DVN-I
Automotive Interior

Thu, 28 October 2021 Weekly Newsletter NEWSLETTER #84

Editorial

ISELED Report And Next DVN Workshops

YANFENG IMAGE

This week's in-depth coverage includes a complete report about the fourth ISELED conference held last week, addressing interior lighting and visual displays. It confirms the importance of interior lighting as a design element which gives the car its personality, and is key to interaction between smart surfaces and occupants. The diversity of supporting technologies was on display, and the importance of electronic architecture behind it.

The next DVN Workshop, to happen in Paris this coming 1-2 February, will include a whole session dedicated to interior lighting. Please consider this **call for papers** your call to action: **write in** and tell us about the technologies, techniques, innovations, and ideas you'd like to present in a lecture, and/or in an expo booth at the event.

The next DVN Workshop after that will be in the Frankfurt area on 26-27 April. It will focus on interior technologies in five categories: functional surfaces; driver monitoring; HMI/HUD; interior air quality, and materials and sustainability. These five rubrics reflect the major trends influencing the future of automotive interiors. Lecture priority is given to DVN Interior members, so here again, **write in** with your contribution proposals.

Don’t miss the bonus episode of Car Interiors Unplugged, last before an overview summary series to be published in November and December.

Thanks for being part of the community! We're all better for your presence and participation.

Sincerely yours,

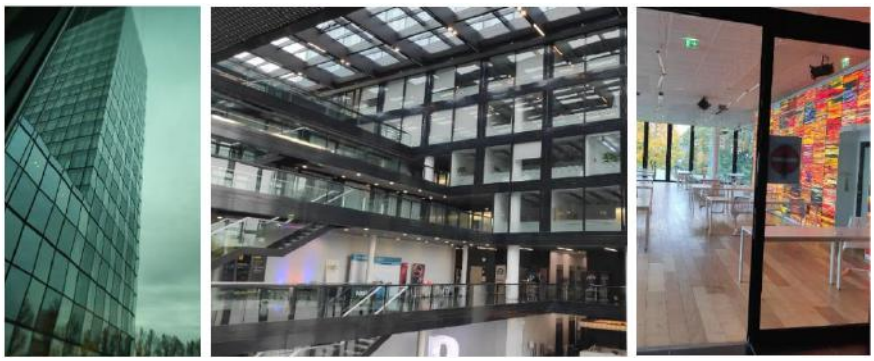
Philippe Aumont
General Editor, DVN-Interior

In Depth Interior Technology

4th ISELED Conference In Review

This year's ISELED Conference took place on 19 October in Munich, in a hybrid format; 92 participants were there live, and 280 online. Leading experts discussed and presented topics and trends around vehicle lighting and visual display concepts.

It is now exactly five years since the ISELED Alliance was founded by five companies and the concept of the "Digital LED" was first presented at Electronica 2016. In terms of sales, this year the magic number of a billion digital LEDs is already on the horizon. Because customers wanted to use ISELED technology throughout the car, ILaS was developed, the ISELED Light and Sensor network. Today the ISELED-Alliance has 40 members from all over the world, with an ever-growing variety of new products and system/application solutions.



PERFECT VENUE: THE SÜDDEUTSCHE VERLAGSGRUPPE BUILDING IN MUNICH

The conference started with live interviews with exhibitors, moderated by Professor Karlheinz Blankenbach from University of Pforzheim. The event as a whole was chaired by Alfred Vollmer, Chief Editor at Hüthig (publishers of 14 specialist journals and associated websites—mainly targetting German industrial engineers and managers—and organisers of technical congresses).

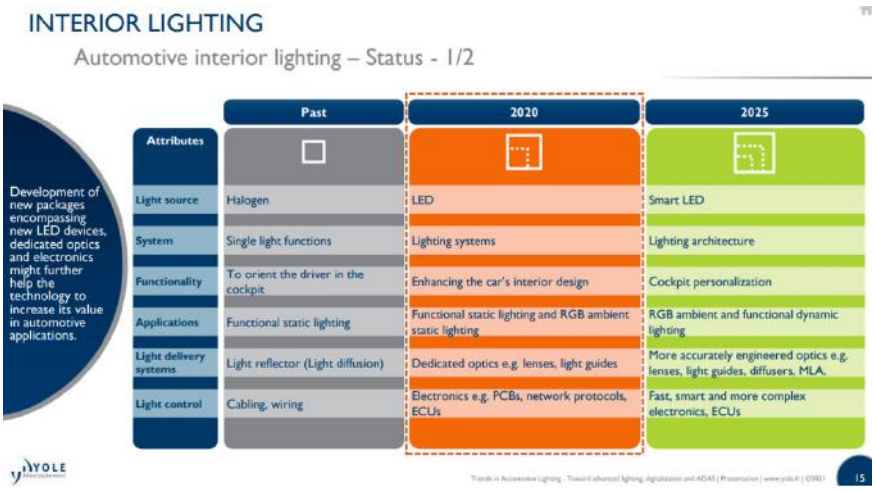
The first keynote, Light to Become a Key Design Element Across the Industry, was from Professor Volker von Kardorff, CEO of Kardorff Lichtdesign. A second keynote, Lighting Architecture Next, was given by BMW Head of Interior Lighting Robert Isele. Inova Semiconductors CEO and ISELED Alliance President Robert Kraus gave an interview centered around the five-years-and-counting success of the ISELED Alliance.

