

## Community

# Conference Notes

## **SPIE Photonics West 2013 (Review)**

San Francisco, CA, USA, 2–7 February, 2013

Every year, the first big meeting of the photonics community is the Photonics West conference and exhibition in San Francisco. As last year the attendance reached a record high with 20.737 (+2%), the exhibitions were larger, and there were more papers (over 4500) in the technical program.

Technical papers were presented in four major areas: biomedical optics (BIOS conferences), lasers (LASE), optoelectronics (OPTO), and micro-opto-electro-mechanical and micro-electro-mechanical systems (MOEMS-MEMS). The conference attendance was strong, despite some concern around US government travel funding restrictions.

The first big event at the conference was the BiOS Hot Topics session on Saturday evening with a large crowd and a lot of networking going on in addition to the presentations. This year the topics ranged from OCT to optogenetics. Symposium chair Jim Fujimoto (Massachusetts Institute of Technology) said: ‘We’re at the point now where many of the technologies that are being developed here can be translated to clinical applications and have real-world clinical impacts’.

LASE symposium chair Andreas Tünnermann (Fraunhofer Institute for Applied Optics and Precision Engineering and Friedrich-Schiller Universität Jena) said he found optimism among conference attendees from science and from industry, despite financial troubles in Europe and elsewhere. ‘People are looking at a bright future; they believe in what they are doing,’ he said. ‘They are here to think about a lot of products, and to bring these products to the market.’

### **Ever growing exhibition**

From Tuesday to Thursday people were rushing into the main Photonics West exhibition to see what 1238 exhibitors had to offer on new products and developments. The BIOS exhibition on the preceding weekend had also grown to 224 exhibitors.

For small companies the presentation at such a large exhibition might seem costly, but several regional clusters or pavilions offered great deals for first time exhibitors. For the eighth time, Germany was represented at the Photonics West with a national pavilion hosting 46 German exhibitors, showing high-tech products made in Germany (Figure 1). It is worth mentioning, that the related networking events, such as the German Evening, offered not only free drinks but excellent opportunities to meet a huge number of national and international partners in a relaxed atmosphere.

### **Recruiting**

For those seeking employment the Photonics West offered the SPIE Job Fair. This year there were 27 recruiting companies, among them of note were companies such as Apple, Intel, and Microsoft, along with Daylight Solutions, Halma Photonics, and Teledyne Scientific & Imaging. However, there were fewer companies looking for new talent than the 36 who were there last year.

### **Startup challenge**

SPIE had also a nice offer for those ambitious enough to start their own companies. SPIE and Jenoptik sponsored the Annual Startup Challenge for photonics technology at Photonics West. This competitive event invited new entrepreneurs to pitch their light-based technology business plan to a team of corporate development experts and venture capitalists. The best pitches were awarded with a prize ranging from 2500 to 10 000 USD. The winners were:

- Arun Chhabra & Erik Klaas (co-founders) – 8-tree – \$10 000 prize ‘fastCHECK: a revolutionary 3D surface inspection system that is amazingly fast, accurate and easy-to-use’.
- Ryan Denomme (founder) – Nicoya Lifesciences – \$5000 prize ‘Compact, low cost, high performance optical biosensors for point-of-care diagnostics’
- Frank Palmer (CEO) – Cold Steel Laser – \$2500 prize ‘Remote image guided endoscopic surgery (RIGES) platform’



**Figure 1** Activity at the German Pavilion. Germany was represented at the Photonics West with a national Pavilion hosting 46 German exhibitors (photo: OptecNet Deutschland e.V.).

## What else?

As every year, there were so many events running with the conference that it is impossible to mention them all. Companies were awarded the Prism Awards, outstanding photonics experts were acknowledged with SPIE fellowships etc. However, the most important thing with Photonics West is meeting people, exchanging ideas and coming home with new ideas, leads, and orders, as SPIE CEO Eugene Arthur mentioned in his welcoming address.

The next Photonics West will take place in the Moscone Center, San Francisco, California, USA from 1–6 February 2014.

This report used material from SPIE, OptecNet Deutschland e.V. and optics.org.

