



Developing technologies to produce efficient OLED products for exploitation by the European lighting industry.



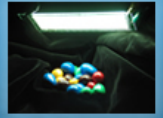
## OLED100.eu NEWSLETTER – DECEMBER 2008

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### OLED100.eu OBJECTIVES

- ▶ 100 lumens per watt power efficiency
- ▶ more than 100,000 'lifetime hours'
- ▶ a unit area of 100cm by 100cm
- ▶ cost of 100€ per square metre or less



### OLED100.eu is launched

OLED100.eu, an FP-7 integrated research project that started in September 2008, brings together a consortium of experts from leading industry and academic organizations to accelerate the development of OLED technologies in Europe. It receives €12.5 million funding from the EC's 7th Framework Programme to form the technological basis for efficient OLED applications for the general lighting industry in Europe.

The OLED100.eu programme follows the successful OLLA (Organic LEDs for Lighting Applications) programme, which started in 2004 and concluded earlier this year. With OLED100.eu, Europe is continuing to invest in the development of organic lighting technologies and moving to specifications required for general lighting applications. The consortium will focus on five main goals:

- High power efficacy (100 lm/W)
- Long lifetime (100,000 h)
- Large area (100x100 cm<sup>2</sup>)
- Low-cost (100 Euro/m<sup>2</sup>)
- Measurement standardization / application research

OLED100.eu is an important initiative to advance the development of energy efficient lighting solutions. Building on the success of OLLA, OLED100.eu will deliver OLEDs with twice the efficiency, 10-times the operational lifetime and 10-times the substrate size. "The participation of leading lighting manufacturers like Philips and Osram ensures a rapid transfer of results into real products", said Dr. Stefan Grabowski of Philips Research, Coordinator of OLED100.eu.

OLEDs are a new and attractive class of solid-state light sources and they are emerging as a compelling candidate to replace conventional lighting systems for large area illumination. Organic LEDs generate a diffuse, non-glaring illumination with high color rendering. OLEDs are instant-on, can be dimmed and can be produced on substrates of basically any shape. This high level of flexibility in terms of design and application make them highly appealing for designers, manufacturers and consumers. Furthermore, as a highly efficient light source, OLEDs have the potential to achieve substantial energy savings. This latest EU research consortium provides important support to ensure Europe plays a leading role in OLED technology.

Partners in the OLED100.eu consortium include:

- Bartenbach LichtLabor GmbH, Austria
- European Photonics Industry Consortium (EPIC), France
- Evonik Degussa GmbH, Germany
- Fraunhofer Institute for Photonic Microsystems (IPMS), Germany
- Microsharp Corporation Limited, Great Britain
- Novaled AG, Germany
- Océ Technologies B.V., The Netherlands
- OSRAM Opto Semiconductors GmbH, Germany
- Philips Technologie GmbH, Business Center OLED Lighting, Germany
- Philips Technologie GmbH Forschungslaboratorien, Germany
- Physikalisch-Technische Bundesanstalt (PTB), Germany
- Saint-Gobain Recherche S.A., France
- Siemens AG, Germany
- Technische Universität Dresden, Institut für Angewandte Photophysik, Germany
- Universiteit Gent, Belgium

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### Commission describes projects for call 4 of ICT Photonics

The Photonics Unit of the European Commission has issued a call for organic photonics and disruptive photonics technologies in late November 2008. The call, which will likely be funded from 30 million euros will be divided between Specific Targeted Research Projects STREPS (25 million euros) and Networks Of Excellence NOE (5 million euros).

The actions addressing this call should target organic, polymer, single molecule and carbon-nanotube based photonic components, including organic-inorganic hybrid components. Projects may range from advanced research to application-driven research with a view toward industrialization. Applicants should give priority to proof-of-principle or “breakthrough” approaches rather than incremental developments.

