

# Welcome to the Photonics Europe Exhibition

Moving Technology to Market™

Conferences: 16-19 April 2012  
 Exhibition: 16-18 April 2012  
 Square Brussels Meeting Centre  
 Brussels, Belgium

## Exhibition Hours

Grand Hall, Level-2

Monday 16 April . . . . . 15.00 to 19.10 hrs.

*Open to all conference attendees only.*

Tuesday 17 April . . . . . 10.00 to 16.00 hrs.

*Open to Exhibition visitors and conference attendees.*

Wednesday 18 April . . . . . 10.00 to 19.30 hrs.

*Open to all conference attendees only.*

## Managed by SPIE Europe

SPIE Europe Ltd., a subsidiary of SPIE, is a not-for-profit UK-registered company serving SPIE constituents throughout Europe as an advocate and liaison to political and industry associations within the European optics and photonics community.

In addition to providing membership services, SPIE Europe Ltd. organises and manages internationally recognised conferences, education programmes, and technical exhibitions featuring emerging technologies in optics and photonics.

SPIE Europe  
 2 Alexandra Gate, Ffordd Pengam, Cardiff, CF24 2SA  
 Tel: +44 29 2089 4747; Fax: +44 29 2089 4750  
 info@spieeurope.org

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### Co-sponsoring Organisations:

 <b>B-PHOT</b> BRUSSELS PHOTONICS TEAM	 <b>FWO</b> VLAANDEREN Fonds Wetenschappelijk Onderzoek Research Foundation - Flanders	 <b>BRUSSELS-CAPITAL REGION</b>
		

### Cooperating Organisations:

<b>CBO-BCO</b>	 <b>EOS</b> European Optical Society	 <b>ELI</b> European Laser Institute	 <b>Knowledge Transfer Network</b> Electronics, Sensors Photonics
 <b>INTERNATIONAL COMMISSION FOR OPTICS</b> COMMISSION INTERNATIONALE D'OPTIQUE	 <b>IET</b> Connective Intelligence	<b>IOP</b> Institute of Physics	 <b>P</b> photonics.eu
 <b>photonics 4 life</b>	 <b>PHOTONICS<sup>21</sup></b>	 <b>PromOptica</b>	<b>SCHOTT</b> glass made of ideas

# SPIE Photonics Europe

## GOLD Sponsors

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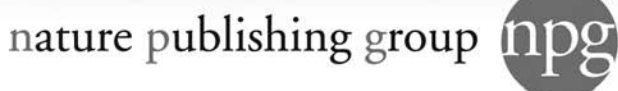
Stand #S108 · [www.iseg-hv.de/start.php/lang.en](http://www.iseg-hv.de/start.php/lang.en)



Stand #S113 · [www.jpk.com](http://www.jpk.com)



Stand #S211 · [www.logitech.uk.com](http://www.logitech.uk.com)



Stand #S117, #S119 · [www.nature.com](http://www.nature.com)



Stand #S111 · [www.ohara-gmbh.com](http://www.ohara-gmbh.com)



Stand #S217 · [www.optida.it](http://www.optida.it)



Stand #S115 · [www.oxxius.com/pages/en/home.php](http://www.oxxius.com/pages/en/home.php)

### PROMOTIONAL PARTNERS

AT-Fachverlag GmbH  
Carl Hanser Verlag  
Electro Optics Magazine  
European Energy Innovation

EuroPhotonics Magazine  
IOP Publishing  
Journal of Biophotonics  
Laser Focus World

OpticalFiberSensors.org  
OptoIndex  
Photonik  
Spectroscopy Magazine

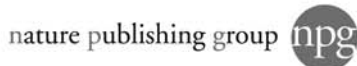
# Sponsors

## LANYARDS



www.optics.org

## CONFERENCE BAGS



Stand #S119 · www.nature.com

## CONFERENCE BAG INSERT



Stand #G221 · www.photond.com

## CONFERENCE BAG INSERT



www.americanelements.com

## CONFERENCE BAG PENS



Stand #G120 · www.oceanoptics.com

## GENERAL REFRESHMENTS

- Acal BFi Belgium nv/sa #S210
- iseg Spezialelektronik GmbH #S108
- JPK Instruments AG #S113
- Logitech Ltd. #S211
- Nature Publishing Group #S119
- Ohara GmbH #S111
- Optida Co. Ltd. #S217
- Oxxius SA #S115

## POSTER SESSIONS



Stand #G322 · www.cobolt.se



Stand #G321 · www.mellesgriot.com



Stand #G327 · www.ekspla.com



Stand #G225 · www.electrontubes.com



Stand #G121 · www.holoeye.com



Stand #G222 · www.ii-vi.de



Stand #G223 · www.pi.ws



Stand #G323 · www.veeco.com

## COFFEE BREAKS



Stand #G220 · www.avantes.com



Stand #G327 · www.coherent.com



Stand #G121 · www.hamamatsu.be



Stand #G324 · www.lovalite.com



Stand #G120 · www.oceanoptics.com

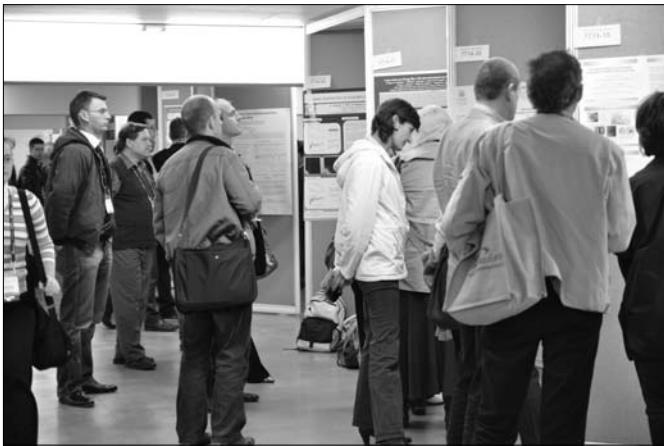


Stand #G221 · www.photond.com



Stand #G122 · www.thorlabs.com

# General Information



## Meals and Refreshments for Purchase

A cash food outlet will be available in the Exhibition Hall.

Tuesday . . . . . 11.00 to 14.00 hrs.

Wednesday . . . . . 11.00 to 14.00 hrs.

Visit the food outlet located in the back of the Exhibition halls Tuesday-Wednesday. They will serve hot and cold snacks, beverages, deli-type sandwiches, salads, hot entrees, and pastries.

## Onsite Service

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### Internet Access/WiFi

#### Internet Pavilion

SPIE will have a complimentary Internet Pavilion at The Square on Monday through Thursday during registration hours. Attendees can use provided workstations or hook up their laptop to an Ethernet connection to access the Internet.

#### Complimentary Internet Wireless Access

SPIE and the Brussels Region are pleased to provide complimentary wireless access to the Internet for all conference attendees bringing 802.11b wireless-enabled laptops or PDAs. Coverage will be available Sunday through Thursday. Properly secure your computer before accessing the public wireless network. Failure to do so may allow unauthorized access to your laptop as well as potentially introduce viruses to your computer and/or presentation.

### Luggage Storage and Coat Check

Registration Hall · Complimentary

Monday . . . . . 08.00 to 20.00 hrs.

Tuesday . . . . . 08.00 to 18.30 hrs.

Wednesday . . . . . 08.00 to 20.00 hrs.

Thursday . . . . . 08.00 to 17.00 hrs.

### SPIE Information

Silver Foyer

SPIE is your source for the latest information, professional development tools, and industry connections. Visit the SPIE Information booth and learn about SPIE Events, Membership, Publications, the Digital Library, Education Services, optics.org, and the Career Center.

## Policies

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### Audio/Video/Digital Recording Policy

In the Exhibition Hall: For security and courtesy reasons, photographing or videotaping individual booths and displays in the exhibit hall is allowed ONLY with explicit permission from onsite company representatives. Individuals not complying with this policy will be asked to surrender their film and to leave the exhibit hall.

### Underage Persons on Show Floor

For safety and insurance reasons, no persons under the age of 16 will be allowed in the exhibition area during move-in and move-out. During open exhibition hours, only children over the age of 12 accompanied by an adult will be allowed in the exhibition area.

### Unauthorized Solicitation

Any manufacturer or supplier who is not an exhibitor and is observed to be soliciting business in the aisles, or in another company's booth, will be asked to leave immediately. Unauthorized solicitation in the Exhibition Hall is prohibited.

### Unsecured Items

Personal belongings such as briefcases, backpacks, coats, book bags, etc. should not be left unattended in meeting rooms or public areas. These items will be subject to removal by security upon discovery.

## Registration

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### Exhibition Hours

Square Brussels Meeting Centre, Grand Hall

Monday 16 April . . . . . 15.00 to 19.10 hrs.

*Open to all conference attendees only.*

Tuesday 17 April . . . . . 10.00 to 16.00 hrs.

*Open to Exhibition visitors and conference attendees.*

Wednesday 18 April . . . . . 10.00 to 19.30 hrs.

*Open to all conference attendees only.*

### Registration Hours

Square Brussels Meeting Centre, Registration Hall

Sunday 15 April . . . . . 08.00 to 17.00 hrs.

Monday 16 April . . . . . 08.00 to 17.00 hrs.

Tuesday 17 April . . . . . 08.00 to 17.00 hrs.

Wednesday 18 April . . . . . 08.00 to 17.00 hrs.

Thursday 19 April . . . . . 08.00 to 16.00 hrs.

## General Information

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### European Networks

Meet Network representatives and discover more about links between groups across Europe in the field of Optics and Photonics.

### Student Chapter Information Session

Monday 16 April · 15.30 to 16.00 · Grand Hall, Product Demo Area

Interested in starting a Student Chapter, or just want to learn more about the programme and its benefits? Get your questions answered at this informal information session hosted by SPIE Student Services.

### Student Chapter Exhibition

Monday 16 April · 16.00 to 18.00 · Grand Hall, Product Demo Area

Join us for refreshments and a late-afternoon mixer in the Student Chapter section of the Exhibition Hall. Meet our amazing students and learn about the innovative activities of some of the best and brightest Student Chapters across the globe!

## Food and Beverage Services

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### Coffee Breaks

Complimentary coffee will be served twice each day of the conference at approximately 10.00 and 15.00.

Monday afternoon – Wednesday . . . . . Exhibition Hall

# Exhibitor Index

## Photonics Europe 2012 Exhibitors

as of 26 March 2012

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### Photonics Innovation Village

Showcasing developments from universities, nonprofits, and research centres

### European Networks

Meet Network representatives and discover more about links between groups across Europe in the field of Optics and Photonics.

### Product Demonstrations

Exhibiting companies will showcase new and successful products in half-hour demonstrations.

## Exhibitor Product Demonstrations

*Exhibition Hall • Presentation Area • Tuesday 17 April*

10.30 hrs.

### Hamamatsu Corporate Outline Presentation

**Mr. Emmanuel PIRSON, Hamamatsu Photonics Belgium**

Presentation about the R&D concept and products of the Electron Tube Division, Solid State Division, Systems Division and Laser

11.30 hrs.

### Next Generation of Optically Pumped Semiconductor Lasers: Concepts and Applications

**Joris VanNunen and Luc Moog, Coherent Europe B.V.**

12.30 hrs.

### New high performance lasers pushing the boundaries of analytical instrumentation technologies

**Martin Norrefeldt, Cobolt AB**

14.30 hrs.

