5TH LED professional Symposium + Expo

Trends & Technologies for Future Lighting Solutions

SEPT 22ND- 24TH 2015 | BREGENZ | AUSTRIA

Light Quality | Lighting Systems | LEDs & OLEDs | Smart Controls | Connectivity & Security
Optics & Measurement | Reliability & Lifetime | Thermal Management | Standardization & Production

- Keynotes by Royal Institute of Technology, Zumtobel, Lumileds
- OLED Workshop, LG Chem
- Automotive Lighting Workshop, EPIC
- Smart Controls Innovation Workshop, Luger Research
- Luminary Design Demonstration and Award, SSC and University of Applied Science Munich
- Scientific Award
- Premium Expo with Top 7 Global LED Manufacturers
- Design meets Technology Day for Designers & Architects

www.lps2015.com

Organized by Luger Research e.U.
LED professional Symposium + Expo 2015

The LpS 2015 is Europe’s foremost solid-state lighting technology event for experts in industry, entrepreneurs, engineers, technicians and scientific researchers in the fields of general, industrial and architectural lighting.

The event covers the building blocks for smart lighting designs of luminaires, lamps, controls, modules and components. It focuses on trends and technologies for future lighting solutions incorporating human centric lighting, Internet of Things, connected lighting and smart controls. The combination of a three-day multi-disciplinary symposium, workshops, international exhibition and networking possibilities is a perfect platform to explore sophisticated semiconductor lighting.

KEYNOTE SPEAKERS

Prof. Zary Segall
Royal Institute of Technology, Sweden

Rogier van der Heide
Senior Vice President & Chief Design and Marketing Officer, Zumtobel Group

Jy Bhardwaj
CTO & Senior Vice President R&D, Lumileds

TECHNICAL SESSIONS

- Light Quality
- Lighting Systems
- LEDs & OLEDs
- Smart Controls
- Connectivity & Security
- Optics & Measurement
- Reliability & Lifetime
- Thermal Management
- Standardization & Production

WORKSHOPS

- OLEDs
- Light Measurement
- Light Mixing
- Optics
- Smart Controls
- Thermal Management
- Automotive Lighting

PROGRAM HIGHLIGHTS

- Exclusive ‘Design meets Technology Day’ for lighting designers, architects and planners.
- Smart Control Innovation workshop for concept creation
- OLED workshop and module demonstrations by LG Chem
- Automotive workshop organized by the European Photonics Industry Consortium (EPIQ)
- ‘Luminary Design Prize’ future SSL system demonstrators (Seoul Semiconductors and Univ. of Appl. Sci Munich)
KEY EVENT FIGURES

- 1500+ visitors expected
- 100+ exhibitors
- 60+ technical presentations

NETWORKING

- Technical Poster Session
- Get-Together Event: Boat Trip on Lake Constance
- Oktoberfest

EXHIBITORS

Manufacturers of LED components, modules, light sensors, controllers, optics, test equipment, thermal management and more! Including top 7 global LED manufacturers.

TARGET GROUPS

- Executives
- Technical Directors
- Researchers & Developers
- Technical Purchasers
- Lighting System Architects
- IP Managers & Personnel
- Technical Application Engineers
- Technical Consultants
- Software Engineers
- Students of Engineering Subjects

REGISTRATION

- Event-information: www.lps2015.com
- Registration: www.lps2015.com/registration

Early Bird Rates until June 30th, 2015

VENUE

Festspielhaus Bregenz
Platz der Wiener Symphoniker 1
6900 Bregenz | AUSTRIA
www.kongresskultur.com

ORGANIZER

Luger Research e.U.
Moosmahdstrasse 30
6850 Dornbirn, Austria
P +43 5572 394489
F +43 5572 206070
E info@lps2015.com
## EVENT OVERVIEW

### DAY 1  
**SEPT. 22ND TUESDAY**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>10.00</td>
<td>Opening &amp; Scientific Award Ceremony</td>
<td>Grosser Saal</td>
</tr>
<tr>
<td>10.30</td>
<td>Keynotes</td>
<td>Grosser Saal</td>
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</tbody>
</table>