Included are:

- OLEDs (including OLEFET) and lasers for lighting, illumination, projection or display applications<sup>1</sup>. Critical issues are: conversion efficiency, extraction efficiency, colour gamut, lifetime, intensity, wavelength, costs etc.
- Organic photovoltaic cells with conversion efficiencies higher than 10% and a life time greater than 5 years for mobile ICT applications such as PDAs, laptops, and mobile phones. Critical issues are: conversion efficiency, lifetime, costs etc.
- Light guiding structures. Critical issues are: waveguides, integrated circuits, micro-cavities, POF etc.
- Organic photonic sensors, lasers and amplifiers. Critical issues are: lifetime, output power, wavelength regime, electric pumping etc.

The research program also calls for research on disruptive / cutting-edge photonics materials and technologies that exploit the limits of the light-matter interaction, such as plasmonics, sub-wavelength structures, metamaterials and photonics-biologic materials.

Interested parties should consult the Commission website: ([http://cordis.europa.eu/fp7/ict/photonics/home\\_en.html](http://cordis.europa.eu/fp7/ict/photonics/home_en.html)) for the official text of the call which has precise, detailed and accurate information concerning the call content and key dates and deadlines.

[1] *Given the synergies between the areas addressed by objective ICT-2009 3.3 a) on Flexible, organic and/or large area electronic devices and building blocks and objective ICT-2009 3.8 a) on Organic Photonics, in particular in the work on OLEDs, proposals that address both these objectives are welcome. Proposals should be submitted to the objective where they have their 'centre of gravity'.*

### OLED100.eu announces the 2009 summer school on OLED Technologies

The OLED100.eu Summer School 2009 will be held from **June 2-8 2009 in Krutyn, Poland**. The summer school carries on from the very successful OLLA summer school on OLEDs which attracted over 60 students. This is the fifth time that the Institute of Physical Chemistry, PAS – is organizing the school for the OLED community. The summer school is open to all in the scientific community who are interested in learning more about OLEDs. It will focus on the latest developments through lectures and open academic discussions.

“It is a real pleasure to organize a summer school for such enthusiastic group of committed people” said Prof. Marek Pietraszkiewicz, director of the summer school. “Last year we had total 96 participants from 16 countries together for a full week of technical discussion. Due to the different backgrounds of the participants, these discussions ended often only in the late evening at the camp fire”.

The school is situated in the small and picturesque summer resort site of Krutyn in the heart of the Polish Mazurian Lake District. “This is one of the last undisturbed European secrets. The complex of 1000 lakes has its origin in the Ice Age and is interconnected by canals and rivers. From the terrace of the conference centre you can kayak into these lakes for relaxation after the work” said Marek.

*Event dates: 2 - 8 June 2009 Location: Krutyn, Poland*

*Deadline for registration: April 30th. 2009*

The international advisory committee is: Prof. Reinder Coehoorn (Eindhoven/The Netherlands), Prof. Wolfgang Kowalsky (Braunschweig/Germany), Prof. Karl Leo (Dresden/Germany), Prof. Marek Pietraszkiewicz (Warsaw/Poland), Prof. Franky So (Florida/U.S.A.), Prof. Mark E. Thompson (Los Angeles/U.S.A.).

Teachers for the 2009 school session who have confirmed are so far: Prof. Chihaya Adachi (Kyushu University/Japan), Dr. Herbert Boerner (Philips Research/Germany), Prof. Kristiaan Neyts (Gent University/Belgium), Dr. Klaus Schmidt (PolyIC/Germany), Prof. Someya (Tokyo University/Japan), Dr. Karsten Walzer (Heliatek/Germany). There will be contributions from Konarka and the Fraunhofer Institute for Photonic Microsystems as well.

Subjects to be covered are: Physics and Chemistry of OLED-related Materials, Molecular Engineering of Triplet Emitters, Synthesis Methods for Materials, Industry Needs and Expectations, Roadmap for OLED technology, Courses in modeling, project and management skills, Special discussions and tutorials.

For more information, please contact Prof. Marek Pietraszkiewicz: [pietrasz1@wp.pl](mailto:pietrasz1@wp.pl) or visit the OLED100.eu Summer School website: <http://OLED100.ichf.edu.pl/ikss2009/>