### Photon Design

**Vincent Brulis, Photon Design**

Modern simulation and design of passive and active photonic components

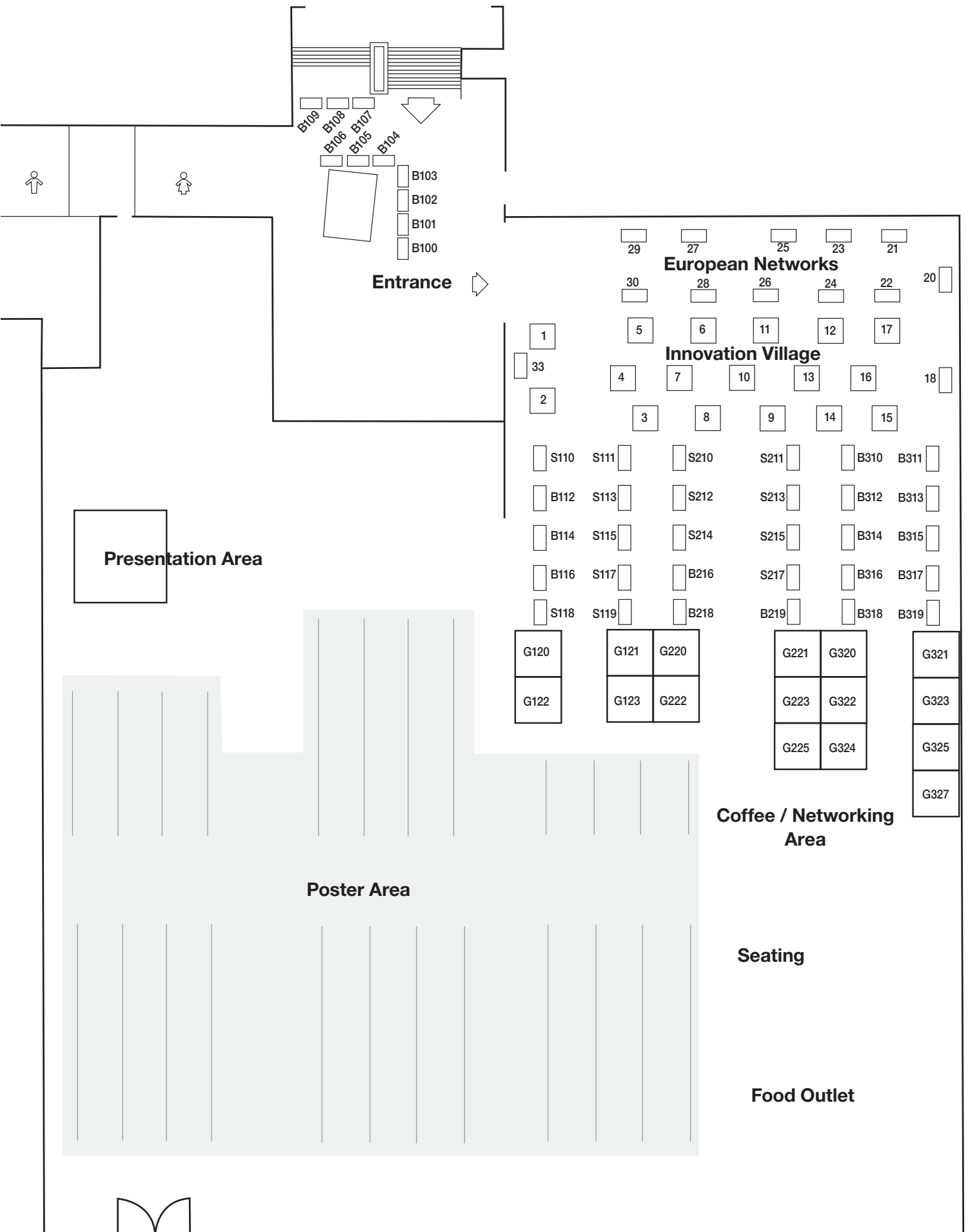
15.30 hrs.

### How to get published in Nature journals

**Rachel Pei Chin Won, Nature Photonics, Nature Publishing Group**

Presentation on how to get published in NPG journals with Q&A session

# Square Brussels Meeting Centre, Grand Hall, Level-2 Exhibition Floorplan



# Photonics Innovation Village

Grand Hall · Open during Exhibition hours

Organised by



**B-PHOT**  
BRUSSELS  
PHOTONICS  
TEAM

## Purpose of the Innovation Village

- To support and publicise research teams from universities, non-profit institutions and research centres who are working on research, new applications and product development.
- To provide free exhibition space together with broad exposure and publicity to the young innovators who are developing the photonics-based products of the future.
- To showcase Europe's (and the world's) finest research programmes and to encourage the transfer of optics/ photonics research and technology into new and useful products.



Innovation Village  
Awards sponsored by



BRUSSELS-CAPITAL REGION

## 2012 COMPETITORS

DynAMITe (Dynamic range Adjustable for Medical Imaging Technology) sensor  
**UNIVERSITY OF LINCOLN, UK**

Compact three-dimensional (3D) imaging and measurement systems  
**NANYANG TECHNOLOGICAL UNIVERSITY, SINGAPORE**

Low-cost and easy to use photohaemostatic device based on LED technology  
**LIGHT4TECH/P4L, GERMANY**

The Photonics Explorer  
**EYEST, BELGIUM**

MoBiSense: A Truly Low-Cost and Disposable Mobile Molecular Sensor as a Multi-Purpose Sensing Platform  
**NANODEV SCIENTIFIC, BILKENT UNIVERSITY - UNAM, TURKEY**

Spectrifire: no-moving parts portable Fourier Transform spectrometer  
**FUSION PHOTONICS, IRELAND**

Fabrication of nanostructured flat-surface micro-optical components  
**HERIOT-WATT UNIVERSITY, UK**

Photonic crystal fiber sensor to measure refractive index, optical density and turbidity  
**SARATOV STATE UNIVERSITY, RUSSIA**

Fiber probe as medical sensor with high spatial resolution  
**IPHT, GERMANY**

Monitoring system for the cover slide in the laser cladding head  
**POLITECNICO DI MILANO, ITALY**

Mono- and two-dimensional arrays for both 2D imaging and 3D ranging  
**POLITECNICO DI MILANO, ITALY**

Nanoimprint for components  
**TECNALIA, SPAIN**

Devices for optical monitoring of human health  
**INSTITUTE OF ATOMIC PHYSICS AND SPECTROSCOPY, LATVIA**

Table-top setup for time-resolved detection of singlet oxygen luminescence in solutions and cell suspensions  
**HUMBOLDT-UNIVERSITY, GERMANY**

Second harmonic generation into periodically poled fibres  
**MULTITEL, BELGIUM**

CMOS single-photon time-correlated SPAD arrays for biomedical applications  
**EPFL LAUSANNE, SWITZERLAND**

ZOOM Spectra: Compact High-resolution High-rate spectrometer

**RESOLUTION SPECTRA SYSTEMS**, Spin-off of University Joseph Fourier-Grenoble 1 and e2v

## Photonics Europe Industry Programme

Wednesday, 18 April · 14.00 to 17.00  
Room: 314/316

The Industry Perspectives Programme will provide a series of executive briefings covering the growing markets and consequent business opportunities of photonics technology and applications.

Come and listen to key members of Europe's photonics industry highlight current trends and opportunities. They will discuss future plans and offer strategic perspectives on ways to maximize market penetration and business development. Learn how developers, industrialists, and investors can create growth centered on the future of photonics manufacturing. Find out how emerging initiatives can open new horizons for business and technology development across Europe.

These sessions will offer executive-level networking and invaluable insight to those seeking to understand and capture photonics-centered business development opportunities: come and engage with the presenters and attendees; they could be potential suppliers, partners, or customers.

### Programme Schedule

- 14.00: **Global photonics markets**  
**Stephen G. Anderson**, SPIE
- 14.35: **Horizon 2020: research and innovation in European photonics**  
**Ronan Burgess**, European Commission
- 15.10: **Coffee break**
- 15.45: **Action to Support Photonic Innovation Clusters in Europe (ASPICE)**  
**Alastair Wilson**, UK Photonics Knowledge Transfer Network
- 16.20: **Life science opportunities in photonics**  
Jürgen Popp, Friedrich-Schiller University
- 16.55: **Opportunities in photonics manufacturing in Europe**  
**John Lincoln**, Harlin Ltd.



## Exhibitor Directory

Exhibitors are listed in alphabetical order with details about products or services each is exhibiting. The address of each exhibitor is also listed, making this Exhibition Guide an excellent reference tool to take back to your office and share with your colleagues.

### General Refreshment Sponsor

#### **Acal BFi Belgium NV/SA #S210**

Zaventem, 1932 Belgium  
+32 2720 5983; fax +32 2725 1014  
acal@acal.be; www.acalbfi.com

Acal BFi has focused its capabilities and energies on a number of niche technologies, which are organized in 8 business units: Each business unit is promoted by its own dedicated, highly trained sales force in each country thereby offering technical sales support and demand creation capabilities in the local language. For our extensive list of customers we offer a unique range of suppliers and products, globally sourced, which are especially tailored to meet their particular markets and needs. The business units are: Sensors - Electromechanical - Magnetic & Power - Specialty Semiconductors - Microsystems - Photonics - Imaging - Communication.

#### **ACTMOST — European Network #30**

Pleinlaan 2, TONA, Elsene, 1050 Belgium  
+32 2 6293569  
hthienpo@vub.ac.be; <http://www.tona.vub.ac.be/Tona/>

ACTMOST is a platform that facilitates industrial access to photonics experts and micro-photonics technologies in order to stimulate industrial product innovation in Europe. 14 high tech research laboratories, ACTMOST act as an efficient “one-stop-shop” solution provider for European companies. ACTMOST encompasses the entire food-chain of micro-photonics: from optical design, to measurement, prototyping, packaging, all the way to proof-of-concept demonstration, reliability testing, and pre-production level fabrication. ACTMOST pro-actively provides companies with timely, cost-effective, investment-free access to cutting-edge micro-photonics technologies and knowledge through user projects or through personalized hands-on training of industry staff in the highly-advanced laboratories of the ACTMOST technology partners.

#### **Adloptica Optical Systems GmbH #B318**

Rudower Chaussee 29-31, , Berlin, 12489 Germany  
+49 3063926620; fax +49 3063926622  
info@adloptica.com; <http://www.adloptica.com/>

#### **AdvEOTec #B105**

6-8 rue de la Closerie, Lisses ZAC Clos aux Pois CE5270, Evry, 91052 France  
+33 1 60 86 43 61; fax +33 1 60 86 43 87  
contact@advteotec.com; <http://www.advteotec.com/menugb.htm>  
AdvEOTec: Test House and Services, Measurement Solutions  
AdvEOTec activities are mainly oriented to demanding environments in sectors such as space, defence, and undersea telecommunications. AdvEOTec is strongly involved in collaborative programs with a special emphasis in applied research and industrialisation. SERVICE Division : The main activities are measurements of optoelectronics and photonics based components

and systems. Component test and qualification programs are taken in charge by AdvEOTec (environmental, mechanical, vibration, radiation, vacuum, construction analysis,...) most in our own test facilities. Our experts are instrumental in providing support to component manufacturers to set quality control strategy starting from component performance analysis, manufacturing process audit to measurement systems definition and data flow. End users rely on our measurements and analysis to select reliable and high-performance solutions. INDUSTRY Division : The main activities deal with the development of sensors and measurement systems where optoelectronics (light sources and detectors, optical fibres, ...) is required. AdvEOTec has a proven track of records in system developments when multidisciplinary approach is required : optoelectronics, electronics, RF, Optics, software, packaging, vacuum technologies, micromechanics. Our teams design and build customised solutions.

