Join Europe’s LARGEST printed electronics event

April 8 & 9 | Dresden, Germany

Venue
The MARITIM Hotel & International Congress Centre
Devrientstrasse 10-12
Ostra-Ufer 2
01067 Dresden
Germany

Cover images courtesy of Novaled AG

“I enjoyed the conference, networking and company tours. IDTechEx is a true global leader in stimulating printed electronics technologies and their applications.” Motorola Labs

To register visit www.IDTechEx.com/peEurope
Keynote

IDTechEx, UK
'The Global Market for Printed Electronics'
- Peter Hanra, Chairman
  ◦ Market by sector 2008-2028
  ◦ Market drivers
  ◦ Rapid progress within inorganics
  ◦ Big company vs small company

Hasbro Europe, UK
'The Future of Toys: A Need for a Change'
- Phil Sage, Senior Technologist / Product Designer
  ◦ Where have we been and where are we going?
  ◦ Empowering our evolving consumer in a changing world
  ◦ New traditional ‘ways to play’

LG Philips LCD, Korea
'Development of the World’s Highest Resolution 14.3 Inch Flexible Colour e-Paper Display'
- Jong-Kwon Lee, Chief Research Engineer
  ◦ TFT development on a thin metal foil for high resolution EPO
  ◦ CP development on a plastic substrate for high resolution EPO
  ◦ Image quality improvement using colour algorithms

Hewlett Packard Laboratories, USA
'Roll-to-Roll Manufacturing of Electronics on Flexible Substrates Using Self-Aligned Imprint Lithography'
- Carl Taussig, Program Manager
  ◦ Self-Aligned Imprint Lithography (SAIL) - an R2R process for electronics fabrication that solves the key challenge of alignment
  ◦ Demonstration of the first active matrix backplanes made exclusively with roll-to-roll processes
  ◦ Challenges and benefits of roll-to-roll manufacturing

Nanosol, USA
'Printed Photovoltaics - Cost-Efficiency for Ubiquitous Deployment'
- Erik Olsokop, European Manager
  ◦ Printed Photovoltaics
  ◦ Asian Photovoltaics

Thorn Lighting Ltd, UK
'Project Topless: Grand Challenges for Organic General White Lighting Applications'
- Dr Geoff Williams, Programme Manager, Technology Group
  ◦ Project Topless: aims and expectations
  ◦ Lighting challenges for organic solid state lighting
  ◦ Customer expectations

University of Cambridge, UK
'Latest Technical Progress with Printed Electronics'
- Professor Heinrich Smittinghaus

Applications

CPI, UK
'How to Make Money from Printed Electronics'
- Richard Kirk

Cubic Corporation, USA
'Printed Electronics Meeting the Requirements of the Transit and Retail Industries'
- Walt Bonneau, Executive SVP / Chief Technologist

The Compliers Group B.V., Netherlands
'Smart Medication Blister Anatomy and Prognosis: The Use of Active RFID in a System-in-foil Solutions for Objective Therapy Compliance Measurement'
- Jos Gelsbeens, Director

Motorola, Germany
'Printed Electronics for Wireless Application and Services'
- Andreas Schaller, Corporate R&D

Paper & Packaging

Stora Enso, Finland
'Packaging Applications for Interactivity, Monitoring and Information Transfer'
- Dr Juha Majaja, Manager, Intelligent Solutions

Sensible Solutions, Sweden & Mittuniversitetet, Sweden
'Action Activated Printed Sensor Solutions — Technology and Market Aspects'
- Mikael Gulliksson, Project Leader, Media Technology

Logic & Memory

SONY PHILIPS parc

Sony Corporation, Japan
'Organic TFTs and their Solution Process Perspectives'
- Dr Jiri Kasahara, General Manager, Fusion Domain Lab, Material Labs

Philips Applied Technologies, Netherlands
'Smart Wearable Electronics'
- Dr Michel Jongerius, Advanced Competence Development

University of Minnesota, USA
'Printable, High Capacitance Gate Insulators for Low Voltage Polymer Thin Film Transistors on Plastic'
- Professor C. Daniel Frisbie

Palo Alto Research Center (PARC), USA
'Jet-Printing of Active-Matrix Backplanes for Image Sensors and Electrophotoregraphic Displays'
- Dr Jurgen Daniel, Senior Researcher