**Parallel Sessions**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>13.30</td>
<td>Light Quality</td>
<td>Seestudio</td>
</tr>
<tr>
<td>13.30</td>
<td>Connectivity &amp; Security</td>
<td>Seefoyer</td>
</tr>
<tr>
<td>16.30</td>
<td>Reliability &amp; Lifetime</td>
<td>Seefoyer</td>
</tr>
<tr>
<td>13.30</td>
<td>Standardization</td>
<td>Propter Homines</td>
</tr>
<tr>
<td>16.30</td>
<td>Workshop Light Measurement</td>
<td>Propter Homines</td>
</tr>
<tr>
<td>10.00</td>
<td>Design meets Technology Day</td>
<td>Grosser Saal, Foyer &amp; Expo</td>
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**Evening Events**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>18.00</td>
<td>Poster Session</td>
<td>Foyer</td>
</tr>
<tr>
<td>18.00</td>
<td>Exhibition Reception &amp; Oktoberfest</td>
<td>Werkstattbühne &amp; Seitenbühnen</td>
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### DAY 2  
**SEPT. 23RD WEDNESDAY**

**Parallel Sessions**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Location</th>
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<tbody>
<tr>
<td>08.30</td>
<td>Light Sources</td>
<td>Seestudio</td>
</tr>
<tr>
<td>08.30</td>
<td>Smart Controls &amp; Drivers</td>
<td>Seefoyer</td>
</tr>
<tr>
<td>08.30</td>
<td>Thermal Management</td>
<td>Propter Homines</td>
</tr>
<tr>
<td>13.30</td>
<td>Optics</td>
<td>Propter Homines</td>
</tr>
<tr>
<td>16.30</td>
<td>Workshop OLEDs</td>
<td>Saal Bodensee</td>
</tr>
<tr>
<td>16.30</td>
<td>Workshop Optics</td>
<td>Saal Bodensee</td>
</tr>
<tr>
<td>16.30</td>
<td>Workshop Thermal Management</td>
<td>Saal Bodensee</td>
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</tbody>
</table>

**Evening Events**

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>17.00</td>
<td>Press Conference</td>
<td>Parkstudio</td>
</tr>
<tr>
<td>18.30</td>
<td>Get-Together Event</td>
<td>Boat Trip on Lake Constance</td>
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### DAY 3  
**SEPT. 24TH THURSDAY**

**Parallel Sessions**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tbody>
<tr>
<td>09.00</td>
<td>Lighting Systems</td>
<td>Seestudio</td>
</tr>
<tr>
<td>09.00</td>
<td>Optics</td>
<td>Propter Homines</td>
</tr>
<tr>
<td>09.00</td>
<td>Measurement and Production</td>
<td>Seefoyer</td>
</tr>
<tr>
<td>11.30</td>
<td>Workshop Smart Controls</td>
<td>Propter Homines</td>
</tr>
<tr>
<td>11.30</td>
<td>Workshop Light Mixing</td>
<td>Seestudio</td>
</tr>
<tr>
<td>09.00</td>
<td>Workshop Automotive Lighting</td>
<td>Saal Bodensee</td>
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**Plenum Sessions**

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<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tbody>
<tr>
<td>13.30</td>
<td>Tech-Panel: Key Trends &amp; Technologies</td>
<td>Seestudio</td>
</tr>
<tr>
<td>14.30</td>
<td>Closing</td>
<td>Seestudio</td>
</tr>
<tr>
<td>Time</td>
<td>Opening, Keynotes &amp; Light Quality</td>
<td>Connectivity, Security, Reliability &amp; Lifetime</td>
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<tr>
<td>10.00</td>
<td>Opening &amp; Scientific Award Ceremony</td>
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<tr>
<td>10.30</td>
<td>KEYNOTE</td>
<td>Grosser Saal</td>
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<tr>
<td></td>
<td>Prof. Zary Segall, Royal Institute of Technology, Sweden</td>
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<tr>
<td>11.00</td>
<td>KEYNOTE</td>
<td>Grosser Saal</td>
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<tr>
<td></td>
<td>Rogier van der Heide, Chief Design &amp; Marketing Officer at Zumtobel Group, Austria</td>
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<tr>
<td>11.30</td>
<td>KEYNOTE</td>
<td>Grosser Saal</td>
</tr>
<tr>
<td></td>
<td>Dr. Jy Brahmkaj, CTO at Lumileds, USA</td>
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**BREAK**

