DrivingVisionNews.com
Automotive lighting and driver assistance technologies

Tue, 10 March 2020 Weekly Newsletter NEWSLETTER #637

Editorial

35 Papers Picked For VISION Congress

The VISION Congress Scientific Committee's 20 members met last week—some in person at the SIA facilities in Surenes, and others by audio conference because of Coronavirus-related bans on non-urgent travel in force at some automotive companies.

The meeting stays with me for its thoughtful, dedicated involvment of the committee members during assessment and selection of the abstracts and proposals. In the end there was total agreement on 23 abstracts concerning lighting and 12 abstracts concerning ADAS were selected. Authors will be informed soon, then will come communication to all the lighting community, and you'll soon see a list of accepted papers here in the Driving Vision News.

The Organisation Committee met just after the Scientific Committee, and took two important decisions: Night drives will be held the evening of 6 October—this time *before* the two days of the congress on 7–8 October. And there will be two panel discussions, one on lighting rating systems and one about ADAS and the integration of sensors in lamps.

Two other points:
• Today we're publishing a sort of virtual report on Geneva auto show. The show it self was cancelled due to the coronavirus, so of course we couldn't walk the show, but we've gathered as much of the information as possible about interesting premieres and innovations that would've been at the show. See also below, the main takeaways.
• On strong demand, we've decided to print 200 more copies of the DVN Global Study on Automotive Lidar we published three months ago. For all new orders, five hard copies of the study will be sent together with the electronic version. If requested, the two main authors of the study will give a live presentation on the subject at the customer's premises and conduct a Q&A session to share the insights of their work.

Sincerely yours,

DVN President

In Depth Lighting Technology

What we Missed at Geneva Motorshow

The 90th edition of the Geneva Motorshow was cancelled due do coronavirus fear. The decision falls 3 days before the opening of the exhibition to the media.

What we missed in Geneva

The show will go on in a different form and platform, as most major brands are sticking to their original timeline debuting new models online while also live-streaming the press conferences.
Driving Vision News takes this opportunity to present what you miss at this 90th edition of the GIMS

Peugeot 208 was elected Car of the Year.The small Peugeot. collected 281 points, Tesla Model 3 was second with 242 points, and Porsche Taycan, with 222 points takes the last place in the podium.. The rest of the finalists for the award were the Renault Clio (211 points), Ford Puma (209), Toyota Corolla (152) and BMW 1-series (133).

The best 3 interesting cars considering lighting were :

1) Aston Martin DBX

- 
  Bezel enlighting standard module and DRL
- 
  Linear tail light in all the width of the car

2) Audi E-Tron

- 
  HL/RL digital light and DRL

- 
  Thin light guide connecting the two rear lamps

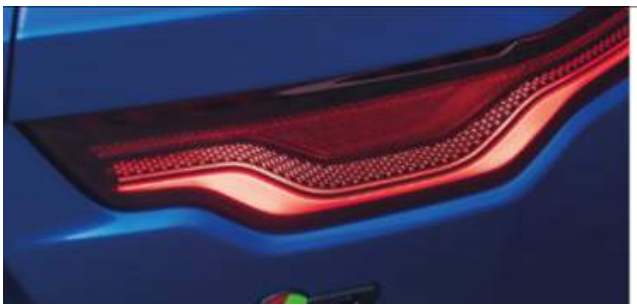
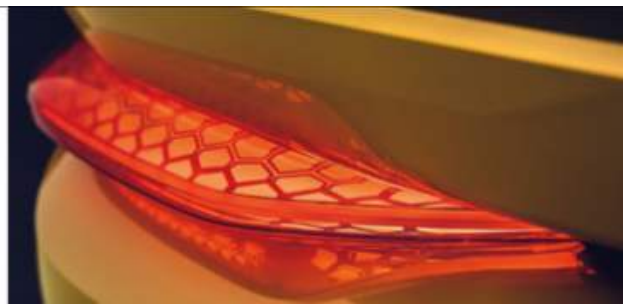
3) BMW i-4

- 
  Thin headlamps
- 
  Perfect homogeneity of the tail light

The 5 main Takeaway concerning headlamps and rear lamps

1.Light sources less and less room, styling parts more and more room

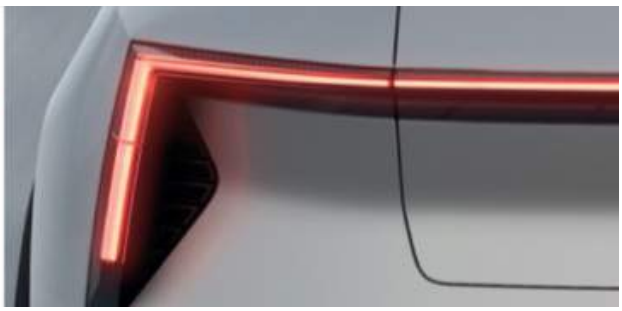

2. Scuptural rear lamps or Perfect homogeneous rear lamp

3. Thinner headlamps


4. Modules highlighted by bezels


5. Linear rear Signal lamp from left to right

Lighting News

Varroc: Opening of a New Production Facility in Poland

After opening the R&D center in Krakow, the company has now opened a new facility specialized in headlamps manufacturing in Niemce. The plant brings more than 350 new jobs.