Oregon State University, USA
'Solution-based Processing of Inorganic Oxide Electronics'
- Dr Douglas Keszler

Printed RFID & Anti Counterfeiting

PolyIC GmbH & Co. KG, Germany
'First Applications of Printed RFID'
- Dr Wolfgang Clemena, Head of Applications

Menippos GmbH, Germany
'Printed Electronics for the Game Market'
- Titus Lindl, Managing Director

InkSure, USA
'Developments in Chipless RFID Technology'
- Don Taylor, Vice President, Global Marketing

Printed Systems & Solutions

Our Exhibitors & Sponsors

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Meet over 50 exhibitors and 600 delegates at the industry’s must-attend exhibition!

Web: www.IDTechEx.com/peEurope Tel: +44 (0) 1223 813 703 Fax: +44 (0) 1223 812 400
Investment Summit
April 7

The IDTechEx Printed Electronics Investment Summit is dedicated to bringing together Venture Capitalists (VCs) and other investors with companies seeking investment.

With over $5 billion sales forecast for printed electronics in 2010 VCs are eager to invest in the industry. This is why the Investment Summit is a must-attend event for both investors and for any companies seeking investment who are involved, or intending to be involved, in any part of the printed and thin film electronics value chain.

The Investment Summit is co-hosted with Invest in Germany – the investment promotion agency of the Federal Republic of Germany.

Investment Summit Programme

» A panel of VCs give their criteria for the sectors and company profiles they seek for investing.

» IDTechEx analysts introduce the latest progress in this area, including an overview of fundraising, undersupplied sectors and company profiles.

» A range of companies who seek investment each give a 10-minute overview of their proposition and technology, followed by Q&A.

For those who are unable to attend, or who fail to find a match, IDTechEx provides a service which locates suitable investors, and assists with presentations and setting up meetings. IDTechEx has extensive contacts in the leading global investment community and frequently carries out such work on an international basis.

Plastic Chemical Sensors Workshop
April 9 (1pm-6.30pm) | April 10 (9am-5pm)

In the electronics industry, organic materials are increasingly being used to print electronics on plastic foils. This workshop, hosted by General Offaction and Sensing Projects at European Level (GOSPEL), will explore how these techniques can be expanded to integrate sensors on plastics, with a special focus on chemical sensors in the gas and liquid phase.

For more information about GOSPEL and this workshop visit www.IDTechEx.com/GOSPEL

Printed Electronics Europe Awards
April 8

Now in their second year, the prestigious Printed Electronics Awards recognise and celebrate company innovation, success and development. Winners of these awards enjoy a huge amount of publicity and prestige.

Any company operating within the printed or partially printed, organic or thin film electronics market is welcome to enter in one or more of the following categories:

» Technical Development Materials Award
» Technical Development Manufacturing Award
» Technical Development Device Award
» Best New Product Development Award
» Best Commercialisation Award

Winners of the 2008 awards will be announced at the exclusive Printed Electronics Awards Gala Dinner which will take place on Tuesday April 8 at the Dresden Battlement Vaults.

If you would like your company to be recognised for outstanding achievement in the field of printed electronics, visit www.IDTechEx.com/peEurope or contact Chris Clare at c.clare@idtechex.com

The deadline for submissions is March 1, 2008.

"The Printed Electronics Award for Best Commercialisation from IDTechEx gave Menippos GmbH great international and national publicity, and reinforced the trust of venture capital companies and target customers in our product and technology.”
Menippos GmbH
Previous winner of the Best Commercialisation Award

REGISTER NOW!
Optional Masterclasses will be taking place both before and after the conference. These interactive sessions, led by IDTechEx experts, give you a great opportunity to get answers to your specific questions. In addition, most Masterclasses include tours to leading printed electronics companies in and around Dresden.

