

Community

News

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Reinhart Poprawe receives the Peter M. Baker Leadership Award 2017 from the LIA

The Laser institute of America (LIA) was founded in 1968, at a time when the industrial use of laser technology was just becoming an option. Ever since it has been the professional society for laser applications in material processing and for laser safety. At its 36th International Congress on Applications of Lasers and Electro-Optics ICALEO more than 320 experts were presented with a significant amount of community news.

A well-deserved award

The LIA past president, Lin Li presented the ‘Peter M. Baker Leadership Award’ to Reinhart Poprawe at the

ICALEO congress on October 25, 2017. This award rewards providing outstanding leadership, significantly enriching the laser community as well as decisively participating in the technological advancement of photonics worldwide. It was awarded for the first time in 2016 and honored the namesake of the prize himself for his special commitment in developing the structure of the LIA.

‘Reinhart is a true leader in the photonics community. His achievements on a national and international level are manifold and the award is more than deserved’, said Lin Li to this journal. Reinhart Poprawe is known as a scientific leader in the community, as an influential voice in the global laser community and not least as an impressive teacher.

After working in a management role at Thyssen Lasertechnik GmbH in Aachen, Poprawe took over the leadership of the Fraunhofer Institute for Laser Technology ILT in Aachen, Germany, in 1996. Since then he has expanded it into the largest facility for development and contract research in the field of laser technology in Europe and even worldwide.

His particular focus has been on sensibly integrating ‘Digital Photonic Production DPP’ into national and



In the LIA award session at ICALEO: President Paul Denney, awardee Reinhart Poprawe, past president Lin Li, executive director Nathaniel Quick (Copyright: Fraunhofer ILT, Aachen/ Lutz Du).

global macro trends such as ‘Industry 4.0’: the networking of the virtual world with real production processes.

At RWTH Aachen University, Germany’s biggest technical university, Poprawe served as a vice president of research, structure and for young academics. He co-founded the new RWTH Campus, a €2 billion investment on a 2.5 km² future technology research infrastructure. Within that campus he initiated the Cluster Photonics dedicated to Digital Photonic Production. The Cluster Photonics hosts more than 800 people from academia and industry already.

At the same time, Reinhart Poprawe holds the Chair for Laser Technology LLT at RWTH. The RWTH Chairs for the Technology of Optical Systems TOS, for Nonlinear Dynamics of Laser Processing NLD as well as for Digital Additive Production DAP were developed on the basis of Poprawe’s initiative. The professor’s presence in lectures and the use of new formats such as the ‘Flipped Classroom’ are a matter of course for him. It was not without reason that his students themselves often awarded him the teaching prize of the Faculty of Mechanical Engineering at RWTH Aachen University’.

Leading as a balancing act

Poprawe understands leadership as ‘creating the balance between strong individuals and their collaboration in the team so that they are enthusiastically committed to their institution’. Guiding around 800 employees at Fraunhofer ILT, the associated chairs and the Photonics Cluster at RWTH, he has developed a strategy that works.

In addition to strengthening the photonics location in Aachen, Poprawe is also focusing on a global network. His important work has been honored, among others, with the Arthur L. Schawlow Award by the LIA, whose presidency he held in 2012. He also received the honorary professorship of Tsinghua University in Beijing, China, in 2014.

(A modified version of this text has been published with *Laser Focus World* before).

Review: Photonik Tage Berlin Brandenburg 2017

The region of Berlin and the surrounding federal state of Brandenburg is home to a vivid photonics community. A strong research infrastructure with academic and non-academic institutions flourishes here together with a

large number of industrial enterprises. What they lack is an annual meeting. Now, the ‘Cluster Optik und Photonik Berlin Brandenburg’ has started a new photonics convention in Berlin Adlershof, the first of which took place on October 18 and 19, 2017.