[www.photonicswest.com](http://www.photonicswest.com)

## LASER – World of Photonics (Preview)

Munich, Germany, 13–16 May 2013 (Congress: 12–16 May 2013)

The LASER, as insiders call it, is the world's largest trade show on photonics technology. It runs on a bi-annual

schedule and previously (2011) it attracted 27 490 visitors and 1075 exhibitors. After this year's growth at Photonics West one may equally expect further growth for the LASER. The event will take place at the Munich Fair Ground (Messegelände), it is entered at the subway station 'Messe West'

The tradeshow is accompanied by a congress, actually a set of diverse conferences. The congress starts on Sunday in the ICM building adjacent to the tradeshow entrance. The congress requires a separate ticket. Several events of an academic character (such as the application panels) will take place in the exhibition halls and will require no congress admission. Special meetings are usually held in meeting rooms adjacent (above) the halls, correct orientation might be an issue.

## The trade show

The LASER trade show starts on Monday 13 May at 9:00 am. It closes on Thursday 15. May 16:00. The main focus topics of this year's exhibition will be:

### Lasers and laser systems for production engineering

Lasers and laser systems in industrial manufacturing have been the primary focus of LASER World of Photonics since it was founded in 1973. As the world's largest trade fair

for this application sector, it showcases the entire range of products and solutions: In 2011, 290 exhibitors presented products for use in various branches of industry and for various materials.

### **Illumination and energy**

New manufacturing techniques in photovoltaics and battery manufacturing, energy-saving lighting concepts, the use of renewable energy sources and improving energy efficiency are technological achievements that help to master the global challenges of generating and storing energy and protecting the environment. LASER World of Photonics and the World of Photonics Congress showcase the latest product developments, application examples and lectures.

### **Biophotonics and medical engineering**

Biophotonics has been indispensable in medicine and biotechnology for quite a while. As a driving force behind innovations and a key to the future, it is also vital to tapping new markets. Its applications, methods and techniques will be the focus of the exhibits in Hall B1. Exhibitors here will present their products and solutions for spectroscopy, microscopy, imaging, therapy and manipulation techniques – and generate important momentum for an interdisciplinary exchange and future investment decisions.

This year the exhibition will extend over four halls B1, B2, C1 and C2. The exhibition is grouped according to the main products showcased in the following way:

- B1 Laser and Optoelectronics
- B1 Biophotonics and Medical Engineering
- B2 Optical Information and Communication
- B2 Optics/Manufacturing Technology for Optics
- B2 Sensors, Test and Measurement/Optical Measurement Systems
- B2 Imaging
- C1 Laser and Optoelectronics
- C1 Lasers and Laser Systems for Production Engineering
- C2 Lasers and Laser Systems for Production Engineering

In addition to the exhibition one may find the 'Application Panels – Lasers and Photonics in Actual Practice' which will take place as forums in exhibition halls B1, B2 or C2, depending on the topic. The application panels usually include an application-oriented presentation and a subsequent discussion with industry representatives. All

presented applications and systems will also be on display at the exhibition. In 2011, some 1500 participants attended the application panels. Most panels are in English with, just a few in German. With 16 sessions (each of 2 or 3 h duration) the panels represent what could be a conference on their own. Details may be found at [http://media.nmm.de/75/applicationpanelpreview\\_deen\\_26754075.pdf](http://media.nmm.de/75/applicationpanelpreview_deen_26754075.pdf)

### **The World of Photonics Congress**

The congress at the LASER is a collection of conferences from the small 50 people workshop up to a big conference with several thousand attendants. A number of different societies are managing the organization of the various conferences and hence, some topical or temporal overlap may occur. Table 1 shows a list of the major conferences, their organizers and links to the respective program. Please notice that some conferences run on different days. Full details of the congress with links to most conferences can be found at:

<http://www.world-of-photonics.net/en/photonics-congress/structure>

### **CLEO, the Conference on Lasers and Electro-Optics**

San Jose, CA, USA, 9–14 June, 2013

Sponsored by the American Physical Society/Division of Laser Science (APS/DLS), the Institute of Electronic Engineers Photonics Society (Photonics Society) and the Optical Society (OSA), CLEO, the Conference on Lasers and Electro-Optics is probably the most famous scientific conference on the field of photonics. It provides the full range of critical developments in the field, showcasing the most significant milestones from laboratory to marketplace.