INTERVIEW WITH ROBERT KRAUS

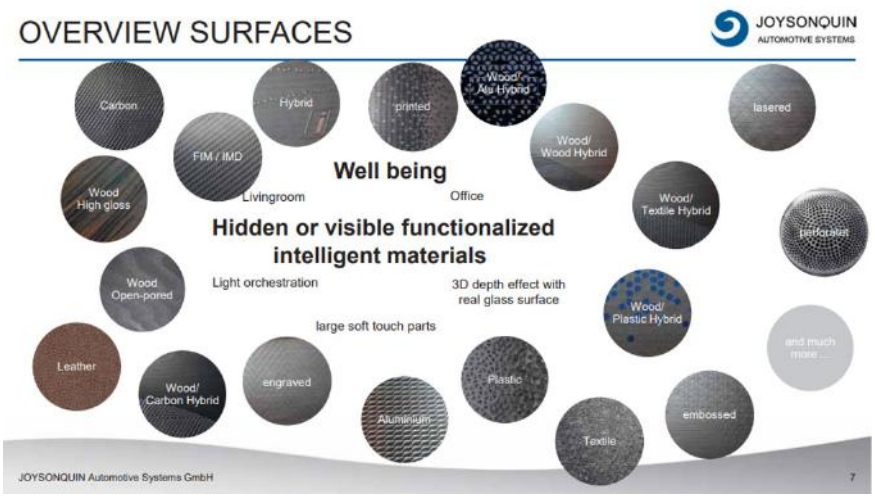
CONFERENCE ROOM FOR 100 DISTANCED PARTICIPANTS

Beside the keynotes, there were 17 other expert lectures; these are described below as examples, depending submitted papers.

Yole Development's Pattrick Bouley spoke on Trends in Automotive Lighting—Toward Advanced Lighting, Digitalization, and ADAS with the impact of megatrends on vehicle lighting and the focus on front, rear, and interior lighting and displays with market evolution.



Dennis Bauer introduced Joysonquin Automotive Systems as a new ISELED Alliance member. Joysonquin, based in Ningbo, China, supply trim parts, air vents and wallboxes, advanced and functional decor surfaces; they joined the Joyson Group in 2015.



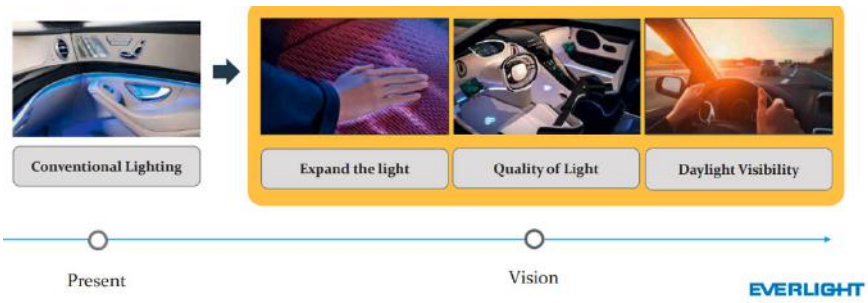
Dr. Jianning Yo introduced the Keboda Group, who make lighting and energy electronics and motion products, as another new member of the alliance.

KC Tay fromDominant Opto gave a talk on ISELED On Ramp-Up Mode. The ISELED distribution for 2022-2026 car models, according to the presentation, stands at 56 per cent Europe; 28 per cent Asia, and 16 per cent America. The ISELED volume forecast

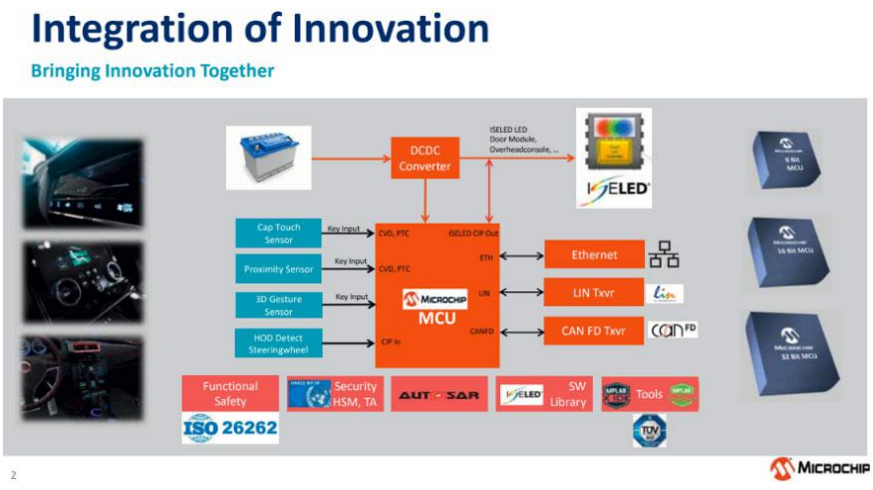
for the coming years shows a large increase with a 5-year CAGR of over 75 per cent; Dominant see in the EV revolution a strong opportunity for new designs incorporating ISELED technology. Car buyers are quick to demand highly complex and luxurious technology if the solution is user-friendly, and the high-speed communication with ISELED and ILAS is necessary for functional safety and emergency status.