‘Fantastic leads on the first day already! I am looking forward to the next Photonics Days!’ This quote from Olaf Meyer, Director of Business Development of Qioptiq Photonics (Excelitas Group) probably pleases the organizers of the event very much. It reflects the first impression of this new event: A small exhibition and a long list of small- and medium-sized workshops provide a good fit with the intentions of the local photonics community.

Small is beautiful

The event continues a successful tradition in this location. Started in 1996 as Laser Optics Berlin, the event reached its occupancy limits 10 years ago. In 2008, the local networks together with professional trade show giant Messe Berlin moved to the fairgrounds near the Funkturm. It failed. Even a relaunch under the name ‘Micro-photonics’ could not achieve critical size to sustain the meeting. Now the event has returned to Berlin Adlershof and re-established itself as the annual meeting of the academic and industrial photonics community in Berlin and the surrounding federal state of Brandenburg. And this time, exhibitors as well as visitors are enthusiastic about the event.

This year, 500 people visited the event, which included almost 20 different workshops and symposia. In addition, 57 companies and organizations participated in the exhibition. The topics of the workshops covered a wide spectrum, from ‘Quantum optics and secure optical data transmission’ to ‘How to do business in California’.

Local networks with global outreach

Although the event was made from and for the local community, it carried strong international ties. For instance, the workshop on Laser Material Processing featured activities in Brazil, Poland and Japan. The workshop was organized by Laserverbund Berlin-Brandenburg and the ‘Phoenix+’ initiative within the local Cluster Optik and Photonik.

When it comes to the internationalization of laser activities, the Fraunhofer Institute for Production Systems and Design Technology IPK in Berlin has an impressive record. Since 2012, an expert team from Fraunhofer IPK has developed strategies and business plans for

the implementation of institutes for applied research in Brazil. Together with the Brazilian National Service for Industrial Training (SENAI), they plan 23 institutions throughout the country. SENAI is a network of secondary level professional schools established and maintained by the Brazilian Confederation of Industry. SENAI has 744 operational units in all states of Brazil, offering more than 1800 courses.

Dr. David Domingos, Operations Manager Brazil at Fraunhofer IPK, presented the current state of the project, which is funded through to 2020. In November 2017, a new institute will open in Sao Paolo, with a starting budget of €3 million. Sao Paolo is the industrial heart of Brazil, with many major companies, including those in the aviation and automotive industry. In fact, the region hosts the largest concentration of German industry outside Europe.



Dr. David Domingos explains the global activities of Fraunhofer IPK.

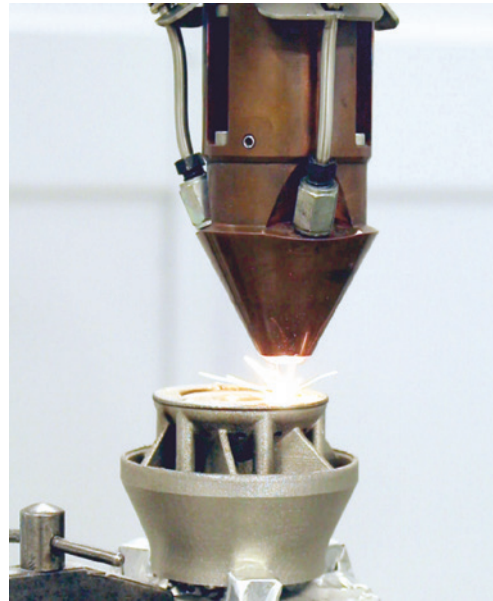
Global exchange is well funded, explained Gerrit Rössler, Clustermanager Optics and Photonics, at the local Berlin Partner für Wirtschaft und Technologie GmbH. Funding for programs on the local, federal and European level is available as a way to reach out to new partners and customers.

Finally, six candidates from Brazil, Poland and Japan presented their cooperative interests in a startup pitch. Their interests reach from the search for German partners to business support offerings in Japan.

Additive manufacturing: From prototyping to volume production

A second part of the workshop on laser material processing was devoted to additive manufacturing with lasers. Benjamin Graf from Fraunhofer IPK gave

an overview of the procedures and how they evolved from rapid prototyping to a high-volume production technology.



