

Plenary Session

Room 13b

Session Chair: Mr. Wolfgang Mildner

MSW, Founder and CEO, DE
LOPEC General Chair

09:00

Words of Welcome

Mr. Wolfgang Mildner
MSW, Founder and CEO, DE
LOPEC General Chair

09:05

Bringing printed and flexible transparent electrodes to market: Challenges and opportunities

Mr. John LeMoncheck
Cambrios Advanced Materials, President and Chief Executive Officer, US

- Challenges for startups in printed electronics
- Transparent electrodes for touch, OPV and OLEDs
- Automotive and wearable electronics

Short Courses

Room 13a

Session Chair: Dr. Giovanni Nisato

CSEM Muttentz
Business and Technology Development Senior Manager, CH

Materials for Printing Electronics

09:30

Printable electronic materials for organic thin-film devices: design and applications

Prof. Jiyoul Lee
Pukyong National University, KR

- Fundamentals of organic semiconductor for printed electronic
- Rational design of organic semiconductor for its application
- Other critical components of printed electronic devices

Printed and Organic Transistors

11:30

Electrical characterization of printed circuits and devices: Strategies to improve yield and performance

Prof. Henrique Leonel Gomes
Instituto de Telecomunicações, PT

- Printed circuits
- Electrical characterization
- Reliability

Business Conference

Room 13b

Session Chair: Mr. Thibaud Le Séguillon

Heliatek GmbH, CEO, DE

End-user Applications and Requirements

09:30

Biosensors for medical diagnostics

Dr. Christopher Hand, Abingdon Health Ltd, Chairman, UK

- OLED, OPD and immunodiagnostics as biosensor
- Multiplex, quantitative medical biosensor
- Biosensor for cancer diagnostics using OLEDs

09:50

Printed electronics in automotive applications

Mr. Vincent Salle, Parlex Europe, Vice President, Business Development, UK

- Human machine interface
- Automotive industry requirements
- Future printed electronics solutions

10:10

Printed electronic solution for future automotive application

Mr. Thomas Gallner, Continental Automotive GmbH,
Director Search Field CO₂ Reduction Technologies, DE

- Available technologies within continental
- Enable new automotive functions and component forms
- Automotive requirements and needed technology improvements

10:30

Enabling smart and connected living through advances in high volume roll-to-roll manufacturing

Ms. Enid Kivuti, Multek Flexible Circuits, Director of Innovation and Technology, US

- Search for cost effective manufacturing methods that enable connected living
- Printed electronics delivered by roll-to-roll screen-printing technology while balancing existing and rapidly evolving technologies
- Comprehensive overview of merging existing manufacturing techniques with new automated solutions to deliver improved performance

Business and Product Developments

11:30

Natural human machine interfaces in ambient intelligence: a case for printed electrochromics

Mr. Jani-Mikael Kuusisto, YD Ynvisible S.A., General Manager, PT

- Printed electrochromics
- Human machine interface design
- Ambient intelligence

11:50

Uncharted territory – A laser equipment maker's approach to organic and printed electronics

Mr. Jörg Jetter, 4JET microtech GmbH & Co. KG, CEO, DE

- Laser micro machining
- Go to market strategy

Conference Program – Day 1

Tuesday – March 28, 2017

Business Conference

Room 13b

Session Chair: Mr. Thibaud Le Séguillon
Heliatek GmbH, CEO, DE

12:10 Activities of TOYOBO focusing on substrates, stretchable conductive ink and smart textiles

Mr. Yasuaki Koseki, TOYOBO Co., Ltd., Manager, JP

- Substrate, polyimide, PET
- Stretchable ink
- Smart textiles

12:30 New generation hybrid and flexible platform for electronic sensors & systems

Mr. Wladimir Punt, Molex, Business Development Manager, DE

- Hybrid and flexible
- Silver-flex
- Electronic sensors and systems

Short Courses

Room 13a

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CSEM Muttentz
Business and Technology Development Senior Manager, CH

Sensors and Interfaces

14:00 Ultra-low detection limits and selectivity with organic bio-electronic sensors

Prof. Luisa Torsi
University of Bari, IT

- Organic bio-electronics
- Thin film transistors
- Biosensing

From Lab to Fab: Printing Photovoltaics

16:00 Printed photovoltaics

Prof. Christoph J. Brabec
University Erlangen-Nürnberg, DE

- Renewable energy
- Organic photovoltaics
- Perovskites, printing and coating

Conference Program – Day 1

Tuesday – March 28, 2017

Business Conference

Room 13b

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Heliatek GmbH, CEO, DE

Supply-chain challenges

14:00 Novel R2R barrier film solutions and their applications

Dr. Stephan Klotz, BASF Schweiz AG,
Director New Business Development, CH

- Flexible barrier films
- Roll-to-roll production
- Encapsulation

14:20 Rise of OLED equipment market

Dr. Seong Woo Chung, Sunic System Ltd.,
Chief of Marketing Officer/Executive Vice President, KR

- OLED
- Equipment
- Display

14:40 The role of COPT.center to initiate business for organic electronics in North Rhine-Westphalia

Dr. Stephan Kirchmeyer, University of Cologne,
Relations- and Marketing Manager, DE

- TOLAE technology in North Rhine-Westphalia
- Technology transfer
- Business model

15:00 Ultra-thin-glass – striving for the seamless integration of thin glasses into today's mass production processes and environments

Mr. Matthias Jotz, SCHOTT AG,
Global Product Manager Semicon and Sensors, DE

- Flexible glass
- Building up a supply chain
- High strength glass

Examples and Strategies of IP Usage to Transform Technology to Business

16:00 From adding to creating value

Mr. Pascal Delloué, Central Midori International, General Manager, SG

- Creating
- Value
- Singapore

16:20 Towards commercialization of new blue TADF emitters for OLED displays

Dr. Andreas Haldi, CYNORA, Chief Marketing Officer, DE

- Commercialization
- OLED
- TADF

Conference Program – Day 1

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Business Conference

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Heliatek GmbH, CEO, DE

16:40

Inkjet printing for OLED manufacturing

Mr. Jeffrey Hebb, Kateeva, Inc., Vice President of Global Marketing, US

- Inkjet printing
- OLED displays
- OLED mass production

17:00

The nano revolution

Ms. Corinne Versini, Genes'Ink, CEO, FR

- Revolution: 1870 the start of the plastic revolution, 1985 the start of the nano revolution.
- Ethic: What are the environmental and ethic issue that we must face? What is the scientific responsibility?
- Dream: We are at the very beginning of a new age of chemistry, it is in our hands to make.