Stephane Vedie, the 4th from the left

“The investment in this new facility is another step forward for our company’s global growth that will help us maintain strong competitiveness in our industry.” said Stephane Vedie, President and CEO, Varroc Lighting Systems.

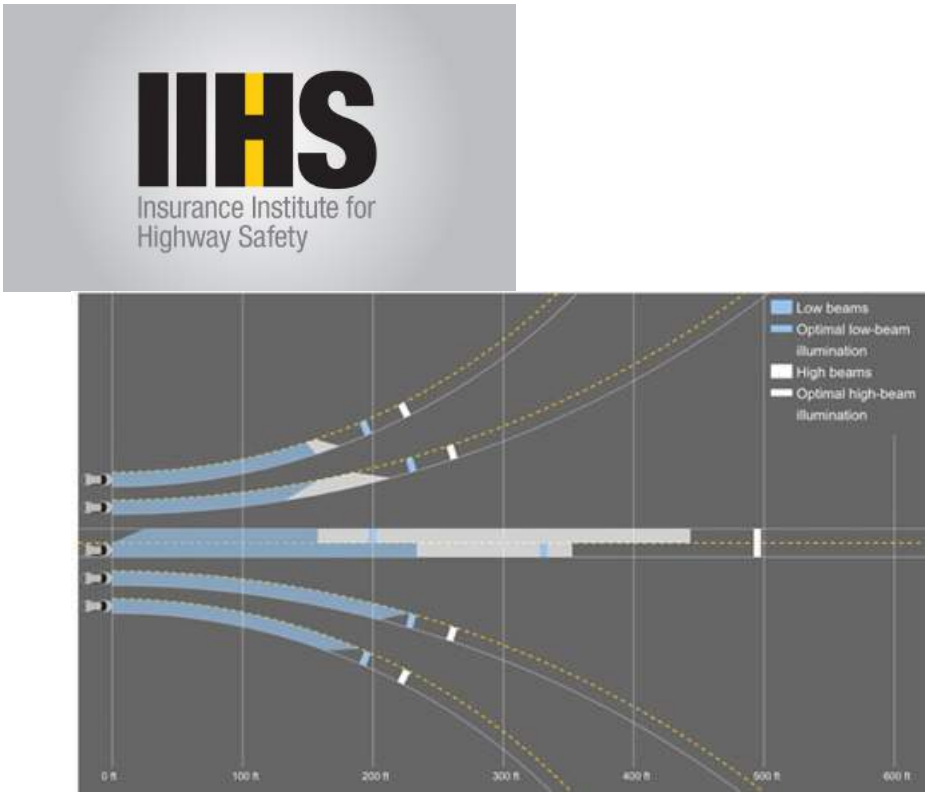
The new manufacturing facility meets the highest standards in production logistics, automation and safety in the Lublin region. The premises feature a total area of 25,000 m2 with injection molding machines, hard coating line, metallizing machines, and assembly lines. The new facility will produce a full range of headlamps with a capacity of 3 600 000 headlamps.

One of the biggest innovations of the new facility is the so-called Virtual Factory. This program will help to strengthen online communication in production in real time.

In addition to manufacturing positions, the company is mainly looking for experts who have higher levels of technical education or want to further develop their careers in technical positions with higher added value.

Varroc LS is a premier developer and manufacturer of external lighting systems and vehicle control electronics for the automotive and two-wheeler industries. Headquartered in Plymouth, Michigan, U.S., the company has more than 8,500 employees worldwide with operations in 17 countries.

U.S. Lights Getting Better For Those Who Pay Extra: IIHS



The U.S. Insurance Institute for Highway Safety keeps close tabs of what's offered in the way of vehicle headlamps in the U.S., and how well or poorly they work. The institute's latest findings echo **those of 2018**: many more vehicles are available with headlamps that illuminate an adequate distance ahead without excessive glare this year than before, but base models with good headlampsremain rare.

"Many carmakers still treat high-quality headlights as extras, rather than essential safety features," says IIHS Active Safety Testing Manager David Aylor. "Leather seats and sunroofs are nice, but you need high-quality headlights to avoid hazards."