#### **AT Fachverlag GmbH — Literature Display Silver Foyer**

PO Box 50 01 80, Stuttgart, 70331 Germany  
+49 711 952 9510; fax +49 711 952 95199  
at@at-fachverlag.de; <http://www.at-fachverlag.de>

### Coffee Break Sponsor

#### **Avantes B.V. #G220**

Oude Apeldoornseweg 28, Apeldoorn, 7333 NS Netherlands  
+31 313 670170; fax +31 313 670179  
info@avantes.com; <http://www.avantes.com>

Avantes is a leading innovator in the development and application of miniature spectrometers. Avantes continues to develop and introduce new instruments for Fiber Optic Spectroscopy to meet our customer's application needs. Avantes instruments and accessories are also deployed into a variety of OEM applications in a variety of industries in markets throughout the world. With more than 15 years of experience in Fiber Optic Spectroscopy and thousands of instruments in the field, Avantes is eager to help our customers find their Solutions in Spectroscopy®. Principle Spectroscopic Techniques Supported: UV/VIS/NIR Spectroscopy, Process Control, Absorbance/Transmittance/Reflectance, Laser-Induced Breakdown Spectroscopy, CIE Color Spectroscopy, Portable Spectrometers, Fluorescence Spectroscopy, Custom Applications, Irradiance, Raman Spectroscopy, OEM Application Development. Avantes works with customers in a variety of markets, including chemical, biomedical, aerospace, semiconductor, gemological, paper, pharmaceutical, and food processing technology. Additionally, Avantes works with research organizations and universities, aiding in developing research and teaching opportunities. Our OEM program is designed to work with our customers to identify needs and customize an Avantes' spectroscopy solution based on our customer's needs and Avantes technical know experience. Avantes' continued growth is based upon a commitment to providing exceptional technology and superb customer satisfaction.

# Exhibitor Directory

## Carl Hanser Verlag GmbH & Co. KG

#S212

Kolbergerstr 22, Muenchen, 81679 Germany  
+49 89 99830 0; fax +49 89 98480 9  
info@hanser.de; <http://www.hanser.de>

## CASIX, Inc.

#B114

20 Fuxing St, Fuxing Investment Zone, Fuzhou Fujian, 350014  
China

+86 591 8362 1246; fax +86 591 8362 1248  
marketing@casix.com; <http://www.casix.com>

CASIX Inc. founded in September 1992, is a wholly owned subsidiary of Fabrinet which is a renowned international company. Engaged in R&D, manufacturing excellence and quality improvement, we focus on developing and manufacturing high quality crystal, precision optics components and optical sub-assemblies for market applications in optical communication, commercial laser, instrumentation, surveying, measuring and scanning, and medical. In order to ensure the product quality, CASIX has launched a comprehensive quality control system and a strict management system. We are certified for ISO9001 by SGS UK, ISO14001, OSRS18001. Meanwhile, we have implemented the Enterprise Resources Management System (ERP).

## CeramOptec GmbH

#B319

Siemensstr 44, Bonn, 53121 Germany  
+49 228 979 670; fax +49 228 979 6799  
info@ceramoptec.de; <http://www.ceramoptec.com/>

We are a medium sized company located in Bonn, Germany and specialized in producing quartz glass multimode step-index fibers. Our product range contains fibers and cables for industrial application as well as fiber bundles for spectroscopy, laser application, sensor technology etc. Based on our own production we are able to offer fibers and fiber optic products of customized design within a reasonable time. A specialty are our fibers with non circular core. The different geometries such as square, rectangular, hexagonal or octagonal effect low-loss mode mixing combined with minimal focal radiation degradation (FRD). Recently we offer NCC fibers with rectangular silica core and rectangular fluorine doped silica cladding for an efficient coupling in and bundling of laser diodes radiation with its special characteristic. Product overview: Preforms of synthetic quartz glass, Silica/Silica fibers for UV/VIS/NIR with NA 0.12, NA 0.22, NA 0.28, NA 0.37 etc., Non Circular Core Fibers for UV/VIS/NIR, Silica/Hard Polymer Fibers (NA 0.37, NA 0.48), Silver halide fibers for wavelengths MIR with NA 0.13, NA 0.25, Fiber cables (standard and customized), Fiber bundles (customized).

## China International Optoelectronic Exposition

#S213

Haide 3rd Road, Nanshan District, Rm 607, East Block, Coastal  
Building, Shenzhen, Guangdong, 518059 China  
+86 755 8629 0891; fax +86 755 8629 0951  
shirly@cioe.cn; [www.cioe.cn/cioe/eindex.html](http://www.cioe.cn/cioe/eindex.html)

### Featured Product: Optical Communications, Laser & Infrared Applications, Precision Optics, LED Lightings & Displays

The 14th CIOE (CIOE 2012) will once again be held at the Shenzhen Convention and Exhibition Center, from September 6 to 9, 2012 over a total exhibition area of 100,000 sqm. It will comprise four concurrent sub-expositions, focusing on optical communications, lasers & infrared applications, precision optics, and LEDs. More than 3,000 exhibitors are expected to present the most advanced optoelectronic technologies and products at CIOE 2012. The China International Optoelectronic Conference (CIOEC) Contact: Shirley Yi, Project Manager, shirly@cioe.cn.

Poster Reception Sponsor

## Cobolt AB

#G322

Vretenvägen 13, Solna, 171 54 Sweden  
+46 8 5459 1230; fax +46 8 5459 1231  
info@cobolt.se; <http://www.cobolt.se>

### Featured Product: High performance diode laser modules 405-660nm

High power DPSS 561nm 500mW Cobolt AB (Stockholm, Sweden) has, since year 2000, been committed to supplying high performance and innovative laser products that meet or exceed the market's expectations concerning quality, reliability and robustness. Through continuous technology development, customer orientation and an ISO certified quality management system, Cobolt has become a preferred supplier of lasers to major instrument manufacturers and leading research. Contact: Håkan Karlsson, CEO, info@cobolt.se; Stefania Tardito, Marketing Coordinator, info@cobolt.se.

Coffee Break Sponsor

## Coherent Europe B.V.

#G327

Kanaalweg 18A, Smart Business Park, Utrecht, 3526 KL  
Netherlands

+31 302806060; fax +31 302806077

coherent.bv@coherent.com; <http://www.coherent.com>

Since its foundation as a laser manufacturer in 1966, Coherent Inc. has become the technology and market leader in a number of areas. The company, which is headquartered in California, has R&D and manufacturing facilities at a number of locations around the world – in Europe these are in Germany and Great Britain. Coherent provides solutions for fields such as microelectronics, machining, medical and instrumentation. These range from the edge isolation of solar cells through key processes in the manufacturing of flat panel displays to the machining of plastics for the automotive industry. In addition to a wide range of laser sources, Coherent also offers leading-edge beam forming and beam guidance systems as well as laser beam measurement and control equipment. Coherent offers a wide range of different laser sources, e.g. CO2 lasers for marking of food packaging or marking of circuit boards, Diode pumped solid-state lasers for ID card marking, Diode lasers and optical components for plastic welding, Excimer lasers for LASIK or flat panel display production, Fiber based industrial lasers for micromachining, Laser machining tools, Optical Systems, Structured light lasers (incl. laser line generators and other pattern generators), Ultrashort pulse lasers for a number of scientific applications. Coherent works closely together with integrators and end users to provide high-performance photonics solutions for a wide-range of applications.

Poster Reception Sponsor

## CVI Melles Griot BV

#G321

Aalsbergen 2, Didam, 6942 SE Netherlands

+31 316 333 041; fax +31 316 528 187

info.holland@cvimellesgriot.com; [www.mellesgriot.com](http://www.mellesgriot.com)

Since 1959 CVI Melles Griot is a global leader in the design and manufacture of products that enable the practical application of light. Serving semiconductor, biotech, industrial, commercial, aerospace and general research applications, the company is a leading supplier of photonics products including optical components and systems, lasers, motion-control systems, laser measurement instrumentation and opto-mechanical hardware. Headquartered in Albuquerque, New Mexico, CVI Melles Griot operates manufacturing facilities around the globe: USA, United Kingdom, Japan, and South Korea with sales representatives and distributors located worldwide. CVI Melles Griot has an unparalleled range of capabilities to meet your unique requirements. For more information welcome on [www.cvimellesgriot.com](http://www.cvimellesgriot.com).

## Ecole Polytechnique Fédérale de Lausanne

#17

Sta 17, Bât BM 4.124/Advanced Photonics Lab, Lausanne, 1015 Switzerland  
+41 21 6933911  
www.aqua.epfl.ch

CMOS single-photon time-correlated SPAD arrays for biomedical applications. Background: A core group of European universities and research centres (EPFL Lausanne/TU Delft, University of Edinburgh and Fondazione Bruno Kessler, Trento) have laid in the past years, together with industrial partner STMicroelectronics, the foundations for SPAD based (Single Photon Avalanche Diode) single-photon time-correlated imagers and 2D arrays. This expertise has been and is being complemented by experts in the respective domains such as GEA-LETI in Grenoble, University of Pavia, Mediso in Budapest, and University of Budapest. The core technology has been pioneered in the European FP6 FET Open MEGAFRAME project, and it now being transitioned to biomedical imaging systems, in particular PET (Positron Emission Tomography), in the European FP7 ICT Photonics SPADnet project. Aim of exhibition: Showcase single-photon time-correlated imaging technology with the MEGAFRAME camera demonstrator ([www.megaframe.eu](http://www.megaframe.eu)) and the SPADnet module development work ([www.spadnet.eu](http://www.spadnet.eu)). Description of product/prototype/demonstration: The MEGAFRAME camera, available in two versions (32x32 and 128x160), contains pixels which can detect a single photon a million times per second. In addition, the camera is also capable of computing their time of arrival with picosecond precision over an array of up to twenty thousand pixels operating simultaneously and independently. The SPADnet module will contain an array of tessellated single-photon TSV chips, connected in a token ring structure.

## EKSMA OPTICS

#G320

Mokslininku Str 11, LT-08412, Vilnius, Lithuania, LT-08412 Lithuania  
+370 5 2729900; fax +370 5 2729299  
info@eksmaoptics.com; <http://www.eksmaoptics.com>

**Featured Product: High contrast BBO and DKDP Pockels cells for Q-Switching, cavity dumping, and other applications.**

EKSMA OPTICS is a manufacturer and global supplier of optics, optical systems, Pockels cells, nonlinear and laser crystals for laser and other photonics applications. EKSMA OPTICS has proven experience delivering custom solutions for OEM partners and R&D customers. EKSMA OPTICS quality control and polishing facility specialized in processing BK7 glass and Fused Silica flat optics and especially in LBO, BBO, K\*DP crystals. Contact: Daugirdas Kuzma, Director, Marketing and Business Development, [d.kuzma@eksmaoptics.com](mailto:d.kuzma@eksmaoptics.com); Ramunas Valauskas, Commercial Director, [info@eksmaoptics.com](mailto:info@eksmaoptics.com).

