DrivingVisionNews.com
Automotive lighting and driver assistance technologies

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Editorial

High Activity At DVN

Last week we told you about the two important events organised by DVN.
The first event, the first-ever fully online Workshop, dedicated to Car Smart Interiors, is now behind us. It was really a great virtual workshop with more than 200 attendees from 100 companees following three great keynotes by Valeo CTO Geoffrey Bouquot on Smart Technology for Smart Interiors; Faurecia CTO Christophe Aufrere on Cockpit of the Future, and Streetscop VP and Mobility Futurist Dave Muyres on future mobility's challenges. There were 20 lectures in five sessions including one about interior lighting, and 12 exhibitions.
This week we bring you interesting takeaways from the four lighting lectures and the enthusiastic Q&A they inspired. Fascinating startup pitches were made during a virtual lunch, with the ISELED Alliance and EPIC organisation front and centre during virtual coffee breaks. Attendees had the opportunity for digital expo visits, business meetings, and chats.

See the conference program **here**, and you can still register **here** to attend the recorded virtual workshop.

The second significant event is the release of the 2020 DVN Study, one of the greatest technical works we have ever done, which thoroughly analyses and assesses new lighting functions in context of new automotive use cases and new realities.
Contact DVN's Salomon Berner to buy your copy.

There is also a third event: the publication of our **DVN Report** on Evolution of Automotive LEDs 2015-2025. It describes all the crucial key points on roadgoing LEDs, past, current, and future, including evolutionary history, trends, and forecasts for physical characteristics and applications; white LEDs for headlighting; coloured LEDs for signalling; RGB LEDs for displays; LEDs producing invisible light, and their

applications. It goes live today, and DVN Gold members can download their copy right away, with no extra cost.

Sincerely yours

DVN PRESIDENT

In Depth Lighting Technology

Interior Lighting at the DVN Smart Interior e-Workshop

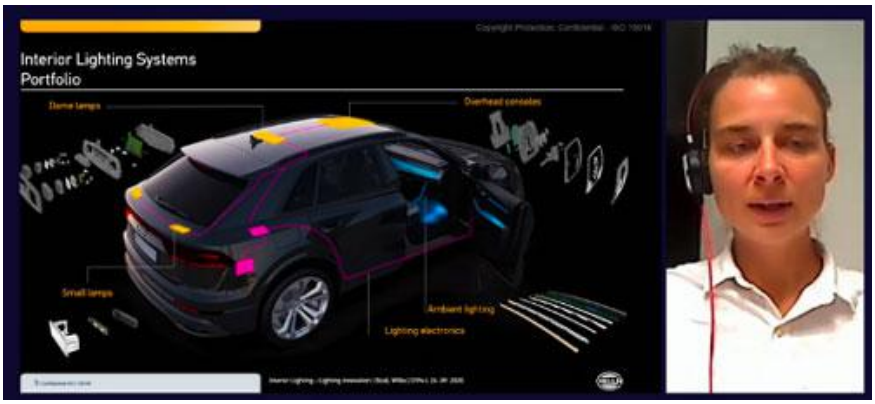
Geoffrey Bouquot and Christophe Aufrere opened the DVN-I virtual workshop on Car Smart Interior

One session of the workshop was dedicated to interior lighting. It was chaired by Robert Isele, who talked on the great future of interior lighting, explaining that up to a thousand LEDs are equipping some car models.

ROBERT ISELE, BMW INTERIOR LIGHTING DIRECTOR

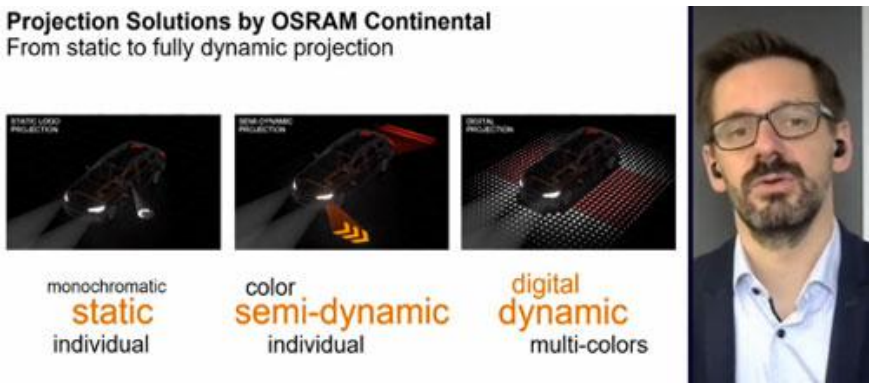
The session comprised four lectures:

• *Lighting to support future use cases*, by Hella's Dr. Ana Bizal, Head of Interior Lighting Pre-Development



ANA BIZAL, HELLA

• *Smart Interior Projection*, by Osram Continental's Dr. Michael Rosenauer, Head of Advanced Development



DR. MICHAEL ROSENAUER

• *Next generation of Smart LED*, by Inova Semiconductors' Senior Application Engineer Stefan Hoffmann
• *Automotive Interior Surface Backlighting*, by DesignLED CTO Dr. James Gourlay.
These lectures were followed by un long Questions/answers discussion

We summarise the session's main takeaways considering interior lighting:

Strong needs of driver and occupants in interior lighting:

• **Wellbeing** is the first need the driver and passengers of the car expects. Interior lighting has to contribute to give joy and emotion. It means a good atmosphere created by warm colors and soft contrasts. This wellbeing is becoming a must, the driver and passengers search to find out the atmosphere at the office or at home.

• **Animation** is also a great expectation. Lighting allows animation everywhere inside the car, with low and high resolution.

• **Individualisation** is strongly pushed. Lighting allows the choice of driver/occupant to personalise the interior lighting by colour, dynamics, and intensity of the light

The tools to achieve these needs:

• Software. To answer the needs on creative solutions, personalization, animation, software is becoming more and more important.

• Efficiency. This rate has to be optimized to limit CO_2.

• Wire harness: Wireless is more and more used.

• Flexibility. Separate functions are used to reduce development time and investments.

• Functions. Year after yeat, automakers seek to upgrade the current functions and to create new functions to improve safety and wellbeing.

• HD modules. Modularised lighting has to be improved on volume, weight, cost, light to work in nighttime and also in daytime.

• Smooth and flat surfaces. Many works are done to reduce thinness of light and improve quality of light surface.

• Digitalisation. Messages and signs by light will be more and more used

• To prepare for the arrival of autonomous driving by light. Lighting will play a great role in AV. Improved and new functions have to be developed.

• To present demo-cars to sell the technologies more than for exterior lighting. More than for exterior lighting, demo-cars are a must to convince automakers on the new technologies and functions.

The Four challenges:

Cost
Space
Integration
Power consumption

Lighting News

End of the Line for Osram-Continental

LIGHTING NEWS

Automotive suppliers Continental and Osram are ending their coöperation on lighting technology after the takeover of the Osram Group by AMS. The joint venture, which was founded in 2018 and specialises in headlamps and other vehicle lighting systems, is to be dissolved, Continental announced in Eschborn last week. Talks will be held on this and should be concluded by the end of the year. Continental and Osram each hold half in the JV. The introduced areas with a total of 1500 employees at 14 locations are to be returned to the companies.

With this step, Continental and Osram reacted to the difficult market situation that had arisen due to weak global car production and the pandemic. The former common expectations of cooperation could no longer be realised in this way.

Seoul SC Bi-Colour LEDs Equip Audi A4

LIGHTING NEWS

2020 AUDI A4 WITH SEOUL SEMICONDUCTOR'S WICOP BI-COLOUR LEDS

Seoul Semiconductor are supplying their WICOP Bi-colour (2 colors in one package) LED products for the DRL and front turn signal of the 2020 Audi A4 headlamp.

This is the first example of Seoul Semiconductor's WICOP product being mounted in an Audi headlamp. WICOP Bi-colour LED is a core patented technology of Seoul Semiconductor that provides both white and yellow light from one package. It is designed to directly mount the LED chip on the board without additional packaging.

"Due to the narrow space between the light emitting surfaces of the bi-color LED, it is technically beneficial to light up one cavity with yellow for turn and white for DRL. This advantage opens up the possibility of slimmer headlamp designs", said Dr. Michael Hamm, the head of development headlamps of Audi.

In the meantime, Seoul Semiconductor have already developed a more compact second-generation WICOP mini bi-colour emitter while including the advantages of the existing WICOP in combination with even slimmer footprint. "The family has been developed as a light source suitable for automobile main functions, DRL and TI. We are now developing the WICOP UHL (Ultra High Luminance)] with excellent high luminance and heat dissipation performance for the next generation of slim headlamps. Accordingly, European headlamp customer inquiries for our innovative products have increased and we have been engaged with customers in more than 20 headlamp projects for next generation cars", said In Heum Park, VP of automotive division of Seoul Semiconductor.