About half of all fatal crashes in the U.S. occur in the dark, and more than a quarter occur on unlit roads. IIHS has been testing and rating headlight performance since 2016, but newly this year, headlamps that earn at least an "acceptable" rating must be installed across all the vehicle variants for sale, not just on high-trim vehicles or as extra-cost options, for a vehicle model to qualify for the highest IIHS award, Top Safety Pick+.

Only six of the 156 models rated so far by IIHS come with headlamps rated "good" as basic standard equipment. On another 31 models, "acceptable" headlights are the lowest-rated ones offered—a 7 per cent increase over 2019's figure. The 2020 results could change as the Institute evaluates additional models and manufacturers release midyear changes.

Out of the 37 models with standard-equipment "good" or "acceptable" headlamps, 23 earn the Top Safety Pick+ award; the other 14 fall short on other crashworthiness or collision-avoidance criteria. And 30 of the tested 2020 models can only be purchased with "poor" headlamps, compared with 36 in 2019.

Manufacturers have also continued their more rapid progress in offering good headlights as options. In 2016, the best available headlamps on just two of the 95 tested models—2 per cent—earned a "good" rating. In 2020, lamps rated "good" are available on 55 of 156 evaluated models, so that figure is up to 35 per cent.

Even when good lamps have been offered as an option, though, makers don't necessarily equip many vehicles with them, and buyers often must pay for very expensive option packages or bundles just to get the better lights. Aylor says "We try to rate all the headlights offered by each manufacturer, but sometimes it's a struggle to find some of the optional, high-end systems at local dealerships. If we have trouble finding them to test, how can consumers be expected to find them to purchase?".

IIHS rates headlamps on the distance they illuminate the road as the vehicle travels straight and on curves. The tests evaluate low and high beams. "Good" rated low beams illuminate the right side of a straight road out to at least 100 metres; "poor" ones might reach out to 67 metres, if that.

IIHS engineers also deduct points for headlamps that produce excessive glare, while extra credit is awarded for systems that automatically switch between high and low beam. Lamp aim is checked but not adjusted before testing, to incentivise automakers and dealers to pay better attention to it.

New Osram LED for Great Rear Fogs

Osram say their new Synios P2720 CR enables especially compact rear fog lamp designs in this current era's drive for smaller and smaller lamps with more and more compact packaging. The new LED offers outstanding performance despite its small dimensions.

One of the main issues with monochromatic LEDs for rear fog applications is the enormous intensity droop, up to about 50 percent, in operating temperatures above 60 °C. Until now, rear lamp manufacturers had to compensate for this by increasing the number of LEDs, which also increased the space requirements. The conversion-based Synios P2720 CR dramatically cuts this output degradation down to only around 10 percent. That unlocks better performance and lower cost by dint of fewer LEDs.

Fewer LEDs also means the heat sink can be smaller, saving additional space and weight (and cost). Manufacturers can choose between two different chip sizes: 0.5 or 1 mm^2, as best suited to the application at hand. Either way, the space-saving package dimensions of 2.0 × 2.7 × 0.6 mm are the same.

PACE Awards Celebrate Lighting Systems

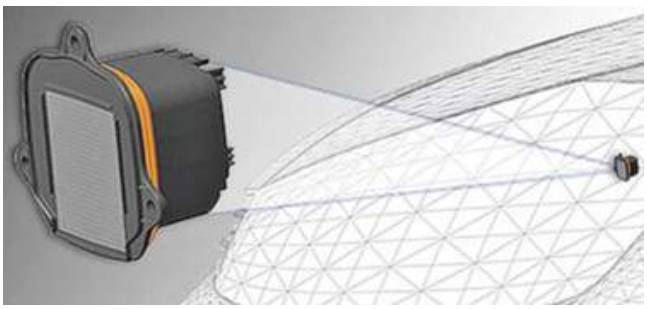
Innovative excellence among automotive suppliers will be celebrated at the 26th annual PACE awards on 23 March in Detroit. Lighting and vision suppliers make a showing of finalists:

• **Hella** for smaller, more adaptable rain and light sensors

• **Mobileye** for a crowdsourcing map solution

• **Stoneridge** for advanced visibility cameras

• **W.L. Gore** for devices to take humidity out of sealed headlamps



• **Valeo** for technology that lets drivers see virtually "through" their trailers

• **Hyundai Mobis** for 3D rear combination lamps

• **Marelli Automotive Lighting** for advanced 1.3-megapixel headlamps based on µmirrors

SLD Lasers Bring Bright Headlamps

US-based SLD Laser are showing headlamps based on the company's high-performance laser diodes. Co-founder Paul Rudy says the technology enables high-output headlamps that are "highly efficient, cost-effective, and compact".

