


12 & 13 DECEMBER

INTERNATIONAL


MICRO
NANOCONFERENCE
2017 AMSTERDAMTuesday 12 December
morning

Opening and Morning Keynote Session								
Chair	09.30-09.45	Albert van den Berg , University of Twente and Chairman of the Program Committee of the iMNC						
Keynote	09.45-10.15	Graphene-CMOS Integration: Applications and Challenges Frank Koppens , ICFO, Spain. This lecture is sponsored by Philips Innovation Services						
Keynote	10.15-10.45	Beyond the Chasm – Trends and Challenges in Commercializing Microfluidics Holger Becker , Microfluidic ChipShop, Germany						
Break	10.45-11.15	Break/exhibition/poster session						
Parallel Sessions				MNBS Workshop				
Morning session	11.15 - 12.45	<i>Session title</i>	<i>Sensors</i>	<i>Photonics</i>	<i>Nanomedicine/ drug delivery / drug targeting</i>	<i>Entrepreneurial & Business (1)</i>	<i>Organ-on-a-Chip</i>	<i>Project Innovation Session (1) (11.15-13.00)</i>
		<i>Chair</i>		Willem Hoving , TMC Physics	Anna Salvati , University of Groningen	Anne-Wil Lucas , StartupDelta	Hands-on Workshop (11.15 – 12.45)	Chair: Nikolaos Kattavenos , European Commission Richard Tuffs , Errin
	11.15-11.45	<i>Invited speaker</i>	Characterization of Miniaturized Environmental Sensors for Mobile, Wearables and IoT Application Nebojsa Nenadovic , Austria Microsystems	Silicon Photonics Integration Roadmap for Applications in Computing Systems Bert Jan Offrein , IBM Zurich, Switzerland	Micromaterials and Nanomedicines to Improve Drug Targeting to Tumors Twan Lammers , RWT Aachen / University of Twente	Evolving from a Startup Towards a Global Company Jasper van Weerd , LipoCoat <i>Startup pitches</i> - Amber Implants, Seyed Mohammad Ahmadi - Biomillenia, Dirk Löffert , france - Biond, Nikolas Gaio	Organ-on-Chip workshop organized by hDMT , Micronit , Fluigent and Confocal with a focus on Gut-on-Chip (WUR and TNO) and 3D Vessels-on-Chip (LUMC, University of Twente) You can participate in the demo's and speak with the different experts present.	Keynote – Setting the Scene, Andreas Lymberis , European Commission. ANGELab - Non-Invasive Diagnostics Based on LabonaChip Systems, Jesus Ruano-Lopez , IK4 Ikerlan, Spain Hyposens - Nano-Confined Photonic System for Detection of Breast Cancer Spread to the Lymph Nodes, Fransesc Mitjans , LEITA Technological Center Terrassa, Spain inSPECT - Integrated Spectrometers for Spectral Tissue Sensing, Jean Schleipen , Philips BIOCdx and BIOFOS - A Miniature Bio-Photonics Companion Diagnostics
	11.45-12.00		Plasmonic Substrates Based on DVD Manufacturing Techniques for Highly Sensitive Quantification of Biomolecules Iris Prinz , Stratec	Application of High-Throughput Label-Free Microarrays for Biomolecular Interaction Studies Günther Proll , Technische Universität Ilmenau, Germany	Protein Coated Magnetic Nano Hybrids for Medical Applications Andreas Weidner , Technische Universität Ilmenau, Germany	A Game-Changing Way of Investing in Early-Stage Innovation Jo de Boeck , Imec.xpand, Belgium		