<table>
<thead>
<tr>
<th>Monday April 7</th>
<th>Thursday April 10</th>
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<tbody>
<tr>
<td><strong>Masterclass 1: Introduction to Printed Electronics</strong></td>
<td><strong>Masterclass 4: Displays &amp; Lighting</strong></td>
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<td><strong>Morning</strong></td>
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<td>Dresden Conference Center</td>
<td>Fraunhofer Institute of Photonic Microsystems</td>
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**Masterclass 1**

Designed for those who are new to this disruptive technology, this Masterclass gives you the big picture:

- Present and future applications
- Lessons to be learnt and the challenges
- Value chain and market forecasts
- Technologies, companies, strategies – thin film transistor circuits (organic, inorganic, thin film silicon), displays (OLEDs, electrochromic, electroluminescent etc.), sensors, conductive inks, batteries, actuators
- Manufacturing techniques

**Masterclass 2: Materials**

A technical session on solution-based materials – organic semiconductors, inorganic semiconductors, metallic conductors, nanoparticles, nanotubes etc. – which covers:

- Available chemistries, performance, cost, printability, lifetime
- Impact of using different print techniques (inkjet, gravure, etc) and substrates (paper, plastic, glass, etc)
- Suppliers of materials by type
- Biggest material challenges
- Latest emerging materials and their capabilities

- Includes a tour of Novaled AG

**Masterclass 3: Printing Technologies**

It’s not the case that one printing technology is optimal for a given device, and that all inks used are organic. Find out:

- Why manufacturers are now using a variety of printing technologies for various layers in a given device to optimise performance and cost
- Where, in parts of some circuits, spin coating, vacuum deposition and other non-printing technologies, even silicon chips, must be retained
- Why active layers in thin film transistors, photovoltaics and other devices now commonly incorporate combined organic and inorganic substances, some in nanoparticle, carbon fullerene or other form
- Why there’s a big market for inkjet printing, as well as various reel-to-reel printing technologies, such as gravure, flexo and rotary screen, but which are customised to purpose

- Includes a tour of Chemnitz University of Technology

**Masterclass 4**

Within ten years, conventional lighting will start to be replaced with printed, flexible lighting. Electroluminescent, electrochromic and electrochromic displays with unique benefits are being used commercially now. This session covers:

- Market opportunities and challenges
- Issues to be resolved
- The Intellectual Property situation
- Companies in the value chain, their positioning and strengths
- Technical and market analysis of displays – one of the largest market segments of printed and potentially printed electronics
- Manufacturing techniques

- Includes a tour of MicroEmissive Displays at Fraunhofer Institute

**Masterclass 5: RFID & Its Progress Towards Being Printed**

RFID is rapidly taking off for a wide range of applications, with over two billion tags shipped in 2008 expected to rise to over 500 billion tags in 2018. The endgame is the item-level tagging of all items but this calls for an ultra low-cost tag. Only printed electronics can get us there. This Masterclass looks at:

- Today’s printed and part printed RFID
- Enabling technologies
- Progress of the leaders
- Most suitable initial applications

**Masterclass 6: Photovoltaics — New Markets**

This Masterclass is designed to give an overall picture of photovoltaic technologies, from basic principles all the way to current, cutting-edge advances. This session covers:

- Photovoltaics: Basic principles and operation, heterojunctions
- Specific technologies: Organic and hybrid organic/inorganic photovoltaics, dye-sensitised solar cells, thin film technologies (e.g. amorphous silicon, CdTe, CIGS) and III-V/ II-VI multi-junctions
- Advances and cutting-edge applications
- Market analysis

- Includes a tour of TU Dresden/Heliatek

All company tours include lunch and transport between venues. For full details of Masterclasses and company tours, visit www.IDTechEx.com/peEurope
The printed electronics market is predicted to be worth over $300 billion by 2028*. If you want to stay one step ahead in this rapidly expanding and potentially lucrative market, you can't afford to miss Printed Electronics Europe 2008 – Europe's largest printed electronics event – and the only event to cover all organic and printed inorganic electronics at one venue.

This authoritative event, hosted by IDTechEx, takes place in Dresden – a fast-growing centre of excellence for organic and printed electronics. To take advantage of this superb location, there will be hosted visits to the best local companies working on, or using the technology.

**Premium Conference**
April 8 & 9

A packed conference agenda covers the full range of printed electronics technologies, providing leading-edge analysis, and updates on industry progress. Commercial applications and routes to market are also covered. Best-in-class speakers from all over the world are flown in, and many will be presenting for the first time on this topic – so you get to hear the exclusives.

**Exhibition**
April 8 & 9

Over 50 leading companies will be showcasing innovative technologies and commercial applications in the field of printed electronics. Join the biggest exhibition in Europe on the topic, and meet your customers and partners in one place.