Conference Program – Day 2

Wednesday – March 29, 2017

Plenary Session

Room 14b

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MSW, Founder and CEO, DE

LOPEC General Chair

09:00

Words of Welcome

Mr. Wolfgang Mildner

MSW, Founder and CEO, DE

LOPEC General Chair

09:15

EU programs for large area electronics: From research to innovation funding

Mr. Henri Rajbenbach, European Commission for Communications Networks, Content & Technology, BE

- Success stories of recent programs
- Future programs and funding
- Targets and expected results

09:40

Printed electronics in Korea and future prospect of organic electronics

Dr. Sang Yoon Lee, Samsung, Senior Vice President, KR

- Printed electronics
- Korean national program
- Organic electronics roadmap

10:05

The internet of big things

Mr. Thibaud Le Séguillon, Heliatek GmbH, CEO, DE

- Heliatek enables internet of big things with an urban fit
- Decarbonized and decentralized energy solution based on organic solar film

Start-up Forum, Business Conference

LOPEC Forum, ICM Foyer

Jury:

Mr. Thibaud Le Séguillon, Heliatek, CEO, DE

Mr. John LeMoncheck, Cambrios Advanced Materials,
President and Chief Executive Officer, US

Dr. Jan Blochwitz-Nimoth, NOVALED, CSO and Founder, DE

B-Round

11:30

Electroninks Incorporated

Dr. Brett Walker, Electroninks, CEO, US

- Conductive inks
- Precursor
- Circuit scribe

11:40

Virtual design of materials for organic electronics

Dr. Tobias Neumann, Nanomatch GmbH, Chief Executive Officer, DE

- Material development
- Predictive modeling
- Virtual design

11:50

GT+W - Industrialising functional printing

Dr. Juergen Willmann, GT+W GmbH, CEO, DE

- Start-up
- Functional printing
- Printing + measuring equipment

Seed Financing

12:00

A new approach to rapid prototyping printed electronics on thin, flexible substrates

Mr. Carlos Ospina, BotFactory, CTO, US

- Prototyping
- Additive manufacturing
- Assembly

12:10

Pylux: Novel polysulphide substrate material for flexible electronics manufacturing

Dr. Tolis Voutsas, Ares Materials, Inc., Vice President, Business Development, US

- Flexible substrate
- Flexible electronics
- Printed electronics

12:20

Senorics – The sensor revolution

Dr. Ronny Timmreck, TU Dresden, IAPP, Spin-off Manager, DE

- Sensor
- NIR
- Photodetector

12:30

Enerthing – Solar energy solutions for things

Dr. Michael Niggemann, Enerthing GmbH, CEO, DE

- Internet of things
- Energy
- Solar

12:40

The Vanguard Initiative:

Establishing international value chains in printed electronics

Dr. Christian Punckt, Karlsruhe Institute of Technology, Associate Director, DE

- Vanguard Initiative
- International value chains
- Private co-investment

12:50

Carbon Waters: A new generation of nanocarbons conductive inks

Dr. Alban Chesneau, Carbon Waters, Project Manager, FR

- Conductive inks
- Graphene

Conference Program – Day 2

Wednesday – March 29, 2017

Technical Conference

Room 13a

Energy

Session Chair: Huib van den Heuvel, Solliance, Director, NL

11:30 | Towards roll-to-roll production of efficient organic triple junction solar films on an industrial scale

Dr. Martin Pfeiffer, Heliatek GmbH, CTO, DE

- Damp heat test passed for flexible solar films
- Efficient tandem cells produced by R2R vacuum processing
- Full scale production line for 120cm web in planning

11:50 | Status S2S and R2R up-scaling progress for perovskite based PV modules at Solliance

Dr. Ronn Andriessen, Solliance, Program Director, NL

- Perovskite based PV stack designs
- Perovskite based PV upscaling
- Perovskite based PV stability

12:10 | Printed aqueous supercapacitors: Materials and architecture optimization for improved mechanical and electrical properties

Mr. Jari Keskinen, Tampere University of Technology, Project Manager, FI

- Supercapacitor
- Energy storage
- Printed electronics

12:30 | The real challenge of in-line quality control of electrodes coatings for lithium-ion batteries based on visual inspection

Dr. Michel Popovic, IN-CORE SYSTEMES, General Manager, FR

- On-line high resolution practical quality control
- Key tool for durable materials and electrodes
- Real key challenges to accurately sense quality

Technical Conference

Room 13b

Functional Materials

Session Chair: Dr. Mark James, Merck Chemicals, R&D Director, Head of Organic Electronics, UK

11:30 | Solution-processed flexible organic thin film transistors with phenomenal reliability performances

Dr. Steve CH Tu, AUO, Manager Advanced Device Research Center, TW

- Organic thin film transistors
- Flexible polyimide substrate
- Reliability

11:50 | Siloxane inks – A new class of materials for the printed IoT era

Dr. Juha Rantala, Inkron, CEO, FI

- Functional inks
- Siloxane
- Printed IoT

12:10 | Materials for printed transistors: More than proof of concept!

