

## Community

# Conference Notes

### SPIE Photonics West 2012 (Review)

San Francisco, CA, USA, 21–26 January, 2012

With more than 20 000 attendees, 1200+ exhibitors and more than 4200 presentations, the SPIE Photonics West is certainly the biggest annual photonics event. Just to continue the impressive numbers: among the five congresses held under the roof of Photonics West, BIOS is the largest with 1800 presentations, closely followed by OPTO with 1500 papers, plenary presentations, technical events, and courses. In addition to LASE and MEMS/MOEMS, the new congress on Green Photonics is the smallest with just 50 papers.

Nevertheless, the biggest attraction of Photonics West is the exhibition. Experts from the various fields of photonics meet here for 3 days. Lasers, cameras, various optical and fibre-optical components, detectors, metrology equipment, and many other items are promoted in the exhibition. In recent years, even high-power lasers for material processing found their way to the exhibition. To promote biophotonics equipment and companies, a separate BIOS exhibition is held on the weekend before the actual Photonics West exhibition.

After a strong business year in 2011, the expectations for the 2012 exhibition were split, and a further development of the photonics market in the coming year remained unclear. However, the mood on the floors was excellent and the exhibition was sold out in advance, which is actually surprising as the show moved to San Francisco just 2 years ago because of a lack of expansion opportunities.



**Figure 1** Photonics West is the biggest annual Photonics meeting.

For the scientists, Photonics West has evolved as the premier event of various communities. First, the biophotonics community has its biggest meeting here. Biophotonics today

comprises all research related to applications of light as a diagnostic or therapeutic tool in the life sciences. The most popular session among the numerous BIOS conferences was certainly the hot topics meeting. This year's hot topics ranged from a new photovoltaically powered retina implant to lasing from single biological cells.

The other conferences have a wide range of topics, from laser source engineering, micro/nanofabrication over optoelectronic materials and devices to displays, and optical communication devices and systems. Most presenters stressed the relation of their research to industrial applications. One example might be the well-regarded plenary talk of Federico Capasso on 'Plasmonics for Beam Shaping and Wavefront Engineering', where the author showed how plasmonic effects can be used to design new optical devices such as laser diodes or mirrors with surprising capabilities.

In addition to the academic presentations, Photonics West always has a number of rather industry-related events. First, there was a large number of short courses where industry experts shared their knowledge with small groups of attendees.

Some of the plenary presentations had a strong industry bias too, such as the one from Trumpf's Peter Leibinger on 'Successful Technology Approach for Lasers in Manufacturing'. At least as interesting were the panel discussions with leading industry executives, namely 'Executive Perspectives on the World of Optics and Photonics' moderated by photonics market analyst Tom Hausken. He started an interesting discussion on the net margins in photonics (typically 7–12%) in comparison to other industries such as telecoms (5–15%) or Google (20–30%).



**Figure 2** First time seen at Photonics West: Glass art from Christopher Ries.

For those seeking a career or a change in career, the SPIE organised a special job fair in addition to the trade show on 24 and 25 January. A total of 36 companies from various fields

(optics, medical devices, aerospace, etc.) attracted several people: the floor was crowded from the beginning to the end.

Last, but not least, Photonics West is a great place for networking. Certainly, the communication on the floors of the conferences and the exhibition is very important to all visitors. Beyond that, there were many special events dedicated to this purpose either arranged by SPIE for some member groups (senior members, Fellows, women, students, and others) or by special focus groups or by local associations such as the German community. The latter has already become a tradition and with approximately 250 participants, it reached a considerable size. The 'German Evening' offered not only great drinks and finger food but also an excellent networking opportunity for those who might work just a few kilometres apart but are more likely to meet in San Francisco than in Germany.

Thus, probably, most participants look forward to the Photonics West 2013, which will take place in San Francisco, CA, from 2 to 7 February, 2013 (exhibition 5–7 February).

<http://spie.org/photonics-west.xml>

### 1st EOS Topical Meeting on Micro- and Nano-Optoelectronic Systems (Review)

Bremen, Germany, 7–9 December, 2011

The 1st EOS Topical Meeting on Micro- and Nano-Optoelectronic Systems was held from 7 to 9 December, 2011 in Bremen, Germany. The well-organised event was in the hands of the Bremen Institute for Applied Beam Technology (BIAS) and the Institute for Microsensors, -actuators and -systems (IMSAS) of the Bremen University that were represented by the chairs Professor Ralf Bergmann and Professor Walter Lang. Professor Andreas Tünnermann (FhG-IOF, Jena) gave in his plenary talk an overview on photonic markets, environmental aspects of modern optics and, as an example for next-generation micro-optical design, the first results of bio-inspired photonic systems. The topics of the conference were directed onto seven areas of photonics: (1) Micro- and nanometrology and fabrication, (2) Photonic micro- and nanosystems, (3) Microsystems, MEMS and MOEMS, (4) Plasmonics, (5) Photonic systems, (6) Photonic components, and (7) Digital holography.

