, Kennispark Twente, assumed leadership for hosting COMS 2013. I am deeply grateful for their willingness, enthusiasm and expertise to create this great event in the Netherlands. With them, I would like to thank personally a very few individuals, who contributed in various ways to the organization of this conference: Annerie Heesink, José Nijhuis, Janinka Feenstra, Nancy Trip, Sikha Ray and Tamara Bebion. Their names stand for a larger group of individuals from all over the world serving in the various committees in preparation of COMS 2013 and making this event finally happen.
A conference like COMS depends vitally on partners, sponsors and exhibitors. They are key components in our efforts to accelerate commercialization of nano and micro products and to develop business strategies. We are very glad and grateful for their interest and generous support. The final program, both in presentations and exhibitions, is exciting. I thank our speakers in advance for the quality they have brought into COMS 2013.
Finally, I thank you all for attending COMS 2013 and look forward to meeting you in Enschede!

Volker Saile, President MANCEF

WELCOME

DEAR COMS COLLEAGUES,

In a world that needs innovation and entrepreneurship more than ever to cope with grand societal challenges and structural changes in economy, COMS has a special position. The practical character of this conference helps entrepreneurs, researchers and governments to speed up commercialization and improve their approach in realizing an optimal environment for innovation and entrepreneurship.

We welcome you to the Netherlands, to region of Twente and the city of Enschede, for COMS 2013, the 18th edition of the annual international conference on commercializing micro- and nanotechnology. The Netherlands have a strong history in micro- and nanotechnology, with ambitious national programs like NanoNed and NanoNextNL, the national research infrastructure NanoLabNL, leading institutes like MESA+, Kavli and Holst, world leading industries like ASML and Philips, and ambitious fast growing companies like Micronit and SolMateS. Twente has played a pivotal role worldwide furthering both research and commercialization in micro- and nanotechnology, with lead actors such as MESA+ and Kennispark. Take your time to get to know our national and regional players at COMS. The program has ample opportunity to do so.

We kindly thank our partners for teaming up organizing this year's COMS, our sponsors for making it possible, and MANCEF for upholding such a great conference over the years.

Enjoy!

Miriam Luizink
technical-commercial director
MESA+ Institute for Nanotechnology

Kees Eijkel
director
Kennispark

Diamond Partner

Sandia National Laboratories

Platinum Partner

nanonextnl

Gold Partner

MESA+ INSTITUTE FOR NANOTECHNOLOGY

Kennispark Twente Innovate & Accelerate

NanoLabNL

SAXION

high|tech|factory nano and microtechnology production facilities

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National Delegation Sponsorship

Norwegian Centres of Expertise NCE Micro- and Nanotechnology

MICROTECH INNOVATION

Media Partner

CMM international

NIA Nanotechnology Industries Association

MinacNed

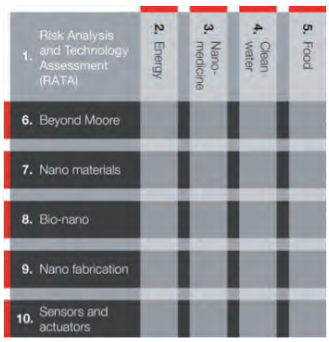
Program

Sunday 25th August

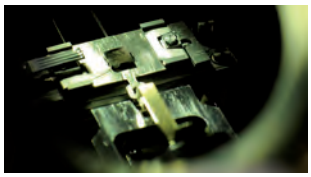
10:00 - 14:00	**BOOTCAMP Young Technology Award** **Location: Concordia, Enschede**
10:30 - 16:00	**GOLF TOURNAMENT at Sybrook, Enschede**
14:30 - 16:00	**PITCH TRAINING YOUNG TECHNOLOGY AWARD** **Location: Concordia, Enschede**
17:00 - 18:30	**WELCOME RECEPTION (Grote Kerk at the Oude Markt in city center of Enschede)**

nanonextnl
innovating with micro and nanotechnology

NanoNextNL is a consortium of more than one hundred companies, universities, knowledge institutes and university medical centres, which is aimed at research into micro and nanotechnology. The total sum involved for NanoNextNL is 250 million euros, half of which is contributed by the collaboration of more than one hundred businesses, universities, knowledge institutes and university medical centres and the other half by the Government of the Netherlands.