Dr. Aurélie Morley, Merck Chemicals Ltd, R&D Lead, UK

- High performance organic electronic inks
- Printed thin film transistors
- Roll-to-roll fabrication

12:30 | High-current pulse processing to improve stability and hysteresis in CNT-based printed electronic devices

Dr. Ryan Giedd, Brewer Science, Inc., Director, Device Engineering & Development, US

- Devices
- CNT
- Pulse

Conference Program – Day 2

Wednesday – March 29, 2017

Scientific Conference

Room 14a

Printing, Patterning and Equipment I

Session Chair: Prof. Reinhard Baumann, Fraunhofer ENAS, DE

11:30 | Monitoring laser scribing processes using VNIR hyperspectral imaging

Mr. Florian Gruber, Fraunhofer IWS, Research Assistant, DE

- Laser scribing
- Hyperspectral imaging
- Monitoring

11:50 | Sinter-free hybrid metal-polymer inks for printed and flexible electronics

Prof. Tobias Kraus, INM – Leibniz Institute for New Materials GmbH, Deputy Head, InnovationCenter INM, DE

- Hybrid ink
- Sintering-free
- Inkjet printing

12:10 | Light induced sintering of printed metal structures

Dr. Jürgen Keck, Hahn-Schickard, Scientific Employee, DE

- Photonic sintering
- Laser sintering
- Printed metal inks

12:30 | Stretchable conductors direct printing for electronic textile applications using pad printing

Dr. Yacov Shneider, Nanoelectronic Center, Technion, Chief Engineer, IL

- Pad printing
- Stretchable conductors
- Transistors

Scientific Conference

Room 14c

Materials I

Session Chair: Dr. Bertrand Fillon, French Plastic Institute (IPC), General Director of Research, FR

11:30 | Highly efficient light-emitting diodes based on intramolecular rotation in coinage metal carbene complexes

Dr. Alexander S. Romanov, School of Chemistry, University of East Anglia, Senior Post-doctoral Research Associate, UK

- Copper
- Carbene
- OLED

11:50 | Rapid progress in achieving stable, efficient and deep-blue OLEDs with thermally activated delayed fluorescence materials

Dr. Angela Digennaro, CYNORA GmbH, Scientist, DE

- OLED
- Blue
- Thermally activated delayed fluorescence

12:10 | Study of the thermal stability of PEDOT:PSS thin films

Mr. Lukas Stepien, Fraunhofer IWS Dresden, Scientific Staff, DE

- PEDOT:PSS
- Degradation
- Electrical conductivity

12:30 | A universal OLED materials benchmark protocol

Mr. Michel Molaire, Molecular Glasses Inc., CEO/Founder, US

- Benchmarking
- Robust design
- Signal to noise ratio

Conference Program – Day 2

Wednesday – March 29, 2017

Technical Conference

Room 13a

Touch, Tactile and Haptic Feedback

Session Chair: Dr. Rahul Gupta,
Cambrios Technologies Corporation,
Senior Director, Business Development, US

14:00 | **Haptics, it used to be all about resonant frequency**

Francois Jeanneau,

Novasentis, Inc., CEO, US

- Current haptic technologies are not meeting OEM goals
- The sense of touch is a critical element into an immersive user experience
- Haptic sensations must be localized and in high definition to meet user expectations

14:20 | **Smart interactive and decorated surfaced for automotive and other electronics user interfaces**

Dr. Wolfgang Clemens,

PolyIC GmbH & Co. KG, Head of Product Management PolyTC, DE

- Touch and gesture control
- Silver metal mesh transparent conductive films
- Automotive, white goods, consumer user interfaces

14:40 | **Fingerprint sensors: Beyond the button**

Mr. Bob Mackey, Synaptics,

Director of Biometric Architecture, US

- Fingerprint sensor
- Capacitive
- Optical

Technical Conference

Room 13b

Biomedical Applications

Session Chair: Dr. Kerry Adams,
DuPont Teijin Films, Business Development Manager, US

14:00 | **Application of screen-printed carbon films in biomedical sensors**

Mr. Steven Setford, Johnson & Johnson, Diabetes Care Companies, Director, Strip Development, UK

- Screen-printed carbon sensors
- Self-monitoring of blood glucose
- Medical devices for diabetes management

14:20 | **OLED/OPD transducer for point-of-use diagnostics**

Dr. May Wheeler, Cambridge Display Technology Ltd, Scientist, UK

- OLEDs and OPDs
- Rapid diagnostics
- Point-of-use

14:40 | **Paper-based platform for printed electrochemical biosensors**

Mr. Giorgio Mutinati,

AIT Austrian Institute of Technology, Scientist, AT

- Single-use quantitative biomedical sensor on paper
- Printed electrode, bioink, microfluidic, microchip
- Enzymatic assay for glucose impedimetric sensing

Conference Program – Day 2

Wednesday – March 29, 2017

Scientific Conference

Room 14a

Printing, Patterning and Equipment II

Session Chair: Prof. Gyou-Jin Cho,
Sunchon National University, KR

14:00 | **Direct laser scribing of organic photovoltaic on R2R processed thin-film barriers, enabling low-cost R2R flexible PV**

Mr. Henri Fledderus, Holst Center / TNO, Senior Process Engineer, NL

- Laser scribing
- R2R thin film barrier
- Organic photovoltaic

14:20 | **Optical characterization of thin inkjet-printed organic photovoltaic films on flexible substrates by spectroscopic imaging ellipsometry**