<table>
<thead>
<tr>
<th>Time</th>
<th>LIGHT QUALITY</th>
<th>Seestudio</th>
<th>CONNECTIVITY &amp; SECURITY</th>
<th>Seefoyer</th>
<th>STANDARDIZATION</th>
<th>Propter Homines</th>
<th>DMT Day</th>
<th>Foyer, Expo</th>
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<tbody>
<tr>
<td>13.30</td>
<td>Human Centric Lighting - What We Know and What is Needed</td>
<td></td>
<td>Why We Need Smarter Smart Lighting</td>
<td></td>
<td>Zhaga Standardization of LED Light Engines, Modules and Drivers Helps to Simplify LED Luminaire Design</td>
<td>Steve Roberts, CTO at Recom, Austria</td>
<td></td>
<td>Exhibition Walkthrough</td>
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<tr>
<td></td>
<td>Di Peter Dehoff, Zumtobel Group &amp; LightingEurope, Austria, The Netherlands</td>
<td></td>
<td>Dr. Walter Werner, CEO at Werner Mgt. Consulting, Austria</td>
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<td>Musa Umeharpa, Secretary General at Zhaga Consortium, The Netherlands</td>
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<td>Exhibition Walkthrough</td>
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<tr>
<td>14.00</td>
<td>CIE Test Method for LED Lamps, LED Luminaires and LED Modules</td>
<td></td>
<td>Lighting Systems and Cyber Security</td>
<td></td>
<td>An Introduction to DALI 2</td>
<td>Steve Roberts, CTO at Recom, Austria</td>
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<td>Exhibition Walkthrough</td>
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<tr>
<td></td>
<td>Dr. Peter Blandner, Head of Optics Laboratory at METAS, Switzerland</td>
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<td>Ken Modeste, Principal Engineer at Underwriter Laboratories (UL), USA</td>
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<td>Exhibition Walkthrough</td>
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<tr>
<td>14.30</td>
<td>Concepts of Intelligent Lighting and LED Luminaires Taking Color Quality and Human Centric Lighting into Account</td>
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<td>Intelligent Methods to Secure Connected Lighting and Smart City Installations</td>
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<td></td>
<td>Steve Roberts, CTO at Recom, Austria</td>
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<td>Exhibition Walkthrough</td>
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<tr>
<td></td>
<td>Prof. Tran Quoc Khanh, TU Darmstadt, Germany</td>
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<td>Dr. Geoff Archenhold, Serenity Lighting, UK</td>
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<td>Exhibition Walkthrough</td>
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<tr>
<td>15.00</td>
<td>The Degrees of Freedom Provided by Modern Methods to Tune CCT and LED Wavelengths</td>
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<td></td>
<td>Challenges and Solutions of Photobiological Safety Assessment for Lighting Products</td>
<td>Prof. Jangpan, CEO at Everfine, China</td>
<td></td>
<td>Exhibition Walkthrough</td>
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<td>Wojtek Cieplik, LEDengin</td>
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<td>Exhibition Walkthrough</td>
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<th>Time</th>
<th>LIGHT QUALITY</th>
<th>Seestudio</th>
<th>RELIABILITY &amp; LIFETIME</th>
<th>Seefoyer</th>
<th>Propter Homines</th>
<th>DMT Day</th>
<th>Expo</th>
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<tbody>
<tr>
<td>16.30</td>
<td>Quality of LED Lamps for Residential in European Market and Associated Health Issues</td>
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<td>Reliability of High Power LEDs: From Gradual to Catastrophic Failure</td>
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<td>Luminary Design Prize</td>
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<td></td>
<td>Prof. Georges Zissis, Toulouse 3 University, France</td>
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<td>Prof. Matteo Manegreni, University of Padua, Italy</td>
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<tr>
<td>17.00</td>
<td>SSL Solutions for Human Centric Lighting</td>
<td></td>
<td>LED Tunnel Lamp - A Reality Check: 50,000 Hours Field Data and Lifet ime</td>
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<td>Exhibition</td>
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<td></td>
<td>Dr. Nicola Trivellin, LightCube, Italy</td>
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<td>Alexander Wim, SSL Expert, OSRAM Opto Semiconductors, Germany</td>
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<td>17.30</td>
<td>Sky Luminance and Radiance Distribution Patterns: Empirical Assessment and Computational Models</td>
<td></td>
<td>Statistical Analysis and Prediction of LED Lifetimes</td>
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<td>Exhibition</td>
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<td></td>
<td>Prof. Adeshir Mahdavi, Technical University Vienna, Austria</td>
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<td>Dr. Wolfgang Scheuerpflug, Diehl Aerospace, Germany</td>
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<th>Werkstattbühne &amp; Seitenbühnen</th>
<th>Foyer</th>
<th>Werkstattbühne &amp; Seitenbühnen</th>
<th>DMT Day</th>
<th>Expo</th>
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<tbody>
<tr>
<td>18.00</td>
<td>OKTOBERFEST</td>
<td>POSTER SESSION</td>
<td>EXHIBITION RECEPTION</td>
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<td>20.00</td>
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## DAY 2 - SEPTEMBER 23RD - WEDNESDAY

