

Tue, 11 April 2023
Weekly Newsletter



NEWSLETTER #798

PixCell LED

Ultimate precision in perfect alignment

100+ individual cells with just 25 µm spacing, perfectly matrixed onto a single LED chip for intelligent headlamps

SAMSUNG



Editorial

Coming Soon! Two Important DVN Events

We are happy to announce two important DVN workshops; one this month and one in June.

This month, **25-26 April**, the DVN Interior Workshop (register online [here](#)) will be held at the Pullman Hotel in Köln, Germany.

There will be

- three keynotes, including from BMW's Innovation Project Manager and from Forvia's Design VP.
- Four automaker lectures from Volvo; Jaguar Land Rover; BMW, and Liux.
- 23 lectures from tier-1 and -2 suppliers and a university professor.

There will be high-value lighting and driver-vision content as well, with sessions on interior lighting; driver monitoring systems, and displays and materials.

And then on **6-7 June** will come the DVN Lighting Workshop (register online [here](#)) at the Ritz-Carlton in Tokyo, Japan—the 27th workshop since the start of DVN 15 years ago!

Four keynotes and fully 30 lectures are expected, with a productive session on regulations—these have long been a widely-favoured part of DVN Workshops—and an expert panel discussion on how vehicle electrification is changing frontal designs.

Surely, these are two events you won't want to miss! We welcome your participation.

Sincerely yours

A handwritten signature in black ink that reads 'W. Frally'. Below the signature, the text 'DVN CEO' is printed in a small, sans-serif font.

In Depth Lighting Technology

DVN Events in Köln, Germany and Tokyo, Japan



DVN-Interior, an outgrowth of DVN, was created in 2019 by Philippe Aumont, a highly experienced executive with almost 40 years of experience in the automotive interior supply industry. He was CTO at Faurecia Seating until 2017. Philippe works with Carsten Befelein; Daniel Stern, and John Cooper, with contributions from the whole of the DVN Team. 50 automotive interior companies are Interior Gold members. Now, DVN Interior's **3rd Workshop** will be an in-person event at the Pullman Hotel in Köln, Germany, on **25-26 April**— that's this month!

The rubric for the two-day conference and exhibition is Human Centred Interior Technology. Sessions include HMI and Smart Surfaces; Safety and Driver Monitoring Systems; Interior Lighting, and Materials and Sustainability. A human-centric approach means new technologies, planning, and integration focus on driver and occupants in term of increased safety, comfort, and wellbeing.

The event will bring together more than 150 participants from all around the world—experts; managers, and decision makers involved in the automotive interior. Lectures are confirmed from automakers including BMW; Volvo, and JLR, with presence of Ford; Honda; Hyundai, and Toyota.



There'll be:

- Three keynotes, from BMW's innovation project manager Martin Enders about the I Vision Dee; from Liux CEO Antonio Espinosa, and from Forvia's Design VP, Andreas Wlasak
- 23 lectures from automakers BMW; Volvo; Jaguar Land Rover, and Liux · tier-1 suppliers Forvia and Antolin; tier-2 suppliers AMS Osram; Ansys; Grammer; Kurz; Marquardt; Mocom; Novem; Dow Chemical; Grewus; Melexis; TTIV; Seoul Semiconductor; Tactotek, and TechnoTeam · and one university professor.

We will welcome automakers including Ford; Honda; Hyundai; Nio; Nissan; Toyota, and Volvo Cars...and suppliers including Ansys; Antolin; Marelli; Toyota Boshoku; Valeo; ZKW; AMS Osram; Covestro; Draxlmaier; Elmos; Lightworks, and Seoul Semiconductor.

As the automotive market competes more and more on what is happening within the cabin, this event will highlight how new technologies increasingly contribute toward safety, comfort, and convenience within the car interior.

And DVN's 27th lighting and vision Workshop will take place in person at the Ritz-Carlton in Tokyo, Japan, on 5-6 June.



The Theme of the 1½-day conference and exhibition is **New Functions and Digital Technologies in Lighting**. That covers software; electronics; optics; design; materials; simulation, and metrology. It will highlight how new technologies will contribute toward safety in our world. The event will bring together more than 250 participants from all over the world: managers; decisionmakers; innovators, and experts.

Lighting News

Kia's Big EV Push

LIGHTING NEWS



Kia plan to deliver 1.6 million EVs in 2030 and get 37 per cent of their global volume from full-electric cars by that year. CEO Ho Sung Song outlined his new vision: to sell 2.38 million fully-electric and hybrid vehicles in 2030, expanding the EV range to 15 models by 2027.