Mr. Christian Röling, Accurion GmbH, Application Scientist, DE

- Flexible substrates
- Ellipsometry
- Thin film

14:40 | **Process dependent performance of slot die coated OLED-multilayers**

Mr. Sebastian Raupp,

Karlsruhe Institute of Technology, PhD, DE

- Slot die coating
- SMOLED
- Multilayer

Scientific Conference

Room 14c

Materials II

Session Chair: Dr. Barbara Stadlober,
Johanneum Research
Forschungsgesellschaft mbh, AT

14:00 | **Understanding the barrier performance of multilayer films – Theoretical studies of steady-state and transient permeation**

Mr. Oliver Miesbauer,

Fraunhofer Institute for Process Engineering and Packaging IVV, Scientist, DE

- Permeation through multilayer barrier films
- Numerical simulation
- Lag time of permeation

14:20 | **Bendable encapsulants and dielectrics to be used in backplanes of flexible displays**

Mr. Gerhard Domann, Fraunhofer Institut für Silicatforschung, Head of Competence Team Optics and Electronics, DE

- Flexible displays
- Dielectrics
- Encapsulants

14:40 | **Stability and degradation of organic materials: Atomistic modelling impact**

Dr. Jacob Gavartin, Schrodinger Inc, Materials Science Lead, UK

- Stability descriptors
- Molecular dynamics
- Quantum chemistry

Conference Program – Day 2

Wednesday – March 29, 2017

Technical Conference

Room 13a

Upscaling Production and Manufacturing Processes

Session Chair: Prof. Karlheinz Bock,
Technische Universität Dresden, DE

15:40 | Flexible manufacturing of 3D printed electronics via print driven process chains

Dr. Martin Hedges, Neotech AMT GmbH,
Managing Director, DE

- 3D printed electronics
- Mechatronics
- Flexible manufacturing

16:00 | Instantaneous drying and sintering of water or solvent based conductive coatings

Dr. Kai Bär, adphos Digital Printing GmbH,
Managing Director, DE

- Instantaneous drying
- Sintering of water
- Sintering of solvent based conductive coatings

16:20 | Spatial atomic layer deposition for large-area and flexible applications

Dr. Paul Poodt, Holst Centre,
Program Manager, NL

- Spatial atomic layer deposition
- Roll-to-roll ALD
- Flexible electronics

Technical Conference

Room 13b

Smart and Hybrid Systems

Session Chair: Mr. Scott White,
PragmatIC, CEO, UK

15:40 | Discover how item-level data is transforming consumer experience in retail

Mr. Francisco Melo, Avery Dennison,
VP/GM Global RFID, UK

- RFID, NFC
- Omni-channel
- Consumer experience

16:00 | Advances in flexible hybrid electronics reliability

Mr. Douglas Hackler,
American Semiconductor, Inc.,
President & CEO, US

- Flexible hybrid electronics
- FHE reliability
- FleX-IC

16:20 | Injection molded structural electronics: Mass manufactured smart plastics

Prof. Antti Keränen, TactoTek, CTO, FI

- Injection molded electronics
- Hybrid integration
- Smart surfaces

Conference Program – Day 2

Wednesday – March 29, 2017

Scientific Conference

Room 14a

Printing, Patterning and Equipment III / Publishing your Research

Session Chair: Prof. Sung-Lim Ko,
Konkuk University, KR

15:40 | Roll-to-roll processing of thin-film-transistor circuits

Dr. Ari Alastalo, VTT, Principal Scientist, FI

- Roll-to-roll processing
- Thin-film transistors
- Circuits

16:00 | Using the coffee ring effect to reduce the thickness of inkjet printed dielectrics

Dr. Neil Graddage,
National Research Council Canada,
Research Officer, CA

- Inkjet
- Dielectric
- TFT

16:20 | Inkjet-printing of aptamers for printable sensor developments

Prof. Silvia Schintke, HEIG-VD, University of Applied Sciences Western Switzerland,
Head of Laboratory of Applied NanoSciences (COMATEC-LANS), CH

- Inkjet-printing for printable sensors
- Surface functionalization
- Non-contact atomic force microscopy

Scientific Conference

Room 14c

Materials III

Session Chair: Dr. Henning Richter,
Nano-C Inc., Vice President,
Research and Development, US

15:40 | Printing self-reducing copper ink and hot press post treatment yielding conductive copper patterns

Mr. Yitzchak (Isaac) Rosen, The Hebrew University of Jerusalem, PhD Student, IL

- We printed a self-reducing copper precursor ink
- Decomposition was obtained by hot press
- Resulted in better conductivity than heat alone

16:00 | A versatile molecular ink platform for printed electronics

Dr. Arnold Kell, National Research Council,
Research Officer, CA

- Molecular silver ink
- Conductive
- Screen, inkjet and aerosol jet printing

16:20 | Novel simplistic method for bending tests on flexible electronic devices

Ms. Emmy Holst, Fraunhofer FEP,
Research Fellow, DE

- Bending tests
- Flexible electronics
- OLED

Conference Program – Day 2

Wednesday – March 29, 2017

Technical Conference

Room 13a

Upscaling Production and Manufacturing Processes

Session Chair: Prof. Karlheinz Bock,
Technische Universität Dresden, DE

16:40 | Integration of nano imprint R2R into the production processes for printed electronic products

Mr. Thomas Kolbusch, Coatema Coating Machinery GmbH, Vice President, DE

- Printed electronic
- Roll-to-roll
- Nano imprint

17:00 | Roll-to-roll methods for producing electrodes for flexible electronics

Dr. Marja Vilkmán, VTT Technical Research Centre of Finland, Senior Scientist, FI

- Roll-to-roll
- Flexible electrodes
- Self-alignment

Technical Conference

Room 13b

Smart and Hybrid Systems

Session Chair: Mr. Scott White,
PragmatlC, CEO, UK

16:40 | 3D printing of flexible and stretchable interconnects

Dr. Michael Renn, Optomec, Inc, Chief Technology Officer, US

- 3D interconnects
- Flexible circuits
- Hybrid electronics

17:00 | Inkjet flex: Roll-to-roll inkjet printing of copper-based printed electronics applications