Hartmut Wettengl, also from Dominant Opto, spoke about SeddLED Roadmap From RGB Ambient Lighting to RGB Projection. The second generation of the SeddLED (**s**mart **e**mbedded **d**igital **d**river) includes the seddLED3.0 A3A-FKG (D65; 1400 mcd) for ambient lighting, and next year the seddLED3.4 A3D-MHG (D65; 2000 mcd), the seddLED2.0 A2A-EHG (cold white 19.5 lm; warm white 18 lm) for matrix interior illumination; and the seddLED3.5 0.5W RGB module (D65; 60 lm) with 3-channel compensation for RGB projection light. Typical product features of the 0.5W RGB module are LED, LED driver and ISELED communication link integrated; zero flux binning; self-diagnostic function, and automatic temperature compensation.

Dennis Lin from Everlight confirmed in his lecture Smart and Smarter LED Solutions thatLED technology transforms from purely functional to customized light experience and multichip mixing lights drive more new designs possibilities. With IC embedded technology, more diversified interior applications can be achieved: dynamic functions, color accuracy, and homogeneous and seamless light effects.

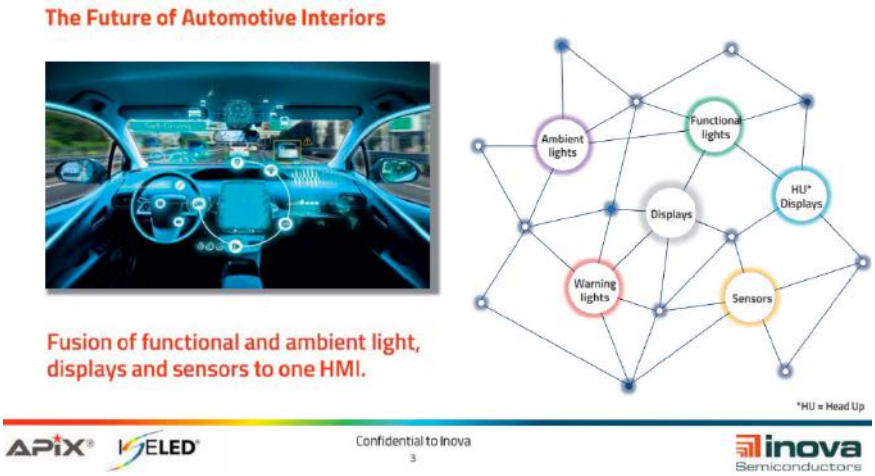


Stefan Kouba ofMicrochiptalked aboutHow Microchip is Enabling the Automotive Interior Innovation.



Yiling Zhang, representing NXP, gave a talk about Extended ISELED Support on S32K3 MCU Family.NXP's S32 automotive platform enables software reuse across multiple applications, reducing development complexity. S32K3 expands S32 into zone control and edge node and extends the S32K family into new applications like advanced body electronics and battery management. The new S32K3 MCU family is tackling software cost and complexity with seamless OTA update. S32K3 MCU + real-time drivers are slated to launch on the market next month, commercialising an off-the-shelf ISELED solution extended to S32K3 family.

Stefan Hoffmann from Inova Semiconductors gave a speech about ISELED & ILAS—The Products for the New Lighting Architecture.The increase in light sources requires color homogeneity, synchronization, and small packages. Dynamic effects on multicolor LED matrix require high data rates. ISELED technology allows the simplification of color homogeneity and system design with minimum installation space, while the ILAS network segmentation and the transceiver's bypath offer highest fault tolerance. Synchronized light effects with up to 4,079 network participants run at video speed—2 mbps. The ILAS network unites the embedded system of light, sensors, and actuators.



Markus Daubner, from Grupo Antolin, spoke on Driving an Innovation to Series Production—How We Have Brought ISELED Into the First European Premium Car,about the BMW iX using ISELED. The project required dynamic lighting, day visibility, homogeneity, and easy assembly in the door panel with small packaging. Grupo Antolin worked together with BMW, Inova, Dominant, Faurecia, and NXP to succeed as the first-time commercialiser of ISELED technology by adaptation of the application to the best technical solution. The biggest advantages of ISELED are the package-minimized PCBs and the great potential with ILAS and the 2.0 controller.

The following lectures are presented here only in short form, as a matter of publication permissions or unsubmitted papers:

Han Hendricks and Christophe Pincemin from Yanfeng gave a lecture about Yanfeng Smart Cabin vision, China Factor & Seamless Integration of Small Display and Lighting With ISELED,confirming Yanfeng's vision that interior lighting is a fundamental part in the makeup of a vehicle's personality.