Preorders for Kia's new EV9 SUV are to begin in the Korean domestic market shortly, with the model reaching Europe, North America, and other markets in the second half of this year. Kia say a wide range of upgrades will be available through the makers's online app and OTA updates, for one-time purchase or on a subscription basis.

Offerings will include features like new digital grilleboard lighting patterns.

'GT-line' versions of the EV9 will be equipped with a new Highway Driving Pilot system that enables L^3 driving under certain conditions, in markets where it's allowed. The system relies on 15 sensors, including two lidars, for a 360-degree view.

MagWerks Vision's Hyper Headlamp for Aptera Solar EV

LIGHTING NEWS



Michael Pickholz is probably the vehicle lighting world's foremost expert in thixo-moulded magnesium for headlamp reflectors, heat sinks, and structural components. He's founder and CEO of Magwerks Vision, the mobility lighting innovator and supplier who will be providing the lights for the Aptera, a solar-electric vehicle soon to be released. Here's our conversation:

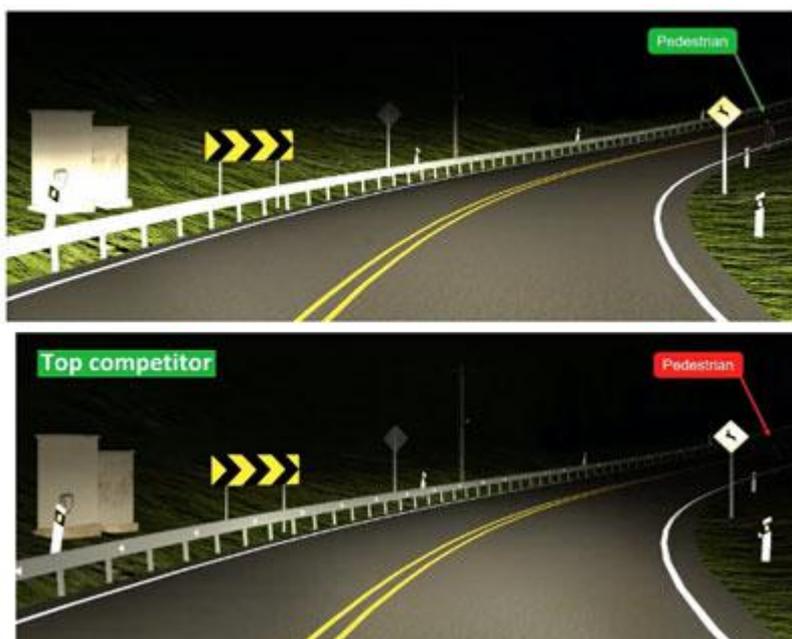


DVN: What can you tell us about Aptera supply contract?

Michael Pickholz: Good lighting tends to be expensive and complex; bulky and heavy, with high power consumption. MagWerksVision's latest technology gives over twice the illumination with half the weight and half the power consumption compared to our nearest competitor.

DVN: How do you do it?

Pickholz: The key is our proprietary optical silicone lens technology and our injection-moulded magnesium housing; these create a very effective, very compact, lightweight solution. Our technologies are 100% recyclable, compared to the plastics-based construction of most traditional lamps.



DVN: And those are the techniques you've brought to the Aptera headlamp?

Pickholz: Yes. These big advantages are exemplified in our headlamp (and six additional lamps) for the Aptera vehicle, with SOP scheduled for next year. It's classified as a motorcycle, from the regulatory standpoint, so it's restricted to a central headlamp—one headlamp. Ours handily outperforms two good conventional lamps, with over twice the level of illumination. What you're seeing here is not simulation; it's Ansys AVXcelerate output, based on actual IES data input.

In addition, we have been awarded a military grant exceeding USD \$1m for development of a headlamp and other lighting opportunities in military applications.

Aptera design chief Jason Hill says, "The Aptera headlamp, which multiplies the efficiency; engineering elegance, and lightweight[ing], will provide a safety function beyond what is expected and required.

Key advantages are better illumination on the road; superior optical properties with greater than 70% efficiency; reduced weight; superior thermal management, and lower energy consumption with higher optical performance.

Wow-Effect Taillights on BMW i7

LIGHTING NEWS



Slim, wide, elegant rear lights on the BMW i7 extend well into the quarter panel and deck lid, with discreet patterning in the cover lenses. A subtle version of the L-shape familiar from many other BMW models is formed by an integral chrome strip and the light bars positioned below it. A homogeneous distribution of light creates the impression of light being emitted directly from the cover lenses.

