Tue, 13 December 2022
Weekly Newsletter

DVN
Lighting & ADAS

NEWSLETTER #781

Editorial

Plan Ahead: DVN Paris Workshop, 2023 DVN Reports

The DVN Paris Workshop and gala 15th 'DVNiversary' will be on 31st January and 1st February at the Hyatt Regency Paris Étoile hotel.Take a look at the updated agenda in today's edition of the DVNewsletter, and you'll find:

- 4 keynotes from Valeo's president; an Audi lighting engineer; a Bentley designer, and TU-Darmstadt's Professor Khanh
- 10 automaker lectures from Audi; Bentley; Jaguar Land Rover; Mercedes-Benz; Porsche; Renault; Rivian; SEAT; Stellantis, and Volvo
- 25 presentations by tier-1 and -2 lighting suppliers and regulators
- A panel discussion to talk over "Light is the new chrome – what is the new front end?"
- An Award ceremony for DVN's 15th anniversary, to congratulate those who have helped the lighting community to field so many innovations. Among the awards given will be DVN's Personality of the Decade plaudit.

It's sure to be a don't-miss event, so:
exhibitors, book one of the last two booths still available!
attendees, register and reserve a room at the present attractive price!
Find all the information you need to join in **here** on the DVN website.

Very important: we are working on the 2023 docket of monthly reports. Here is a first proposal; please look it over and **share your thoughts** with us. We are here for you, the DVN community, so we are open to changing, adding, or deleting reports.

January	Technologies presented at CES 2023
February	DVN Paris Workshop
March	Universities and Lighting
April	OLED technology
May	MLA technology
June	DVN Tokyo Workshop
July	Models launched in H1-2023
September	DVN US Workshop
October	ISAL
November	Models launched in H2-2023

Sincerely yours

In Depth Lighting Technology

DVN Paris Workshop Program Updated

Here is an update on the DVN Workshop docket. Look at the VIP keynotes and lectures; the automakers sharing their innovations and projects, and tier-1 and -2 suppliers and regulatory experts lending their expertise and perspectives.

Tuesday, 31 January

Opening remarks (Hector Fratty, **DVN**)
Keynote (Christophe Perillat, **Valeo**)
Keynote (Michael Kruppa, **Audi**): *Roadmap to Digital Light—Enabling Durable Light Sources for Software-Based Access*

Session 1: Automaker Achievements Chair: Wolfgang Huhn
SEAT - Carlos Elvira: *From the Line to the Surface*
JLR - Irene Sanchez Funez: *How Lighting Can Improve ADAS Capability*
Rivian - Shammika Wickramasinghe: *How Lighting Improves Safety*
Stellantis – Mathieu Collot: *Lighting Technologies for a Global Multi Brand Approach*
Mercedes-Benz - Uwe Kostanzer: *[title TBD]*
Audi - Andre Hainzlmair: *Customer Centricity for Innovation in Software-Defined Lighting*
Stellantis - Ingolf Schneider, Philipp Roeckl: *Stellantis way to digital lighting*
Renault - Nathalie Venot: *Lighting System integration in Future Renault Software Design Vehicle*
Volvo - Paul-Henri Matha: *Volvo Software Strategy, With Focus on Exterior Lighting EX90*
Porsche: R. Haehle and Dr. B. Hummel: "*Porsche HD-Matrix Headlamps*"

Session 2: Tier-1 Innovations Chair: Hector Fratty
Marelli AL – Jean Pascal Herlin: *Evolution of Lighting & Sensing—An Overview at 360° Around the Car*
ZKW - Gerald Boehm: *Light Requirements: From Human Driver Until Sensor Support*
Valeo - Christophe Le Ligné: *[title TBD]*
Mind - Hossein Nafari: Mind Vision: *Lighting Evolution from Digital to Meta*

Hasco Vision - [details TBD]
Marelli AL - E Rosenhahn: *Digital Control of Front Lighting to Optimize Power Consumption*
Forvia - Michael Kleinkes: *Software-Driven Innovations*
Mobis - [speaker TBD]: *Future Technology of Mobis*
DesignLED -Edouard Da Silva,Tony Allison: *UI + Light = Ultimate Personalisation*

Session 3: Startups Chair: Leo Metzemäkers, Ralf SchäferSeven startups will present their technologies in a pitch and in the exhibition area