*Poster Reception Sponsor*

## EKSPLA UAB

#G320

Savanoriu Ave 231, Vilnius, Alytus, 02300 Lithuania  
+370 5 264 9629; fax +370 5 264 1809  
sales@ekspla.com; <http://www.ekspla.com>

**Featured Product: First commercial high energy full DPSS picosecond laser offers 30 ps with up to 25 mJ pulse energy.**

EKSPLA is ISO9001 certified manufacturer of solid state lasers, laser systems and laser components for R&D and industrial applications. Employing 30 years experience and close partnership with scientific community, EKSPLA is focused on design and manufacturing of advanced products. Main products are DPSS and flash-lamp mode-locked picosecond, nanosecond Q-switched lasers; optical parametric oscillators/generators/amplifiers; spectroscopy systems; industrial DPSS lasers; laser optoelectronics. Contact: Rokas Sulcas, Area sales manager, [sales@ekspla.com](mailto:sales@ekspla.com).

## ePIXfab – European Network

#24

Sint-Pietersnieuwstraat 25, Gent, 9000 Belgium  
<http://www.ugent.be>

ESSenTIAL will bring silicon photonics within reach of European small and medium sized enterprises, thereby building on the track record of the Silicon Photonics Platform ePIXfab ([www.epixfab.eu](http://www.epixfab.eu)) and its integration into Europractice. To this end, ESSenTIAL offers affordable access to standardized active and passive silicon photonic IC and packaging technology, a path from design to manufacturing and hands-on training. Based on a consortium of major research institutes with silicon photonics expertise, ESSenTIAL will reach out to European industry and will support them to evaluate silicon photonics in the context of concrete applications and markets. To ensure low-cost early access and scalability to manufacturing, the maturity of silicon photonic IC technology will be enhanced by setting up a library of generic devices, a level of process and device benchmarking and a well maintained design flow. For the first time, devices in a standard package will be offered to allow easy testing. Training on the IC and packaging services will be offered, including hands-on design training. Maturity, standardization and sustainability will be driven by a steadily growing user base, from Europe and elsewhere. ESSenTIAL will ensure that ePIXfab will keep Europe's lead in fabless silicon photonics and will turn it into an industry-relevant platform.

*Poster Reception Sponsor*

## ET Enterprises Ltd.

#G225

45 Riverside Way, Uxbridge, UB8 2YF United Kingdom  
+44 1895 200 880; fax +44 1895 270 837  
sales@et-enterprises.com; <http://www.electrontubes.com>

ET Enterprises Limited, which started in 2007, took over the photomultiplier tubes and accessories business of Electron Tubes Limited and continues to manufacture, supply and develop the Electron Tubes brand product range. A subsidiary of Ludlum Measurements Inc., ET Enterprises has the benefit of the additional production facilities of ADIT, a US based producer of photomultipliers. Similarly, ADIT has access to ET Enterprises' development resources and experience in many different photomultiplier applications worldwide. Products: ET Enterprises manufactures photomultipliers and signal processing electronics for low level light detection applications.

## EUMINAFab – European Network

#28

Webstrasse 5, Karlsruhe, 76133 Germany  
<http://www.euminafab.eu>

EUMINAFab is the first Pan-European Research Infrastructure for micro and nano fabrication of new, novel and emerging functional materials. It provides access to a unique portfolio of state-of-the-art technologies for structuring and characterisation of a multitude of materials at the micro nano scale. It answers to challenges from global competitors. EUMINAFab allows for no-fee access of its users from fundamental science to industry-oriented research after peer-review.

## Europa Science Ltd.

#S110

Spectrum Bldg/Michael Young Ctr, Purbeck Rd, Cambridge, CB2 8PD United Kingdom  
+44 1223 211170  
info@europascience.com; <http://www.europascience.com/>

**Featured Product: Europa Science publishes Electro Optics, Imaging and Machine Vision Europe and Laser Systems Europe**

Europa Science, established in 2002, is a publisher of magazines in the science and technology sector, including Electro Optics, Imaging and Machine Vision Europe, Laser Systems Europe, Scientific Computing World and Research Information. Subscription to each magazine is free to qualifying individuals, and all magazines are supported by daily updated websites and regular email newsletters. Combining high quality editorial with on target distribution provides advertisers with an optimum product.

# Exhibitor Directory

## European Energy Innovation #B106

29 High St, Bank Chambers, Ewell Surrey, KT17 1SB United Kingdom  
+44 20 8786 3695; fax +44 20 8786 8887  
<http://www.europeanenergyinnovation.eu/>

## EYEST, Belgium — Innovation Village #18

The 'Photonics Explorer' is a novel, intra-curricular optics kit designed to engage, excite and educate students about the fascination of working with light and optics – with their own hands, in their own classrooms. The kit equips teachers with a class set of optical components, of a high didactic value given free of charge, in conjunction with teacher training courses. The content and didactic framework of the kit has been designed with the input of 35 science teachers and experts in pedagogy from 11 EU countries, to integrate seamlessly into European science curricula and enhance and complement science lessons. Students get the opportunity to work hands-on with real-world, versatile and robust experimental components, designing experiments to observe interesting physical phenomena and link them to current technologies. The modular structure gives teachers the flexibility to incorporate the kit into their own teaching styles and classroom situations. The Photonics Explorer has been field tested in 7 EU countries; Belgium, Bulgaria, France, Germany, Spain, Poland and UK in the local language, with over 1500 students. The feedback is extremely positive from teachers and students alike. The development of the kit was funded by the European Commission Framework 7 and supported by teachers, scientists, industry, and key stakeholders in European photonics. EYESTvzw is responsible for the mass distribution of the Photonics Explorer throughout Europe.

## FIREFLY — European Network #23

De Rondom 1, Eindhoven, 5612 AP Netherlands  
+31 088 866 5575; fax +31 088 866 8822  
[sjoukje.wiegersma@nto.nl](mailto:sjoukje.wiegersma@nto.nl); <http://www.fp7-firefly.eu>

In October 2011 a new project, named FIREFLY, has started, in which new optical components will be developed, that will make it possible to transmit data over short distances. With these new components, the data transmission in computers can become much faster than with the electronic components currently used. The full name of the project is "Multilayer Photonic Circuits made by Nano-Imprinting of Waveguides and Photonic Crystals". The FIREFLY consortium consists of partners from the industry, IBM Research, TE Connectivity, VERTILAS and Momentive as well as research groups from TNO, IMEC, VTT, Tyndall and the University of Utrecht. In this shared research project forces are combined from materials, processing and device expertise to develop the nano and micro components needed for the transportation of light for the optical data communication, based on polymer waveguides. Innovative polymers, new applications of nano-technology as well as new methods for light in- and out coupling and the integration of all these new components are the technical ingredients of this ambitious project.

## Fusion Photonics Ltd. — Innovation Village #6

Dunhill, Waterford, Ireland  
+353 51302121  
[info@fusionphotonics.com](mailto:info@fusionphotonics.com); [www.fusionphotonics.com](http://www.fusionphotonics.com)

Fusion Photonics Ltd. is a new Irish start-up company that was spun out from the Optics Research Group in Waterford Institute of Technology following the invention of a new patent pending Passive Photonic Engine Technology, Spectrifire™. Spectrifire™ technology is first being applied to the portable spectrometer market where it brings the key advantage of 10 times the accuracy of competing photonic engines at 1/10 of the cost. Fusion Photonics Ltd. will exhibit its Spectrifire™ technology at the Photonics Innovation Village.

Coffee Break Sponsor

## Hamamatsu Photonics Belgium #G121

7 rue du Bosquet, Louvain-La-Neuve, 1348 Belgium  
+32 10 45 63 34; fax +32 10 45 63 67  
[infoweb@hamamatsu.be](mailto:infoweb@hamamatsu.be); [www.hamamatsu.be](http://www.hamamatsu.be)

Hamamatsu develops and manufactures the most up-to-date light related sensors and instruments: Photomultipliers; Photodiodes; CMOS and CCD sensors; Infrared detectors; Microchannel plates and image Intensifiers; Mini spectrometers; Detectors and sources for X-rays; Xenon - Xenon-mercury and Deuterium lamps; Laser diodes; Equipments for semi-conductor and pharmaceutical industries; Microscope slides digitalization machines; Digital CCD board cameras and High grade digital cameras. Contact: Dieter Degezelle, Sales Engineer, [ddegezelle@hamamatsu.be](mailto:ddegezelle@hamamatsu.be); Emmanuel Pirson, Country Manager, [epirson@hamamatsu.be](mailto:epirson@hamamatsu.be).

## Hembach Photonik GmbH #G324

Finkenstr 1-3, Rednitzhembach, 91126 Germany  
+49 9122 8899490; fax +49 9122 8899499  
[info@hembach-photonik.de](mailto:info@hembach-photonik.de); <http://www.hembach-photonik.de>

Hembach Photonik GmbH is your partner for the development of optical and photonic systems and provides optical design software, engineering services and training. Hembach Photonik is the representative of Lumerical Solutions in Austria, Germany, the Netherlands and Switzerland.

## Heriot-Watt Univ. — Innovation Village #7

Edinburgh Scotland, EH14 4AS United Kingdom  
+44 131 449 5111; fax +44 131 449 5153  
[enquiries@hw.ac.uk](mailto:enquiries@hw.ac.uk); <http://www.hw.ac.uk/home/>

Heriot-Watt University is one of the UK's leading research-oriented universities with a long and distinguished track-record in the fields of photonics and laser physics. The Diffractive and Micro-Optics Group, which has been conducting novel micro-optical research for over twenty five years, has been a major contributor to a number of high-profile multi-national collaborative projects including the Network of Excellence in Micro-Optics (NEMO) and the Smart-Pixel Opto- Electronic Connection (SPOEC) project. Heriot-Watt University is The Sunday Times Scottish University of the Year 2011-12.

Poster Reception Sponsor

## HOLOEYE Photonics AG #G123

**SPIE** Corporate Member

Albert-Einstein-Str 14, Berlin, 12489 Germany  
+49 30 6392 3660; fax +49 30 63 92 36 62  
[contact@holoeeye.com](mailto:contact@holoeeye.com); <http://www.holoeye.com>

HOLOEYE Photonics AG and its US-subsiidiary, HOLOEYE Corp., are providing services and products in the fields of diffractive optics (DOE), spatial light modulation (SLM) and LCOS microdisplay components. HOLOEYE offers design and production services of diffractive micro-optical elements, Spatial Light Modulators (SLM) which are based on high-resolution translucent or reflective microdisplays and a great variety of LCOS microdisplay types and products as OEM solution in higher quantities. Contact: Klaus von Guenner, [klaus.von.guenner@holoeeye.com](mailto:klaus.von.guenner@holoeeye.com).

## Humboldt-Univ. zu Berlin — Innovation Village #16

Newtonstr 15, Institut für Physik/AG Photobiophysik, Berlin, 12489 Germany  
+49 30 2093 7625; fax +49 30 2093 7666

[roeder@physik.hu-berlin.de](mailto:roeder@physik.hu-berlin.de); <http://www-pbp.physik.hu-berlin.de/>

Delta-Vision is a start-up to be founded this year, which aims to combine cutting edge sensitivity with simple and secure handling. Delta-Vision products are designed to allow the non-specialist to perform measurements that usually require specialist knowledge and expensive equipment. Out-of-the-lab the "Tau-Delta" is the first product of the intended portfolio that will be made commercially

available. It can detect singlet oxygen with a sensitivity worldwide matched only by top-level laboratory setups. The origin of Delta-Vision is the Photobiophysics group of the Humboldt-Universität zu Berlin (chair: Prof. Dr. Beate Röder). This group is specialized on spectroscopy of nature-related or nature-mimetic transfer processes in the spectral region Vis-IR in a timescale of years down to femtoseconds. For more detailed information on the planned start-up: [www.delta-vision.net](http://www.delta-vision.net).