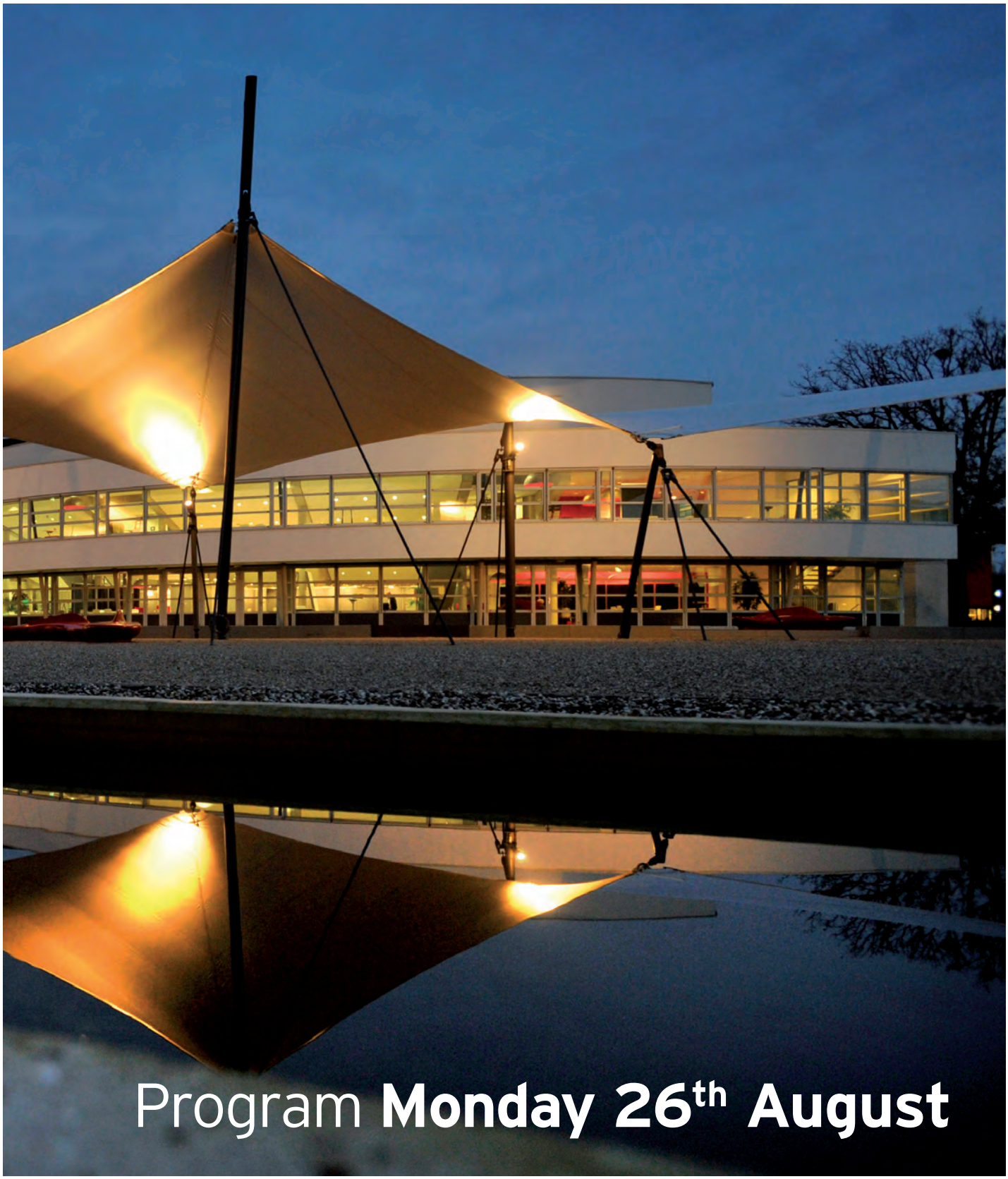
NanoNextNL is organized in 10 themes which include a total of 28 programmes. There are three different types of themes:
- Risk Analysis and Technology Assessment (RATA) (1)
- Application Themes (2-5)
- Generic Technology Themes (6-10)



MESA+
INSTITUTE FOR NANOTECHNOLOGY
www.utwente.nl/mesaplus

Kennispark develops and provides an optimal environment for knowledge-intensive and innovative companies who want to accelerate their growth by innovating. We offer both an attractive innovation campus in Enschede as a business location, as extensive support for innovative businesses with growth plans across Twente. Knowledge transfer between University of Twente or Saxion and existing companies is key.
More information: www.kennispark.nl