This year it will take place again in San Jose (CA, USA), the capital of the Silicon Valley. The technical program features 1800+ presentations and hundreds of sessions and short courses covering fundamental research in electro-optics, innovative developments in laser science, and commercial applications in photonics. Research is presented under these core conferences:

- CLEO: QELS – Fundamental Science
- CLEO: Science & Innovations
- CLEO: Applications & Technology

**Table 1** Conferences at the World of Photonics Congress.

Conference	Topics	Organizer, Start/End, Program link
LiM – LASERS IN MANUFACTURING	<ul style="list-style-type: none"> <li>– Laser Material Processing</li> <li>– System Technology</li> <li>– Process Optimizing</li> </ul>	WLT-Wissenschaftliche Gesellschaft für Lasertechnik e.V. in cooperation with AILU, SLN, ELI, JLPS, LIA 13–16 May 2013 <a href="http://www.wlt.de/lim">www.wlt.de/lim</a>
EOSMOC 2013: 3rd EOS Conference on Manufacturing of Optical Components	<ul style="list-style-type: none"> <li>– High-Volume Manufacturing of Optical Components</li> <li>– Latest Advances in Freeform Optics</li> <li>– Micro-Optics and Structured Surfaces</li> <li>– Precise Optics Fabrication</li> <li>– Testing for Fabrication and Assembly</li> </ul>	European Optical Society EOS 13–15 May 2013 <a href="http://www.myeos.org/events/eosmoc2013">www.myeos.org/events/eosmoc2013</a>
EOSOF 2013: 2nd EOS Conference on Optofluidics	<ul style="list-style-type: none"> <li>– Photonic actuation of microfluidics</li> <li>– High resolution in-chip lensless microscopy</li> <li>– Optical and photonic tweezers</li> <li>– Optofluidic lenses and solar collectors</li> <li>– Microfluidic lasers</li> <li>– Fluid-fluid waveguides and microfluidically tuned optical fibers</li> <li>– High sensitivity biomolecular sensor platforms</li> <li>– Fluid displays and paper</li> <li>– Optofluidic photobioreactors and photocatalytic reactors</li> <li>– Upscaling optofluidic technology</li> </ul>	European Optical Society EOS 13–15 May 2013 <a href="http://www.myeos.org/events/eosof2013">www.myeos.org/events/eosof2013</a>
OPTICAL METROLOGY	Subconferences: <ul style="list-style-type: none"> <li>– Optical Measurement Systems for Industrial Inspection</li> <li>– Modeling Aspects in Optical Metrology</li> <li>– Optics for Arts, Architecture, and Archaeology</li> <li>– Videometrics, Range Imaging and Applications</li> <li>– Optical Methods for Inspection, Characterization and Imaging of Biomaterials</li> <li>– Automated Visual Inspection</li> </ul>	Organized by SPIE Europe Ltd Sponsored by SPIE In cooperation with EOS and WLT 13–16 May 2013 <a href="http://spie.org/x6506.xml">http://spie.org/x6506.xml</a>
ECBO 2013 European Conferences on Biomedical Optics ECBO 2013 is being held in conjunction with HNODS (Head and Neck Optical Diagnostics Society)	<ul style="list-style-type: none"> <li>– Advanced Microscopy Techniques</li> <li>– Clinical &amp; Biomedical Spectroscopy &amp; Imaging</li> <li>– Diffuse Optical Imaging</li> <li>– Opto-Acoustic Methods &amp; Applications</li> <li>– Novel Biophotonic Techniques and Applications</li> <li>– Optical Coherence Tomography &amp; Coherence Techniques</li> <li>– Medical Laser Applications and Laser-Tissue Interactions</li> <li>– Neurophotonic</li> <li>– Head and Neck Optical Diagnostics (HNODS-specific)</li> </ul>	Organized by OSA Sponsored by OSA and SPIE 13–16 May 2013 <a href="http://www.osa.org/meetings/topical_meetings/european_conferences_on_biomedical_optics_(ecbo)/">www.osa.org/meetings/topical_meetings/european_conferences_on_biomedical_optics_(ecbo)/</a>
CLEO®/EUROPE-IQEC 2013	<ul style="list-style-type: none"> <li>– Lasers</li> <li>– Optical materials and innovative photonic applications</li> <li>– Lightwave technology</li> <li>– Sensing and metrology</li> <li>– Fibre and guided-wave optics</li> <li>– Nonlinear optics and nonlinear dynamics</li> <li>– Ultrafast science and high-field laser physics</li> <li>– Quantum and atom optics</li> <li>– Nanophotonics and integrated optics</li> <li>– Plasmonics and metamaterials</li> </ul>	Organized by the European Physical Society (EPS) Sponsored by EPS Quantum Electronics and Optics Division, OSA, IEEE/LEOS 12–16 May 2013 <a href="http://www.cleoeurope.org/">www.cleoeurope.org/</a>
11th International Laser Marketplace	<ul style="list-style-type: none"> <li>– Market review for Laser sources, Laser systems and industrial applications</li> </ul>	Organized by Optech Consulting 15 May, 13:00 – 17:00 <a href="http://www.optech-consulting.com/html/11th_laser_marketplace.html">http://www.optech-consulting.com/html/11th_laser_marketplace.html</a>