HiPhiX: Multitude of LEDs to Communicate with Road Users

LIGHTING NEWS

Earlier this month, DVN released our 2020 Study on New Lighting Functions, presenting our vision on the arrival of new vehicle lighting functions in the next decade.
This week, we have a look at a new model, the HiPhiX produced by Human Horizons, which will be presented at the Beijing autoshow and produced in May 2021. This car shows a part of the coming new lighting functions and is a perfect example of the evolution of lighting as described in the DVN Study.

In the HiPhiX we see the strong presence of light and digital media: Front and rear, and on both sides, relatively large surfaces composed of a multitude of LEDs are able to form different figures to communicate with other road users and pedestrians. All the exterior lighting components are there: DLP frontlight, rear lamp, and new lighting functions were developed and are produced by Hasco. See an online film about the car **here**.

More information on the lighting of this car will be found in the October DVN Report, “New worldwide models”.

Matt Roney is New Lumileds CEO

LIGHTING NEWS

Lumileds has announced that Matt Roney (photo) takes over as CEO, replacing Jonathan Rich who will remain executive chairman of the board at the company.

Roney joined Lumileds this past January, becoming president of the Lumileds Automotive Business Unit. The CEO change marks the second with Lumileds operating under Apollo Global Management. Moreover, the announcement hints at an increased focus on the automotive solid-state lighting (SSL) sector for Lumileds.

Jonathan Rich had moved into the CEO position back in the spring of 2019. Rich lacked experience in the LEDs or semiconductor sectors, but had a deep histority of management positions within Apollo-owned companies. The two prior Lumileds CEOs, Mark Adams and Pierre-Yves Lesaicherre, came to the LED maker from the semiconductor industry. Perhaps in his 18 months on the job, Rich has brought the Apollo way to Lumileds and charted a new path forward for the company.

“Speaking on behalf of the board of directors, we are grateful for Jon’s contributions as CEO and believe Lumileds is well positioned for success in this next phase under Matt’s leadership,” said Rob Seminara, senior partner at Apollo Global Management. “Matt has nearly 25 years’ experience in the automotive industry, and his performance and leadership throughout his career have given us even greater confidence in his ability to drive long-term innovation and growth at Lumileds.”

That automotive lighting forecast is heavily weighted by growth in the exterior segment for rear lamps, headlamps, DRL, TI. But the interior market may well be undervalued

as we are seeing an explosion of SSL deployment in car cabins for both ambience and safety applications.
See the DVN Study on New Lighting Functions released this month.

Adasky Thermal Cameras Ready to Help Save Lives

LIGHTING NEWS

DVN with Bill Grabowski

I met Bill Grabowski a long time ago at DaimlerChrysler. I just discovered he joined one year ago, an Israeli startup called Adasky. Find below his thoughts about the termal camera technology.

"About a year ago I joined Adasky which was one of the companies that had caught my eye in the prior years as I was scouting for sensors that could enable high level ADAS. They happen to make a very unique thermal imaging camera with technology that is incredibly advanced. It allows it to constantly 'see' in complete darkness or bad weather at distances up to 300 meters and can classify pedestrians, bicyclists, animals,well before a potential tragedy can occur.

"Imagine the number of lives that could be saved if we had technology that doesn't depend on enough daylight or headlamps or clear dry weather. 75% of the 6,590 pedestrians are being killed at night.

"The auto industry introduced thermal imaging technology twenty years ago on the 2000 Cadillac DeVille, at very high cost. Things are beginning to change with the advent of Automatic Emergency Braking (AEB). In October of 2019, AAA published findings on four AEB equipped vehicles that were found to be completely deficient at night in stopping for pedestrians. 100% failure at night! They even failed 60% of the time during the day. These vehicles were equipped with daylight cameras and radars.

"I’m now part of a highly innovative, strong, four-year old startup that has cracked the code using a software approach for thermal imaging to improve ADAS/AEB systems. Eliminating moving parts, complexity and focusing on automotive applications has been our mission from the beginning. Adasky have developed a shutterless thermal imaging camera called the Viper, that is about the size of a C-cell battery that can be easily packaged and hidden on the exterior of the vehicle."

Ford's Portfolio of Renewable Materials

LIGHTING NEWS

Ford advanced-materials expert highlights the wealth of materials coming online to reduce carbon footprints during a 2020 SPE keynote.

A broad portfolio of renewable materials is available now that can help the automotive industry reduce its carbon footprint. Many of these new materials exceed the performance of traditional plastic composites, and more are constantly coming online. This was the message from Dr. Deborah Mielewski, senior technical leader of sustainable and advanced materials at Ford, during her recent “Greener materials for a greener world” virtual keynote at the 2020 SPE Automotive Composites Conference.