Mr. Steven Bagshaw, CPI, Business Development Manager, UK

- Inkjet printing
- Copper electronics
- Internet of things

Conference Program – Day 2

Wednesday – March 29, 2017

Scientific Conference

Room 14a

Printing, Patterning and Equipment III / Publishing your Research

Session Chair: Prof. Sung-Lim Ko,
Konkuk University, KR

16:40 | Easily integratable, low cost nano lens array technology for large-area flexible printed electronics

Dr. Young-Sam Park, ETRI, Principal Member of Engineering Staff, KR

- Nano lens
- Flexible
- Organic light emitting diode

17:00 | Publishing your research – An introduction to scientific publishing

Mr. Simon Buckmaster, IOP Publishing, Publisher, UK

- Scientific publishing
- Peer-review
- Writing scientific articles

Scientific Conference

Room 14c

Materials III

Session Chair: Dr. Henning Richter,
Nano-C Inc., Vice President, Research and Development, US

16:40 | Synthesis of processable n-type polymers

Dr. Roman Tkachov, Fraunhofer-Institut für Werkstoff- und Strahltechnik, Researcher, DE

- n-type conductive polymer, poly[Kx(Ni-ett)]
- Monomer and polymer structure
- Printable paste

17:00 | Printing electronic and sensing components on biocompatible and biodegradable PLA substrates

Dr. Danick Briand, Ecole Polytechnique Fédérale de Lausanne, Team Leader MEMS and Printed Microsystems, CH

- Poly-lactic acid substrate
- Printing resistors and transistors
- Biocompatible and biodegradable

TC Poster Session

ICM Foyer 18:00–20:00

Upscaling Production and Manufacturing Processes

Advanced materials deposition digital solutions for printed electronics and smart 3D printing

Mr. Nicolas Bernardin
Ceradrop, Deputy Managing Director, FR

New silicon frontiers: Physically flexible system-on-a-chip

Mr. Rich Chaney
American Semiconductor, General Manager, US

Development of high-precision web handling modules of a R2R evaporation system for flexible OLED devices

Mr. Hyuntae Kim
KIMM, Korea Institute of Machinery & Materials, Researcher, KR

High speed non-contact electrical metrology for printed electronics

Dr. Adam Lewis
National Physical Laboratory, Higher Research Scientist, UK

Precision stripe coating by non-meniscus guided tungsten carbide lip slot die

Mr. Naoki Rikita
MMC RYOTEC CORPORATION by Mitsubishi Materials, Technical Director, JP

High volume digital printing of antennas and circuitry with continuous copper and aluminum

Dr. Dene Taylor
SPF-Inc, President, US

Energy

Organic photovoltaics: Enabling production of commercially viable modules

Dr. Stephane Berry
MERCK Chemicals Ltd., R&D Manager, UK

Lifetime study of flexible encapsulated organic photovoltaic modules: Optimization of device architecture and selection of encapsulated materials

Dr. Muriel Matheron
CEA INES, Research Scientist, FR

Automotive & Aerospace

Light weight cables enhance vehicle performance

Mr. Tommi Rintala
New Cable Corporation, CEO, FI

Functional Materials

Transparent and conductive surface modification for polymers

Mr. Thomas Abendroth
Fraunhofer IWS, Scientific Co-worker, DE

Smart dispersion – How to achieve better dispersion results with realtime process analysis

Mr. Ulf Koepke
EXAKT Advanced Technologies GmbH, R & I Manager, DE

Publicly Funded Projects

Processing of metal oxide nanoparticle inks for OPV and OLED applications by a novel new synthesis route

Dr. Christine Boeffel
Fraunhofer IAP, Project Manager, DE

In-mold hybrid integration process for LED displays

Mr. Sami Ihme
VTT, Senior Scientist, FI

Luminous ceramic tile based on flexible LED lighting module with high lighting uniformity

Dr. Kimmo Keränen
VTT, Senior Scientist, FI

Biomedical Applications

Multifunctional printed PEDOT:PSS skin-multielectrode arrays

Dr. Sébastien Sanaur
Ecole Nationale Supérieure des Mines de Saint-Etienne, Associate Professor, FR

Flexible Displays and Lighting

Conformable organic liquid crystal displays

Dr. Jan Jongman
FlexEnable, Senior Engineering Manager, UK

Wearable Electronics

Integration of electroactive fibers and yarn structures into automotive interiors for enhanced interactive surfaces and sensor actuator applications

Dr. João Gomes
CENTI – Centre for Nanotechnology and Smart Materials, RTD Manager, PT

A study of pad-bonding strength enhancements on elastometric substrate

Dr. Jay Yu
AU Optronics, Senior Researcher, TW

TC Poster Session

ICM Foyer 18:00–20:00

Smart and Hybrid Systems

Printed electronics for enhancing the functionality of packages

Prof. Dr. Ulrich Moosheimer
Munich University of Applied Sciences, Professor for Printing Technologies, DE

Substrates and Encapsulation

Polyester films for the next generation of flexible electronics

Dr. Bill MacDonald
DuPont Teijin Films, Business Research Associate, UK

Transparent and high conductive fabric based electrodes

Dr. Roland Steim
Sefar AG, Project Manager, CH

BC Poster Session

ICM Foyer 18:00

Business and Product Developments

Flexible connectors for flexible electronics

Mr. Antti Backman
Delektre Ltd., CEO, FI

SC Poster Session

ICM Foyer 18:00–20:00

Printing, Patterning Technologies and Equipment

Towards roll-to-roll reverse-offset printing

Dr. Ari Alastalo
VTT, Principal Scientist, FI

Direct writing of patterned, lead-free nanowire aligned flexible piezoelectric device

