

## Community

# Conference Notes

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## Review: Laser Optics 2014 (OSA Congress & tradeshow)

Berlin, Germany, March 18–20, 2014

Laser Optics has established itself as a multifaceted event on optical technology and microsystems with a trade show and a number of symposia and workshops. The whole event takes place bi-annually at the Berlin fairgrounds, close to the famous Funkturm.

The tradeshow remained, with 150 exhibitors and about 3000 visitors, at the level of 2012. Around 150 companies and research institutions from 11 countries exhibited their innovative products and services on an area covering three display halls.

### Scientific Congresses and symposia at Laser Optics

Over a period of 3 days this industry event hosted two international congresses: the OSA Optics and Photonics Congress and the Optical Sensing and Cyber-Physical Systems Congress. The big congresses were supported by a broad range of workshops, symposia and forums.

The Optical Society of America was presented to the congress by its President Elect Phillip Russell of the Max Planck Institute for the Science of Light in Erlangen (Germany). In his opening speech he mentioned that 21% of the OSA members are actually Europeans with Germany having the biggest share. The OSA congress included two topical meetings and a workshop: The High-Intensity Lasers and High Field Phenomena (HILAS), the Quantum Information and Measurement (QIM) meeting and new this year, the 1-day workshop on Optical Plasmonic Materials.

The Congress “Optical Sensors and CPS” was dedicated to experts from the industry and applied research.



Prof. Dr. Phillip Russell, President Elect of The Optical Society (OSA).

It particularly highlighted the interfaces between optical technologies and microsystems. The organizers of the congress were Fraunhofer IZM, Berlin Partner für Wirtschaft und Technologie GmbH, the Centre for Microsystem Engineering (ZEMI) and Messe Berlin. The conference program had a strong focus on industrial and scientific sensor technology ranging from Laser diodes and fiber optical systems via “Hybrid and Monolithic System Integration” to “Sensor in Production Engineering” and “Biological and Medical Sensor Systems”.

### Annual EPIC Meeting

The comprehensive supporting programme was further evidence of the international dimension of Laser Optics. Around 100 senior executives from around Europe took part in events held by the European Photonics Industry Consortium (EPIC). The European Industry Consortium’s annual conference also took place on the Berlin Exhibition Grounds. Under the supervision of the Heinrich-Hertz Institute there were workshops focusing on the latest European projects, as well as a workshop on the European PhoxTroT project.

The next LaserOptics will take place in Berlin, in March 2016. More information will be available soon at [www.laser-optics-berlin.de](http://www.laser-optics-berlin.de)

## Review: International Laser Technology Congress AKL'14

Aachen, Germany, May 7–9, 2014

From May 7 to 9, 2014 the industrial laser community met at the International Laser Technology Congress AKL'14 for the tenth time in Aachen. About 630 experts from various fields of applied laser technology attended, with a growing share of non-Germans joining the event. Beside the classical areas of micro and macro materials processing a big future trend Digital Photonic Production (DPP) was a focus of the congress. Heavy investments of about 70 million Euro were announced in Aachen to foster the development of DPP.

The congress started with three parallel tracks: The Seminar Laser Beginners ABC, the Technology Business Day and the EU Innovation forum on Laser Additive Manufacturing in Aeronautics.

### eMobility drives new wave of investment

The Technology Business Day focused on global markets for laser technology, in particular with an eye on China. There, as David Belforte reported, the government has decided to develop its own industrial and IP base for laser technology. The next speaker Bo Gu gave insights of the Chinese domestic market, where nearly 300 companies have been established in the laser field already. The whole field is still growing out of proportion, in particular fiber lasers showed +40% in 2013. Chinese companies have discovered this area, only high power devices with more than 1 kW are still imported.

Klaus Löffler, Head of international sales at Trumpf, Germany's biggest laser machine manufacturer, drafted a larger picture of the laser markets from the viewpoint of technology development. While the photovoltaic industry has largely reduced its demand for equipment, the automotive industry might well start with an entirely new investment wave driven by the growing production of new car concepts in the field of eMobility. Applications there are numerous, with a special need for the automated processing of carbon-fiber-reinforced plastic (CFRP).

### Hot topics at the main congress

The two-day main conference of the International Laser Technology Congress AKL'14 is currently Germany's most important meeting on laser material processing technologies. In three parallel tracks the AKL encompassed the latest laser manufacturing processes for the micro and macro applications – from cutting and welding via microjoining and new online process monitoring all the way to polishing and thin film processes – as well as innovative developments in the field of laser beam sources.

Ultrashort pulsed (USP) lasers were – again – a hot topic. On the side of source development the experts agreed that there is a strong need for kW-systems to succeed the difficulties of industrial CFRP processing. Several kW-UKP systems based on slab or disk technology were presented, but they still have to find their way into serial production.

Laser additive manufacturing (LAM) seems one step further than UKP processing. It was the topic of this year's Gerd Herziger Session. System providers as well as users from the automotive and aviation industry described the technology as mature, making its way now from prototyping into volume production. As an example, William Carter (GE Global Research) announced the production of 100 000 fuel nozzles for the Boeing 737 already in the coming years.

Last but not least Reinhart Poprawe, the head of the Fraunhofer Institute for Laser Technology and Professor at the RWTH Aachen, announced a huge investment program for laser technology in Aachen. A new Innovation Center Digital Photonics Production will be completed in 2015. This investment of 12 million Euro will be done in a private-public partnership with several companies. A research center DPP will be erected right besides this building for 55 million Euro. (Not) finally, the federal



Professor Poprawe presented investments of almost 100 million Euro in the research infrastructure in Aachen. (Copyright: AKL'14, Fraunhofer ILT, Aachen.).

government will sponsor an interdisciplinary research campus there with 2 million Euro per year. The funding period is 15 years. And more to come...

### **Innovation Award Laser Technology 2014**

On the evening of May 7, 2014, the Arbeitskreis Lasertechnik e.V. and the European Laser Institute ELI convened at the famous town hall in Aachen to award the 'Innovation Award Laser Technology'. The award endowed with 10,000 Euros went to a team from the Fraunhofer Fraunhofer Institute for Solar Energy Systems ISE. The team led by Ralf Preu from Freiburg won with a project on 'Laser Fired Contact (LFC) technology for the production of

highly efficient silicon solar cells'. The second prize was awarded to the team of Dr. Markus Kogel-Hollacher (Precitec) for their development of 'Penetration Depth and Topography Measurement in Laser Materials Processing using Low Coherence Interferometry'.

The International Laser Technology Congress AKL is organized by the Fraunhofer Institute for Laser Technology ILT. The European Commission, the European Photonics Industry Consortium EPIC, the Arbeitskreis Lasertechnik e.V., the European Laser Institute ELI as well as the industry associations SPECTARIS, VDA, VDMA and VDI all assist the forum as supporting organizations. The AKL'16 – International Laser Technology Congress is announced for the April 27–29, 2016.

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