		Consumables ,Austria					Platform for Reliable Cancer Diagnosis and Treatment Monitoring, Henk Leeuwis , LioniX International
	12.00-12.15	Electronic Nose Technology for Agriculture Aleksander Andreski , Saxion	Fast and Efficient Detection of Rare Cells Using CMOS-Based Low-Cost Quantum Dot Camera Zihim Ding , Anitoo Systems, USA	Polyethylenimine-based Nanoparticles Decorated with Various Integrin Ligands Mimicking RGD Peptides for Targeted Delivery of Plasmid DNA Ali Dehshahri , Shiraz University of Medical Sciences, Iran	<i>Startup Pitches</i> - Cellenion Guilhem , France Tourniaire , France - Elpanav, Arash Noroozi		SniffPhone - Non-Invasive Disease Diagnosis Using Wearable Technologies, Haick Hossam , Technion - Israel Institute of Technology Haifa, Israel MEDILIGHT - Developments Towards a Miniaturized Smart System for Light Stimulation and Monitoring of Wound Healing, Martina Urbankova , Amires, Czech Republic
	12.15-12.30	Biofunctionalization as Key Step in Biosensor Applications – From R&D to Highthroughput Manufacturing Wilfried Weigel , Scienion, Germany	Si3N4 Based Miniaturized Biosensors for Sensitive Detection of Protein and DNA Geert Besselink , LioniX International	Asymmetric Liposomes for Nucleic Acid Delivery Robbert Jan Kok , University of Utrecht	Spinning-out University Technologies: a Role for Students in the Commercialization Process Jes Broeng , DTU Fotonik, Lyngby, Denmark		SMARTDIAGNOS – An EU Horizon 2020 Innovation Project to Develop a New Generation of Fully Integrated PCR-based Infection Diagnostics, Anders Wolff , Technical University of Denmark, Denmark LiqBiopSens – Detection of KRAS and BRAF Mutations in Colorectal Cancer using Blood Liquid Biopsy, Juan J. Diaz Mochon , DestiNA Genomics Ltd, UK
	12.30-12.45	Capacitive Micromachined Ultrasonic Transducer Platform Rob van Schaijk , Philips Innovation Services	Micro-ring Resonator-based Photonic Systems for Detection of Various Biomarkers Gerald Ebberink , Saxion	Modelling Nanoparticle Uptake and Intracellular Transport into Cells and Barriers Christoffer Åberg , University of Groningen	<i>Startup pitches</i> - Eximiuslab, Niek Kunst - Femtoprint, Alexander Steimle , Switzerland - Hyperion Technologies, Bert Monna		MADIA - Magnetic Diagnostic Assay for Neurodegenerative Diseases, Alek Dediu , CNR, Italy InForMed – An Integrated Pilot Line for Medical Devices – SMART CATHETERS, Covering the Complete Innovation Chain from Technology Concept to System Qualification – Ronald Dekker , Philips
Break	12.45-14.00			Break/exhibition/poster session			
				13.20 – 13.40: Demonstration of the European Pix4Life pilot line - Visible Multi-Project Wafer			

Tuesday 12 of December
afternoon

		Parallel Sessions					Workshop	MNBS Workshop
Afternoon session	14.00 - 15.30	<i>Session title</i>	<i>Microfluidics & Analytical Systems (1)</i>	<i>Fabrication at Nanoscale</i>	<i>Organ-on-Chip (1)</i>	<i>Entrepreneurial & Business (2)</i>	Workshop NanoNextSteps	<i>Project Innovation Session (2) (14.00 – 15.45)</i>
		<i>Chair</i>	Eduard Pelsers , Philips		Herman Blok , Micronit Microtechnologies	Anne-Wil Lucas , StartupDelta	14.00 – 15.00 hrs.	Petra Weiler , VDI/VDE Innovation + Technik Janny van den Eijnden , hDMT
	14.00-14.30	<i>Invited speaker</i>	Bio-inspired Microfluidics for Health, Jaap den Toonder , Eindhoven University of Technology	Titel mist nog Fengzhou Fang , MNMT-Dublin, Ireland	Lung-on-chip Models with Organ-level Functions Olivier Guenat , AlveoliX, Switzerland	The Story of Avantes, focus on Innovation as the road to success Benno Oderkerk , Avantes <i>Startup pitches</i> - lamFluidics, Tom Kamperman - Life Sense Group, Wouter Moes	Workshop regarding the continuation of public-private collaboration and innovation on a national scale; NanoNextSteps. A joint initiative of NanoNextNL, together with MinacNed and the University of Twente.	Keynote: One Health (DMC-MALVEC & DIAGORAS) - Interfacing Human Diagnostics with Vector Control Towards a Holistic Healthcare Approach Against Infectious Diseases, Konstantinos Mitsakakis , Hahn-Schickard, Germany AllerScreening - Point-of-care device based on KETs for diagnosis of food allergies, Araceli Diaz Perales , CBGP UPM-INIA, Spain
	14.30-14.45		The Effect of Microchamber Geometry on the Efficiency of Magnetic Microbead Mixing Eriola Shanko , Technical University of Eindhoven	Implementation of Carbon Nanomembranes into Different Sensor Concepts Albert Schneiders , CNM Technologies, Germany	Organ-on-a-Chip : An Updated Commercialisation Report Card 2017 Malcolm Wilkinson , Kirkstall Ltd, United Kingdom	Investing in the Technology, Medtech, and Healthcare Sectors Dick Sietses , Health Innovations	This workshop is identical to the workshop of Wednesday afternoon, with a complementary focus on Organ-on-Chip and Bio-Nano Devices .	PhasmaFOOD - Portable Photonic Miniaturised Smart System for On-The-Spot Food Quality Sensing, Paraskevas Bourgos , WINGS ICT Solutions, Greece PROTEUS - Carbon Nanotubes Approach in Water Quality Monitoring, Nicolas Giunta , Easy Global Market Valbonne, France
	14.45-15.00		Integrated Flow Control Based on Capillary Burst Valves and Electrostatic Actuation Mechanism for Sequential Flow of Reagents	Enhanced Control over Carbon Nanotube Textile Synthesis Using a Micro Coriolis Device Wouter Sparreboom ,	Gut On-A-Chip: Towards a More Physiological and Predictive Human Intestinal Barrier Model Lianne Stevens , TNO	<i>Startup pitches</i> - NanoPhab, Francesco Pagliano - Noviocell, Juliette van den Dolder , Hefziba ten Brink	LoveFood2Market – A Portable MicroNano-BioSystem and Instrument for Ultra-Fast Analysis of Pathogens in Food: Innovation From Lab Prototype to Pre-Commercial Instrument, Zuzana Bilkova , UPCE, Czech Republic SOCKETMASTER – Development of a Master Socket for Optimised Design of	