Kennispark Twente
Innovate & Accelerate



Program **Monday 26th August**

Program Monday 26th August

09:00	**WELCOME AND OPENING** **Room: Waaier 1**
	Miriam Luizink, Technical Commercial director MESA+ Institute for Nanotechnology
	Ed Brinksma, Rector Magnificus University of Twente
	Volker Saile, President MANCEF and CSO Karlsruhe Institute of Technology
	PLENARY SESSION **Prof. dr. ing. Dave H.A. Blank,** Scientific Director MESA+ Institute for Nanotechnology **THE DUTCH LANDSCAPE IN NANOTECHNOLOGY**
10:00	Coffee break and exhibition

10:30	**TRACK A1 - THE INVESTOR'S POINT OF VIEW IN COMMERCIALIZATION** **Room: Waaier 1** **Chair: Martijn Enter** Steven Walsh - University of New Mexico, US *Trends in Investing: How it affects early stage funding* Jelto Kromwijk Smit – Prime Ventures, NL *Sources of funding* Ray Quintana – Cottonwood Technology Fund, US *Early Stage Funding through the Formalization of a Competence Based Venture Funding Model* Harm de Vries – Twente Tech Fund, NL *Venture capital terms and conditions; how vc´s structure their investment* Jaap Beernink – Golden Egg Check *Venture capitalists´process and their product and market related investment criteria* Marc Lambrechts - Capricorn Venture Partners, BE *A VC perspective on investing in micro-systems based start-ups*	**TRACK B1 - INDUSTRY NEEDS AND A MICROSYSTEMS ROADMAP FOR FOOD PROCESSING** **Room: Waaier 3** **Chair: Christophe Cotillon** **Patric Salomon** Christophe Cotillon - ACTIA *Introduction* Roger van Hoesel, Food Valley, NL *Where food ideas grow: Food Valley and innovation in the Dutch food industry* Karin Schroen - Wageningen University, NL *Matching academic research interest with industrial demands in the field of emulsification* Josef Müller - Fraunhofer IME and Fraunhofer Food Alliance, DE *State of the Art in Food Analysis Methods* Katrin Schmitt - Fraunhofer IPM, DE *Current and Future Sensor Technologies - towards a Roadmap for Dairy Processing* Elisabeth Delevoye - CEA - Leti, MINATEC, FR *Title: tba* Patric Salomon - enablingMNT, DE *Microsystems for food roadmapping - wrap-up and panel discussion*	**TRACK C1 - PRINTED ELECTRONICS** **Room: Waaier 4** **Chair: Frits Feenstra** Frits Feenstra - TNO, NL *Introduction* Martin Smallegange - Stork, NL *The opportunities and challenges of functional printing with screen and ink jet* Markus Dickerhof - KIT, DE *An additive manufacturing and e-printing based approach for flexible scalable manufacturing of Microsystems* Kim Eiroma - VTT Technical Research Centre of Finland *Towards upscaling and commercialization of Rapid Electrical Sintering (RES) technology for printed electronics fabrication* António Braz Costa - Centi, POR *Title: tba*