The session topics range from Advances in Extreme UV Science and Applications to Laser Driven Inertial Fusion Energy. The latter comes not only with a large number of presentations from laser projects all around the world but there is also a must-see event offered: A tour of the National Ignition Facility is arranged for the morning of Wednesday, 12 June 2013. The NIF tour is limited to 200 people and you must be pre-registered to attend. The registration deadline is 15 March 2013.

A full list of the special symposia can be found here: [www.cleoconference.org/home/science-and-innovations/special-symposia/](http://www.cleoconference.org/home/science-and-innovations/special-symposia/)

## CLEO:EXPO

From 11–13 June the CLEO will host an exhibition featuring 300 participating companies from around the world representing the laser and electro-optics industry. Within the CLEO: Expo there will be a number of interesting presentations in the frame of the Market Focus. Among these events are several panel discussions such as ‘Industrial Laser Outlook and Opportunities’ (Tuesday, 11 June 2013, 10:30 – 12:30) with speakers from Longbow Research, Newport Corporation, DirectPhotonics, and TRUMPF Inc., discussing the latest market trends in industrial laser applications.

Furthermore, CLEO:Expo features a Technology Transfer Program: It provides a forum for entrepreneurs and researchers from start-ups, major universities, businesses and national laboratories to present exciting new technologies which are ready and available for commercialization. The Program will kick off with a Tutorial for those that want to learn more about the licensing process – funding, entrepreneurship, technology transfer and intellectual property. In addition, organizations will feature their license ready technologies at tabletop displays in the exhibit hall.

The next CLEO is scheduled for 8 – 13 June 2014 and it looks as if it will remain in San Jose for the foreseeable future.

[www.cleoconference.org](http://www.cleoconference.org)

## 114. Annual Meeting of the DGaO

Braunschweig, Germany, 21–25 May, 2013

It has become a tradition that the German Society of Applied Optics DGaO convenes in the week after

Pentecost for its annual meeting. This year, the host of the meeting is the Physikalisch Technische Bundesanstalt PTB. PTB is the national metrology institute of Germany providing scientific and technical services. Metrology is the core competence of PTB and accordingly it is the first item on this year’s list of main topics at the meeting:

- Optical precision metrology
- Interferometry
- Aspheres
- Photometry/Radiometry
- Microscopy

Beside the scientific presentations networking will be a major issue of the meeting. There will be the Welcome reception on Tuesday, the annual excursion on Thursday and the festive conference dinner on Friday night which will include the Fraunhofer lecture.

For the first time, DGaO will award prizes the best doctoral thesis and the best master thesis in the field of applied optics.

## DGaO Young Scientist Award

The German Society of Applied Optics (DGaO) has created a new prize for promising young scientists from a German speaking country in the field of Applied Optics. The DGaO Young Scientist Award will be presented for the first time at the annual meeting in Braunschweig.

There will be separate awards for the best PhD dissertation and the best Master’s thesis of 2012, consisting of €1000 (PhD) and €500 (Master’s), along with a 1-year full membership of the DGaO. The winners will also be invited to the Braunschweig meeting to give a presentation of their work.

In order for a student to be considered, supervisors will need to submit the original thesis as PDF file, via the DGaO secretary ([dgao-sekretariat@dgao.de](mailto:dgao-sekretariat@dgao.de)). The supervisor will also need to submit the following:

- thesis summary (max. 2 pages)
- appraisal statement
- curriculum vitae of candidate
- list of publications, patents related to thesis (if applicable).

Submission deadline for the prize is 9 February, 2013.  
[www.dgao.de](http://www.dgao.de)