			Aliki Tsopela , Micronit Microtechnologies	Bronkhorst High Tech				Prosthetic Socket for Lower Limb Amputees, Jianxin Gao , TWI Ltd, UK	
	15.00-15.15		Detection of IV Medicine Mixture Composition at Low Flows Rory Dijkink , Saxion	A Chip-based, Widely Tunable InP-Si3N4 Hybrid Laser with Ultra- high Coherence Youwen Fan , University of Twente	Using 3D-Printing to Fabricate Microfluidic Vascular Models to Mimic Arterial Thrombosis Hugo Albers , University of Twente	The Search for Investment Partners Supporting Internationalisation of Research Based Companies in their Early Stages of Development Christopher Mott , Open Strategic Global Ventures		SAPHELY - Self-Amplified Photonic Biosensing Platform for MicroRNA-Based Early Diagnosis of Diseases, Jaime Garcia- Ruperez , Universitat Politecnica de Valencia, Spain Phocnosis - Advanced Nanophotonic Point-of-Care Analysis Device for Fast and Early Diagnosis of Cardiovascular Diseases, Jaime Garcia-Ruperez , Universitat Politecnica de Valencia, Spain	
	15.15-15.30		Microfluidic Devices for UV-Vis Spectroscopy for Illicit Drug Detection Brigitte Bruijns , University of Twente	Rapid Process Ramp-up of Sensor Guided Automated Assembly Processes Tobias Mueller , Fraunhofer IPT, Germany	Development of a 3D In Vitro Platform for Functional and Structural Interrogation of Neuronal Circuits Paolo Cesare , NMI, Germany	<i>Startup Pitches</i> - SCILNanoimprint solutions, Rob Voorkamp - SeraNovo, Niall Hodgins		SMARTER-SI - Smarter Access to Manufacturing for Systems Integration, Eric Moore , Tyndall Institute, Ireland & Guy Voirin , CSEM, Switzerland A Framework for Multi- Stakeholder/Ecosystem Driven Innovation - Results from InSSight, Mark de Colvenaer , DSP Valley, Belgium	
Break	15.30-16.00		<i>Break/exhibition/poster session</i>						
Afternoon Keynote Session and Closure of the Day									
Chair			Cas Damen , Twente Solid State and member of the Organizing Committee of the iMNC						
Keynote	16.00-16.30		On the Challenge of Characterizing Nanomedicines in Bio-fluids Stefaan Desmedt , Ghent University, Belgium						
Keynote	16.30-17.00		More and more NanoLinks Juergen Brugger , EPFL, Switzerland - This lecture is sponsored by NanoLabNL 						
	17.00-17.15		Announcement Startup of the Year 2017						
	17.15-18.30		Drinks / Exhibition / poster session						
Workshop	17.30-18.30	Grote Zaal	InSSight Workshop : An ecosystem view on Micro Nano Bio Systems Interactive discussion on multi-stakeholder, cross-discipline, interregional innovation				Microfluidics Association and Microfluidic Standardisation Informal meeting		

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18.30-21.00

Grote Zaal

Conference Dinner and Evening Program

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Wednesday 13th of December morning