"We are working with automotive-certified, 1mm bi-axial MEMS mirrors, which can be used to shape the laser light in patterns with very high luminance per pixel", Rudy says. "We're currently in the range of 0.5 to 1° resolution, with the expectation of being able to get to 0.1° resolution in the future".

The solution can fit into a 5-cm cube capable of providing full headlighting functionality in any pattern of light, including full ADB functionality and the ability to perform communication and sensing functions. The laser light can be coupled into fibres to transport or emit the light. The latter option, known as emissive fibre, could be used for æsthetic lighting on the interior and exterior of vehicles, and to transmit data via LiFi in front, side, and rear lights, so data could effectively be sent via LiFi in all directions from equipped vehicles.

SLD Laser's clever light sources also can produce infrared light from the same chip, so during the day when a vehicle's exterior lighting isn't being used, data can still be transmitted in the infrared. Rudy says "Currently, this infrared light is 850-905 nm wavelength. However, we expect to be able to deliver this at 1,300-1,600 nm in the future. This dual functionality from the same chip could not be achieved using LEDs. They are 1,000 times slower than lasers, they don't provide the required visibility or range, they require big optics, and are not dual wavelength."

Audi to Lead VW Group R&D Efforts

Audi will take the lead on R&D within the Volkswagen Group, to create greater economies of scale and a pooling of resources amongst the group's various brands.

The announcement, made as the VW Group release their 2019 financial results, comes as they boost investment in future technologies including electric powertrains, 5G connectivity, and autonomous-driving functions while increasing their software capabilities through a new division called Car.Software.

Audi already are coöperating with Porsche on the development of the PPE (premium platform electric) platform architecture for midsize-to-large electric vehicles.

Starting next month, Audi will also take charge of R&D across the whole of the VW Group. The date coincides with the arrival of new Audi CEO Markus Duesmann, the former BMW boardmember responsible for purchasign, who's coming onboard to succeed Bram Schot.

The financial results show VW Group increased their operating profit 22% in 2019 to €16.9bn. The Group's 22% profit increase resulted from strong sales of high-margin vehicles, particularly SUVs. The group sold a total of 10.975 million cars in 2019, up 1.3% from a year earlier.

Driver Assistance News

E-Class Makes Intelligence

The Mercedes-Benz E-Class will combine automotive intelligence with excitement. The latest generation of Mercedes-Benz's best-selling model comes with the latest driving assistance systems, reacting if the driver does not.

The steering wheel knows if the driver is not holding the wheel through sensors in the rim, providing warnings before activating Emergency Brake Assist if the driver remains inactive.
The E-Class comes with Active Brake Assist as standard, autonomously braking to prevent a collision or mitigate its severity. It is also able to brake for stationary vehicles and crossing pedestrians at city speeds.

As part of the Driving Assistance Package, functions include :
- Active Speed Limit Assist, which respond to changes in the speed limit.
- Active Distance Assist Distronic can respond to data from live traffic information, reducing speed if a tailback is detected.
- Active Stop-and-Go Assist can keep in lane and maintain safe distances in highway tailbacks at speeds up to 60km/h.
- On multi-lane roads, Active Steering Assist supports the driver with the emergency corridor function, which causes the vehicle to stay off-center in the lane.
- Active Blind Spot Assist can warn occupants of passing road users including cyclists when opening doors and is available up to three minutes after the ignition has been switched off.
- Active Parking Assist with Parktronic and a 360° camera makes it possible to enter and leave parking spaces automatically. The system helps search for and select a parking space, as well as enter and leave parallel and end-on parking spaces or garages. When leaving a parking space, the system can warn of traffic crossing behind the vehicle and apply the brakes in case of doubt.

General News

Goodbye Frankfurt, Hello Munich: IAA Will Move

Munich will succeed Frankfurt as the big German auto show's host city starting next year, according to the German Automakers Association (VDA). The VDA's contract with the Frankfurt trade fair company ended last year, allowing the association the chance to change venues, and the association said in January that Frankfurt would no longer host the show after almost seven decades as the home of the biannual exhibition of the industry's latest innovations.

Berlin, Hamburg and Munich were on the short list; Munich convinced the VDA's board that its city centre and attractive locations close to downtown can be used to host events for the show, VDA President Hildegard Mueller said.

The show is also known by its German acronym IAA, for International Automobile Exhibition. It has been a crucial sales and marketing platform for automakers, but last September's event saw a sharp drop in interest as major brands, including fan magnet Ferrari, decided to sit out and skip it. It was also the target by protests by environmental activists and visitor numbers fell by 30% to 560,000. The VDA envision IAA evolving from an automobile show to a mobility show. The next show is scheduled for September 2021.