<table>
<thead>
<tr>
<th>Time</th>
<th>LED &amp; OLED Light Sources</th>
<th>Smart Controls, Drivers &amp; Optics</th>
<th>Thermal Management &amp; Optics</th>
</tr>
</thead>
</table>
| 08.30  | **LIGHT SOURCES | Seestudio**  
Solid-State Light Products Design Breakthrough  
Mauro Corella, Field Application Engineer; Cree, Italy | **SMART CONTROLS & DRIVERS | Seefoyer**  
Energy and Light Quality Results of EnLight Lighting Solutions Applied to a Hospitality Environment  
Dr. Herbert Weiß, Project Manager Corp. Technology at OSRAM, Germany | **THERMAL MANAGEMENT | Propter Homines**  
The Effect of Dynamic Thermal Management for Smart Controlled Solid State Lighting Systems  
Dr. Mehmet Arık, Ozyeğin University, Turkey |
| 09.00  | **LIGHT SOURCES | Seestudio**  
Progress in Single Crystal Luminophores for High Power LEDs and LDs  
Dr. Jan Kubat, Head of Materials and Precision Optics at Crytur, Czech Republic | **SMART CONTROLS & DRIVERS | Seefoyer**  
Human-Focused Outdoor Illumination: A Trade-off Between Pleasing Color and Circadian Action  
Dr. Franciscus Vitta, Vrije University, Utreca | **THERMAL MANAGEMENT | Propter Homines**  
A Case Study: Opto-Thermal Modelling of a Mid-Power LED  
Dr. V.D. Hildenbrand, Researcher at Philips Lighting Solutions, The Netherlands |
| 09.30  | **LIGHT SOURCES | Seestudio**  
An Iterative Optical and Thermal Simulation Method for Proper Simulations of Phosphor Converted LEDs  
Dr. Wolfgang Niemitz, Researcher at Joanneum Research, Austria | **SMART CONTROLS & DRIVERS | Seefoyer**  
A New Software Approach/Architecture for Scalable Distributed Lighting Control  
Prof. Peter Niebert, CTO LED’s CHAT, France | **THERMAL MANAGEMENT | Propter Homines**  
Reliability of Interconnects in LED Lighting Assemblies Utilizing Metal Clad Printed Circuit Boards  
Justin Kolke, Principal Engineer at The Bergquist Company, USA |