Laser cladding on a gas turbine burner created by laser additive manufacturing (Photo: Fraunhofer IPK).

An impressive example of the success of laser additive manufacturing comes from Siemens Power and Gas. Jan Münster, from the Berlin-based subsidiary of Siemens, illustrated very clearly how laser technology has enabled recent progress in increasing the efficiency of their large turbines.

The benefits are two-fold: On the one hand, laser additive manufacturing allows for new net shapes that were impossible to cast with conventional technologies. On the other hand, the new technology has replaced lengthy casting procedures. While the development of a new turbine blade previously took 2 years with conventional technologies, that has been reduced to 6 months with selective laser melting.

One example of the benefits of the new technology is an improved gas burner: The old version consisted of 13 parts that were connected by 18 weld seams. The new burner is made in one piece by selective laser melting. Eight of those burners are erected in parallel from one powder bed, significantly reducing manufacturing time for this part.

Jan Münster, an expert from Siemens, pointed out where he sees the current challenges: One example is the difficulty of handling more than 100 kg of fine metal powder. Furthermore, upscaling of the manufacturing processes is still difficult. Also, the introduction of new

materials is difficult as a full material characterization easily costs more than €500 000. Therefore, data exchange and cooperation is very important.

While this review provides just a short introduction to one of the many workshops offered, people were generally

very satisfied with the new event and are already planning their participation in the next Photonics Days Berlin Brandenburg on October 17 and 18, 2018.

<http://www.optik-bb.de/de/veranstaltungen/photonic-tage-berlin-brandenburg-2017>

Conference Calendar

January

SPIE Photonics West

San Francisco, CA, USA

27 January–1 February 2018

Exhibition: 30 January–1 February 2018

<http://spie.org/pw>

February

SPIE Advanced Lithography

San Jose, CA, USA

18–22 February 2018

<http://spie.org/al>

March

OFC

San Diego, CA, USA

11–15 March 2018

www.ofcconference.org

Symposium Photonischer Leichtbau

Hannover, Germany

14–15 March 2018

www.photonischer-leichtbau.de

OSA High-Brightness Sources and Light-Driven Interactions Congress

Compact (EUV & X-ray) Light Sources

High-Intensity Lasers and High-Field Phenomena (HILAS)

Mid-Infrared Coherence Sources (MICS)

Strasbourg, France

26–28 March 2018

www.osa.org/Meetings/OSA_Meetings/OSA_High-Brightness_Sources_and_Light-Driven_Inter

April

SPIE Defense + Commercial Sensing

Orlando, FL, USA

15–19 April 2018

<http://spie.org/dcs>

OSA Biophotonics Congress: Biomedical Optics

Clinical and Translational Biophotonics

Optics and the Brain

Optical Tomography and Spectroscopy

Hollywood, FL, USA

03–06 April 2018

www.osa.org/en-us/meetings/osa_meetings/osa_biophotonics_congress_biomedical_optics/

SPIE Photonics Europe

Strasbourg, France

23–26 April 2018

Exhibition: 24–25 April 2018

<http://spie.org/pe>

Photomask Japan 2018

Yokohama, Japan

18–20 April 2018

www.photomask-japan.org/

Optics and Photonics International Congress 2018

Yokohama, Japan

23–27 April 2018

<https://opicon.jp/>

SPIE Structured Light

Yokohama, Japan

24–27 April 2018

<http://spie.org/x127815.xml>

Laser Damage Pacific Rim

Yokohama, Japan

24–27 April 2018

<http://spie.org/x127239.xml>

May

AKL'18 International Laser Technology Congress

Aachen, Germany

2–4 May 2018

www.lasercongress.org

EOS Topical Meeting on Terahertz Science & Technology (TST 2018)

