

6th International Healthcare and Life Science (HLS) & Entrepreneurship Workshop

29 & 30 April 2021

Technical University of Denmark, Copenhagen Venue: remote (via Zoom)

Scientific Chair & Host: Winnie Svendsen (DTU)

Scientific Chair: Heiner Linke (NanoLund)

Entrepreneurship Chair & Programme Director: Hugo de Haan (VD S&E)

Keynote Speakers

Anja Boisen, *Technical University of Denmark, Lyngby, Denmark*, "Bringing microstructures to life"

Heiner Linke, *professor, deputy dean at faculty of engineering, NanoLund, Lund University, Sweden*, "Highly sensitive optical detection of biomarkers using light-guiding nanowires"

Regina Lutge, *Associate Professor in the Microsystems section and Chair of Neuro-Nanoscale Engineering, Eindhoven University of Technology, The Netherlands*, "Nervous system-on-chip: From moonshot to forward engineering of applications"

Preliminary speakers with the title of their abstract clustered into themes

NanoBio surfaces, biosensing:

Fouzia Boulmedais, *Université de Strasbourg, CNRS, France*, "Release-killing polyphenol based multilayer film applied as antibacterial coating"

Michael Daniele, *NCSU*, "Wearables and Implantables: Enabling Technologies to Move Biosensing from the Benchtop to the User"

Bio Polymers:

Benjamin Richter, *Nanoscribe, Germany*, "3D micro printing by means of two-photon polymerization as the key enabling technology for life science applications"

Evelien Smits, *University of Antwerp, Belgium*, "Combination of different sources of reactive oxygen species in 2D and 3D glioblastoma multiforme cultures"

Felix Löffler, *Max Planck, Potsdam, Germany*, "Laser-assisted parallel synthesis of biomolecules and nanomaterials in polymer nanoreactors"

Gianluca Ciardelli, *Politecnico di Torino – DIMEAS, Italy*, "Tailored biomaterials: advanced tools to enhance cancer understanding and treatment"

Maria Cristina Righetti, *CNR and IPCF Pisa, Italy*, "Semi-crystalline Biopolymers: Properties of the Constrained Amorphous Interphase"

Zarah Korb, *University of Basel, Switzerland*, "Obstacles to commercialisation: Understanding organisation and structure in adaptable, bio-based polymer networks in complex environments"

Human diagnostic:

Magdalena Kowalska, *CERN, Geneva, Switzerland*, "Novel techniques for biological studies and medical Novel techniques for biological studies and medical diagnosis using unstable isotopes"

Elisabete Fernandez, *INL, Portugal*, "Patient stratification for treatment decisions: the challenges behind the optimization of a PoC platform"

Alexios Paul Tzannis, *IMT Masken und dTeilungen AG, Switzerland*, "Advanced detection schemes in Consumables for Life Science and Diagnostics by including surface functionalisation in microfluidic flow cells; challenges and opportunities"

Surface functionalization, coatings and dispensing;

Diego Mantovani, *Department of Min-Met-Materials Eng., & University Hospital Research Center, Canada*, “Diamond-like coatings: A scientific platform for multifunctional antibacterial coatings for health in an academic/entrepreneur R&D&I perspective”

Damien Thiry, *University of Mons, Belgium*, “The wrinkling concept applied to plasma-deposited polymer-like thin films: a promising approach for the fabrication of flexible electrodes”

Ghizlane Choukrani, *Surflay Nanotec GmbH, Berlin, Germany*, “Controlled release of the immunomodulatory protein TNF under body-like flow conditions and tumor microenvironmental pH using vaterite nanoparticles”

Sonja Voorn, *Fontys University of Applied Sciences, The Netherlands*, “Developing medical phantoms and learning models”

Harald Doell, *TSE TROLLER AG, Murgenthal, Switzerland*, title/abstract yet to follow

Analytics, detection and imaging;

Max Maletta, *ThermoFisher, The Netherlands*, “The role of cryo-EM in fighting back diseases and the Covid-19 epidemic”