12:30	Lunch and exhibition

13:30	TRACK A2 - THE INVESTMENT PROCESS FROM A COMPANY'S POINT OF VIEW Room: Waaier 1 **Chair: Janusz Bryzek** Janusz Bryzek - Fairchild Semiconductor, US *Starting the Startups, Silicon Valley Way* Vincent Spiering - QMicro, NL *From MEMS start-up to corporate entity and back again: a continuing story* Sul Kassicieh - University of New Mexico, US *New Directions in Entrepreneurship and Venture Funding in Nano-Technology and Microsystems* Paul Nederkoorn - UTIV, NL *UT International Ventures makes potentially disruptive technologies financeable* Kees Revenberg - Maser Engineering, NL *The role of an independent service provider as shared facility center in the electronic and MEMS world* Ron Lawes - STC, MiniFAB *Estimating the Commercial Investment and Unit Cost-of-Production - from MEMS R&D Prototypes*	TRACK B2 - MICRONANO SOLUTIONS FOR THE FOOD INDUSTRY Room: Waaier 3 **Chair: Helge Bergslien** Helge Bergslien - NCE Culinology, NO *Consumer perception and environmental issues - core elements in discussion about food and micro-nanotechnology* Krassimir Velikov - Unilever, NL *From strong interactions for soft materials: Harvesting strong intermolecular interactions for design of novel functional nano- and microstructures for food applications* Steven van Campenhout - Flanders Food, BE *Sensors For Food: possibilities and opportunities for doof manufactures and technology providers* Kris Vandevoorde - IMEC, BE *Hyperspectral camera´s: driving the revolution of machine vision & food applications* Eric Smith - TrustFood, NL *Commercialisation prospects and challenges for microphotonic sensors* Peter Höjerback - Serstech AB, Lund, SE *Increasing quality while saving costs - the benefits of handheld Raman* Aurel Ymeti - Ostendum, NL *Lab-on-a-Chip Biosensor for Food Safety and Water Monitoring*	TRACK C2 - PRINTED ELECTRONICS Room: Waaier 4 **Chair: Reinhard Baumann** Reinhard Baumann - Chemnitz University, DE *Manufacturing Smart Objects by Printing Technologies* Ralf Mauer - InnovationLab, DE *Commercializing Organic and Large Area Electronics in Europe* Corne Rentrop - TNO, NL *Printed sensors on a paper substrates* Marc Koetse - Holst / TNO, NL *Smart Devices bringing organic and large area electronics to the market place* Felix Buss - KIT, DE *Structure Formation and Mass Transfer Phenomena in Nanoscale Printed Electronic Films* Guofu Zhou - SCNU, China *Electronic Paper Display and its Applications*

15:30	Coffee Break and Exhibition

16:00	PLENARY SESSION - Room: Waaier 1
	Tim Harper, CEO Cientifica - **CONNECTING MARKET NEEDS WITH EMERGING TECHNOLOGIES**
	Peter R. Russo, Boston University School of Management **WHAT ARE WE (SHOULD WE BE) TEACHING TOMORROW'S ENTREPRENEURS?**

17:00	Travel towards YTA

17:30 - 22:00	**YOUNG TECHNOLOGY AWARD** ATAK Enschede Drinks and Tapas

Program **Tuesday 27th August**

Program Tuesday 27th August

09:00	**PLENARY SESSION** **Room: Waaier 1** **Chair: Clive Davenport**
	Don Tennant, Cornell University **THE CORNELL NANOSCALE FACILITY: AN OPEN LAB RESOURCE FOR INTERDISCIPLINARY RESEARCH AND COMMERCIALIZATION**
	Prof. dr. ir. Albert van den Berg BIOS, the Lab-on-a-chip group, MESA+ Institute for Nanotechnology, University of Twente **LAB-ON-A-CHIP: MOVING FROM SCIENCE TO THE MARKET**
10:00	Coffee break and exhibition

10:30	**TRACK A3 - THE GLOBAL VALUE CHAIN** **Room: Waaier 1** **Chair: Jonathan Linton**	**TRACK B3 - NANOSCOPY** **Room: Waaier 3** **Chair: Frank de Jong**	**TRACK C3 - MEDICAL TECHNOLOGIES** **Room: Waaier 4** **Chair: Henne van Heeren**
	Jonathan Linton – University of Ottawa, CA *A Market Pull Approach to Development and Commercialization of Micro-Nano-Technologies as an Integral Part of Existing Supply Chains* Christine Neuy – MicroTEC Südwest *MicroTEC Südwest - Highlights from the cluster roadmap* Dirk Ortloff – Process Relations GmbH *The MEMS Industry Groups Technology Development Process Template* Konstantin Vishnevskiy – HSE, RU *Integrated roadmaps for nano-technologies: Russian experience* Arjan van Liere - Present Media, NL *Digital Business Development opens new market opportunities!* Robert Haak - Insight Asia, SI *MNT trends in the Asia Supply Chain*	Frank de Jong - FEI, NL *Electron microscopy supporting nano-technologies: recent trends* Joost Frenken - LPM/University Leiden, NL *Nano-Imaging under Industrial Conditions* Peter Drent - Nikon Instruments Europe BV, NL *Optical microscopy enters the nano world* Andries Effting - Delmic, NL *Simultaneous Correlative Light and Electron Microscopy* Hamed Sadhegian - TNO, NL *Pushing the Boundaries in Throughput of Scanning Probe Microscopes* Natacha Lourette - DSM Resolve, NL *High-end analytical tools for innovative nanotechnology and science*	Dominique Delmas - Future Health Products, FR *The EPoSS Strategic Research Agenda in Health Sector and beyond (EPoss, the European Platform on Smart Systems Integration)* Sven Schönfelder - INSION, DE *Enhanced specificity and sensitivity by a new generation of monolithic spectral sensors for medical diagnostics, process control, safety- and colorimetric applications* Per Ohlckers - Prediktor, NO *GlucoPred - A Personal Non-invasive Glucose Monitoring Systems* Daniel Rossbach - HSG-IMIT, DE *SMART Implant: Implantable Electronics for Clinical Diagnostics and Therapy* Tor Inge Tønnesen – Oslo University Hospital, NO *An organ-implantable biosensor (IscAlert TM) for real-time detection of insufficient blood supply: Medical and commercial aspects* Marc Robillard - Tagworks, NL *In vivo actuaction of tagged antibodies*
12:30	Lunch and exhibition		

