Intelligent Interior Lighting

Hear about the latest developments for both interior lighting and display systems:
- Retain competitive and advanced market share by implementing intelligent lighting in the interior
- Achieve advanced development and functionality by implementing OLED within dashboard lighting
- Learn about lighting design in aircraft and how it is applicable to other industry sectors
- Analyse how mechatronics are contributing to future lighting concepts
- Optimize control systems for interior automotive application
- Discuss brightness, lifetime, aging and colour behaviour of white LED and the trend towards warm-white LED
- Enhance design by establishing three-dimensional Formable Electroluminescent Lamps

World-Class speaker panel includes:
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- DaimlerChrysler AG, Germany
- Volkswagen AG, Germany
- Delphi Deutschland GmbH, Germany
- SCHOTT AG, Germany
- Rogers Corporation, Durel Division, USA
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- Bayer MaterialScience AG, Germany
- Fraunhofer IZM, Germany
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- University of Paderborn, L-LAB, Germany
- Technical University of Braunschweig, Germany
- Tridonic Optoelectronics GmbH, Austria
- Genthe-X-Coatings GmbH, Germany
- LichtVision GmbH, Germany
- CS Electronic GmbH, Germany
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- Siemens AG Transportation Systems Trains, Germany
- ALSTOM Marine – Chantiers de l’Atlantique, France
- RTIDisplay Corporation, Taiwan

Case Study Highlight: Lighting on board Queen Mary 2 Liner
- Xavier Delannoy and Marc Lizee, ALSTOM Marine – Chantiers de l’Atlantique, France

Interactive Workshops: 27th September 2004
- Ambience Lighting - A Challenge for Designers and Technicians
- Performance coatings for value-added products in the automotive interior
- Organic LED: Science and applications - challenges and opportunities
- Thermal management in LED technology

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Monday, 27th September 2004
Interactive Workshops

9:30 - 13:00

A  Ambience Lighting – A Challenge for Designers and Technicians

Content: Ambient lighting has gained a strong interest in many industrial branches during the last years. Especially in the automotive industry new applications and designs are often discussed to support the driver and the passengers in search of special functions. But also the emotional impression in the car interior is becoming increasingly important. Besides the automotive applications many other industries see a growing demand for light as functional part of the design. Applications can be seen in the IT industry as well as furniture, clothing or accessories.

To fulfill the designer’s demands in all the different applications, several technologies have been developed. These technologies comprise LED with light guides as well as two and three dimensional electroluminescent lamps.

The target of the workshop will be a common understanding for the demands and the applicable technologies which are necessary to fulfill the requirements of the future.

Dr. Klaus S. Reinitz, New Business - Industry Innovation, Bayer MaterialScience AG

9:30 - 13:00

B  Performance Coatings for Value-added products in the Automotive Interior

Content:
- Fundamentals of nanotechnological sol-gel coatings
- Manufacturing experience
- Case study: Anti scratch and UV protection
- Case study: Easy-to-Clean and antifingerprint coatings
- Case study: Tinted coatings
- Case study: Antifog coatings

Dr. Torsten Schmidt, CEO Gérard Moog, Sales Manager Automotive, Genthe-X-Coatings GmbH

14:30 - 18:00

C  Organic LEDs: Science and Applications – Challenges and Opportunities

Content: OLED is the must-have for innovative lighting systems. This workshop will provide you with the essential knowledge about science, features and applications of organic LED. Starting with a short introduction covering the basics of OLED technology, it will guide you deep into the latest research and development results. Comparing OLED with competing technologies will help you find out how using OLED could be profitable for you. Last but not least it will demonstrate possible application fields and give an overview about the OLED-market and future opportunities.

Dr. Thomas Dübler, Product Manager, Business Development Div. Luminescence Technology
Alexander Biebel, Product Manager, Business Development Div. Luminescence Technology, SCHOTT AG

14:30 - 18:00

D  Thermal Management in LED technology

Content: Thermal management for High-Power-LED

A. Theoretical Aspects
- How does a LED work?
- Power dissipation of LED
- Mechanism of power dissipation
- Thermal impedance
- Efficiency of power
- PCB technologies for thermal management
- Assembly technologies and their impact on thermal management

B. Laboratory Course
- Calculation of heat-flow
- Assembly of various LED to various circuit constructions
- Measurement of temperature and brightness
- Comparison between theory and practice
- Conclusions
- Discussion about participant’s applications

Kai-Uwe Steffens, DV / CIO and Project Management
Jutta Kemkes, Technical Manager, CS Electronic GmbH

Tuesday, 28th September 2004
Congress Day One

8:30  Registration and Coffee
9:00  Chairman’s Welcome and Opening Address
Dr. Wolfgang Müller, Product Manager Lighting and Innovation, Johnson Controls GmbH

9:15  Intelligent reflectors in the automotive interior
- Requirements for micro-mechatronics systems within the automobile
- Demand for intelligent reflectors
- Pixel application in headlights, e.x. BMW
- Further possible interior lighting applications for intelligent reflectors

Dr. Frank Ansorge, Head of Mikro-Mechatronik Zentrum, Fraunhofer IZM

9:55  Lighting design in the automobile interior
- Light as function
- Light as stimulation
- Light as staging

Joern Petersen, Head of MMI Interieur Design, DaimlerChrysler AG

10:35  Refreshment Break and Networking
11:05  Next generation: OLED displays for automotive display and lighting
- OLED self-emitting characteristics for display and lighting
- Future OLED technology for display and lighting applications
- Existing OLED products and technology available for automotive