Dr. Meng Gao
Institute of Chemistry, Chinese of Academy of Sciences, Student, CN

Reliability of electrically conductive adhesive interconnections in printed flex-to-flex system integration

Dr. Tuomas Happonen
VTT Technical Research Centre of Finland Ltd, Senior Scientist, FI

Improvement of roll-to-roll fabrication based polymeric semiconductor thin film transistor

Mr. Jaemin Kim
Konkuk University, Researcher, KR

Improvement of electrical performance of printed OTFT by calendaring process

Prof. Sangyoon Lee
Konkuk University, KR

Development of new products with optimized slot dies – The scalable process

Mr. Maick Nielsen
TSE Troller AG, Managing Director, CH

Electromigration (EM) reliability study on electrohydrodynamic-jet-printed Ag lines

Ms. Chaeri Yu
Kongju National University, Student, KR

Circuit Design, Simulations, and Systems

Methods of display graphical information using printed electronics

Mr. Ignatii Adamantov
Saint Petersburg State University of Industrial Technologies and Design,
PhD Student, RU

A fast printed pressure and impact force sensing surface

Mr. Marco Fattori
Technical University of Eindhoven (TUE), PhD Researcher, NL

Layout versus schematic in multilayered printed electronics designs

Dr. Ryan Griffin
National Research Council Canada, Electronics Designer, CA

Rapid-prototyping and instrumentation using printed electronics

Mr. Alexandre Pereira
Commissariat à l'Energie Atomique, Researcher, FR

Devices

Measuring and controlling exciton diffusion length in highly efficient small molecules organic semiconductors for organic photovoltaic applications using solvent vapor annealing

Mr. Oskar Blaszczyk
University of St. Andrews, PhD Student, UK

Printed graphite/Cu electrodes for back electrodes in printed photovoltaic thin films

Mr. Alexander Blümel
Joanneum Research Forschungsgesellschaft mbH, Scientist, AT

The effect of bias stress and environmental stability on inkjet-printed CMOS circuits

Dr. Afshin Davvand
National Research Council Canada, Research Officer, CA

Organic semiconductor explosive sensors

Mr. James Glackin
University of St Andrews, PhD Student, UK

Tungsten polyoxometalate as an interfacial layer for solution processed high performance metal oxide transistors

Dr. Adrica Kyndiah
Centre national de la recherche scientifique CNRS –
University of Bordeaux, Post Doctoral fellow, FR

Flexible and disposable printed devices for temperature control and monitoring

Mr. Alberto Loi
Fundació Eurecat, Researcher, ES

Fully screen printed flexible thin film loudspeaker using a piezoelectric polymer

Mr. Kris Marcelissen
Fontys University of Applied Sciences, Research assistant, NL

Enerthing – Solar energy solutions for things

Dr. Michael Niggemann
Enerthing GmbH, CEO, DE

Transparent quantum dot light emitting diode (QD-LED) with various inorganic nano-particles as electron transport layer

Dr. Min Suk Oh
Korea Electronics Technology Institute (KETI), Managerial Researcher, KR

Efficient pyrrolo[3,4-c]pyrrole-1,3-dione-based wide band gap polymer for high efficiency binary and ternary solar cells

Mr. Insoo Shin
Pukyong National University, Graduate Student, KR

Hot-air annealing method for improving the performance of organic-inorganic hybrid lead halide perovskite solar cells

Mr. Insoo Shin
Pukyong National University, Graduate Student, KR

Resistive switching characteristics of all-solution-based Ag/Mn:ZnO/W:In₂O₃ devices for non-volatile memory application

Ms. Jiyeon Yang
Kongju National University, Student, KR

Quality control and device characterisation of defects by laser based imaging techniques

Dr. Alina Zoladek-Lemanczyk
National Physical Laboratory, Higher Research Scientist, UK

2.5D and 3D Printed Electronics

Hydro-printing electrical circuits onto 3D objects

Mr. Gabriel Saada
Hebrew University of Jerusalem, Student, IL

Materials

New ink formulation using non-chlorinated solvents for organic solar cells

Dr. Badrou Reda Aich
National Research Council, Research Council Officer, CA

Functionalization of cellulose fabric with AgNWs and TiO₂ nanomodifier

Dr. Grzegorz Celichowski
University of Lodz, Associate Professor, PL

Suppressing spontaneous polarization of p-GaN by graphene oxide passivation: Enhanced light output of flexible UV-LED

Prof. Seung Yol Jeong
Korea Electrotechnology Research Institute, Principal Research Scientist, KR

Additive Manufacturing / 3D Printing in Combination with Printed Electronics

3D printing of soft-ferrite core and Ag winding for fabrication of electromagnet and transformer

Mr. Taekyu An
Kongju National University, Student, KR

How can 3D printed electronics change the mobile world?

Dr. Fernando de la Vega
PV Nano Cell, Ltd., Founder and CEO, IL

Conference Program – Day 3

Thursday – March 30, 2017

Plenary Session

Room 14b

Session Chair: Mr. Wolfgang Mildner
MSW, Founder and CEO, DE
LOPEC General Chair

- 09:05 Printed sensors: Approaches from consumer health to lifesciences**
Dr. Giovanni Nisato
CSEM, Business and Technology Development Senior Manager, CH
- Printed sensor technology from 2D to 2D+ sensors
 - On body sensors for consumer health applications
 - Towards ehealth and lifescience applications
- 09:25 Toward flexible future of electronics**
Ms. Jennifer Y. C. Lin
AU Optronics Corporation, Associate Vice President of Advanced Technology Research Center, TW
- Organic TFT
 - Production
 - Flexible electronics
- 09:50 Collaboration and the development of a flexible hybrid electronics ecosystem**
Dr. Melissa Grupen-Shemansky
SEMI, CTO SEMI / FlexTech, US
- SEMI
 - NextFlex
 - Flexible hybrid electronics
- 10:15 Fully printed organic sensors**
Mr. Jean-Yves Gomez
ISORG, Founder & CEO, FR
- Printing
 - Sensors
 - Large surface
- 10:40 Presentation of Student Poster Award**