13:30	**TRACK A4 - LESSONS LEARNED** **Room: Waaier 1** **Chair: Job Elders** Job Elders - Greenfield Foundation, NL *Lessons learned in High tech value creation* Lee Ayres - Encapson, NL *Transforming the management team of high tech start-ups* Elderd Land - GIMV, NL *Technology Investment Lifecycle - Back2Basics* Paul van Attekum - ASML, NL *The transformation of Philips spin-off into a 25B$ leading semicon equipment supplier* Paul May - Imperial Innovations, UK *Technology start-ups - a view from a poacher turned gamekeeper*	**TRACK B4 - NANOFACILITIES** **Room: Waaier 3** **Chair: Miriam Luizink** Miriam Luizink - NanoLabNL and MESA+ *Introduction* Jürgen Mohr - Karlsruhe Nano Micro Facility, DE *The Karlsruhe Nano and Micro Facility - open access to micro and nano technologies and characterization methods* Ulrika Gyllenberg - VTT, FI *Combining R&D and small-volume production in a nanofabrication facility* Roland Germann - Binnig + Rohrer Nanotechnology Center, CH *The `Binnig + Rohrer Nanotechnology Center (BRNC)´* Kay Gastinger - NTNU, NO *NorFab - an open-access cleanroom infrastructure providing services from academic research and process development to small - scale production for industrial users* Gerard Roelofs - NanoLabNL / MESA+, NL *MESA+NanoLab; creating possibilities for research development and small scale production* Frank Dirne - NanoLabNL/Kavli NanoLab, NL *NanoLabNL: Providing an open-access infrastructure for R&D in nanotechnology*	**TRACK C4 - MEDICAL TECHNOLOGIES** **Room: Waaier 4** **Chair: Christine Neuy** Henne van Heeren - enablingMNT, NL *Review of the microfluidic landscape* Won Ick Jang - ETRI, KR *Advanced Healthcare Technology in the republic KOREA* Steven Staal - Medimate, NL *The first prefilled Lab on a Chip based Electrophoresis device suitable for Point of Care diagnostics* Daniel Mark - HSG-IMIT, DE *Lab-on-a-chip Design and Foundry Service* Paul Vulto - Leiden University *Organ-on-a-Chip Platform for High-Throughput Drug Screening* Lars Halvor Langmoen - Spinchip, NO *SpinChip Diagnostics: The ultimate Point of Care in vitro diagnostic platform*

15:30	Travel towards companies

16:00	**Company visits:** Demcon and QMicro, SolMateS and Micronit (@High Tech Factory), Medimate and TSST (@High Tech Factory), MESA+ NanoLab

17:30	Travel towards dinner location

18:00 - 22:00	**Conference dinner at Restaurant Bloemenbeek, de Lutte**

Company Visits Tuesday 27th August

QMicro:
Qmicro develops and manufactures solutions enabled by micro chip technology (MEMS) focused on microfluidics and micromechanics for high tech instruments. Application areas for these solutions are Industrial process control and automation, laboratory analysis instruments and portable devices and sensors. Qmicro is engaged in contract research, MEMS based product development, customized manufacturing and OEM product supply.

Demcon:
DEMCON researches, develops and produces high-tech systems and products for our focus areas of high-tech systems and medical devices. Due to our production capabilities, DEMCON can differentiate our self from other suppliers. Our clients receive not only a blueprint but also a working product or system.