## id Quantique SA #B311

Chemin de la Marbrerie 3, Carouge Geneva, 1227 Switzerland  
+41 22 301 83 71; fax +41 22 301 83 79  
[info@idquantique.com](mailto:info@idquantique.com); <http://www.idquantique.com>

### Featured Product: id220: Free-running photon counter with very low dark count rate at telecom wavelength

IDQ offers photon-counters based on avalanche photodiodes in Geiger mode for the visible and infrared regions. It also includes Telecom short-pulse laser sources (id300). The id100 is a photon counter based on silicon APD for VIS wavelength. id210 and id220 are based on InGaAs/InP APD optimized for telecom wavelength. The id210 has a 100MHz max. trigger rate and can also operate in free running. The id220 offers the lowest dark count rate in free-running mode. The id400 is optimized for 1064nm. Contact: Michael Desert, Sales Engineer, [info@idquantique.com](mailto:info@idquantique.com).

### Poster Reception Sponsor

## II-VI Deutschland GmbH #G222

Im Tiefen See 58, Darmstadt, 64293 Germany  
+49 6151 8806 29; fax +49 6151 8966 67  
[info@ii-vi.de](mailto:info@ii-vi.de); <http://www.ii-vi.de>

## Inphotech #G324

Bagno 3/64, Warsaw, Poland  
<http://www.inphotech.eu>  
+48 501 227 47 8; fax +48 22 409 91 45

InPhoTech - Innovation Photonics Technology carries out research, development and fabrication of innovative optical fibre components and devices. We are a spin-off company from two world leading fibre technology groups at University of Maria Curie-Skłodowska (UMCS) in Lublin and Military University of Technology (MUT) in Warsaw (both in Poland). Technical development is combined with exploratory applied research ensuring a long term excellence in fibre optics based on academic partners' experience (almost 30 years), while providing industrially relevant new products and solutions for academic and industrial partners.

## Institute of Atomic Physics and Spectroscopy — Innovation Village #9, #14

19 Raina Blvd, Riga, 1586 Latvia  
+371 67034334; fax +371 67243091  
[ad@lu.lv](mailto:ad@lu.lv); <http://www.lu.lv/eng/>

### Featured product: RGB imaging system for assessment of hemoglobin distribution in skin, skin blood perfusion imaging system

The scientists of Bio-photonics Laboratory (Institute of Atomic Physics and Spectroscopy) are working with novel methods and optical technologies for health screening and monitoring. It covers research opportunities: non-invasive optical assessment, of human cardiovascular state, wireless cardiovascular monitoring, human skin health assessment by diffuse reflectance spectrometry, and parametric human skin imaging (laser-excited skin fluorescence fading effects, hyperspectral imaging). Primary Contact: Uldis Rubins, senior researcher, [uldrubins@yahoo.com](mailto:uldrubins@yahoo.com); Dainis Jakovels, researcher, [dainis.jakovels@gmail.com](mailto:dainis.jakovels@gmail.com).

## IOP Publishing Ltd. — Literature Display

## Silver Foyer

Temple Way, Temple Circus, Bristol, BS1 6BE United Kingdom  
+44 117 930 1281; fax +44 117 929 4318  
[custserv@iop.org](mailto:custserv@iop.org); [publishing.iop.org](http://publishing.iop.org)

IOP Publishing is a world leader in scientific publishing and the electronic dissemination of physics. Our portfolio includes a number of exceptional journals, magazines and websites across many scientific, technical and medical disciplines. We have continued this reputation for innovation with the full digitization of our complete Journal Archive and our web products and services for the STM community, including [physicsworld.com](http://physicsworld.com), [medicalphysicsweb.org](http://medicalphysicsweb.org), [nanotechweb.org](http://nanotechweb.org) and [IOPscience.org](http://IOPscience.org).

## IPHT/Photonics 4 Life #2

Albert-Einstein-Str 9, Jena, 07445 Germany  
+49 3641 20 60 064; fax +49 3641 20 60 044  
<http://www.photonics4life.eu>

Fiber optical esophageal sensor catheter. Swallowing and transport of food from the mouth to the stomach is a highly coordinated neuromuscular event. Dysfunction of this mechanism causes a variety of diseases like esophageal adenocarcinoma or heartburn. The examination of the causes with sensors so far was a lengthy and uncomfortable process for the patient. A German group from the IPHT (Network Photonics4Life) has now developed a fiber sensor that is not only easier to swallow but can measure the movements of the whole esophagus simultaneously over the whole length. The sensor in the form of a small diameter catheter locates and measures changes of pressure over a well-defined length with high spatial resolution and consists of an optical fiber jacketed with special polymers. The application is designed for measurements in the esophagus for the investigation of the swallowing process. The measurement is done by fiber Bragg grating sensor elements. Due to their small size and the ability to run in a measurement chain, the FBG sensors are predestined for the use in this application. The grating structures are printed into the fiber during the fiber drawing process in very short spatial distance (1cm). Complete sensor arrays can be manufactured in one single process very effectively. Contact Name: Prof. Juergen Popp, Job Title: Coordinator of Photonics4Life, Email: [Juergen.popp@ipht-jena.de](mailto:Juergen.popp@ipht-jena.de)

### General Refreshment Sponsor

## iseg Spezialelektronik GmbH #S118

Bautzner Landstr. 23, Radeberg, 01454 Germany  
+49 351 26996 0; fax +49 351 26996 21  
[sales@iseg-hv.de](mailto:sales@iseg-hv.de); <http://www.iseg-hv.de/start.php/lang/en/>

iseg Spezialelektronik GmbH is specialized in design and manufacturing of wide range of highly precise HV power supplies for various applications in science and industry, such as PMTs, APDs, MCPs, SiPMs and many more. iseg Spezialelektronik GmbH specializes in the development and production of high voltage power supplies for industry and research. This is based on 30 years of experience in the development and implementation of modern high voltage generating technology. Through the development of a new generation of High Voltage Power Supplies in modern, patented resonance mode technique it is possible to offer our customers very efficient HV units with small dimensions and excellent electrical parameters. The use of efficient resonant converter technology in conjunction with the state-of-the-art digital and analog circuit design allows for high voltage solutions with minimum dissipation, high reliability and cost-effectiveness. For precision applications a substantial product range is available, characterized by high output voltages, extreme stability and minimal noise.

# Exhibitor Directory

## ISLA — European Network #20

Broomhill Way, Torquay Devon, TQ2 7QL United Kingdom  
+44 1803 407893; fax +44 6037 330811

arobertson@goochandhusego.com; <http://www.isla-project.eu/>

Two micron fibre laser technology has the potential to open a whole new area of ICT and industrial applications. The well-known power scaling advantages, from increased core size & higher non-linear thresholds, offer a tenfold increase in "raw power" compared with current one micron technology. Perhaps more importantly, a host of applications specific to this almost unexplored region of the eye-safe spectrum are obvious; including industrial processing, free-space communications & medical procedures. Undoubtedly more applications will arise as currently exotic wavelengths become readily available. ISLA will seize this opportunity to develop a set of "building block" components and a "tool-kit" of processes to define an integrated modular common platform for two micron fibre lasers consisting of compatible and self-consistent fibre, components, laser diodes and processing techniques. Not only will advances beyond the state-of-the-art in each of these four areas be achieved, but this will be attained through a coordinated programme to deliver a genuinely integrated technology platform. CW, pulsed and ultra-short lasers will be demonstrated through industrial applications (transparent plastic cutting and PV cell scribing).

General Refreshment Sponsor

## JPK Instruments AG #S113

Bouchéstr 12, Haus 2 Aufgang C, Berlin, 12435 Germany  
+49 30 5331 12542; fax +49 30 5331 22555

info@jpk.com; <http://www.jpk.com/>

JPK Instruments is a world-leading manufacturer of nanoanalytic instruments for a broad range of applications reaching from soft matter physics to nano-optics, from surface chemistry to cell and molecular biology.

## Laser Focus World — Literature Display Silver Foyer

98 Spit Brook Rd, PennWell Technology Div, Nashua NH 03062-5737 USA

+1 603 891 0123; fax +1 603 891 0574

<http://www.laserfocusworld.com>

## Light4Tech Firenze S.r.l. #1

Via Pisana 316, Scandicci, 50018 Italy  
info@light4tech.com; <http://www.light4tech.com/>

A local cluster from the European Network of Excellence for Biophotonics, Photonics4Life, has now come up with a photohaemostatic device that dramatically improves wound healing processes by the use of light. Based on a patent owned by Light4Tech Firenze srl, the photohaemostatic device is a compact and easy-to-use device, based on Light Emitting Diode (LED) technology, able to induce haemostasis of superficial blood vessels through a photo-thermo-coagulation process, without any collateral damage to surrounding tissue. The working principle relies on the conversion of radiant energy into heat by selective absorption of (de) oxyhaemoglobin and on the resulting heat diffusion inducing thermal denaturation of blood and vascular tissue.

## LightTrans VirtualLab UG #B216

Wildenbruchstr 15, Jena, 07745 Germany  
+49 36 41 67 54 30; fax +49 36 41 67 54 35  
service@lighttrans.com; <http://www.lighttrans.com>

**Featured Product: LightTrans VirtualLab 5 – field tracing software for optical modeling and design**

The field tracer provides suitable modeling and design techniques based on unified optical modeling. New: the Lighting Toolbox for the design and simulation of non-paraxial optical systems, e.g. setups using LED's or other highly divergent partially coherent sources. Also: several optimization strategies, as parametric.

General Refreshment Sponsor

## Logitech Ltd. #S211

Old Kilpatrick, Erskine Ferry Rd, Glasgow Scotland, G60 5EU  
United Kingdom

+44 1389 875444; fax +44 1389 890956

info@logitech.uk.com; <http://www.logitech.uk.com>

**Featured Product: DP1/DP4 High Speed Precision Polishing Systems Ideal for Polishing Hard Materials**

Logitech Ltd is a world leader in materials processing, shaping and surface finishing technology. We design and manufacture high precision cutting, lapping and polishing systems which enable high specification surface finishes to be prepared with precise geometric accuracy. Logitech systems are used to process fibre optic, laser, opto-electronic and semiconductor materials. Precise, repeatable angles can be achieved when polishing optical components such as AWGs, FBGs, Fibre Arrays and SOAs. Contact: Mark Munley, Technical Sales Executive, mark.munley@logitech.uk.com; Chris O'Brien, Sales Manager, chris.obrien@logitech.uk.com.

Coffee Break Sponsor

## LovaLite #G324

**SPIE** Corporate Member

18 rue Alain Savary, Besancon, 25000 France

+33 3 81 53 26 25; fax +33 3 81 53 25 51

sales@lovalite.com; <http://www.lovalite.com/>

**Featured Product: FDTD Solutions, MODE Solutions, INTERCONNECT, DEVICE, Fibre Termination, Specialty fibres**

LovaLite provides expert services from design to production in all area related to optical fibers, nano-optics, sub-wavelength light manipulation. Our products: micro-optical components (for applications such as near field microscopy, photonic coupling or specific sensors), simulation and design softwares, scanning probe microscopes, photonics components and custom realizations for specific needs. Contact: Gregory Baethge, Sales Manager, sales@lovalite.com.