Berlin, Germany

6–9 May 2018

<http://www.myeos.org/events/tst2018>

CLEO

San Jose, CA, USA

13–18 May 2018

www.cleoconference.org

SPIE Optical Systems Design

Frankfurt, Germany
14–17 May 2018
<http://spie.org/x126923.xml>

SPIE Translational Biophotonics

Austin, TX, USA
14–15 May 2018
<http://spie.org/x127816.xml>

optatec

Frankfurt, Germany
15–17 May 2018
www.optatec-messe.de

June**LASYS**

Stuttgart, Germany
5–7 June 2018
www.lasys-messe.de

SLT '18–Stuttgart Laser Technology Forum

Co-located with LASYS
Stuttgart, Germany
5–7 June 2018
www.slt.uni-stuttgart.de

SPIE Astronomical Telescopes and Instrumentation

Austin, TX, USA
10–15 June 2018
<http://spie.org/astronomical-instrumentation.xml>

OSA Imaging and Applied Optics Congress

Orlando, FL, USA
25–28 June 2018
www.osa.org/Meetings/OSA_Meetings/OSA_Imaging_and_Applied_Optics_Congress

August**SPIE Optics + Photonics**

San Diego, CA, USA
19–23 August 2018
Exhibition: 21–23 August 2018
<http://spie.org/op>

September**SPIE Security + Defence**

Remote Sensing
Berlin, Germany
10–13 September 2018
Exhibition: 11–12 September 2018
<http://spie.org/sd>

SPIE Photomask Technology + EUV Lithography

Monterey, CA, USA
17–20 September 2018

Exhibition: 18–19 September 2018
<http://spie.org/x126645.xml>

FiO/LASER Science: 102nd OSA Annual Meeting

Washington, DC, USA
16–26 Sep 2018
www.frontiersinoptics.com/home/

ECOC European Conference on Optical Communications

Rome, Italy
23–27 September 2016
www.ecoc2018.org

October**European Optical Society Biennial Meeting (EOSAM) 2018**

Delft, The Netherlands
8–12 October 2018
www.myeos.org/events/eosam2018

Photonics Asia

Beijing, China
11–13 October
<http://spie.org/x127644.xml>

Photoniktage Berlin Brandenburg

Berlin
17–18 October 2018
www.optik-bb.de/de/veranstaltungen

glasstec

Düsseldorf, Germany
23–26 October 2018
www.glasstec.de

November**Advanced Solid State Lasers Conference
Laser Application Conference**

Boston, MA, USA
4–8 November 2018
www.osa.org/Meetings/Global_Calendar/Events/Advanced_Solid_State_Lasers_Conference

Optics and Photonics for Energy & the Environment

Sentosa Island, Singapore
5–8 November 2018
www.osa.org/Meetings/Global_Calendar/Events/Optics_and_Photonics_for_Energy_the_Environment

2019**SPIE Photonics West**

San Francisco, CA, USA
2–7 February 2019

Exhibition: 5–7 February 2019
<http://spie.org/pw>

SPIE Advanced Lithography

San Jose, CA, USA
19–22 February 2019

5. UKP-Workshop

Aachen, Germany
10–11 April 2019
www.ultrakurzpulslaser.de

Optical Interference Coatings

Santa Ana Pueblo, NM, USA
2–7 June 2019
www.osa.org/Meetings/Topical_Meetings/Optical_Interference_Coatings

SPIE Optifab

Rochester, NY, USA
14–17 October 2019

Advanced Solid State Lasers Conference

Vienna, Austria
29 Sep–3 Oct 2019
[www.osa.org/Meetings/Global_Calendar/Events/Advanced_Solid_State_Lasers_Conference_\(1\)](http://www.osa.org/Meetings/Global_Calendar/Events/Advanced_Solid_State_Lasers_Conference_(1))

**Frontiers in Optics: the 103rd OSA Annual Meeting and Exhibit/
Laser Science Conference**

Washington, DC, USA
13–17 October 2019
www.osa.org/Meetings/Global_Calendar/Events/Frontiers_in_Optics_the_103rd_OSA_Annual_Meeting