Micronit:
Micronit Micofluidics manufactures structured wafers and lab-on-a-chip products and has extensive experience in microfluidics, MEMS and micromachining and is a key supplier of microfluidic devices to life sciences and chemistry markets.
Besides providing high quality lab-on-a-chip components for analytical instrumentation and structured glass/silicon wafers for MEMS, Micronit is also a dedicated research and development partner for both science and industry.

SolMateS:
SolMateS is a global supplier of industrial deposition equipment based on laser deposition. It is a revolutionary deposition technology which has been under development since 2007. SolMateS' research department has created unique intellectual property in the field of pulsed laser deposition and has built high expertise on piezo thin layers, its processing and its applications.
SolMateS is headquarted in Enschede, The Netherlands. Situated in the High Tech Factory.

TSST:

Twente Solid State Technology (TSST) offers high quality thin film solutions. The company is specialised in design and production of customised thin film deposition equipment, specifically Pulsed Laser Deposition equipment for advanced studies. An example is the use of Reflection High Energy Electron Diffraction (RHEED) under high-pressure conditions, which gives real-time information about the surface morphology during depositions. Apart from the equipment, TSST also produces ceramic thin films, and offers services for research in the field of ceramic thin films, such as the surface treatment of ceramic substrates.

Medimate:

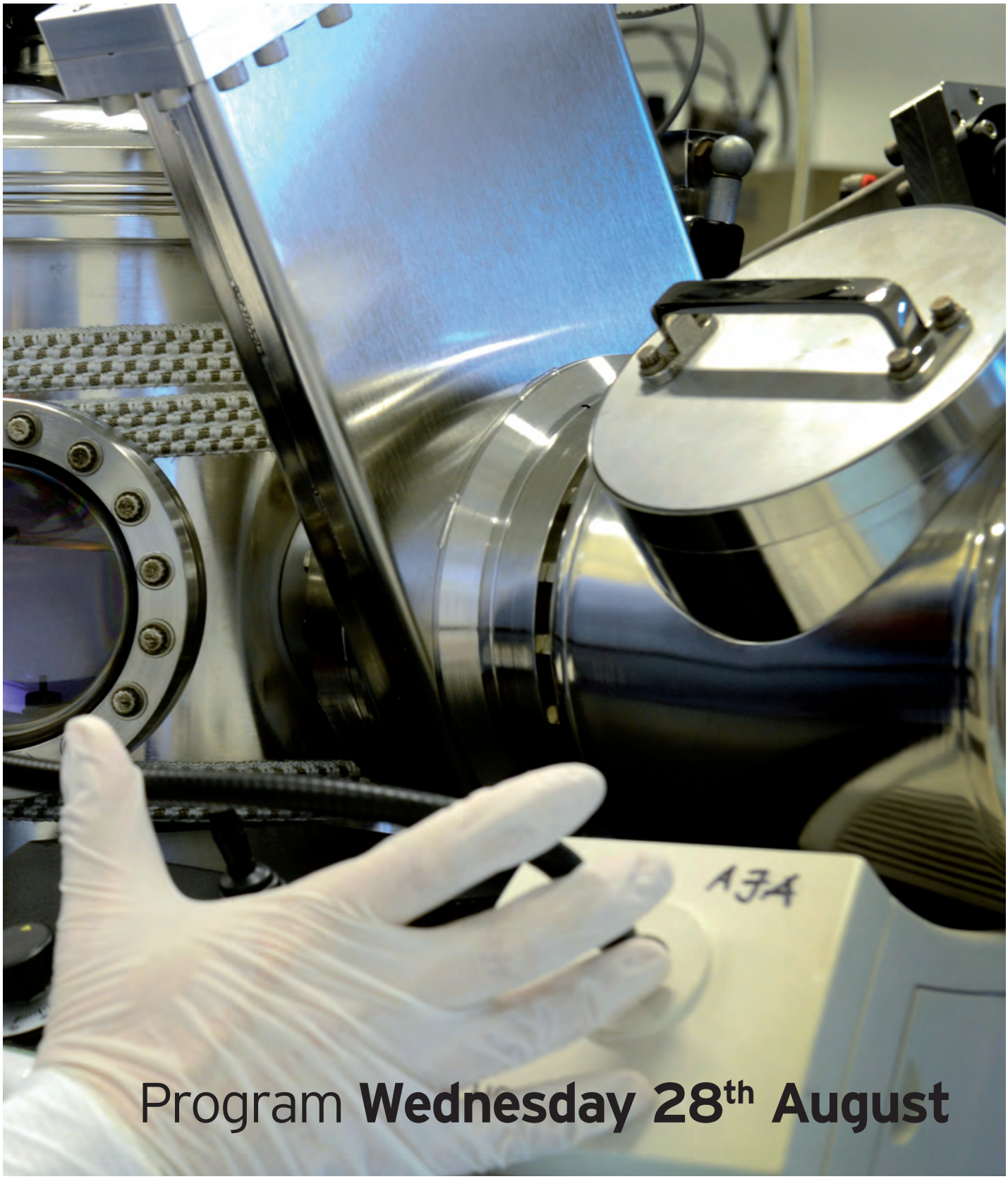
Medimate develops, produces and markets MiniLabs for healthcare professionals, patients and researchers. With this MiniLab, which consists of a measuring device and disposable chips, Medimate offers solutions for situations where the added value of decentralised measurement or self-monitoring of blood concentrations is significant.