Wednesday, 1 February

Keynote (Professor T-K Khahn, **TU-Darmstadt**): *Research for Lighting in Automotive and Daily Life*
Keynote (Mohamed Abd El Ghani, **Bentley**): *Artistic Ambiance of Lighting Orchestration Via Software*

Session 4: Light Source Innovations Chair: Gerd Bahnmüller
Lumileds - Lars Dabringhausen: *Benefits of Direct Imaging for ADB Matrix and Digital Headlight Beam*
AMS Osram - Stefan Groetsch: *HR Pixel-LED for Forward Lighting & Digital Light Communication*
LG Innotek - [Details TBD]
KSLD - Josip Kovacevic: *Lighting Modules with Integrated Sensing and Night Vision Functionality*
OLEDWorks - [Details TBD]

Session 5: Regulations Chair: Bart Terburg
Bart Terburg, GTB VP, SAE International Cooperation Chair: *Introduction*
Timo Kärkkäinen,GRE Chair: *Relationship With Other WP29 WPs & Relevance of UN RR156 to Lighting*
Davide Puglisi, GTBSecretary General, GRE Secretary of WG SLR: *GTB Update*

Panel discussion I: Safety and Regulatory Implications of Software-Defined Lighting
Chair: Bart Terburg
Whilk Gonçalves, Valeo Lighting Systems Optics Director
Xie Dongming, Deputy Director of CASIC Geneva Office [tbc]
Timo Kärkkäinen, GRE Chairman
Davide Puglisi, GTB Secretary General
Mike Larsen, Chairman SAE ADB Task Force and SAE Regulatory Cooperation Task Force [tbc]

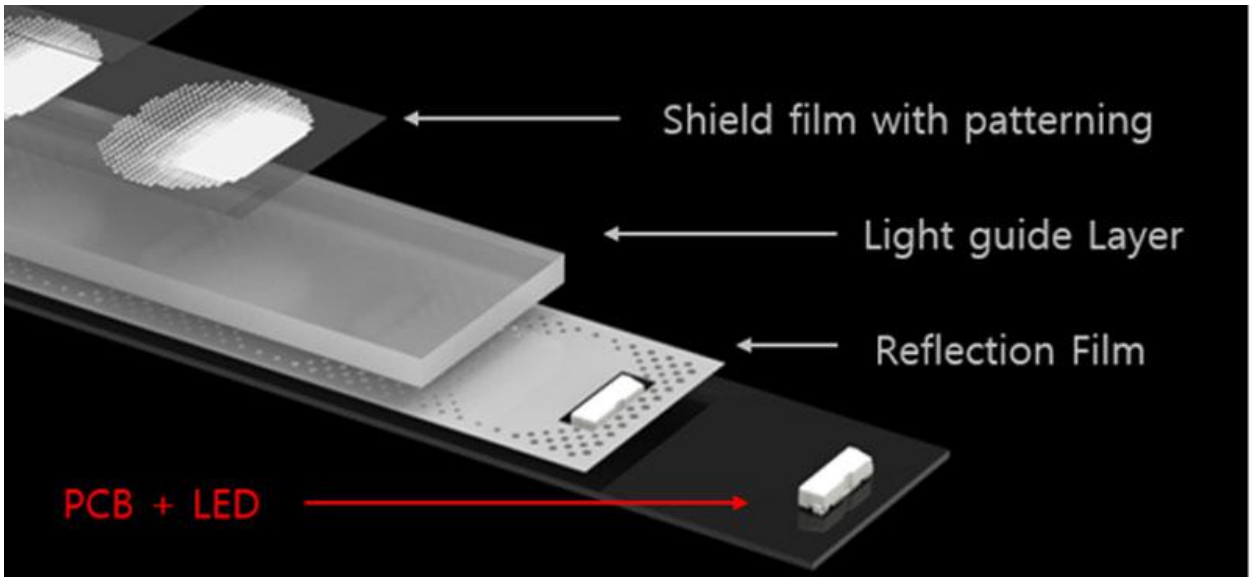
Session 6: Skills to Help Development of New Functions Chair: Jean-Paul Ravier
AMS Osram - Hermann Senninger: *From Dynamic Lighting to OSP—Why we Need Intelligence Inside the LED*
Elmos - Jatin Thaker: *Enabling the Lighting Edge Using Software-Driven Smart Electronics*
LMI - Kamislav Fadel, Vincent Keromnes: *Exterior Automotive Lighting Benchmarking Challenges*
LMT-Technoteam – T. Reiners, C. Schwanengel: *The Best of Two Worlds - Innovations in Light Measurement*
Dajac - Steve Trent: *Using Automation, High-Speed Cameras, and Software to Test High-Tech Lighting*
DO - Markus Winkler [tbc]: *Freeform Optics Made in Glass: Precision in High Volume*