## MINIGAS — European Network #25

PO Box 1000, Oulu, 90571 Finland

+358 4 00 488414

juha.palve@vt.fi; <http://www.minigas.eu/Home.html>

The MINIGAS project aims to develop a miniature, super sensitive and cost effective photo-acoustic gas sensor. This infrared gas sensor uses a freestanding silicon cantilever for detecting the acoustic signal. The movement of the cantilever is detected by means of a spatial interferometer. A lab scale modular photo-acoustic sensor with IR LED sources, differential photo-acoustic gas cell, spatial interferometer and cantilever has demonstrated its performance for CH<sub>4</sub> detection. A second photo-acoustic sensor with diode laser source is under development.

## MIRTHE — European Network #27

+33 1 3077 68 66

www.ist-mirthe.eu

MIRTHE targets new multilevel-modulation all-monolithic integrated TX and RX Photonic Integrated Circuits (PICs) able to achieve 100-400 Gb/s aggregated speed on a single wavelength. This project is motivated by: The reduction of cost and power consumption of 100Gb/s transmission equipment. The need of future-proof component technologies for next generation terabit networks. Chips will be packaged and driven at 28 and then 56 GBauds to realize first PIC-to-PIC Terabit range transmissions. The innovation introduced by the monolithic integration of RX and TX with novel vector EAM-based sources should bring a real breakthrough in cost, size and consumption of Terabit components.

## Multitel A.S.B.L. — Innovation Village #12

Rue Pierre et Marie Curie 2, Mons, 7000 Belgium  
+32 65 34 27 32; fax +32 65 34 27 29  
info@multitel.be; <http://www.multitel.be>

The project CHARMING (Components for Highly Advanced time-Resolved fluorescence Microscopy based on Nonlinear Glass fibres) is a European funded initiative that started in September 2011. The aim of the project is the development of non linear devices fully integrated into optical fibres. Our plan for the Photonics Innovation Village will be to present an experiment of second harmonic generation into periodically poled fibres. This will be the result of a joint work between MULTITEL and ORC Southampton, in the frame of the project CHARMING.

## N.G. Chernyshevsky Saratov State Univ. — Innovation Village #8

ul Astrakhanskaya 83, Saratov, 410012 Russian Federation  
+7 8452 261 696; fax +7 8452 278 529  
rector@sgu.ru; <http://en.sgu.ru/>

Title: Photonic crystal fiber sensor

Participating entity: Multilateral research project in framework of P4L Saratov Local Cluster activity. Innovation: Special type of photonic crystal fiber for application in food and chemical industry as well as in biomedicine was developed. This fiber in combination with light source and spectrum analyzer is a prototype of an optical sensor that allows one to provide express analysis of different liquids (drinks, chemical solutions, physiological liquids) by combining refractometric method for determination of sugar concentration in liquid and photometric method for determination of an optical density or turbidity. We utilized chirped PCF with big grating period as a sensor for refractive index of analyzed liquids and stretched photometric cuvette for photometric analysis simultaneously by injecting liquid in the hollow core and obtaining an optical response. This fiber may be used as refractometer with extremely small sample volume (10 µL), saccharimeter or micro reactor for tracking optical parameters of the reagents in real time. Representative: Anton Malinin.

## NanoDev Scientific Ltd. #10

Technology Development Region, Cyberplaza  
B Building, floor:2, No: 219  
Bilkent Ankara, Turkey  
<http://www.nanodev.com.tr>

We have developed a novel sensing mechanism based on Surface Plasmon Resonance (SPR) technique. Mechanism utilizes nano-structured grating patterns in order to create enhanced plasmonic excitation. Light absorption is readout through transmission using a planarly integrated photo-sensitive substrate. Any kind of molecular interaction that takes place in the form of the lock and key model is possible to be investigated and analyzed with our sensing mechanism. Utility of our device can be diversified into various application fields, i.e. in biology, chemistry, pharmacy, food safety, medical diagnostics, bio-defense, agricultural and environmental monitoring, simply by using truly low cost disposable sensor chips that we functionalize according to specific purposes. We have reached a sensitivity level of  $10^{-6}$  -  $10^{-7}$  RIU which is the current sensitivity limit of existing conventional SPR devices. Moreover our mechanism offers sensitivity enhancement possibilities via light source/grating structure/photo-sensitive layer manipulations. Due to innovative production techniques we implicate the overall sensing mechanism has very high integration density enabling us to design a very compact handheld device.

## Nanophotonics for Energy Efficiency, N4E — European Network #29

Av Carl Friedrich Gauss num 3, Parque Mediterráneo de la Tecnología, Castelldefels, 08860 Spain  
+34 93 553 4001; fax +34 93 553 4000  
secretariat@icfo.es; <http://www.icfo.es/>

The Nanophotonics for Energy Efficiency proposal is creating a research and technology centre of excellence to re-orient and focus nanophotonics research towards the challenges in energy efficient applications. In order to achieve this, the network clusters nanophotonic laboratories and research groups in Europe, combining their expertise in the development of disruptive approaches to lighting and solar cell technology. The consortium consolidates know-how and resources of 9 different institutions in 6 European countries with complementary research and development expertise, integrating more than 130 scientists, engineers, technicians and managers in nanophotonics. It is also open to collaborations and information exchanges with other institutions through the Seed Proposal and Associate Membership schemes. Market and industrial relevance is ensured through the involvement of industry leaders in the Advisory Board. This approach complements the existing top-down, industry-driven projects.

## Nanoscribe GmbH #B100

Hermann-von-Helmholtz-Platz 1, Eggenstein-Leopoldshafen,  
76344 Germany  
+49 721 60828840; fax +49 721 60828848  
info@nanoscribe.de; <http://www.nanoscribe.de/>

### Featured Product: 3D Laser Lithography System Photonic Professional

3D laser lithography systems allowing for the fabrication of true three-dimensional micro- and nanostructures in commercially available photoresists. Nanoscribe also offers advice in casting of 3D structures into metals, semi-conductors and SiO<sub>2</sub>. Areas of applications are in photonics, micro-optics, microfluidics, nano- and microtechnology or life sciences. Contact: Martin Hermatschweiler, CEO, info@nanoscribe.de; Wanyin Cui, Sales Manager, sales@nanoscribe.de.

## Nanyang Technological Univ. — Innovation Village #3

50 Nanyang Ave, Singapore, 639798 Singapore  
+65 6791 1744; fax +65 6791 1604  
<http://www.ntu.edu.sg/Pages/default.aspx>

Several 3D measurement prototypes with a measuring scale from nanometer to micrometer to millimeter in the axial (depth/height) direction will be showcased at this event. For nanometer profiling a Compact Digital Hologscope (CDH) has been developed with applications in the metrology of MEMS, Microsystems, and micro-fabrication process inspection and device characterization. The novel features are full-field (4 square mm) and real-time 3D imaging and measurements of samples in non-contact mode. The concept of the system is based on lensless magnification using diverging wave geometry and numerical reconstruction of the recorded digital hologram. Besides nano-profiling, the system can be used for static and dynamic characterization of MEMS and microsystems. A user-friendly software is developed which can be tailored for both in-line and off-line real-time (10 frames/sec) inspection. The second prototype is Compact 3D Profilometer (C3DP), which is an effective tool to measure the 3D structures with axial resolution of 10 microns for objects which are 100 mm<sup>2</sup> in size. The basic need for such a compact system is provide inspection and 3D imaging for various industrial and entertainment application. Applications in such diverse fields as aerospace, medical, product inspection and quality control, and reverse-engineering have been demonstrated.

# Exhibitor Directory

## NapaNIL — Innovation Village #17

Mikeletegi Pasealekua 2, Parque Tecnológico-Tecnologi Parkea,  
San Sebastian, 20009 Spain  
+34 664039047

dissemination2napanil.org; <http://www.napanil.org>

Title: Affordable Photonics: Nanoimprint for components

Participating entity: NapaNIL project. NapaNIL is a large-scale collaborative research project funded by the European Commission under the FP7 NMP theme and is composed of 16 partners representing both the industrial pull and the technology push of the project. The main focus of the project is related to optical applications, based on the idea of controlling light at surfaces using nanoscale 3-dimensional surface structures. Innovation: Surface structuring alters dramatically the optical properties of materials and enable manipulating the geometrical path and/or the spectral properties of the light. At the start of the project there were no efficient production methods available for this kind of surfaces, major challenges being the control of the intensity, the homogeneity and the guiding of light. Nanoimprint lithography has resulted in a scalable unique method for creating high-aspect ratio surface structures in polymer and glass at the micrometer and nanometer scale. Since the polymer film to be nanostructured rests on another solid flat or curved surface, surface and interface engineering process steps have been factored in nanoimprinting processes for high volume product demonstrators covering the full value chain of three nanoimprinted devices. Design and process control issues are now handled by imaginative software solutions coupled to state-of-the-art knowledge of polymer rheology. Throughput, critical dimensions and nanopatterning in the 3rd dimension, have all been incorporated in the demonstrators driving the main challenges in NapaNIL project. Specifically, the three demonstrators are: Head Up Display (eHUD), Light Directing Element (LDIR), Planar Diffractive Optical Element (PDOE) Representative: Isabel Obieta.

## NARNIA Project — European Network #22

Archaeological Research Unit, Department of History and  
Archaeology

UNIVERSITY OF CYPRUS

P.O. Box 20537. CY-1678 Nicosia, CYPRUS

tel. +357 22 893564, FAX. +357 22 674101

email: v.kassianidou@ucy.ac.cy; [www.narnia-itn.eu](http://www.narnia-itn.eu)

NARNIA, a Marie Curie Initial Training Network, is an interdisciplinary project, the main objective of which is to provide young researchers with the means to conduct research on ancient Eastern Mediterranean material culture and to develop their analytical skills through a series of research and training activities. An awareness of the recent advances in technology and an understanding of the implications for theory and practice in the heritage environment have brought together a consortium of academic institutions and private companies in this collaborative project to support young researchers in their first steps into the competitive and complementary worlds of academia and private enterprise. This well-structured research network aims to improve the career prospects of employment for young researchers, developing their lab-based skills in the study of ancient materials, while contributing to the history and archaeology of the Eastern Mediterranean basin, a region of great historical, cultural and geopolitical significance. In particular, through a comprehensive mobility scheme, young researchers will have the opportunity to continue their research careers at high profile universities and well-established private enterprises while working in research projects focused on the study of ancient material culture.

Conference Bag Sponsor

## Nature Publishing Group #S117

Macmillan Bldg, 4 Crinan St, London, N1 9XW United Kingdom  
44 20 7833 4000; fax 44 20 7843 4596

enquiries@nature.com; <http://www.nature.com>

## Newport Spectra-Physics GmbH #B112

Guerickeweg 7, Darmstadt, 64291 Germany  
+49 6151 708 0; fax +49 6151 708 952

info@spectra-physics.com; <http://www.spectra-physics.com/>

Newport is a leading global supplier of advanced-technology products and systems to customers in the scientific research, microelectronics manufacturing, aerospace and defense/security, life and health sciences and precision industrial manufacturing markets. Newport's innovative solutions leverage its expertise in high-power semiconductor, solid-state and ultrafast lasers, photonics instrumentation, sub-micron positioning systems, vibration isolation, optical subsystems and precision automation to enhance the capabilities and productivity of its customers' manufacturing, engineering and research applications. Newport, a worldwide leader in lasers and photonics solutions that Make, Manage and Measure Light®, announces the 1830-R Optical Power Meter. A newly designed optical meter, the 1830-R provides a 'drop-in' replacement for Newport's legacy 1830-C Power Meter which has been widely used in fiber optic component production and testing. The DC power measurements can be easily viewed in the 7-segment, backlit LED display. Units of W, dBm, dB, and relative measurement can be displayed in the 4 digit, wide-angle view. A wide dynamic range is provided with power sensitivities down to 10 pW and full scale readings up to 2 W (detector dependent). The unit's built-in, audible beeping tone changes its frequency as a function of incident optical power, making it very useful when optimizing the optical beam alignment.