**BREAK**

| Time   | LED Lighting for Visual Merchandising  
Dr. Daniel Dorsze, Deputy Managing Director of Nichia Europe, Germany | Wireless Mesh Networks Demystification  
Vladimir Sicic, CEO at MIKORDSIC, Czech Republic | Thermal Impedance Analysis of LED Modules  
Dr. Stefan Treffinger, Material Center Leibniz, Austria |
|--------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 11.30  | **LIGHT SOURCES | Seestudio**  
Trends in SMD LED Packages for General Lighting  
Dr. Christopher Kausch, Everlight Electronics, Germany | **SMART CONTROLS & DRIVERS | Seefoyer**  
Quality Characteristics of LED Power Supplies and Drivers  
Dr. Stephan Wegstein, CEO at sysLED, Germany | **THERMAL MANAGEMENT | Propter Homines**  
Nanoceramic Substrates for Thermal Management of High Brightness LEDs  
Dr. Giles Humphston, RAE at Cambridge Nanotherm, UK |
| 12.00  | **LIGHT SOURCES | Seestudio**  
Leveraging Chip Scale Package Technology to Deliver a Robust and Future-Proof Platform  
Ingolf Sisscha, Technical Solution Manager at Lumileds, Germany | **SMART CONTROLS & DRIVERS | Seefoyer**  
Reliable and Cost Effective LED Drivers Improving Perception Artefacts and Grid Compatibility  
Prof. Eberhard Waffenschmidt, Cologne University, Germany | **THERMAL MANAGEMENT | Propter Homines**  
Advantages of Using Thermally Conductive Polymers for Heat Sinks  
Dr. Klaus S. Reinartz, Marketing Manager at Bayer Material Science, Germany |

**BREAK**

| Time   | Luminous Glasses and Glass Ceramics for White Light Emitting Diodes  
Dr. Frantiska Staudek, Research at Fraunhofer, Germany | **SMART CONTROLS & DRIVERS | Seefoyer**  
Advantages and Challenges of Modern Software Based Digital SMPS LED Drivers  
Mikael Pettersson, R&D Manager at SwitchTech, Sweden | **OPTICS | Propter Homines**  
Why Moldable Silicone is Driving Innovation in Engineering of LED Optics for Professional Lighting?  
Dr. Francesca De Buij, Dow Corning, Belgium |
|--------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 14.00  | **LIGHT SOURCES | Seestudio**  
Spectrally Tuneable SSL Solutions and Applications  
Dr. Josep Camarasa, Head of the Lighting Group at IREC, Spain | **SMART CONTROLS & DRIVERS | Seefoyer**  
How to Combine Smart Lighting with a Driverless, AC-Driven Solution  
Lorenz Bauer, Field Application Engineer at Seoul Semiconductors GmbH | **OPTICS | Propter Homines**  
Sensitivity of the Optical Performance of LED Illumination Systems to Manufacturing Tolerances  
Dr. Christian Pallick, Engineer at Auer Lighting, Germany |
| 14.30  | **LIGHT SOURCES | Seestudio**  
Human Centric Lighting: The Future of the Lighting Industry  
Prof. Guenther Leising, Lumitech, Austria | **SMART CONTROLS & DRIVERS | Seefoyer**  
PFC Flyback with Software Controlled Digital Driver  
Ulrich vom Bauer, Infineon, Germany | **OPTICS | Propter Homines**  
Styrenics for LED lighting – How Specialty Styrenics Open New Possibilities in LED Lighting  
Dr. Eike Johnke, Technical Product Manager at Styrenics, Germany |
| 15.00  | **LIGHT SOURCES | Seestudio**  
What is the Future of OLED for Lighting?  
Pars Mulik, Analyst at Yole Development, France | **SMART CONTROLS & DRIVERS | Seefoyer**  
| | **OPTICS | Propter Homines**  
Thin-Film Light Management System for Intelligent Large-Area LED Luminaires  
Dr. Oscar Fernandez, Researcher at Philips Lighting Solutions, Spain |