Yangfeng sees opportunities for future lighting integration in:

- **Autonomous drive impact**: light scenarios for each drive mode, styling change with cockpit vs. new living room and new use cases like gaming and music with light
- **BEV impact:** more innovative features and design, and electrical consumption decrease vs. increasing lighting (surface, dynamic)
- **Vehicle architecture to enable light story** : data rate, low latency and EMC performance, light central orchestration with corresponding HW&SW, interactions between light and other interior features

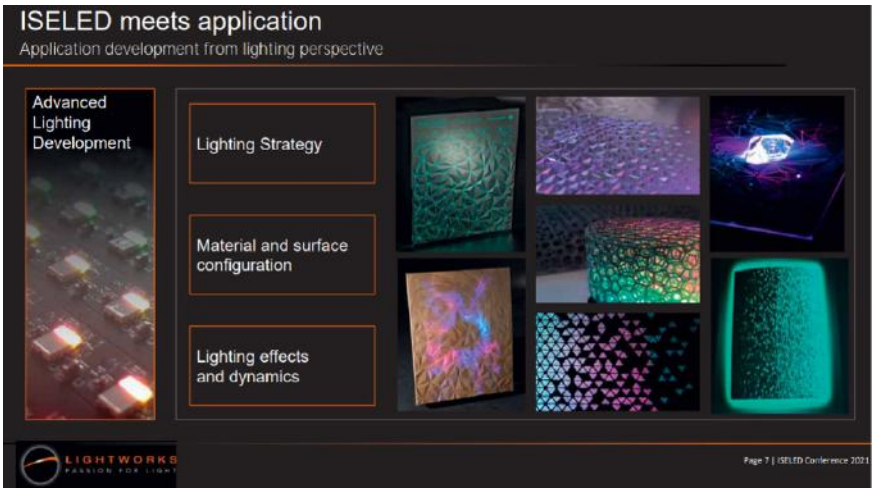
The Yangfeng Smart Cabin comprises an extraordinary cabin ambiance, multi-modal cabin HMI, personalized experiences, adaptive interior layout, integrated intelligent safety, and connected services and data.

Luca Gioanola, of Magna Lighting, reported aboutAmbient Lighting, A Bright Future With New Form and Dimension.

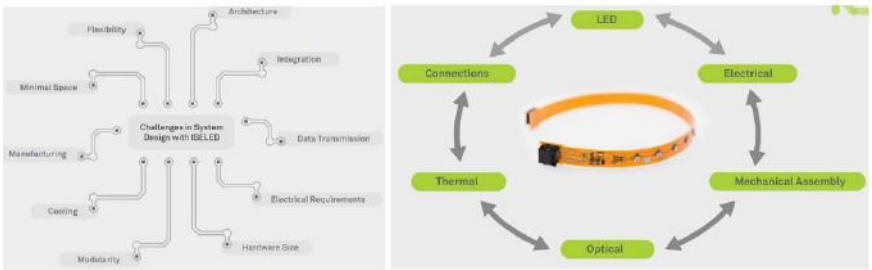
Dr. Ana Bizal from Hella showed Perspectives in Smart Interior Lighting Applications.

DesignLED's Dr. James Gourley gave a lecture about SmartLEDs and Automotive Displays.

And Mathias Rönnfeldt, CTO of Lightworks, informed about ISELED Meets Application: Perfect Matches Between Laser Textured Surfaces, Natural Materials and Smart Fabrics.



Tobias Seidl, from Feno, described in his lecture the conditions and challenges concerning System Design With ISELED on Flex-PCB and presented his company, founded in 1998 in Munich, with 100% in-house design, engineering, manufacturing for electronics, LED modules, and light guides for automotive interior lighting.



Jürgen Brügl of Brügl Innovations gave a lecture aboutISELED Toolchain—A New Versatile Demo System. He described how to program ISELEDs with Arduino, an open-source electronics platform based on easy-to-use hardware and software. The Arduino programming language is a simplified C++ and comes with the Arduino Software IDE, a lightweight programming environment which allows the addition of actuators, sensors, and communication like I2C, SPI, RS485, UART, Serial, LIN, and CAN. WiFi and Ethernet opens many options like UDP and 10BaseT1S. The Munich-based Usaneers company have successfully used an off-shelf Ethernet shield to control ISELEDs via DMX and Artnet. J. Brügl also introduced FastLED, the most powerful open source community driven software library available: a fast, efficient, easy-to-use Arduino library for programming addressable LED strips and pixels. In his opinion the following features are needed in the near future: LED strips pitches of 36, 72, and 144 per meter; interconnectable and flexible matrices of 8 × 8; 16 ×16, and 8 × 32; LED rings in various sizes, and 11- and 16-bit color models.

The conference ended with a fascinating panel discussion among experts [left to right here] S.Kouba (Microchip); Dr. Wambsganß (Hella); M.Daubner (Antolin); R.Isele (BMW), and A.Vollmer (Hüthig) with the rubric **LED Lighting: the (R)evolution has just begun**.