High Tech Factory:

High Tech Factory is the production facility on the campus of the University of Twente offering the perfect working environment for young, expanding companies engaged in high-tech development and production in the field of micro and nanotechnology. The facility offers a valuable infrastructure that includes high-quality cleanrooms, laboratories fitted out with all the necessary equipment, office space, plus an equipment fund: High Tech Fund. This provides companies with the opportunity to lease expensive production equipment.
More information can be found at
www.hightechfactory.com

MESA+ NanoLab:

MESA+ is one of the world's largest nanotechnology research institutes; and it's the largest research institute in this field in the Netherlands. A total of 525 researchers work together on cutting-edge research at the highest level.
MESA+ NanoLab has extensive laboratory facilities at its disposal, offering a wide spectrum of opportunities for researchers in the Netherlands and abroad.



Program **Wednesday 28th August**

Program Wednesday 28th August

09:00	**PLENARY SESSION** **Room: Waaier 1** **Chair: Bob Mehalso**
	Gil Herrera, Sandia National Laboratories **FUTURE TECHNOLOGIES IN MICRO/NANOTECHNOLOGIES AT SANDIA NATIONAL LABORATORIES**
	Dr. Don Birx, Penn State Erie **CROSSING ACADEMIA, INDUSTRY AND GOVERNMENT TO CREATE A FERTILE CHALLENGE-BASED ENVIRONMENT FOR NEW PRODUCT DEVELOPMENT**
10:00	Coffee break and exhibition

10:30	**TRACK A5 - ENTREPRENEURAL ECOSYSTEMS** **Room: Waaier 1** **Chair: Kees Eijkel** Job Komen - Boston Consulting Group, NL *Exploration of the possibility of improving prototype development within technology start-ups by collaborating with a medium sized product development firm* Henk Gerards - Business Cluster Semiconductors, NL *Innovation 2 Industrialisation for Advanced Micro- & Nano Systems: a faster way from Proof of Principle towards market ready products through co-operation within a High Tech Ecosystem* Marisa Durfee - University of New Mexico, US *A Small Business Story - It began with Ouchless Glucose* Dick Koster - NanoNextNL / TNO *The Dutch Approach* Jason Strauss - Facility Facts *A Public Private Partnership*	**TRACK B5 - T-SENSORS** **Room: Waaier 3** **Chair: Janusz Bryzek/Steven Walsh** Janusz Bryzek - Fairchild Semiconductor, US *Smart Systems, a Driver for Trillion Sensors* Steven Walsh - University of New Mexico, US *The back end of the "Hype Cycle:" Systems solutions for a trillion sensor world* Jan Maas - INCAS3, NL *Roadmap Sensor Systems: Accelerate introduction, commercialization and use of Key Enabling Technologies (KETs)* Gregory Galvin / Timothy Davis - Kionix, Inc. *Elasticity of Demand: Curse or Trillion Unit Opportunity* Paul Savage - Arrayware, AUS *Nanosystem-enabling: Beyond the microprocessor* Norman Mechau - KIT, DE *Printing multifunctional sensor systems: Mass production meets digital manufacturing* Per Sylcke - XSens *Next generation wearable sensors for sport, health, fitness and mobile gaming*	**TRACK C5 - ADVANCED MATERIALS & ENERGY** **Room: Waaier 4** **Chair: Mark Huijben** Wilfred van der Wiel - MESA+, NL *HydroSoliX - PhotoCatalytic Water Splitting* Gabi Schierning - University of Duisburg, DE *Novel device concepts for thermoelectric heat-to-electricity conversion* Arjen Janssens - SolMateS, NL *Title: tba* Seamus Curran - C-Voltaics, US *Using nan- manufacturing for coatings and sensor systems* Per Ohlckers - Vestfold University, NO *Supercapacitors: Principles of Operation, Application Examples and Future MEMS-based Supercapacitors* Lutz Mädler - University of Bremen, DE *Transfer of highly porous nanoparticle layers to various substrates through mechanical compression* Santiago J. Garcia - Delft University of Technology, NL *Functionalities restoration by self-healing concepts*