**BREAK**

| Time   | Saa Bodensee  
WORKSHOP  
OLEDs  
by LG Chem, Korea | Saa Bodensee  
WORKSHOP  
OPTICS  
by Lambda Research, USA | Propter Homines  
WORKSHOP  
THERMAL MANAGEMENT  
by ams, Germany |
|--------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 16.30  | **PRESS-CONFERENCE**  
Boat trip on Lake Constance | **GET TOGETHER EVENING**  
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<thead>
<tr>
<th>Time</th>
<th>Lighting Systems, Light Mixing &amp; Tech-Panel</th>
<th>Measurement &amp; Production</th>
<th>Optics &amp; Smart Controls</th>
<th>Automotive Lighting</th>
</tr>
</thead>
</table>
| 09.00 | **LIGHTING SYSTEMS | Seestudio**  
The Paradigm Shift of Residential Lighting from Retrofit Lamps to Fully Integrated Fixtures  
Jeremy Ludyjan, Director of Innovation at Bulbrite Industries, USA | **MEASUREMENT & PRODUCTION | Seefoyer**  
New Standards for the Photometry of LED Based Light Sources – A Challenge for the Laboratories  
Dr. Udo Kroeger, Head of Photometry, TechnoTeam, Germany | **OPTICS | Propter Homines**  
Better Light Through Optical Design for Manufacturing  
Dr. Angelika Hofmann, Optical Design Manager at kdg Opticomp, Austria | Saal Bodensee  
**WORKSHOP AUTOMOTIVE LIGHTING** by EPIC |
| 09.30 | **LIGHTING SYSTEMS | Seestudio**  
Six-Channel LED-Luminaire for Retail Lighting  
Prof. Meike Barfuss, FH Suedwestfalen, Germany | **MEASUREMENT & PRODUCTION | Seefoyer**  
How to Guarantee 1-Step MacAdam Ellipse Color Bins for LEDs in General Lighting  
Dr. Matthias Hoeh, Product Manager at Instrument Systems, Germany | **OPTICS | Propter Homines**  
Diffusion Panels - The Way Out of the Glaring Inhomogeneous LED Misery  
Dr. Dieker Henning, R&D Designer at VS Lighting, Germany | Saal Bodensee  
**WORKSHOP AUTOMOTIVE LIGHTING** by EPIC |
| 10.00 | **LIGHTING SYSTEMS | Seestudio**  
High-Temperature Reliability of Retrofit LED Bulbs  
Dr. Matteo Dal Lago, Researcher at LightCube, Italy | **MEASUREMENT & PRODUCTION | Seefoyer**  
Adhesive Developments for Low Cost Flip-Chip and High Precision Bonding in LED Lighting Applications  
Andreas Kraft, Business Development Manager at DELO, Germany | **OPTICS | Propter Homines**  
24/7 Custom Optics: Improved Capabilities Increase Manufacturing Speed and Flexibility Significantly  
Bram Mueleblok, LUXeXceL, The Netherlands | Saal Bodensee  
**WORKSHOP AUTOMOTIVE LIGHTING** by EPIC |
| 11.30 | Seestudio  
**WORKSHOP LIGHT MIXING**  
by LightCube & University of Padua, Italy | **MEASUREMENT & PRODUCTION | Seefoyer**  
New High Speed Assembly Technology “Reel to Reel Flip Chip LED”  
Franz Brandl, Head of R&D at Mühlbauer, Germany | **OPTICS | Propter Homines**  
**WORKSHOP SMART CONTROLS** by Luger Research, Austria | Saal Bodensee  
**WORKSHOP AUTOMOTIVE LIGHTING** by EPIC |
| 12.00 | Seestudio  
**WORKSHOP LIGHT MIXING**  
by LightCube & University of Padua, Italy | **MEASUREMENT & PRODUCTION | Seefoyer**  
Adhesive Developments for Low Cost Flip-Chip and High Precision Bonding in LED Lighting Applications  
Andreas Kraft, Business Development Manager at DELO, Germany | **OPTICS | Propter Homines**  
**WORKSHOP SMART CONTROLS** by Luger Research, Austria | Saal Bodensee  
**WORKSHOP AUTOMOTIVE LIGHTING** by EPIC |
| 13.30 | Seestudio  
**TECH PANEL**  
KEY TRENDS & TECHNOLOGIES | | | |
| 14.30 | | | | **CLOSING** |