Mielewski initiated the biomaterials program at Ford in 2001, and her team was the first to demonstrate soy-based foam that met all automotive-seating requirements. Ford launched soy-based foam on the 2008 Mustang, and soy seat cushions, backs and headrests have since been employed on every North American-built Ford vehicle. “Bio-based foams currently reduce Ford’s greenhouse gas emissions by over 25 million pounds and reduce petroleum dependence by over 5 million pounds annually,” Mielewski claimed.

One of the latest successes is from a coffee byproduct. Late last year Ford partnered with McDonald’s to launch its first coffee-chaff-reinforced-plastic production part, a headlamp housing for the Lincoln Continental. Coffee chaff is the dried skin of the bean that comes off during the roasting process, millions of pounds of which are created by the food & beverage industry each year.
According to Mielewski, who specifically credited the work of Amar Mohanty at the University of Guelph, along with Varroc Lighting Systems and Ontario’s Competitive Green Technologies (CGT), the McDonald’s partnership allowed 40% of the talc in the previous material to be replaced with coffee chaff, while also knocking off 250 g of weight per vehicle.

Driver Assistance News

S-Class to Next Level of Autonomous Driving

DRIVER ASSISTANCE NEWS

Engineered to provide L^3 and L^4 self-driving capability, the new S-Class is ready to take control when regional infrastructure, regulation and legislation allow it.
The big news is the introduction of Drive Pilot and Intelligent Parking Pilot technologies, new L^3 and L^4 self-driving systems that pave the road to the automaker's autonomous future.

Initially, Drive Pilot will be available only in Germany and not until the second half of 2021, when regulatory approval is completed.
It is a Level 3 conditionally automated self-driving technology capable of monitoring the surrounding environment and performing all tasks without driver input until it actively requests that the driver take over.

When Drive Pilot requires human intervention, such as when conditions prevent it from operating properly or when upcoming roads are unsuitable for autonomous driving, it notifies the driver to retake control of the car and expects a human response within 10 seconds.
To ensure drivers remain ready to resume control, Mercedes uses an infrared camera that monitors the driver's face and eyelids to detect sleeping, observes the driver's position in the seat, and otherwise identifies and responds to any circumstance that might prevent a driver from retaking control of the vehicle.
If the driver does not resume manual operation of the vehicle, Drive Pilot assumes he or she is suffering a medical emergency and activates the Automatic Emergency Stop Assist system.

Using its Car-to-X technology to communicate with a properly outfitted garage, the S-Class can autonomously park itself and then return to its owner when summoned. Unlike with existing examples of this technology, there is no requirement for the driver to be standing near or within sight of the car as it makes its way to and from its parking space.

HELLA Implements 24 GHZ Radar on Suzuki Swift

DRIVER ASSISTANCE NEWS

GHz The driver assistance system with which the Suzuki Swift and Swift Sport are equipped is based on 24 GHz radar sensor technology from HELLA.

After debuting on the Suzuki Vitara in 2018, HELLA's 24 GHz radars are now featured on Suzuki's new flagship models, enabling safety-relevant driver assistance functions such as "Blind Spot Monitor" and "Rear Cross Traffic Alert".
While the Blind Spot Monitor detects the area in the driver’s blind spot and warns him of danger when changing lanes, the Rear Cross Traffic Alert warns the driver of approaching vehicles when manoeuvring out of a parking space.

HELLA has been active in the radar business for around 20 years and was one of the first companies to start series production of 24 GHz radar sensors for rear applications. Ever since, HELLA has continuously been improving the technology, strengthening the position of global market leader in this field with more than 30 million sensors manufactured by today. In spring this year, HELLA also commenced series production of the latest radar generation on a 77 GHz basis.

Mobileye signs driver-assistance deal with Geely

DRIVER ASSISTANCE NEWS

Geely unveiled the electric vehicle, Zero Concept, from Lynk & Co, a brand formed as a JV between Geely and Volvo, at the Beijing Auto Show.
The new Zero Concept EV will feature Lynk & Co's CoPilot solution powered by Mobileye SuperVision surround-view ADAS. Utilizing Mobileye's production-ready SuperVision system based on Mobileye's leading EyeQ5® system-on-chip (SoC) alongside Geely's accelerated production capabilities will enable Geely Auto Group to deliver a new suite of advanced driver-assist features to consumers beginning in fall 2021.

Intel also announced that Mobileye and Geely Auto have signed a long-term, high-volume agreement for ADAS that means more Geely Auto vehicles will be equipped with Mobileye's computer vision technology.