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Conference Program – Day 3

Thursday – March 30, 2017

Technical Conference

Room 13a

Flexible Displays and Lighting

Session Chair: Dr. Edzer Huitema,
Apple Inc., Hardware Engineering, US

11:30 | The importance of low power electrophoretic displays to emerging printed and flexible electronics

- Dr. Michael McCreary,** E Ink Corporation, Chief Technology Officer, US
- EPD are ideal visual readouts for flexible wearables
 - Printed segmented or TFT backplanes can be used
 - Full color EPD with no CFA have been demonstrated

11:50 | Flexible OLED lighting integration into glass-glass composites

- Dr. Stefan Mogck,** Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP, Head of Department R2R Organik-Technologie, DE
- Roll-to-roll OLED
 - Autoclave process
 - Glass-glass laminates

12:10 | Printable electronic technologies developed at CDT: Overview of technology platforms and current performance

- Dr. Miguel Carrasco,** Cambridge Display Technology Limited, Program Manager, UK
- Photodetectors
 - Sensors
 - Displays

12:30 | Introduction of standardization activities for flexible display devices in IEC TC 110

- Mr. Kei Hyodo,** Konica Minolta Inc., Manager, JP
- Flexible displays
 - Standardization
 - Evaluation method

Technical Conference

Room 13b

Wearable Electronics

Session Chair: Dr. Jyrki Schroderus,
PolarElectro, CTO, FI

11:30 | Printed, skin-mounted hybrid system for ECG measurements

- Prof. Matti Mäntysalo,** Tampere University of Technology, FI
- Wearable bandage
 - Healthcare
 - Stretchable electronics

11:50 | Development of integrated printed and embedded sensors on personal protective equipment for hazardous environment and personal monitoring

- Dr. João Gomes,** CENTI – Centre for Nanotechnology and Smart Materials, RTD Manager, PT
- Personal protective equipment
 - Textile integration
 - Printed sensors

12:10 | Conformable sensor arrays for large area and high resolution thermal imaging

- Dr. Jan-Laurens van der Steen,** Holst Centre/TNO, Senior Scientist, NL
- Conformable
 - Sensor
 - Array

12:30 | Integration of organic LED and optical sensing to create a wearable health monitoring device

- Dr. Thomas Knieling,** Fraunhofer ISIT, Head of Business Field Wearable Electronics, DE
- OLED
 - Flexible
 - Wearable

Conference Program – Day 3

Thursday – March 30, 2017

Scientific Conference

Room 14a

Devices I

Session Chair: Dr. Chao-Jen Wang,
Industrial Technology Research Institute, ITRI, Project Manager at Display Technology Center, TW

11:30 | Robust design and fabrication of flexible logic circuits based on 3D-printed 5V dual-gate organic NAND technology

- Prof. Sungjune Jung,** Pohang University of Science & Technology, KR
- Organic printed electronics
 - Dual-gate organic transistor
 - Inkjet printing

11:50 | Fully roll-to-roll gravure printed 4 bit NFC tag for developing user interfaced board game

- Dr. Younsu Jung,** Suncheon National University, Researcher, KR
- NFC tag
 - Roll-to-roll gravure
 - Interface game

12:10 | Fully roll-to-roll gravure printed 40 dpi TFT-active matrix based signage

- Mr. Junfeng Sun,** Suncheon National University, Doctoral Candidate, KR
- Roll-to-roll gravure
 - 40 dpi TFT-active matrix
 - Flexible signage

12:30 | Single-substrate integrated active-matrix pyro-sensor

- Dr. Herbert Gold,** Joanneum Research, Senior Scientist, AT
- Sensor-electronics integration
 - Ferroelectric sensor
 - Flexible active-matrix

Scientific Conference

Room 14c

2.5D and 3D Printed Electronics / Washability and Stretchability of Printed Electronics

Session Chair: Prof. Pim Groen,
Holst Centre, Program Manager, NL

11:30 | Highly stretchable conductive wirings with silver flake paste

- Mr. Cai-Fu Li,** Osaka University, Specially Appointed Researcher, JP
- Wearable device
 - Conductive wiring
 - Stretchable electronics

11:50 | Copper complex inkjet ink with self-reduction mechanism enable fabrication of electrical circuits on heat sensitive 2D substrates and 3D objects

- Mr. Yousef Farraj,** HUJI, PhD Student, IL
- Copper conductive ink
 - Low decomposition temperature
 - Printing on 2D substrates and 3D objects

12:10 | Inkjet-printing on 3D-Printed substrates

- Ms. Lisa-Marie Faller,** Alpen Adria University, University Assistant, AT
- Various 3D-printed substrates and conductive inks
 - Lowcost and off-the-shelf
 - Smart packages and ubiquitous sensing devices

12:30 | Printed stretchable sensors for garments and automotive applications

- Mr. Sripathi Raja Jeyakumar,** Fraunhofer Institute For Silicon Technology, Student, DE
- Stretchable electronics
 - Screen printing
 - Wearables

Conference Program – Day 3

Thursday – March 30, 2017

Technical Conference

Room 13a

Automotive & Aerospace

Session Chair: Dr. Nina Riegel,
OSRAM OLED GmbH,
Innovation Management, DE

14:00 | **OLED-technology in rear lamps – Challenges in system engineering and robustness validation**