Interior News

Continental's Miniature Interior Sensor Tech

INTERIOR NEWS

CONTINENTAL IMAGE

Continental has developed an integrated miniature solution called Cabin Sensing, which combines camera data with radar sensor technology and intelligent algorithms.

Continental's Cabin Sensing is designed to allow real-time object detection within the entire vehicle interior. This is made possible with optics and sensors minimized to around 1 cm, integrated directly into the display. The precise positioning of the radar sensor is intended to ensure all areas of the interior are equally covered, and that living objects in the vehicle can be reliably detected. "To do this, our Cabin Sensing detects, among other things, the child's breathing, thus identifying it as a living person and sounding the alarm. False warnings are nearly impossible," says Continental's relevant Product Manager Daniel Naujack.

Continental's solution meets the new requirements of the EU General Safety Regulation (GSR), which will make driver and vehicle monitoring systems mandatory for new approvals from 2024 to detect driver fatigue or lack of attention. In addition, the installation of interior cameras will already be rewarded with points in Euro NCAP from 2023. In the future, the system will be able to record and evaluate other health parameters, like child breathing, in addition to object movements.

If the system detects a health emergency with a child in the back seat, it can then bring the vehicle to a safe stop using a "minimum risk maneuver".

Kurz IMD Decopur Showcases "Shy Tech"

INTERIOR NEWS

KURZ IMAGE

Surfaces and components become more and more intelligent HMIs using wafer-thin decoration and sensor technology. The top of an automotive component can be individually designed using the wide range of In Mold Decoration (IMD) design options: From "shy tech" designs with integrated touch function, to seamless ebony surface. Integrated operating functions come alive as soon as the interface is activated via touch or gesture, then the complete functionality of the component is revealed. Backlighting and haptic feedback give the user confidence and orientation. The cover with its crystalline structure and multi-light design becomes a highlight with IMD Decopur technology from Leonhard Kurz,

The front cover was created using the affordable IMD DECOPUR process, wherein the component, decoration, and PUR layer are created in a single work step. This allows for a wide variety of designs with depth effects, combined with extreme durability. Scratches can even heal themselves. The component is equipped with capacitive and haptic sensors as well as color-backlit symbols.

Basalt-Reinforced Plastic Seat is Light, Strong

INTERIOR NEWS

AMC'S JEROEN BLEEKEMOLEN SEAT, NAMED AFTER THE LE MANS WINNER

At the lightweight construction symposium of Automotive Management Consulting (AMC) in Kasel near Trier, Germany, a wide range of applications of xFK-in-3D ultralight construction were shown. To achieve sustainability goals and replace petroleum-based materials, the performance seat was wound with basalt fibers, and covered with Alcantara on resource-saving flat panels. AMC Managing Partner Rainer Kurek says "The innovation BFK in 3D makes the more advanced technical use of natural fibers for highly stressed structural components such as the full-shell seat relatively easy, opening up a new lightweight construction tournament".

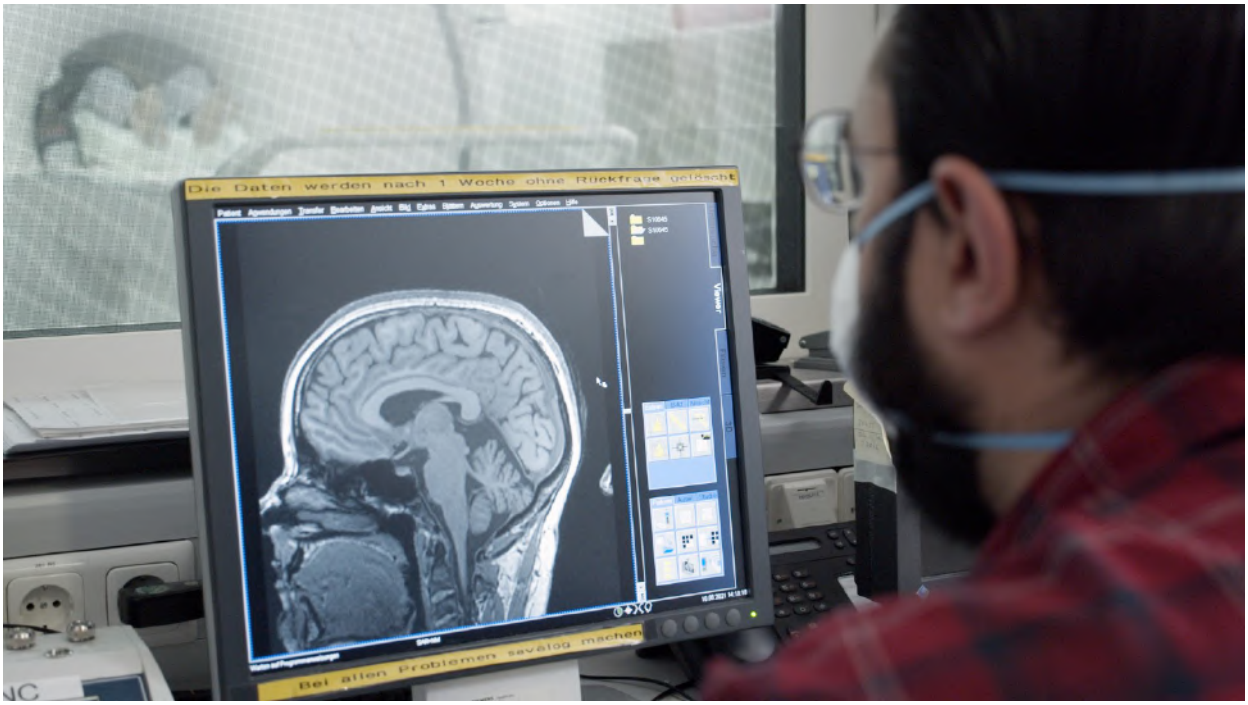
Basalt has a lower GWP (global warming potential), is easier to recycle, and, according to AMC, has a CO_2 footprint one-eighth that of carbon fiber reinforced plastics (CFRP). Specifically, the seat weighs less than four kilograms, the structure alone only about 1,800 grams. Nevertheless, with a comparable E-modulus, the seat is about 30 per cent stiffer than conventional fiber-compressed solid shells. Weight and stiffness can be adjusted via fiber structure, direction, and thickness.