Panel discussion II: Light is the New Chrome—What is the New Front End?
Chair: Michael Hamm
Participation of Forvia; Marelli AL; Valeo; Covestro, and SMP, followed by discussion

Lighting News

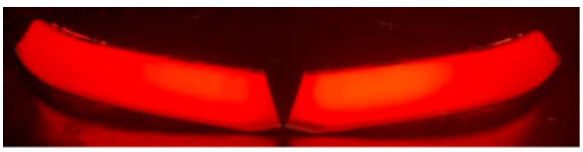
LG Innotek's Nexlide A: Slim Surface for Design Flexibility

LIGHTING NEWS



LG Innotek introduces Nexlide A, a slim surface lighting solution for automobiles that achieves high design flexibility and uniform light distribution.
By moulding a side-shooting LED to the light guide layer to transmit light, uniform light distribution images can be realised even over a large area. The slim thickness allows for a variety of lamp designs and flat and curved surface lighting.

Optical films for diffusion or focus can further improve the light distribution and surface brightness—so much so that not only low-intensity functions like rear position lights but also high-intensity ones like the stop light and turn signal functions can be realised.



The Nexlide Series can provide a high quality, surface lighting solution for all colours used in automobiles.

Watch for more information in a forthcoming DVN interview with Mooryong Park, LG Innotek's director of lighting solution development.

ZKW + Swarovski = Crystal Lights for Electric in the BMW i7

LIGHTING NEWS

ZKW have developed a unique lighting system in cooperation with Swarovski and BMW. The four precisely cut crystals on each side of the lights adorn individually-controlled LEDs to provide the DRL and turn signal functions, creating a vibrant, sparkling glow that is particularly effective during the welcome and farewell light shows.
The premium crystal light was developed at ZKW headquarters in Wieselburg, Austria. It is manufactured at their Slovakian site in Krusovce, with crystals also coming from Austria.

ZKW have equipped the main headlamp, hidden lower in the i7's front fascia, with adaptive matrix LED technology for low and high beam as well as glare-free high beam assist (BMW Selective Beam) as standard equipment. ZKW project manager Thomas Edletzberger says "A special challenge in the development of the main headlamp together with the BMW design team was to make it as inconspicuous as possible in order to particularly emphasise the crystal light above it".

Gerald Boehm presented the technology and the product at the VISION congress in October in Paris. The title of his presentation was *New Light Styling Approach in Headlamps: Challenges and Possibilities.*

LUXIT Acquires Lighting Facility from Proper Group

LIGHTING NEWS

LUXIT, an affiliate of New Water Capital Partners, has acquired a manufacturing facility in Pulaski, Tennessee, from Proper Group International.

The Pulaski facility, which began operations in 2016, will further expand LUXIT's manufacturing presence in the United States. The 8,800m2 facility employs 140 people and is fully dedicated to lighting products and technologies. It will add multi-color injection molding, anti-fog and hard coating, as well as assembly capabilities in a strategic location close to many of LUXIT's customers.

Proper Group's established position in complex tooling and manufacturing of sub-assemblies makes this acquisition an ideal complement for the LUXIT Group. "With this acquisition, we are confirming our position as the North American leader for small lamp and auxiliary lighting,"said LUXIT Group CEO Stephane Vedie. "We are adding capacity to support our rapid growth."

"This strategic acquisition further adds to our vertical integration strategy and will also help us reach critical size with key customers," Vedie added. "We are confident that we will be able to better serve our current customers as well as offer a logistics advantage to new customers that would not have been possible without this next step."