Dr. Wolfgang Pohlmann,
Hella, Vice President, DE

- Organic light emitting diode
- OLED, automotive, rear lamp, tail lamp
- System development and reliability

14:20 | **Printed electronics for interactive and responsive automotive interior components**

Dr. André Pinto,

CeNTI, Researcher, PT

- Smart components
- Interactive and responsive interiors
- In mould labeling

14:40 | **Printed heaters for space applications**

Dr. Dirk Godlinski, Fraunhofer IFAM,
Project Manager, DE

- Digital printed heater
- Space relevant substrate
- Performance testing

Technical Conference

Room 13b

IoT (Internet of Things)

Session Chair: Dr. Wolfgang Clemens,
PolyIC, Head of Product Management
PolyTC, DE

14:00 | **End-to-end NFC solutions enable the internet of everything**

Dr. Peter Fischer, Thin Film Electronics,
Chief Operating Officer, US

- NFC solutions bring intelligence to ordinary items
- Consumers are engaged by tapping a smartphone
- High-volume NFC production is possible with R2R

14:20 | **Development of an integrated flexible energy harvesting and storage system**

Dr. Thomas Kugler, Cambridge Display
Technology Ltd., Principal Scientist, UK

- Thermoelectric generator
- Battery
- Supercapacitor

14:40 | **A new energy storage technology for the internet of things**

Dr. Michael Korell, Evonik Creavis GmbH,
Project Manager – Intrapreneur, DE

- Energy storage
- Internet of things
- Batteries

Conference Program – Day 3

Thursday – March 30, 2017

Scientific Conference

Room 14a

Devices II

Session Chair: Prof. Klaus Meerholz,
University of Cologne, DE

14:00 | **Universal charge generation layers for all-solution processed, highly efficient tandem organic light emitting diodes**

Ms. Min Zhang,

Karlsruhe Institute of Technology,
PhD Student, DE

- Charge generation layer
- Solution process
- Organic light emitting diodes

14:20 | **High bright polymer light electroluminescent diodes by energy transfer process in a simple structure towards large area emission**

Dr. João Gomes, CeNTI – Centre of
Nanotechnology and Smart Materials,
R&D Manager, PT

- PLED
- Large area emission
- Flexible lighting

14:40 | **Improved stability of blue TADF emitters with EQE >10% to replace fluorescent blue emitters**

Dr. Stefan Höfle,

CYNORA GmbH, R&D Scientist, DE

- Thermally activated delayed fluorescence
- Improved stability
- OLED

Scientific Conference

Room 14c

Circuit Design, Simulations and Systems

Session Chair: Prof. Donald Lupo,
Tampere University of Technology, FI

14:00 | **Sensoric functionalisation of industrial textile fibers by printing**

Dr. Danick Briand, Ecole Polytechnique
Fédérale de Lausanne, Team Leader MEMS
and Printed Microsystems, CH

- Industrial textile fibers
- Printing
- Sensors

14:20 | **Explicit relationship between the growth of electric resistance due to cracking and the parameters of the crack pattern**

Dr. Oleksandr Glushko,

Erich Schmid Institute, Project Leader, AT

- Polymer metallization
- Reliability
- Electrical degradation

Technical Conference

Room 13a

Publicly Funded Projects

Session Chair: Dr. Jérôme Gavillet,
CEA-Liten, Printed Electronic Program
Director, FR

16:00 | Nanotechnology and textile electronics

Prof. Jong Min Kim,

University of Cambridge, UK

- The vision of 1D-NEON
- 14 partners from 7 European countries
- The main challenges of currently available state-of-the art technologies

16:20 | PI-SCALE: Creating an open access european flexible OLED pilot line

Dr. Erno Langendijk,

Holst Centre, Business Development and
Program Manager – Flexible OLEDs, NL

- Open access, customized flexible OLED services
- Bridging the gap between R&D and mass manufacturing
- Accelerating integration of flexible OLEDs in diverse applications

16:40 | Design driven innovation as a means to guide research in flexible electronics

Prof. Pim Groen,

Holst Centre, Program Manager, NL

- Design driven innovation
- Flexible electronics
- OLED

Technical Conference

Room 13b

Substrates and Encapsulation

Session Chair: Dr. Bill MacDonald,
DuPont Teijin Films, Business Research
Associate, UK

16:00 | Development of robust barrier films for flexible electronics

Prof. Samuel Graham, Woodruff School of
Mechanical Engineering, Georgia Institute of
Technology, US

- Barrier films
- Flexible electronics
- Mechanical properties

16:20 | Gas barrier film for OLED devices

Prof. Tadahiro Furukawa,

Yamagata University, JP

- Gas barrier film
- Evaluation method
- Roll-to-roll

16:40 | Screen printing, copper plating, and debonding process for flexible OLED substrates

Dr. Doo-Hee Cho,

Electronics and Telecommunications Research
Institute (ETRI), Senior Engineer, KR

- Flexible OLED
- Printing
- Plating

Scientific Conference

Room 14a

Devices III

Session Chair: Prof. Jukka Hast,
VTT Technical Research Centre of Finland,
Research Professor – VTT Printed Intelligence,
FI

16:00 | Advances in materials for solution deposited, printable organic photodiodes: Imaging the future

Dr. Toby Cull, Merck Chemicals Ltd.,

R&D Manager, UK

- Organic semiconductor
- Photodetector
- Printable

16:20 | Beyond the shockley equation: Reliable parameter extraction from low-mobility solar cells

Dr. Bernd Ebenhoch, Karlsruhe Institute of

Technology, Postdoctoral Researcher, DE

- JV-curve fitting
- Internal voltage
- Charge carrier mobility

16:40 | Capacitive force sensors for an artificial skin

Mr. Andreas Albrecht, Technische Universität

München, Doctoral Candidate, DE

- Force sensors
- Artificial skin
- Screen-printing