A company called Gradel has expertise to place resin-impregnated fibers exactly where they belong by a wet winding process, precisely and reproducibly with multi-axis robot systems. The patented process technology, called "xFK in 3D", is a procedure in which plastics reinforced with fibers such as glass, carbon, or basalt are wound three-dimensionally based on calculation and simulation. The fibers can be designed geometrically freely in the X, Y, and Z planes, depending on the defined load paths and load spectra of the component. The advantages of this are optimal fiber placement to absorb forces and stresses, and minimal material waste.

The Jeroen Bleekemolen seat will be presented next month at the Automotive Industry Lightweight Construction Summit 2021, as part of the session on sustainability and lightweight construction.

Ford's Work With Neuroscientists On Fatigue, Distraction

INTERIOR NEWS



BRAIN SCANNING – UNICLINIK AACHEN IMAGE

Ford, through their Advanced Engineering Group in Aachen, Germany, says they are pioneering new brain research that could ultimately lead to a faster, more accurate way to detect when a driver is starting to zone out behind the wheel.

Working with neuroscientists from Uniklinik RWTH Aachen, Ford is hoping that identifying the brain responses that reveal concentration lapses may facilitate correlating the scans to their physical and measurable manifestations, such as changes in heart or respiration rates.

Alerting tired or distracted drivers earlier could greatly boost traffic safety, with driver fatigue cited as a contributing factor in up to 25 per cent of fatal and serious road crashes. A survey shows that 40 per cent of drivers in Europe do not follow the recommended practice of taking a break every two hours on long drives.

The testing involves participants completing a driving simulation while their brain activity is scanned by an MRI machine. A specially positioned mirror enables the participants to see the simulation on the screen.

The scenario, designed using gaming technology, involves a three-lane motorway at night where a vehicle in the middle lane brakes suddenly and the participant has to take over and move the car to the left or right, using a handheld device. The participants are also prompted by engine sounds to indicate which lane it is safe to move to.

The MRI machine scans the brain before and during these actions, while the researchers measure how quickly the participant reacts and if they make the right decision, and monitor changes to heart rate, breathing rate and other physiological measures.

Ford Award for Preh Rotary Button

INTERIOR NEWS

PREH ROTARY BUTTON IN FORD MUSTANG MACH E (PREH IMAGE)

Preh's haptic rotary knob bonded to a touchscreen display has been nominated as one of 27 finalists for the globally renowned Automotive News PACE Awards. The Preh button has been first commercialized in the Ford Mustang Mach E.

More recently, Preh was announced as a Create Must-Have Products & Services World Excellence Award winner at Ford Motor Company's virtual event earlier this month. In the Ford Mustang Mach-E, this haptic rotary control knob is bonded, cutout-free, to the touchscreen.

Preh Group CEO Zhengxin Cai says, "I am always very proud when our company is recognized for its innovative power. This is because the Preh Group has a history of innovation, started by founder Jakob Preh more than 100 years ago. Our team worked tirelessly on the creation of an outstanding solution for Ford: The rotary multi-function knob on a touchscreen. And my thanks go to our customer Ford. It was the excellent cooperation between Ford and Preh, which finally brought this new control interface successfully into series production in the Mustang Mach-E. For Preh, this award win marks a new milestone in our track record of creating world-class HMI solutions, demonstrating what we can achieve by living the essence of our claim 'Passion For Excellence'".

Cupra Born: Sporty Sustainability from Spain

INTERIOR NEWS

INTERIOR AND TUNING DIFFER FUNDAMENTALLY FROM THE VW ID.3

The Cupra Born has been available to order since the beginning of September, and four weeks later production started at the VW plant in Zwickau, where the platformmate VW ID.3 is manufactured. Within the Volkswagen Group, the Cupra Born has been assigned the role of turning Spain's whole auto industry towards electric mobility, with a brand which claims to inspire the world from Barcelona.