12:30	Lunch and exhibition

13:30	TRACK A6 - COMMERCIALIZATION FROM THE RESEARCH ORGANIZATION'S POINT OF VIEW Room: Waaier 1 **Chair: Clive Davenport** Clive Davenport - STC, AUS *Delivering Academic Excellence and National Economic Advancement - the Research Institute´s Challenge* Ralph Ford - Penn State Erie, US *Developing Industry-Academia Partnerships through the Open Lab Model* Eppo Bruins - STW, NL *STW as an open market place for new technology* Bruce Whan, Swinburne University, AUS *Commercialisation from Research Organisations - an Australian Perspective* Kees Eijkel - Kennispark, NL *The invisible leader: a public research organization at the center of an ecosystem*	TRACK C6 - RISING ABOVE THE STORM - NEW APPROACHES IN TECHNOLOGY AND INNOVATION EDUCATION Room: Waaier 4 **Chair: Aard Groen** Sue Neuen - Science@OC, US *The STEM Education Equation* Regan Stinnet - Sandia, US *Analysis of the Benefit to University Students of Participation in National Laboratory-Provided Micro and Nano Technology Innovation Institutes* Gregor Luthe - Saxion University of Applied Sciences, NL *Societal Needs driven Nanotechnology & The quest for synergy in education, applied research and SME support* René Mauer - RWTH Aachen, DE *The innovation challenge: Changing requirements and expectations for entrepreneurship education in universities* Rainer Harms - NIKOS, NL *Entrepreneurship education: the entrepreneurial process as a framework for an entrepreneurship education curriculum at various degree levels* Volker Saile - KIT, DE *Karlsruhe School of Optics & Photonics (KSOP)*

15:30	Coffee break and exhibition

16:00	PLENARY SESSION Room: Waaier 1
	Chris van Hoof, IMEC, BE **KILLER APPS FOR HEALTH, FUN AND SPORTS**
	Jos Benschop, ASML **NANO LITHOGRAPHY ROADMAP OF ASML**

17:00	Conference Wrap Up by MANCEF President Volker Saile

Exhibitors

Kennispark Twente
Innovate & Accelerate

C-Voltaics

high | tech | factory
nano and microtechnology production facilities

Icemos
Cooler than cool

PHENOMWORLD

KIT
Karlsruhe Institute of Technology

MESA+
INSTITUTE FOR NANOTECHNOLOGY

micronit
MICROFLUIDICS

MANCEF
www.mancef.org

nanonextnl
innovating with micro and nanotechnology

MICRONARC
Micro-nanotech Cluster of Western Switzerland

microTEC
Südwest

NanoLabNL

oost nv

MICROTECH INNOVATION

Norwegian Centres of Expertise
NCE Micro- and Nanotechnology

WW][NN

DEMCON

National Delegation Norway

is attending COMS 2013 with the aim of both imparting information to other participants on Norwegian state of technology entrepreneurship, companies and frontrunner solutions, as well as learning about the developments and entrepreneurial ecosystem activities in the Twente Region specifically and in the MANCEF community in general. Participants from the Norway delegation will present at the conference, in Young Technology Award, and will take part in the exhibition. MicroTech Innovation (MTI) and Norwegian Centres of Expertise (NCE) are part of this delegation.

Norwegian Centres of Expertise
NCE Micro- and Nanotechnology

MICROTECH INNOVATION