## Nuferm #B310

**SPIE** Corporate  
Member

7 Airport Park Rd, East Granby, CT, 06026-9523 USA

+860 408 5000; fax +860 844 0210

info@nuferm.com; <http://www.nuferm.com>

Nuferm is a leading U.S. manufacturer of specialty optical fibers, precision wound optical fiber coils, fiber lasers and amplifiers. Our integrated team has the experience, resources, and facilities required to design, manufacture, test and qualify highly-engineered optical fibers and fiber-based products for diverse applications and industries. Contact: Andrzej Szkotnicki, Sales & Application Engineer - EU, [aszkotnicki@nuferm.eu](mailto:aszkotnicki@nuferm.eu); Peter Pietrzak, Sales & Application Engineer - EU, [ppietrzak@nuferm.eu](mailto:ppietrzak@nuferm.eu).

Conference Bag Pen and Coffee Break Sponsor

## Ocean Optics B.V. G120

Geograaf 24

Duiven 6921 EW Netherlands

31 26 319 0500; fax 31 26 319 0505

info@oceanopticsbv.com; <http://www.oceanoptics.com>

Ocean Optics is the inventor of the world's first miniature spectrometer and a global leader in photonics for research, life sciences, quality assurance, education and OEM applications. Ocean Optics' extensive line of complementary technologies includes spectrometers, chemical sensors, metrology instrumentation, optical fibres and thin films and optics. Recognized as an industry innovator, Ocean Optics has specified and delivered over 150,000 modular miniature spectrometers and systems throughout the world and has enabled thousands of different applications - from cancer detection and colour matching to plasma monitoring and particle size analysis. Our spectrometers have been to the Moon and inside active volcanos and follow our mission to help our customers change the world through optical sensing.

General Refreshment Sponsor

## Ohara GmbH #S111

Nordring 30 A, Optisches Glas, Hofheim, 65719 Germany  
+49 61 9296 5050

info@ohara-gmbh.com; <http://www.ohara-gmbh.com>



## OpTIC Innovations #B101

St Asaph Business Park, Ffordd William Morgan, St Asaph  
Denbighshire, LL17 0JD United Kingdom  
+44 1745 535100; fax +44 1745 535102  
info@optictechiunium.com; <http://www.opticinnovations.co.uk/>

OpTIC specialises in designing, developing and manufacturing customised precision optical and opto-mechanical components and systems. We produce prototypes, new processes or customised products. We offer Europe's largest specialised industrial scale facilities that develop cutting-edge technology with an unparalleled array of highly specialist equipment and labs. Working with on site leading edge academia as well as dedicated scientists and engineers, we help take your technology to market faster. We are focussed in 3 key areas of photonics: Optical & opto-mechanical design & engineering, Complex & large scale optics manufacturing, Large area optical microstructured patterning.

*General Refreshment Sponsor*

## OPTIDA #S217

Savanoriu 231, Vilnius, Vilniaus, 01108 Lithuania  
+370 5 2621508; fax +370 5 2621508  
sales@optida.lt; [www.optida.lt](http://www.optida.lt)

**Featured Product: Laser Mirrors, Laser Beamsplitters, Polarizing Cubes, Filters, Metal Mirrors, Ultrafast Optics, etc.**

OPTIDA established in 1997 is largest optical coatings and optics company in Lithuania. OPTIDA offers various optics, optical coatings and development services for laser systems and optical devices according to custom requirements of scientists and engineers. OPTIDA researchers take a part in coating technology research activities, cooperating with research institutions and improving existing or integrating new technologies. Contact: Marius Semeta, Sales Manager, marius@optida.lt; Giedrius Abromavicius, Project Manager, giedrius@optida.lt.

## Optima Research Ltd. #B219

**SPIE** Corporate Member

Stoney Common Rd, 8 Riverside Business Park, Stansted, CM24 8PL United Kingdom  
+44 1279 810911; fax +44 1279 810912  
info@optima-research.com; <http://www.optima-research.com>

**Featured Product: Zemax is a comprehensive optical and lighting design software.**

Radiant Zemax Europe is the regional head office for Radiant Zemax LLC and is the European provider of the Zemax optical and lighting design software. Our typical customers are scientists and engineers who design, tolerance, make and test optical equipment ranging from telescopes, cameras, photocopiers, medical imaging equipment, lenses for mobile phone cameras, to car headlights, LED's, displays and lasers.

## Optiwave Systems Inc. #B218

**SPIE** Corporate Member

7 Capella Ct, Ottawa, ON, K2E 7X1 Canada  
+613 224 4700; fax +613 224 4706  
info@optiwave.com; <http://www.optiwave.com/>

Optiwave Systems is an R&D company specializing in the development and commercialization of scientific and engineering software for numerical simulation of integrated and fiber optic devices and systems. OptiSystem: Planning, testing, and simulation of optical links in the transmission layer of modern optical networks. OptiFDTD: Simulation of advanced passive and non-linear photonic components. OptiBPM: Waveguide optics modeling design. OptiSPICE: Only SPICE software for Opto-Electronics. For more information on our products or services please visit us online @ [optiwave.com](http://optiwave.com).

## OptoIndex — Literature Display

Sliver Foyer

Papiermuehlenweg 74 Ratingen, 40882 Germany  
+49 2102 1678 0; fax +49 2102 1678 28  
info@opto-index.de; [www.opto-index.de](http://www.opto-index.de)

The proliferation of photonics in recent years creates the imperative need for an index. This work of reference - International OptoIndex - offers a comprehensive data source for companies and products in the sector. Who has the best solution to my problem? Where can I find a cost-effective product developments shortcut? This catalogue and website [www.opto-index.de/ot](http://www.opto-index.de/ot) will help you to find the answers. Updated annually, the international OptoIndex 2012 is published in English. Print run is 15.000 issues distributed worldwide at the international exhibitions (Photonics West, San Francisco, Optatec Frankfurt, Laser, Shanghai, etc.) and to our widespread mailing list.

## Optophase #B312

15 rue du Bocage, Lyon, France  
+33 (0)4-78-74-24-56; fax: +33 (0)4-78-09-55-17  
info@optophase.com [www.optophase.com/](http://www.optophase.com/)

OPTOPHASE is a leading supplier for the following products: Automation products dedicated for microscopy (Modular inverted microscope, DC motor XY stage, motorisation of microscope objective turret, autofocus hardware) Nanopositioner, Infrared camera, Autocollimator, Light source for fluorescence, Surface tension measuring equipment, Diamond scribe for cutting wafer before REM/AFM observation.

## Optronis GmbH #B116

Honsellstr 8, Kehl, 77694 Germany  
+49 7851 9121 0; fax +49 7851 9126 10  
info@optronis.com; <http://www.optronis.com>

*General Refreshment Sponsor*

## Oxxius SA #S115

**SPIE** Corporate Member

4 rue Louis de Broglie, Lannion, 22300 France  
+33 2 96 48 70 28; fax +33 2 96 48 21 90  
info@oxxius.com; <http://www.oxxius.com/pages/en/home.php>

Oxxius manufactures innovative solid-state lasers for Biophotonics and Measurements applications. Its compact laser modules, featuring wavelengths in the visible and near-UV spectrum, have outstanding performance with market-leading power levels. The SLIM DPSS line features a monolithic resonator technology that ensures excellent power and pointing stability. The LaserBoxx line is a performing drivers integrated laser diode and DPSS modules in 100mmx40x40mm industry standard package.

## PhoeniX Software #B313

PO Box 545, Enschede, 7500AM Netherlands  
+31 53 4836460; fax +31 53 4337415  
info@phoenixbv.com; [www.phoenixbv.com](http://www.phoenixbv.com)

**Featured Product: Software solutions for Micro and Nano Technologies**

PhoeniX is a supplier of professional software tools for the micro and nano technology industry. Typical products include software for mask layout and process flow simulation (MaskEngineer, CleWin and FlowDesigner), software for integrated photonics simulations (OptoDesigner, FieldDesigner and ASPIC) and the leading manufacturing execution system dedicated to the industry: The Living Database. Furthermore dedicated Design Kits for multiple photonic foundries are provided. Contact: Salar Ahmed, Account Manager, [salar.ahmed@phoenixbv.com](mailto:salar.ahmed@phoenixbv.com); Twan Korthorst, CEO, [info@phoenixbv.com](mailto:info@phoenixbv.com).

# Exhibitor Directory

Coffee Break and Conference Bag Insert Sponsor

## Photon Design

#G221

**SPIE** Corporate Member

34 Leopold St, Oxford, OX4 1TW United Kingdom  
+44 1865 324990; fax +44 1865 324991  
info@photond.com; <http://www.photond.com>

**Featured Product: PicWave is a new generation tool for design of active and passive PICs scaling to large circuits.**

Photon Design was started in 1992 and now provides a wide range of innovative photonics CAD tools to 33 countries around the world, supplying most of the World's leading photonics companies, universities and government research labs. CAD products include tools for both passive and active (semiconductor) component and optical circuit modelling. The company has a team of some of the brightest people in photonics modelling, developing innovative solutions for tomorrow's photonics design projects. Contact: Dominic Gallagher, [info@photond.com](mailto:info@photond.com).

## Photonics 21

#G325

Peter-Müller-Str 1, c/o VDI Technologiezentrum GmbH,  
Duesseldorf, 40468 Germany  
+49 211 6214 478

[secretariat@photonics21.org](mailto:secretariat@photonics21.org); <http://www.photonics21.org>

The European Technology Platform Photonics21

In December 2005 the European Technology Platform Photonics21 was set up as an industry driven platform to unify the community in the area of photonics. Today, more than 2000 representatives of the photonics industry and research institutes from most European countries are involved in the platform. Leading companies and research organisations have joined together to further advance Europe's position in photonics. The photonics experts work together in seven teams on a common European photonics strategy and on photonics research priorities for different photonics application areas such as Information & Communication (Work Group 1), Industrial Manufacturing & Quality, (Work Group 2), Life Science & Health (Work Group 3), Emerging Lighting, Electronics and Displays (Work Group 4), Security, Metrology & Sensors (Work Group 5), Design & Manufacturing of Components & Systems (Work Group 6) and Photonics Research, Education & Training (Work Group 7). The photonics research priorities serve as recommendations to the European Commission's Framework Programme. Major Photonics21 publications are the Strategic Research Agenda Lighting the way ahead, the vision document Photonics - Our vision for a Key Enabling Technology of Europe as well as the study The Leverage Effect of Photonics Technologies: The European Perspective.