LUXIT's Tier 1 division is an established North American provider of small lamps and auxiliary lighting, bringing innovative solutions to OEM customers. Its Tier 2 division is a global supplier to lighting, headlamp and rear lamp Tier 1s. With its unique combination of processes and know-how, the Tier 2 offering includes complex die casting, thixomolding, plastic injection, metallization and electronics assembly.

LUXIT Group's full vertical integration and unique capabilities create a competitive advantage in cost, logistics, and time to market.

A2MAC1 & LMI join forces to deliver Advanced Exterior Lighting Insights

LIGHTING NEWS

KAMISLAV FADEL, STEPHAN WENG, PASCAL POPIS, MATTHIEU BLARY

A2MAC1 and LMI, joined forces to provide clients with deep, comprehensive insights on lighting technology options. Their combined best-in-class competencies give rise to a new service, Advanced Exterior Lighting Insights, further extending their exterior lighting benchmarking activities and consolidating A2MAC1 performance, technology, and costing insights.

“A2MAC1’s purpose is to stay attuned to the markets’ evolutions and to anticipate the subsequent challenges our clients will face. While lighting equipment can benefit from regular technological breakthroughs to improve the final product performance and its contribution to overall vehicle aesthetics & safety, it is constrained by rigorous regulations and increasing cost control” said Stephan Weng, Head of Operations at A2MAC1.

A2MAC1 has been serving its clients with competitive insights for more than 25 years, deconstructing and analyzing complex product assemblies. In recent years, A2MAC1 has extended its core technical benchmarking offering with performance and cost benchmarking data, introducing unique 360° vehicle insights. The company has been benchmarking vehicle exterior lighting for several years, dismantling and analyzing around 20 headlights a year, and more recently adding performance insights thanks to goniometry.

LMI is bringing more than 50 years of combined experience, from R&D and product management to manufacturing processes. The company will benefit from the synergies established between A2MAC1 and its clients in the field of benchmarking and will further complement A2MAC1's 360° insight offering thanks to its deep understanding of the lighting market.

“Joining forces with A2MAC1 guarantees LMI’s further development. We know that the automotive sector will experience important changes in the near future. Exterior lighting management will be critical to automotive manufacturers. A2MAC1 understands this critical shift and we are honored that they value our unique and respected niche knowledge in the lighting design industry,” said Kamislav Fadel, Co-Founder of LMI.

Design, Lighting Awards Bestowed at Party in London

LIGHTING NEWS

The winners of the inaugural Car Design News People Awards were revealed last week at a gala dinner in London

Best Exterior Design Team
This award was for dynamic, visually-exciting design created by thinking beyond form to create a mould-breaking innovation.

Finalists: Rivian, Kia, Lotus, Polestar, Tata, Mahindra and Mahindra
Winner: Polestar won over the judges with sharp detailing; minimalist exteriors, and the ability to establish itself as a standalone brand.

Best Lighting Design Team
This plaudit was for designers who took vehicle lighting in new directions to new levels of design and function.

Finalists: Volvo, Hyundai, Škoda, Kia, Tata
Winner: Škoda's lighting team found favour with the judges for showing how light can convey modes of driving; interior ambience; enhance the UX and communicate with the world outside the car.

Software is Key to Intelligent Solutions: Plastic Omnium

LIGHTING NEWS

By combining lighting technology with electronics and software, Plastic Omnium develop intelligent lighting solutions—everything from headlights and signal lighting to smart, high-performance products for connected; safe; personalised, and sustainable mobility of the future.

In a recent interview, PO's Iași [Romania] Software and Electronic RD Manager, Ciprian Lapa (photo) said: "As the g**lobal centre for software engineering** for all of Plastic Omnium's projects, the company site in **Iași** is fundamental to its business. *We develop intelligent solutions for the future of mobility lighting, thus software is the key. Individual control of modern headlamps at LED level takes precision, light distribution and efficiency to new heights. In conjunction with intelligent software and control electronics, light becomes an assistant in all driving situations. Adverse weather conditions, narrow lanes, twisting roads, bumps and dips all make the driver's life difficult, but adaptive, intelligent vehicle lighting can greatly reduce the burden.*

"*The software we develop in Iași enables, for example, our new interior and exterior projection solutions to deliver fully individualised welcome and goodbye scenarios and create a personalized driving experience for passengers. Our digital projection systems offer numerous options for displaying individual content, from static motifs and patterns to fully dynamic videos, both inside and outside the vehicle, turning it into a canvas. In addition, our digital projection solutions can be used to supplement important safety functions outside the vehicle. For example, the modules can project a carpet of light in front of the driver and passenger doors to make it easier to get in and out of the vehicle, especially in the dark or with poor visibility. Beyond that, the technology can display warning symbols next to the vehicle or even communicate warning signals to other road users in the immediate environment*".