Developed and produced in Marelli's Italian competence centre for rear lamps in Tolmezzo, the new lamps are made in a sophisticated set of production processes. The beautiful edge pattern is obtained with high-precision printing in the inner and outer lenses, for example, and the chrome bar is accurately welded to the lens in a unique welding process.

Genesis CUV Concept at New York Auto Show

LIGHTING NEWS



Genesis, Hyundai-Kia's luxury brand, showed a CUV concept at the New York auto show. The GV80 Coupé Concept is based on the X Speedium Coupé Concept it showed at last year's show.



The concept's designation may have been devised to spur controversy, or at least conversation; to many, *coupé* (or 'coupe', in American English) is a term applicable only to two-door vehicles, and the GV80 has four. Whichever side wins that debate, though, the bright orange vehicle is certainly noticeable—not least because of its lighting. Although the concept car doesn't have a fully-functional lighting system, Kia say this car will be built, and the concept car's lighting design probably accurately previews the production car. It features a bold, prominent iteration of the Genesis brand's familial twin-parallel-stripes lightstyle, with wraparound front stripes providing the white DRL and amber turn signal functions. Those front stripes continue behind the front wheel arch, where they serve as side turn signal repeaters. At the rear, twin red strips span the full width of the vehicle and extend well into the quarter panels, sharpened to points like a sharp knife.

Marelli at Auto Shanghai: 'Co-Create What's Next'

LIGHTING NEWS



Marelli will demonstrate their latest innovations at this year's Auto Shanghai, to be held from 18-27 April. The supplier will offer an interactive experience with the theme 'Co-Create What's Next', aimed at evincing cooperative development of the future of mobility with customers and technology partners.

Visitors will get to try out Marelli's wide array of offerings by configuring their own vehicle with a curated selection of lighting; sensing; electronic, and interior options featured in Marelli's Digital Design Studio. Marelli will also present products that drive vehicle personality and performance, including those most relevant for the Chinese market.

Marelli will showcase their lighting and sensing technologies to allow 360° illumination around the car and expand safety, communication, and branding functionalities beyond the vehicle. Near-field ground projection allows welcome, safety, and communication messages to be displayed on the ground surrounding the vehicle; that will be on display in the booth. So will illuminated front grilleboards, which integrate lighting systems and sensors and can display or project messages and customised illuminated elements with animation enabled by software.

Marelli have 22 production facilities in China, along with eight R&D centres and nine joint ventures with local partners. They combine innovation; quality, and R&D capabilities there to work closely with local customers and partners for Chinese needs.

Aldo Kamper is New ams OSRAM CEO

LIGHTING NEWS



Aldo Kamper was appointed Chair and CEO of ams Osram late last January; now he has begun working in those roles—he succeeds Ingo Bank who will leave the company at the end of this month.

Kamper also has been appointed CEO of subsidiary Osram Licht. With almost thirty years' experience, Kamper is a veteran of the semiconductor industry and a seasoned CEO. He joins ams Osram after his stint as President and CEO of the Leoni Group. Kamper started his career with Osram, and after various roles including numerous management positions, he assumed the role of President and CEO of the Opto Semiconductors business unit. During his career he pioneered the development of microLED technology; dynamic forward lighting, and LED performance roadmaps for new applications such as horticultural lighting.

Driver Assistance News

Hyundai to Launch L3 Cars This Month

DRIVER ASSISTANCE NEWS



Hyundai-Kia will launch, this month, versions of their Genesis G90 and Kia EV9 with Highway Driving Pilot (HDP), an L^3 autonomous driving suite of technologies.

The new G90 is the first Korean mass-produced model equipped with L^3 autonomous driving technology, and will launch with a maximum speed of 80 km/h.

Hyundai added a lidar sensor to the grille to enable HDP, which works with data from the lidar as well as front-side-rear cameras and front and side radars.

L^3 autonomous driving allows a car to change lanes on its own as it navigates to its destination and allows the driver to take their hands off the steering wheel. Drivers can do other things while driving, such as crossing their arms or looking at their phones.

Officially-certified vehicles with L^3 technology in the global market are the Mercedes-Benz S-Class and EQS, and the Honda Legend. Drive Pilot, Mercedes-Benz's system, is usable at speeds up to 60 km/h.

The Honda Legend obtained its L^3 certification from the Japanese Ministry of Land, Infrastructure, Transport, and Tourism in 2020; Honda has been selling the L^3 Legend since March 2021.