Opening and Morning Keynote Session							
Chair	08.55-09.00	Frank van de Scheur, Philips Innovation Services, board member of MinacNed					
Keynote	09.00-09.30	Micro-instrumentation Towards In Vivo NMR Metabolomics - a Roadmap Jan Korvink , KIT, Germany					
Keynote	09.30-10.00	Atomic Layer Deposition: an Enabling Technology for Nanoscale to Large Area Applications Erwin Kessels , Eindhoven University of Technology					
Break	10.00-10.45	Break/exhibition/poster session					
Parallel Sessions				MNBS Workshop			
Morning session	10.45-12.15	<i>Session title</i>	<i>Microfluidics & Analytical Systems (2)</i>	<i>Characterization at Nanoscale (2)</i>	<i>Organ-on-Chip (2)</i>	<i>Single cell dispensing on a microreactor device</i>	<i>Ecosystems and key innovation MNBS issues (1)</i>
		<i>Chair</i>	Per Magnus Kristiansen , FHNW University of Applied Sciences and Arts Northwestern Switzerland	Martijn Fransen , PANalytical	Peter van Stiphout , BionChip	Hands-on Workshop 10.45 – 11.30	Eric Moore , Tyndall Institute
	10.45-11.15	<i>Invited speaker</i>	Nanophotonic Lab-on-Chip Biosensor Platforms for Ultrasensitive Analysis at the Point-of-Care Laura Lechuga , Catalan Institute of Nanoscience and Nanotechnology, Spain	Structure-properties Relationship Determination at the Nanoscale Using Advanced Electron Microscopy Nicolas Gauquelin , University of Antwerpen, Belgium	Merging High-Content and High-Throughput Screening: Microphysiological Organ-on-a-Chip Systems Featuring Complex Human Tissues With Physiological Structure and Function Peter Loskill , Fraunhofer Institute for Interfacial Engineering and Biotechnology	Workshop single cell dispensing on a microreactor device organized by Cellenion and Micronit Microtechnologies . The demonstration is followed by a microscopic characterisation to make the result visible. You can participate in the demo's and speak with the different experts present.	Transforming a Mature Technology Into a Viable Clinical Solution: the Loop of Innovation, Furio Gramatica , Fondazione Don Carlo Gnocchi Onlus, Italy Standardisation of MNBS Building Blocks for Manufacturing, Petra Weiler , VDI/VDE-IT, Germany Multi-stakeholder Innovation & SMEs, Richard Crotty , Environmental Laboratory Services Ltd. Point of Care Measurements - Possible Market Barriers for High Tech Solutions - A Business Perspective - Christian Braun , Roche Diagnostics, Germany
	11.15-11.30		Commercial Value and Challenges of Drop-Based Microfluidic Screening Platforms - An Opinion	Lighting Up Molecules in Large-scale Multi-modal Electron Microscopy Ben Giepmans , UMC Groningen	Modeling the Pre-invasive Breast Cancer Microenvironment Using High-throughput		

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			Christian Holtze , BASF SE, Germany		Microfluidic Cell Encapsulation Jelle Sleebom , Technical University of Eindhoven		User perspective and real-life implementation on MNBS, Speaker(s) to be	
	11.30-11.45		Microfluidic Droplet Arrays for Rapid Single Cell Culture and Analysis Amin Hassanzadeh Barforoushi , University of New South Wales, Australia	Optimized MEMS-based Sample Carrier for In-situ Heating in the Transmission Electron Microscope Tijn van Omme , DENSSolutions	Characterizing Micromechanical Viscoelastic Properties of Soft Tissues and (Bio)Materials in Physiological-like Conditions Giorio Mattei , Optics11		European Developments on Organ-on-a-Chip, Janny van den Eijnden , hDMT	
	11.45-12.00		3D printed Stainless Steel Microreactor with Electrospray Ionization Tip Gianmario Scotti , University of Helsinki, Finland	New modalities in Re-scan Confocal Microscopy (RCM) Erik Manders , University of Amsterdam	Three-Stage Enzymatic Digestive System for a Gut-on-a-Chip Pim de Haan , University of Groningen			
	12.00-12.15		Generator – Collector Electrochemical Sensor Configurations Based on Track-Etch Membrane Separated Platinum Leaves Hamid Zafarani , Technical University of Delft	Characterization of Porosity & Flow in Battery Materials with 3D Reconstruction of Plasma FIB Serial Slice. Daniel Phifer , Thermo Fisher Scientific	96 Perfusable Blood Vessels to Study Vascular Permeability In Vitro Vincent van Duinen , LUMC			
Break	12.15-13.30	Break/exhibition/poster session						