Fast MicroLED Test Solution

LIGHTING NEWS

With more and more mature technology for mini- and microLED fabrication, manufacturers are gearing up for the production phase and critically looking for more test efficiency and fast testing for the optical devices.
Star Technologies, a major mini- and microLED tester supplier, continually develop measurement technology to enhance optical testing capabilities and parallel test efficiency and to achieve fast, affordable production.

Star's new Unicorn-LAIT II tester, based on an integrated parallel test architecture, is designed to meet diverse industry requirements and to ensure accurate and reliable measurement results in the shortest test time. The tester is ideal for electrical and optical measurement; driver functionality; RGB testing, and more. It is equipped with a highly efficient light- and EMI-shielded test environment dedicated to LED and laser applications. The system can be upgraded with an autoloader for a fully automatic test with a cassette.

Star's Unicorn mini- and microLED tester is based on a flexible architecture platform supporting small pads probing with controlled needle force. The tester integrates parallel testing with a probe station and card, and offers comprehensive analysis results. It efficiently accomplishes manufacturers' expectations for high throughput production to meet their customer's assembly requirements.

"Test time and the reliable result are the key factors for product strategy. Unicorn-LAIT II is a high throughput tester to cater for dies in hundreds of thousands to millions of optical devices per wafer and allows industry users to significantly reduce the cost of testing", said Star CEO and CTO Dr. Choon Leong Lou.

Driver Assistance News

SiLC's New Eyeonic for Ultralong-Range Visibility

DRIVER ASSISTANCE NEWS

Machine vision specialists SiLC Technologies have launched their new Eyeonic Vision System, which they say is the industry's most compact and powerful coherent vision system. The new system features the highest resolution, highest precision and longest range while remaining the only FMCW lidar solution to offer polarisation information. The Eyeonic Vision System integrates the company's unique photonics technology into the industry's first available turnkey vision solution—a highly flexible subsystem that reduces time to market for manufacturers seeking to incorporate machine vision into their products. Targeted to robotics, autonomous vehicles, smart cameras and other advanced products, the system sets a new benchmark, delivering the highest levels of vision perception to identify and avoid objects with very low latency, even at ranges of more than a kilometre.

At the heart of the Eyeonic Vision System is the company's fully-integral silicon photonics chip. With roughly 10 millidegrees of angular resolution coupled with millimetre-level precision, it provides more than 10 times the definition and precision of legacy lidar offerings. This enables the Eyeonic Vision Sensor to measure the shape and distance of objects with high precision at great distances.

Cepton's New Lidar at CES 2023

DRIVER ASSISTANCE NEWS

Cepton have announced additional details around their plans for the upcoming CES in Las Vegas. Their booth will feature a Chevrolet Silverado and a Ford F-150 equipped with Cepton's latest vehicle integration solutions; short- and long-range automotive lidars will be seamlessly embedded into multiple locations around the vehicles, including the headlamps, fog lamps, side mirrors, front grille, and tailgate.

Visitors can expect to see one of the industry's first full, integrations of lidar technology into a vehicle's lighting system. This involves a combination of Cepton's automotive lidars embedded within headlamps and fog lamps to simultaneously enable near-range blind spot detection and long-range obstacle detection. Combined with a fully-integrated cleaning system from Koito, the state-of-the-art automotive lidar integration enables a dual-light self-cleaning mechanism to address real-life driving needs.

During CES, Cepton will also unveil their next-generation automotive lidar, the Vista-X120 Plus. With an unprecedented combination of ultraslim compact design; top-end performance; and real-time adaptive 3D perception, it is designed for today's vehicles as well as the next generation of intelligent, electrified, and software-defined vehicles. Cepton has been recognised with a CES Innovation Award in the Vehicle Tech & Advanced Mobility category for this product. Cepton representatives will be available to share additional details about Vista-X120 Plus, with product demonstrations available upon request.