Robosense's Solid-State Lidar L4 Perception Fusion System

DRIVER ASSISTANCE NEWS



RoboSense have released their first automotive-grade solid-state lidar perception solution, the RS-Fusion-P6, for L^4 autonomous driving. The P6 offers precise environmental perception capabilities, enabling autonomous vehicles to easily navigate complex driving scenarios, reduce costs, and increase efficiency. RoboSense says it perfectly integrates hardware based on two-dimensional MEMS scanning technology and software based on artificial intelligence technology.

The P6 is flexible and scalable, making it suitable for a wide range of autonomous driving applications and can be customized to meet specific vehicle platforms' needs. It offers high-performance perception capabilities for full-scene environments from start to finish, making it ideal for all driving scenarios, including city streets, highways, and more. It has four M-series solid-state lidars, and offers dynamic switching and high-resolution long-distance detection capabilities to detect traffic conditions up to 200 metres away.

ABI Research Rank AV-Involved Companies

DRIVER ASSISTANCE NEWS

ABIresearch

ABI Research recently studied companies involved with autonomous vehicle development and equipment. Here are the five they ranked at the top of the pack:

[Mobileye](#)

Mobileye are experts in self-driving enablement. Using their expertise in active driver safety and machine vision, Mobileye have created a world-class autonomous vehicle platform. They've developed new SoCs; sensor hardware; driving safety frameworks; redundancy approaches, and tools and services that support both the automaker and Mobility-as-a-Service (MaaS) customers.

[Nvidia](#)

Nvidia, a technology company based out of California, are highly skilled in using artificial intelligence and graphics processing units (GPUs) in the automotive industry. Major automakers like Mercedes-Benz; Jaguar Land Rover, and Volvo leverage the Nvidia DRIVE Orin platform for autonomous driving capabilities.

[Qualcomm](#)

Qualcomm's semiconductor developments are being leveraged for success in the autonomous driving domain. Their self-driving platform is capable of delivering L^{2+} functionality when its ADAS application processors are stacked. And when combined with autonomous vehicle accelerators, L^4 functionality can be achieved.

[Valeo](#)

Part of the reason why Valeo are a leading autonomous vehicle platform provider is because of their expertise in sensing technology to support up to L^4 vehicle autonomy –particularly their high-performance Scala lidar and their autonomous parking systems.

[Waymo](#)

Waymo is a division of Alphabet (i.e., Google). Their automated mobility platform, Waymo Driver, has been a massive facilitator for third-party automakers to test and prototype autonomous vehicles around the world.

General News

New organization at the head of Toyota

GENERAL NEWS



Akio Toyoda



Koji Sato

On April 1st Akio Toyoda, the long-time chief executive of Toyota Motor stepped down and was replaced at this position by Koji Sato, the automaker's current branding chief. Meanwhile, Mr Toyoda was promoted chairman of Toyota, a company founded by his grandfather.

Mr Sato gave some indication about the new direction for Toyota:

"Under the new management structure, we will accelerate the taking on of challenges for the future, with a new management style of "simultaneously and organically working as a team."

"From now on, we aim to transform into a mobility company. Toyota's mission is "Producing happiness for all." We want to protect the beautiful Earth and enrich the lives of people around the world. We want to change "Minus(-)" to "Zero" and further create the value beyond Zero. That is our aim as a global company. For the car to continue being a necessary part of society, we need to change the future of the car."

Ford's BlueOval City: How EVS will be made

GENERAL NEWS



Ford CEO Jim Farley says the company's first new assembly plant in more than a half-century will be "a marvel of simplification."

The centerpiece of the site, a 400,000m² assembly plant that will produce a next-generation electric pickup, will be the largest Ford has ever built. But it could have been even bigger.

Ford said the \$5.6 billion project, expected to come online in 2025 with an annual capacity of 400,000EVs, will have a 30% smaller footprint than other plants with similar capacity. That's because the company, for the first time in recent memory, is designing both a plant and its product simultaneously, and is building in efficiencies that don't exist at other sites.

The plant will have fewer workstations, and the vehicle built there, known internally as Project T3, will be offered to customers in significantly fewer configurations than today's models.

"It's a marvel of simplification," CEO Jim Farley said at an event here in March.

Farley has stressed a need to reduce complexity and eliminate waste throughout Ford's operations, saying the company must cut the number of fasteners in its vehicles by half and move to larger casting with fewer parts, like Tesla does, to achieve its goal of 8% margins on EVs.

Ford expects to employ 6,000 workers at the site.

Farley said Ford is applying what it has learned from the Mustang Mach-E and F-150 Lightning EVs, which are currently unprofitable, to the BlueOval City truck, which is expected to be the first vehicle on Ford's dedicated battery platform.