Dr. Yih Chang, General Manager, RiTdisplay Corporation

11:45  Innovative lighting application within railways
- Interior lighting requirements
- Design and regulations
- Innovation and reliability
- Comfort and costs

Dipl.-Ing. Wolfgang Weber-Hampel, Group Leader Construction, Siemens AG Transportation Systems Trains

12:25  Networking Lunch
13:55  Aircraft cabin lighting and design – from functionality to emotion
- Cabin lighting 1970 - 2004
- Customer’s desires today
- Parameters for lighting design in aircraft
- Examples for applications in aircraft

Carsten Kohlmeier-Beckmann, Head of Lighting Systems Development, AIRBUS Deutschland GmbH

14:35  Modern interior aircraft lighting - a balancing act between wish and feasibility
- Trends within cabin lighting
- Coloured lighting and its impact on mankind
- Technological overview
- Possibilities and limits of LED technology
- Best practice examples

Dr. Wolfgang Helbach, CEO, Diehl Luftfahrt Elektronik GmbH

15:15  Refreshment Break and Networking
15:45 Lighting on board Queen Mary 2 Liner
• Cruise vessel lighting issues versus plane, train and car lighting issues
• Connection and remote control of 40 000 lights with different types of sources
• LED and FO use
• Solutions to control more than 1000 lighting circuits
• How LED and FO may contribute to public spaces and cabin ambience: Project International know-how
• External lighting - light QM2 as a building
  
Xavier Delannoy, Project Manager, Communication and Electrical Systems Department
Marc Lizée, Design Engineer
ALSTOM Marine - Chantiers de l'Atlantique

16:25 Lux quo vadis?
Special guests:
Gustav Hofmann, Head of Interface Design
Volkswagen AG
Lutz Gelbert, Head of Design Centre BT Germany, MNL/ESI, Bombardier Transportation GmbH

17:00 Chairman’s closing remarks

Wednesday, 29th September 2004 Congress Day Two

8:15 Registration and Coffee
8:45 Chairman’s Welcome and Opening Address
Dr. Wolfgang Müller, Product Manager Lighting and Innovation, Johnson Controls GmbH

9:00 Control systems for interior automotive application: and the significance for ambience and functional lighting
• Transfer from interior building applications (project examples)
• State-of-the-art lighting control functions in interior building applications
• Current trends in industrial standards (DALI)
• The importance of easy user interfaces for increased functionality in lighting controls
• Impact on ambient and functional lighting by lighting control

Dr. Thomas Knoop, Head Industrial Consulting and Development, LichtVision GmbH; Consortium DALI

9:40 Human Centric Lighting: What mechatronics contributes to future lighting concepts
• Requirements and weaknesses of present lighting systems
• A systems theory approach to active lighting
• Sensors and (micro-)processors for task identification
• Target functions for light distribution
• System architectures for active lighting

Professor Dr.-Ing. Jörg Wallaschek, Director of the Mechatronics and Dynamics Group, Heinz Nixdorf Institute, University of Paderborn
CEO, L-LAB

10:20 Refreshment Break and Networking

11:00 LED - Application in the Automobile interior
• Information and ambient illumination effects
• Cabling aspects for interior illumination
• Potential application of LED interior illumination
• New technologies as OLED, El-foil
• Production technology for illumination systems

Dipl. Ing. Reinhard Felgenhauer, Supervisor Delphi Deutschland GmbH

11:40 LED-Systems for automotive applications – New concepts become reality
• Requirements for exterior and interior applications
• Future packaging: LED-components and chip on board solution
• Thermal management
• Options
Dr. Christian Hochfilzer, Leader business unit Industrial and Transportation, Tridonic Optoelectronics GmbH

12:20 Thermal management for High-Power-LEDs
• Power dissipation of LED
• Solutions:
  - Metal-Clad-PCB, various constructions
  - Additional aspects: Peltier-Element, Fans, Liquid cooling
• Design recommendations: Cost-driving aspects
• Advantages: Brightness, Reliability
Kai-Uwe Steffens, DV/CIO and Project Management
Jutta Kemkes, Technical Manager, CS Electronic GmbH

13:00 Networking Lunch

14:00 Three-dimensional Formable Electroluminescent Lamps for new applications in interior automotive lighting
• Electroluminescence for ambient lighting
• Three-dimensional formability of EL systems
• Savings of weight and space
Dr. Klaus S. Reinartz, New Business - Industry Innovation, Bayer MaterialScience AG

14:40 Refresher Break and Networking

15:00 Organic LED for lighting applications
• Principle of operation, materials, devices structure
• Function and benefits of OLED for lighting and signage applications
• Key performance parameters - current status and future progress
• Comparison with requirements for interior automotive lighting
Dr. Thomas Däubler, Product Manager, Business Development Div. Luminescence Technology
SCHOTT AG

15:20 Organic Electroluminescence for display and lighting systems
• OLED principles and performance rating
• Top-emitter OLED
• Plain and structured OLED
• Production aspects and requirements
Prof. Dr.-Ing. Wolfgang Kowalsky, Head of the Institute for High-Frequency Technology
Thomas Dobbertin, Scientific Assistant
Michael Kröger, Scientific Assistant
Technical University of Braunschweig

16:20 Solutions:
• Power dissipation of LED
• Thermal management
• Options

Dr. Christian Hochfilzer, Leader business unit Industrial and Transportation, Tridonic Optoelectronics GmbH

17:00 Chairman’s closing remarks and close of congress

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