Fredrik Westerlund, *Chalmers University of Technology, Sweden*, “High-resolution identification of bacteria and their plasmids using optical DNA mapping”

Jochen Guck, *Max Planck Zentrum für Physik und Medizin, Erlangen, Germany*, “Physical phenotyping at rates of 1,000 cells/sec for functional blood cell diagnostics”

Karin Schütze, *CellTool GmbH, Germany*, “Advanced cell analysis using gentle Raman-Trapping-Microscopy”

Nils Goedecke, *Heidelberg Instruments Nano, SwissLitho AG, Switzerland*, Title/abstract yet to follow

Microfluidics;

Carlos A García-González, *University of Santiago de Compostela, Spain*, tentative title "Processing of medical devices using supercritical fluid technology". Abstract will follow

Iwona Ziemecka, *Vrije Universiteit Brussel, Belgium*, “Controlling the trajectory of magnetic particles in microfluidic devices for Layer-by-Layer coating”

(33)Julien Reboud, *University of Glasgow*, “ Microfluidics in Medical Devices – from Entrepreneurship to Open Innovation “

Loes Segerink, *University of Twente, The Netherlands*, “Improving assisted reproductive technology using microfluidics”

Piotr Garstecki, *Bacteromic Sp. z o.o., Scope Fluidics S.A, Poland*, “Microfluidic methods in phenotypical and molecular diagnostics to curb AMR”

Drug delivery;

Ada-Ioana Bunea, *DTU Nanolab*, "Microrobots for biomedical applications: where does light come in?"

Anders Koustrup Niemann, *Danish Technological Institute, Denmark*, “Development of calibration procedures for drug delivery devices”

Francesca Costantini, *Sapienza University of Rome, Italy*, “RNA amplification through an optoelectronic lab on chip: from plant virus to SARS-CoV-2 detection”

Richard Hooogenboom, *Ghent University, Belgium*, “Poly(2-oxazoline)s for drug delivery”

Entrepreneurship;

Martin Holmboe, *Futurebox, Denmark*, “Best practice for accelerating startups: The Futurebox philosophy”

Jens Friholm, *Senior Innovation Officer, DTU Skylab*, “Supporting the DTU Life science entrepreneurs”

Nanomedicine;

Dietmar Appelhans, *Leibniz-Institut für Polymerforschung Dresden e.V, Germany*, “Compartmentalized space for enzymatic cross-talks and overcoming enzyme inhibitions”

Stephan Block, *Freie Universität Berlin, Germany*, “Mobility-Based Quantification of Single Virus-Receptor Interactions”

Cell-material interaction;

Jaap Koopman, *Fibriant BV, Leiden, The Netherlands*, “Recombinant Human Fibrinogen: turning natural variation into product innovation”

Silvia Fare, *Politecnico di Milano, Milan, Italy*, “Photocrosslinked GelMA/hyaluronic acid hydrogels as adipose tissue in vitro models”

Valeria Chiono, *Politecnico di Torino, Turin, Italy* “Bioengineering strategies in the direct reprogramming of human cardiac fibroblasts towards the cardiac phenotype”

Tissue Engineering, regenerative medicine, organ on a chip:

Elena Martínez, *Institute for Bioengineering of Catalonia, Spain*, “Biomimetic models of intestinal tissue: promoting cellular self-organization through biofabrication techniques”

Joost Lötters, *Bronkhorst High-Tech BV, Ruurlo, The Netherlands*, “Flow control system for organ on a chip application”

Serena Danti, *University of Pisa*, “3D printed barium titanate/polyhydroxybutyrate scaffolds for bone tissue engineering”

Séverine Le Gac, Ph.D, *University of Twente, The Netherlands*, “Tumor-on-a-chip models to study nanomedicine penetration”

Stephanie Descroix, *Institut Curie, PSL Research University, CNRS, Paris, France*, “Development of an gut on chip recapitulating gut complexity”