## Photonics 4 Life — Innovation Village #2, #33

Albert-Einstein-Str 9, Jena, 07445 Germany  
+49 3641 20 60 064; fax +49 3641 20 60 044  
<http://www.photonics4life.eu>

Photonics4Life is the European Network of Excellence for Biophotonics. 13 top-of-the-line research institutes, all active in the broad domain of Biophotonics, have joined forces to establish a European platform on Biophotonics for both academia and industry. They aim to provide a coherent and interdisciplinary framework for research in the strongly fragmented field of Biophotonics in Europe. Another major goal is to initiate a paradigm shift in research by putting emphasis on the needs of physicians and patients and to strengthen local, national, and European research and communication activities between technical developers and medical users. Photonics4Life is funded by the European Commission within the 7th Framework Programme. Contact Name: Clemens Homann  
Email: [Clemens.homann@ipht-jena.de](mailto:Clemens.homann@ipht-jena.de)

## Photonics Media/Laurin Publishing — Literature Display Silver Foyer

**SPIE** Corporate Member

2 South St, Berkshire Cmn, Pittsfield, MA, 01201-6109 USA  
+1 413 499 0514; fax +1 413 442 3180  
[photonics@laurin.com](mailto:photonics@laurin.com); [www.photonics.com](http://www.photonics.com)

Poster Reception Sponsor

## Physik Instrumente (PI) GmbH & Co. KG

#G223

Auf der Römerstr 1, Karlsruhe, 76228 Germany  
+49 721 4846 0; fax +49 721 4846 100  
[info@pi.ws](mailto:info@pi.ws); <http://www.pi.ws>

Well-known for the high quality of their products, PI is one of the leading players in the global market for precision positioning technology for many years. PI has been developing and manufacturing standard and OEM products with piezo or motor drives for 40 years now. With four German factories and ten subsidiaries and sales offices abroad, the PI group is represented internationally.

## Politecnico di Milano — Innovation Village

#11

Piazza Leonardo da Vinci 32, Milano, 20133 Italy  
+39 02 23996149; fax +39 02 2367604  
[franco.zappa@polimi.it](mailto:franco.zappa@polimi.it); <http://www.everyphotoncounts.com>

**Featured Product: Single-Photon counting and timing for 2D imaging and 3D ranging**

The proposed demonstrators are based on the world-wide renowned expertise of Politecnico di Milano (POLIMI) on Single-Photon Avalanche Diode (SPAD) detectors and arrays. The technology demonstrators are based on silicon CMOS technology, exploited at its best in order to achieve SPAD imagers with ultimate performance. The products are aimed at the photonics market, where high sensitive detectors (down to the single-photon level) are needed to measure the intensity of faint light (photon counting) or to measure ultra-fast waveforms (photon timing) or to reconstruct the distance of an object (time-of-flight ranging). We present ultra-high sensitivity imagers, based on smart-pixels employing SPAD detectors and in-pixel analog sensing front-end and digital processing electronics, all integrated into a fully standard, cost-effective 0.35µm CMOS technology. We show mono-dimensional and two-dimensional SPAD arrays for both 2D imaging (through single-photon counting) and 3D ranging (through single-photon timing). Two techniques are proposed, namely phase detection of pulsed and continuous-wave modulated LED light, and direct Time-of-Flight (TOF) measurements with pulsed lasers, with advanced in-pixel Time-to-Digital Converters.

## PRIMA — European Network #21

**SPIE** Corporate Member

Kapelreef 75, Heverlee, 75 Belgium  
+32 16 28 7780  
<http://www.prima-ict.eu/>

The purpose of the PRIMA project is to investigate different plasmonic strategies to enhance the optical absorption in various solar cell technologies. Specifically, we examine the use of metal nanostructures to enhance the optical absorption of incident solar radiation in crystalline Si, high performance III-V, organic, as well as dye-sensitized solar cells. These technologies are either currently commercially available (Si or III-V), or are envisaged to become commercially viable in the near future (organic and dye sensitized). What all solar cell applications have in common is the need to always reduce the cost per unit power delivered. Therefore, the ultimate aim of the PRIMA project is to improve absorption in order to produce thinner and therefore less expensive solar cells due to the use of less material. However, achieving these goals requires effort from fundamental understanding, to device fabrication, to upscalable and cost-effective fabrication techniques.

## Resolution Spectra Systems — *Innovation Village* #13

13 Chemin du Vieux Chêne, Meylan, 38240 France  
[info@resolutionspectra.com](mailto:info@resolutionspectra.com); <http://www.resolutionspectra.com/>  
 ZOOM Spectra will give you access to high spectral resolution (5-15 pm/ 0.2cm-1/ 3 GHz in the wavelength range: 600-1100 nm) on a simultaneous bandwidth of a few nanometers, with high measurement rate capability (30 kHz). ZOOM Spectra is a compact system (8.3 cm x 8.6 cm x 12.6 cm) without any moving part and doesn't require any user calibration. ZOOM Spectra used the SWIFTS revolutionary innovation that combines groundbreaking nanotechnology research, integrated optics, microelectronics and embedded software, resulting in a high performance spectrometer technology that, in a simple component, is over 100 times more powerful than current existing mini-spectrometers. This innovation is the fruit of Nobel Prize winning work of Gabriel Lippmann in the 19th Century and state-of-the-art research in integrated optics and nano-technology carried out by the University Joseph Fourier (UJF), Grenoble, France.

## Sigma-Aldrich Chemie GmbH #B102

Industriestr 25, Buchs, 9470 Switzerland  
 +41 81 755 28 28; fax +41 81 755 28 15  
<http://www.sigmaaldrich.com>

### Featured Product: [aldrich.com/matsci](http://aldrich.com/matsci)

Aldrich Materials Science, a strategic technology initiative of Sigma-Aldrich, offers a range of performance materials for the Alternative Energy, Electronics and Biomedical markets. Through our materials chemistry Centers of Excellence in Hard Materials and Polymers, we seek to enable innovation through new product additions to our materials portfolio, collaborations, technology licensing, custom research, process development and scale-up.

## Single Quantum #B103

Lausbergstraat 17, Delft, 2628 LA Netherlands  
[info@singlequantum.com](mailto:info@singlequantum.com); <http://www.singlequantum.com/>  
 Single Quantum provides superconducting nanowire single photon detectors (SNSPD) for the most demanding applications. We provide reliable and easy to use complete systems, based on technology developed at the Delft University of Technology. The detectors are sensitive to single photons from the UV to the near-infrared and are coupled to single mode fibers for easy implementation. Other key parameters such as time resolution, dark noise, dead time and afterpulsing are better than single photon detectors based on avalanche photodiodes. Single Quantum uses advanced fiber-sleeve technology to couple the fiber robustly onto the detector. Single Quantum is the first company offering a complete closed cycle SNSPD with a built-in cryogenic cooler. This closed cycle system has the advantage of not requiring any external liquid helium supply, which enables it to run uninterrupted for very long periods of time.

## SITEC - Politecnico di Milano — *Innovation Village* #4

Via G. La Masa 1, Milano, 20156 Italy  
 +39 02 2399 8530; fax +39 02 2399 8585  
[sitec@mecc.polimi.it](mailto:sitec@mecc.polimi.it); <http://sitec.mecc.polimi.it/>

The cover slide is one of the most stressed component in a laser cladding head, since it has to protect the optical chain from any harmful product of the process, such as such as powder, sparkles, fumes and melted material. Therefore a monitoring system of the cover slide able to detect the evolution of the equipment is mandatory. The principal innovative aspects of the realized monitoring system are three. First of all the possibility to detect the whole degradation of the slide and not only its failure. The second innovation is the possibility to detect both small, such as micro-cracks and small diameter powder grains, and large defects, such as opaque zones and coating burns. Third, this system can acquire the status of the slide not only during the 'process on' but also during the 'setup time', in this manner a complete monitoring time solution is ensured.

## SMETHODS / Tech. Univ. Delft — *European Network* #26

Lorentzweg 1, Faculteit Technische Natuurwetenschappen, Delft, 2628 CJ Netherlands  
 +31 015 27 88105  
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## Spectroscopy Magazine — *Literature Display* Silver Foyer

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## Univ. of Latvia – Innovation Village

#9

Institute of Atomic Physics and Spectroscopy, University of Latvia,  
19 Rainis Blvd., Riga, LV-1586, Latvia  
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RGB imaging system for assessment of hemoglobin distribution in skin, skin blood perfusion imaging system. Company description; The scientists of Bio-photonics Laboratory (Institute of Atomic Physics and Spectroscopy) are working with novel methods and optical technologies for health screening and monitoring. It covers research opportunities: non-invasive optical assessment, of human cardiovascular state, wireless cardiovascular monitoring, human skin health assessment by diffuse reflectance spectrometry, and parametric human skin imaging (laser-excited skin fluorescence fading effects, hyperspectral imaging).

## Univ. of Latvia – Innovation Village

#14

Institute of Atomic Physics and Spectroscopy, University of Latvia,  
19 Rainis Blvd., Riga, LV-1586, Latvia  
asi@lu.lv; [www.asi.lv](http://www.asi.lv)

Device for assessment of capillary blood refill time. A prototype device was developed for contact optical monitoring of blood refill time in human tissue. Opto-mechanical part of device consists of blue LEDs, photodiode sensor, and orthogonally orientated polarizers, mounted in flexible head with pressure sensor. Electronics part consists of signal amplifier, processing units and small display. Device is powered by battery. All the components have built in small cylindrical body. The measurement can be performed by slight pressing of device against finger. After the 10-second long measurement, blood refill time is displayed on the indicator. The device could be used for non-invasive measurements of dehydration in tissues or in cases of hypothermia. Device for assessment of arterial occlusion. A prototype device was developed for assessment of arterial occlusion in legs or arms. The device consists of a control unit, two cuffs that provide arterial blocks, two cuffs that provide oscillometric pressure measurement and three photoplethysmographic sensors. The device simultaneously measure two systolic ankle pressures, and can detect pressure by photoplethysmographic sensors and by cuffs. The obtained data is stored on computer for offline analysis. The custom designed Matlab software calculates pressure difference between the legs, the ankle-brachial index and time-delay of pulse. The device could be used for early non-invasive diagnosis of artery occlusions in legs (hands).

## Univ. of Lincoln

#5

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The University of Lincoln and its associated company, ISDI Ltd, will demonstrate Dynamite - the World's largest and most complex radiation-hard CMOS imager with an active area of 168 cm<sup>2</sup>. Developed by a dedicated team with sixty accumulated years of experience in designing CMOS imagers - Active Pixel Devices. Dynamite is 2-sides butttable to allow the construction of a 26 cm square single imaging area. There are effectively four separate cameras in one device with two different pixel sizes, 50 um and 100 um, which provides great flexibility of readout and increased dynamic range. Each light-converting element is designed in a standard 3-T APS architecture, allowing a high Fill Factor (70%) and

Quantum Efficiency (QE), measured as 45% for 525 nm light. The noise level is measured at 50 e<sup>-</sup> rms and a linear full well capacity up to 4.50×10<sup>5</sup> e<sup>-</sup> for the 50 um pixels, whereas these values are respectively 150 e<sup>-</sup> and 1.35×10<sup>6</sup> e<sup>-</sup> for the 100 um pixels. Dynamite was designed for medical imaging applications especially image-guided radiotherapy. We are very happy to discuss the development and supply of custom imagers and other CMOS devices. We possess full commercial design tools, excellent relationships with foundries, and unique characterisation facilities.

Poster Reception Sponsor

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#B104

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