A choice of six colors provides interior illumination to set the tone for each journey, while a sporty exterior is designed for enhanced performance and agility. The three-dimensional textured surface provides stylish exterior dynamism.

In terms of bodywork, interior and configuration, the Born does not have much in common with the ID.3; it appears more sporty and stylish, and is presented as more sustainable than the ID.3. For example, the seats have covers made of recycled marine plastic (a recycled polymer fiber fabric called Seaqaul Yarn). Other details such as the parcel shelf are also made of recycled material, and leather is no longer used except on the steering wheel's wrap. Most of the interior surfaces, many with three-dimensional embossing, also look much higher quality than in the ID.3.

You sit completely and comfortably in the molded seats. The seat bolsters clasp your back and bottom in curves without constriction. The driver and passenger are separated by a wide center console. The cockpit with its two displays is largely familiar from the ID.3, as is the AR-HUD. The Dinamica® seats use high-quality recycled materials.

If desired, up to eleven assistants take care of the wellbeing and safety of the passengers. Four driving modes can be set, or five in the performance versions of the car. Each program changes the steering and response of the electric motor. The many sensor fields and sliders as well as the operating concept of the multimedia unit come from Wolfsburg.

The Design Lounge

Legacy Automaker BEV Design Challenges: Renault

THE DESIGN LOUNGE

RENAULT TWIZZY (LEFT); RENAULT 5 PROTOTYPE (RIGHT)

After overviewing Tesla's design and their challenges as a self-styled 'startup' automaker, today's Design Lounge looks at an established automaker—Renault's—approach to BEV architecture in context of their branding and design themes.

In our introductory photo, you can see two approaches used by Renault design: the new design of the Twizzy and the retro hints of the Renault 5 Prototype BEV. This is a luxury an established maker's design studio has over their 'startup' colleagues.

One of the key elements of a maker such as Renault is their design history. Positive or negative, such a history creates a crucial reference point for the studio's every next new vehicle's design and architecture. Over the years and decades, their design studios can introduce retro elements that strum at nostalgia, or create a contrasting direction from this past that introduces new types or segments of vehicles.

Renault is a brand known for their design prowess by establishing a series of new vehicles types into the market. Vehicles such as: the original Renault 5, the Twingo, the Scenic, and the Espace brought new interior-space concepts. Even the commercially unsuccessful Avantime seen below enabled Renault's signature style elements.

RENAULT AVANTIME

Reviewing their design history over the last four decades, including the Avantime, one can see how Renault used the centrally-focused instrument cluster as a brand-

significant design differentiator. This established and strengthened their interior-space concept for many generations.

ORIGINAL RENAULT 5 (ABOVE)

2ND GEN RENAULT 5 (ABOVE)

ORIGINAL RENAULT TWINGO (ABOVE)

2ND GEN RENAULT TWINGO (ABOVE)

ORIGINAL RENAULT SCENIC (ABOVE)

3ND GEN RENAULT SCENIC (ABOVE)

3RD GEN RENAULT SCENIC

4TH GEN RENAULT SCENIC

The interior-space concept used in the Twingo, Scenic, and Espace—now implemented by all of Renault's competitors although without the centrally-anchored IP, made Renault design look for a new direction. This, along with the introduction of UX/HMI, shifted Renault away from the interior-space concept and more toward a tablet-style center/floor console interior design layout.

Seen here below in the spiritual successor to the Twingo, the Zoe BEV. With this interior update, this center/floor console becomes the focal point for all of Renault's interior designs and layouts.