In addition to the conference and exhibition, we are running optional Masterclasses & Company Tours, and an Investment Summit.

**Masterclasses & Company Tours**
April 7 & 10

Interactive Masterclasses, delivered by IDTechEx experts, plus optional tours to leading printed electronics companies.

**IDTechEx Investment Summit**
April 7

Bringing together Venture Capitalists/other investors with printed electronics companies seeking funding.

**Awards & Gala Dinner**
April 8

The Printed Electronics Europe Awards recognise and celebrate company innovation, success and development. Winners will be announced at the Printed Electronics Awards Gala Dinner.

"Great conference that shows the great variety of these emerging technologies"
PolyIC

FREE Encyclopedia of Printed Electronics when you register for Printed Electronics Europe 2008
Your ultimate reference to the world of organic and printed inorganic electrics – worth $1500!

### Conference Program

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<th>April 7</th>
<th>April 8</th>
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<td>Masterclass 2 Materials + Tour of Novaled AG</td>
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<td>Investment Summit</td>
<td>Masterclass 3 Printing Technologies + Tour of TU Chemnitz</td>
<td>Masterclass 4 Displays &amp; Lighting + Tour of MicroEmisive Displays</td>
<td>Masterclass 5 RFID &amp; Its Progress Towards Being Printed</td>
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**REGISTER NOW!**
To register for Printed Electronics Europe 2008, simply complete the registration form below and post or fax it back to IDTechEx at +44 (0) 1223 812400. Alternatively, you can register online at: www.IDTechEx.com/peEurope

**Price List**

**Money-saving Packages**

**NOTE:** Optional Sessions refer to Masterclasses 1-6 and the Investment Summit

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<tr>
<th>Package Description</th>
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<td>2 Day Conference &amp; Exhibition + Networking Dinner + Audio Copies of Proceedings</td>
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<td>2 Day Conference &amp; Exhibition + GOSPEL Workshop</td>
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<td>2 Day Exhibition + Keynote Presentations Pass + GOSPEL Workshop</td>
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**Individual Prices**

- 2 Day Conference & Exhibition + Electronic Copies of Presentations                €1199
- Gala Awards Dinner                                                                €75
- Investment Summit                                                                 €599
- Masterclass 1: Introduction to Printed Electronics                                €599
- Masterclass 2: Materials                                                           €599
- Masterclass 3: Printing Technologies                                               €599
- Masterclass 4: Displays & Lighting                                                €599
- Masterclass 5: RFID & Its Progress towards Being Printed                          €599
- Masterclass 6: Photovoltaics                                                       €599
- GOSPEL Workshop                                                                    €150
- 2 Day Exhibition + Keynote Presentations Pass                                    €375

Please note that copies of conference audio proceedings and online presentations are provided subject to speakers’ permission.

**Paying By**

- International Money Order or check payable to IDTechEx
- Direct bank transfer available. Please contact m.bateman@idtechex.com for more information
- VISA  □  MasterCard □  AMEX  □

**Terms & Conditions**

Hotel and travel costs are not included in the price. Substitutions may be allowed at any time but please let us know. Cancellations must be made in writing 28 days before the event, upon which a 15% cancellation fee is payable. If a cancellation is made less than 28 days before the start of the event, no refund will be given. IDTechEx reserves the right to alter the location or content of the event at any time. IDTechEx retains the right of refusal. Only one promotional code may be used per purchase.

This information in this brochure was correct at time of going to print but all prices and programmes may be subject to change.

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Join the LARGEST
printed electronics event in Europe!

» Over 600 attendees
» Over 80 speakers from 14 countries
» Over 50 exhibitors

April 8 & 9 Dresden, Germany

Full technological analysis is given on all areas of printed electronics including:
» Applications
» Paper & Packaging
» Logic & Memory
» Printed RFID & Anti-counterfeiting
» Photovoltaics

» Batteries
» Manufacture
» Conformal & Large Area Electronics
» Displays
» Lighting
» Materials
» Replacement of Rare Materials
» Modelling, Testing & Reliability
» Progress in the Biggest Territories

To register visit www.IDTechEx.com/peEurope

Printed Electronics Europe 2008
April 8-9, Dresden, Germany

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Investment Summit
Awards & Gala Dinner

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