In a post, Mobileye chief executive officer and Intel senior vice president Amnpn Shashua wrote that the deal is the first time "Mobileye will be responsible for the full solution stack, including hardware and software, driving policy and control."
He added "it also marks the first time that an OEM has publicly noted Mobileye's plan to provide over-the-air updates to the system after deployment. While this capacity has always been in our repertoire, Geely and Mobileye want to assure customers that we can easily scale their driving-assistance features and keep everything up to date across the car's lifetime."

General News

Detroit auto-show moves to fall 2021

GENERAL NEWS

The Detroit auto show is changing dates — again. After reimagining the Detroit show as a summertime indoor/outdoor event, originally scheduled for June 2020 but postponed a year because of the coronavirus pandemic, show organisers now say the event will take place 28 September to 9 October 2021, and will remain in the autumn indefinitely.

The change comes weeks after organisers for the Los Angeles Auto Show said they will move the 2020 show from November to May 2021, wedging itself in between the New York and Detroit shows. And in Europe, the Geneva auto show is considering a March 2021 date.

"Our responsibility as an auto show is to host a global stage for current products as well as mobility innovations of tomorrow," North American International Auto Show Executive Director Rod Alberts said in a statement. "September is an excellent time of year for new product, and at the same time, alleviates the challenges a now crowded spring auto show calendar presents for auto show stakeholders."

After spending the past year touting the advantages of warm weather, organisers are now looking forward to cooler air—just maybe not quite so frosty-frozen as the longtime January NAIAS dates.

Wayne Griffiths is New SEAT Boss

GENERAL NEWS

SEAT have a new boss: From 1 October, Wayne Griffiths—previously head of sales at the VW subsidiary—will also take over as CEO. The company announced this after a corresponding resolution by the Supervisory Board. Griffiths is "one of the most qualified managers in the group," said CEO Herbert Diess. "I am convinced that it will build on Seat's previous successes."

Griffiths will also remain in charge of the Cupra brand, which was founded in 2018. He will also continue to hold the position of Seat Sales Director, which Griffiths has held since 2016, "until further notice". The Briton has been with the group since 1989 and switched from Audi to Seat in 2016.

Carsten Isensee, who has been interim head since January, will remain on board as CFO. From November 1st, Herbert Steiner will be the new Seat Production Director. He replaces Christian Vollmer, who switched to the Volkswagen Passenger Cars brand on August 1 as Board Member for Production.

Rimac Consider Buying Bugatti

GENERAL NEWS

BUGATTU CHIRON

Croatian electric supercar specialists Rimac are said to be in advanced talks with Volkswagen and stakeholder Porsche to acquire the 111-year-old Bugatti brand.
VW are considering the sale of Bugatti Automobiles to Rimac Automobili as part of a consolidation of volume production car operations at the German automaker.

The proposed sale, although not officially confirmed, was the main topic at a recent Volkswagen supervisory board meeting, according to Germany's *Manager Magazin*, which says Volkswagen Chairman Herbert Diess hopes to conclude contract signings by the end of 2020.
Under a condition of the sale said to be proposed by Volkswagen, Bugatti would switch their focus from traditional combustion engines to electric-powered supercar production using electric driveline and battery expertise developed by Rimac.

The purchase by Rimac of Bugatti and the increased shareholding of Porsche would be dependent on the agreement of a number of current stakeholders, including Xiangyang, China-based battery specialist Camel Group and Hong Kong-based China Dynamics, sources suggest.
Bugatti sold 82 cars in 2019, mainly Chiron models. Bugatti's most recent model, the 1,578-hp Centodieci, is based on the Chiron. It is planned to be built in a limited run of just 10, each priced at €8m. Rimac, headquartered in Syeta Nedelja near Zagreb, Croatia, were established in 2009 by Mate Rimac.

Tokyo Motor Show organizers mull options for 2021

GENERAL NEWS

Organizers of the Tokyo Motor Show are taking a wait-and-see stance to next year's event as the COVID-19 pandemic wreaks havoc with the international auto show circuit.
The biennial Tokyo Motor Show, scheduled to take place in the fall of 2021, may have to be reimagined or possibly brought online, Akio Toyoda said Thursday, speaking in his role as chairman of the show's organizing group, the Japan Automobile Manufacturers Association.

Tokyo is wavering on plans for the next show as much of the international auto show schedule has been upended due to the pandemic.
Meanwhile, in China, the Beijing show opens its doors Sept. 26, after moving back the date from an originally planned start in April.

The Tokyo Motor Show has struggled in recent years, amid falling visitor turnout and disinterest from automakers, many of which would rather spend their auto show marketing budget in China. However, the 2019 show drew 1.3 million people, a 70% increase from 771,200 who attended the biennial show in 2017.