In the invited papers, particular emphasis was laid on innovative themes with large application potential such as super-resolution (Osten), the combination of laser light and ultrasound (Culshaw), optofluidics (Vellekoop), MEMS (Hofmann), or plasmonics (Dorfmueller). Furthermore, aspects of integration in planar optical systems (Jahns) and optoelectronic chips (Wale, Garcia-Ortiz) were discussed.



**Figure 3** Werner Jüptner.

The objectives and the present status of the lobby-oriented European 'Photonic21' network were presented in another invited talk (Wale).

The special session on Digital Holography was dedicated to the 70th birthday of Professor Werner Jüptner who is one of the pioneers in this field. Invited contributions reported on gated digital holography in the ps range (Trollinger), submersible holographic cameras (Watson), and digital holography without a reference wave (Claas Falldorf). The participants of the meeting had the opportunity to visit laboratories in BIAS and IMSAS and were spoiled by an exciting visitors programme including a walk through historical sites of the city.

### SPIE Photonics Europe 2012 (Preview)

Brussels, Belgium, 16–20 April, 2012

Every even year Brussels hosts the European counterpart of the larger American event. With an attendance of 2150 in 2010 it was the largest photonics conference in Europe in that year, and further growth can be expected for 2012.

The congress breaks down into 18 conferences ranging from Nanophotonics or Silicon photonics to more traditional topics such as Micro-optics, Optical Modelling, and Design or Real-Time Image and Video Processing. With 159 presentations the conferences 8427 'Biophotonics: Photonic Solutions for Better Health Care' is probably the biggest one.

The proximity of the conference to the offices of the European Commission suggests a close relation to those officials and indeed, Thierry Van der Pyl, the Director of Directorate G 'Components and Systems', Information Society and Media Directorate General European Commission will present in the hot topics session on Monday morning his view on 'Photonics in horizon 2020'.

In addition to the academic presentations there will be a number of industry events. Some European projects (NARNIA, PLAISIR Project: Plasmonics in the Infrared, LovaLite-Lumerical Workshop: Advanced Opto-Electronic Simulation, from Devices to Photonic Integrated Circuits) meet here. The German glass supplier SCHOTT offers a half-day workshop on the properties of optical glass and special optical materials.

The Photonics Europe Exhibition will showcase some areas dedicated to European projects, namely:

- European Networks  
Meet Network representatives and discover more about links between groups across Europe in the field of Optics and Photonics.
- Photonics Innovation Village  
Showcasing developments from universities, nonprofit organisations, and research centres.

The 5th edition of the Photonics Innovation Village will be organised by the Vrije Universiteit Brussel. By taking part in the competition, innovative researchers will receive a complimentary 'mini-booth' in a special section of the exhibition.

The exhibition will open its doors on Monday 16 April from 15:00 to 19:10 to conference attendees only. The official

start of the exhibition will be on Tuesday 17 April at 10:00. The trade show, with approximately 50 exhibitors, will last until Wednesday 18 April 19:30.  
<http://spie.org/photonicseurope>

### 113th Annual DGaO Conference in Eindhoven (Preview)

Eindhoven, Netherlands, 29 May–2 June, 2012

The Photonics Cluster Netherlands (PCN) and the German Society of Applied Optics (DGaO) are inviting participants for the 113th Annual DGaO Conference from May 29 to June 2, 2012 in Eindhoven, Netherlands. The topics of the conference will be optics for illumination, optical lithography, electron optics, integrated optics, and camera systems.

Since its foundation in 1923 the character of DGaO is formed by both researchers from industry and from academic institutions. This is also reflected in the general assembly and scientific conference, which, over more than 50 years are occasionally also held in countries neighbouring Germany.

After Innsbruck (Austria) in 2001, Wroclaw (Poland) in 2005, and Brescia (Italy) in 2009, in 2012 DGaO invites participants to join this event at the Technical University of Eindhoven in the Netherlands. This year's partner will be the Photonics Cluster Netherlands.

Together with the Technical University of Eindhoven, Philips, ASML and a number of SMEs in the photonics domain the *spiritus loci* – 'city of the light' is created in Eindhoven.

Inspired by the location, this year's topics are: optics for illumination, optical lithography, electron optics, integrated optics, and camera systems.

For several years the scientific conference has been accompanied by a small trade show, where industry presents new optical products for scientific and industrial applications. In



**Figure 4** The motto of the Eindhoven university is: Mens agitat molem (The mind brings matter into motion).

accordance with the conference presentations this creates a perfect meeting point for the whole community.

Followed by a large festive banquet, traditionally the conference is closed by the prestigious Fraunhofer lecture, which is presented by an internationally renowned researcher.

The Conference Chair is Dr. Stefan Bäumer of Philips Lighting, LightLab, Eindhoven, Netherlands. Every accepted paper will be published in a two-page version within the online conference proceedings ([www.dgao-proceedings.de](http://www.dgao-proceedings.de)). Fees for registration before 30 March are € 200 (DGaO, DPG, PCN, and EOS members), € 250 (nonmembers), € 80 (pensioners and students).

The conference language is English. Registration may be made through the DGaO website. Details are available at [www.dgao.de/info/tagung12\\_e.php](http://www.dgao.de/info/tagung12_e.php).