AEye's Immersive Lidar Experience at CES

DRIVER ASSISTANCE NEWS

AEye are inviting CES attendees to an immersive lidar experience. Visitors to AEye's indoor and outdoor exhibit areas can experience lidar first-hand by stepping inside a virtual-reality lidar data point cloud; walking through a live, lidar-monitored crosswalk, and riding through the streets of Las Vegas in AEye's ShadowVan demonstration vehicle.

To experience the power and precision of adaptive lidar, visit AEye booth № 3429 in the West Hall of the Las Vegas Convention Center (LVCC), and at the live demonstration area outside the LVCC, in the West Hall lot. To set up a meeting or schedule a demo, **contact Aeye**.

AEye lidar enables safer mobility for all modes of transportation—cars and trucks; pedestrians, and cyclists. Roadway fatalities continue to increase at an alarming rate, and are at a 16-year high, with nearly 50,000 fatalities annually due to motor vehicle and pedestrian-vehicle traffic collisions. At CES, AEye will demonstrate how reducing those numbers using technology is possible now. The company also will release findings of their Safer Mobility Survey, conducted with the Partners for Automated Vehicle Education (PAVE), which gauges Americans' views on road safety for all road users including drivers; pedestrians, and bicyclists.

Through a series of interactive demonstrations, visitors to AEye's West Hall locations will learn how adaptive lidar improves pedestrian safety, enables safe, high-speed highway ADAS and autonomous functionality, and future-proofs autonomous development.

LeddarTech Launch LeddarVision Front-View Packages

DRIVER ASSISTANCE NEWS

LeddarTech have launched LeddarVision Front-View-E and Front-View-H (LVF-H) stacks to address the challenges tier-1 and -2 suppliers and automakers face when developing L^2 and L^{2+} ADAS applications, such as solving safety issues and finding scalable fusion and perception software that offers high performance at a low cost.

LVF-E (LeddarVision Front-Entry) is for customers seeking to develop entry-level ADAS safety and highway assistance L^2/L^{2+} applications. It is a comprehensive front-view fusion and perception stack for highway assist and 5-star NCAP 2025/GSR 2022. LeddarTech's low-level fusion (LLF) technology pushes the performance envelope, doubling the effective range of the sensors and enabling for the first time a solution with only a single 1.2-megapixel 120° front camera and two short-range front corner radars in a 1V2R configuration.

LVF-H (LeddarVision Front-High) is a premium companion fusion and perception stack. With sensor configuration extended to 1V5R based on a single 3-megapixel 120° camera; single front medium-range radar, and four short-range corner radars, the stack extends the perception support to highway assist applications—including 160-km/h adaptive cruise control; 200-metre range, and semi-automated lane changing. It also enhances the NCAP 2025 support for overtaking; reverse, and dooring scenarios. With efficient implementation on the TDA4L platform and a single Hailo-8 deep-learning accelerator, low-cost sensing economically achieves front-view L^2/L^{2+} premium ADAS.

B-sample rollout is planned for Q3 2023, targeting vehicle SOP in 2026

General News

Gilles Michel In, Jacques Aschenbroich Out as Valeo Board Chair

GENERAL NEWS

Jacques Aschenbroich will leave the Chairmanship and the Board of Directors of Valeo on the last day of 2022. The selection process implemented by Valeo's Board of Directors wound up with the Board of Directors' unanimous decision to appoint Gilles Michel as Chairman of the Board of Directors.

The Board of Directors warmly thanked Aschenbroich for his outstanding record during his 13-year stint at the head of the Valeo group, and asked him to accept the title of Honourary Chairman.

Gilles Michel has extensive experience in the automotive industry, having spent several years in senior management positions at PSA Peugeot Citroën, where he was Technical and Purchasing Director; CEO of the Citroën brand, and member of the Management Board of Peugeot S.A. He began his career at ENSAE, then at the World Bank in Washington, D.C. before joining the Saint-Gobain group in 1986 where, for 16 years, he held various management positions—notably in the United States—before being appointed President of the Ceramics & Plastics branch in 2000. In 2008, he was the first Chief Executive Officer of the Fonds Stratégique d'Investissement (FSI), which he set up and then managed. He headed the Imerys group from 2010 to 2019, as Deputy Chief Executive Officer, Chairman & CEO and then Chairman of the Board of Directors.