Wednesday 13th of December

afternoon	Parallel Sessions					MNBS Workshop	
Afternoon session	13.30-15.00	<i>Session title</i>	Microfluidics & Analytical Systems (3)	Thin Films: Ffabrication and Characterization	Organ-on-Chip (3)	Workshop NanoNextSteps 13.30 – 14.30 hrs. Workshop regarding the continuation of public-private collaboration and innovation on a national scale; NanoNextSteps. A joint initiative of NanoNextNL, together with MinacNed and the University of Twente. This workshop is identical to the workshop of Tuesday afternoon, with a complementary focus on 3D Manufacturing and Nanomaterials for Energy Storage .	<i>Ecosystems and key innovation MNBS issues (2)</i> Andreas Lymberis , European Commission Smart Anything Everywhere and Digital Innovation Hubs, Rainer Günzler , Hahn-Schickard Freiburg, Germany Combining KETs for Disruptive Healthcare - Patrick Boisseau CEA-LETI, France 2017 Strategic Research Agenda for Electronic Components and Systems on MNBS, Renzo dal Molin , Cairdac, Italy MNBS Funding Opportunities H2020– Nikolaos Kattavenos , European Commission AIOTI WG Wearables and AAL, Helmi Ben Hmida , Fraunhofer IGD, Germany Internet of Food and Farm 2020, Cor Verdouw , Wageningen UR Summary of InSSight Workshop results, Panel Discussion and Closing Notes
		<i>Chair</i>	Han Gardeniers , University of Twente	Fred Bijkerk , University of Twente	Janny van den Eijnden , hDMT		
	13.30-14.00	<i>Invited speaker</i>	Microfluidic standardisation: part 1 Interfacing (Marko Blom , Micronit Microtechnologies), part 2 Testing and characterization (Stefan Thalhammer , Heidenhain, Germany)	Optics for EUV Lithography Eric Louis , MESA+	Robust Microfluidic Organ Mimic Platforms Ashutosh Agarwal , University of Miami, USA		
	14.00-14.15		Surface Modification for Point-of-Care Devices Wout Knoben , Surfix	Model Independent Approach for the Analysis of GIXR Data from Thin Films Igor Makhotkin , MESA+	Human Gut-on-a-Chip as a Model for Bioavailability and Biotransformation Studies Hans Bouwmeester , RIKILT		
	14.15-14.30		Digital Surface Modifications for Microfluidics and Biosensor Applications Alquin Stevens , InnoPhysics	Protection and Functionalization of Particles Through Scalable Atomic Layer Deposition Bart van Limpt , Delft IMP	Curved Micro-engineered Membranes for Alveolar on-Chip Models Danielle Baptista , MERL Institute		
	14.30-14.45		A versatile X-Y architecture using Stretchable Microfluidics for Quantitative Multi-step Assays Nicolas Verplanck , CEA-LETI, France	X-ray Methods for the Characterization of Layered Structures Joachim F. Woitok , PANalytical	Fabrication of an Organ-on-Chip Membrane Scaffold with Integrated Conducting Polymer Sensors. Pieter Kapel , Technical University of Delft		
	14.45-15.00		Modular Platform Using Standardized Microfluidic Building Blocks for Effective Microfluidic Prototyping	Recent Advances in Large area Pulsed Laser Deposition; Epitaxial Growth of Complex Oxides	A Human Microvessel-on-a-Chip Platform to Assess Circulating Factors Associated with		

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		William César, Fluigent, France	on Silicon Rik Groenen, Twente Solid State	Microvascular Destabilization Thomas Hankemeier, Leiden University		
Break	15.00- 15.30		<i>Break/exhibition/poster session</i>			
			Afternoon Keynote Session and Closure of the Day			
Chair			Ronny van 't Oever, Micronit Microtechnologies and Chairman of the Board of MinacNed			
Keynote	15.30- 16.00		Roadmapping Innovations by Technology Assessment and Predictive Analytics Ashok Vaseashta, New Jersey City University, USA			
Keynote	16.00- 16.30		The Urgent Need for Improved Human Relevant In Vitro Models: are Organs-on-a-Chip a Solution? Lorna Ewart, AstraZeneca, UK			
Closing	16.30- 16.45		Ronny van 't Oever, Micronit Microtechnologies and Chairman of the Board of MinacNed			

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