RENAULT ZOE

CURRENT SCENIC

CURRENT ESPACE




CURRENT MEGANE RS CURRENT CLIO

MÉGANE E-TECH

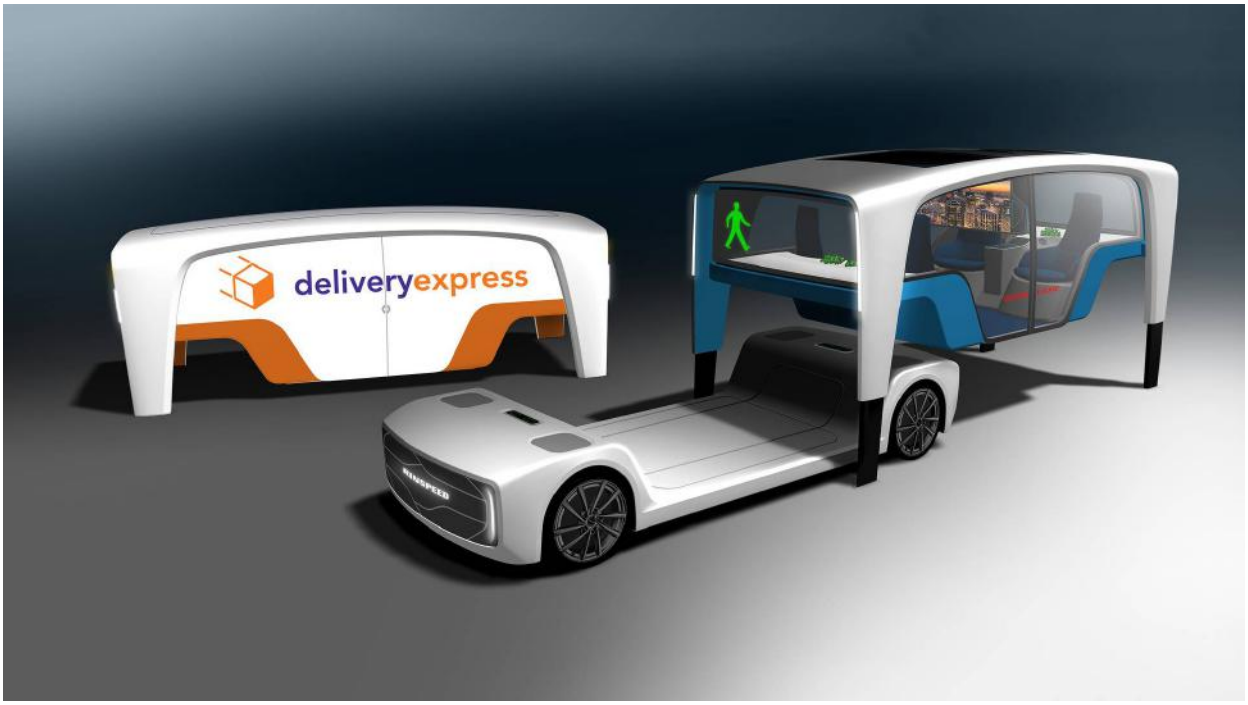
Renault's new Mégane E-Tech, the centrally-oriented interior-space concept is supplanted by a strong driver-oriented design. Now a driver's pod type of display/cluster floats off the instrument panel, integrating the HVAC ducts as a strong contrasting horizontal element. This creates a layered, spatial effect.

It seems reasonable to expect this layered spatial effect to be incorporated into future interior designs to build Renault's unique brand-significant design in its new direction.

News Mobility

_ Car interiors Unplugged.

NEWS MOBILITY



RINSPEED-SNAP-CONCEPT – SOURCE: RINSPEED

34. Post script. Meta-interiors _

A ‘motion paradox’ in film refers to whenever an object is in motion and simultaneously also in rest. At first glance, to some of the latest autonomous mobility concepts, we have the feeling that transportation, logistics and real estate conjured into one unique, alternative, business scenario. In a closer look to autonomous platform based modular mobility concepts (ie Toyota e-pallet, CAMV etc), we can clearly state that ‘car interior’ is detached from ‘the car’, therefore cannot anymore be defined as such. In addition, converts itself occasionally into static space, a room with a view. The view to the outside world is carefully framed in order to depict surroundings accordingly. Framed landscape (*ref. Mobility vs Landscape*) has been for centuries our view to the world, recuperating just enough visual elements to make a synthesis of the territory we are crossing and the surrounding circumstances.

Moreover, independently of the kinetic status of the composition, another type of framed representation of the world takes place within, through a smart screen, that does not only ‘frame’ our physical proximity but a much wider vision to the world. Even when the interior hub is not on wheels, we can still follow mobility and mobile activities, stitching the unknown, non-visible, through graphic representations, real time images and reports, into a new reality bended around our interests. That alone gives vehicle the ability to go static and let the world go round. Thus, we have now managed to immobilize mobility, the film equivalent to a still-motion on an action scene.

Before 1500, the world was a series of local networks and no one had a global vision, with any form of governance being a regional empire. Our contact to the world has always been the moving landscape, derivate of our motion while crossing new territories. A moving image was invented soon after, as its artistic representation. Today seems that any sort of animated screen has become more compelling than our static proximity and we attempt to design the vehicle for it.

The ability to convince others to believe in something that they don't see, but we all believe it should be true, is a terrific trick. Our entire finance system is built on this one act of faith. In the case of mobility, it is a promise between the low value of a glass-slab-object like a screen and the highly valued information displayed at the unit of time. It is an implicit contract between the people and the decisions they believe will be made in the future to come. Or, maybe just the fact that they are the ones to take those decisions.

Each geographical place is of course different, but what happened with smart tech is that everyone from anywhere can see each other's moves and places, from Bombay to Paris, from Gothenburg to Sydney. Picking into each other's lives often created a crisis of expectations. That lead us into making assumptions for many things we don't see, focusing in specific angles and definitions that people create of their journey, what may become our own journey, on the long run. This is worth an analysis of human perception and what it means to see or to look at. It is about reframing principles that somehow work against each other.

Making sequence of patterns and forms, shifting through different narratives we become not just the masters of suspense but also storytellers and world-builders. Undoubtedly, there are very big similarities with film shooting. Indeed, it is the same exact action multiplied by the infinite number of participants. In a software seminar in Silicon Valley the audience was asked to point out the difference between a bank-thief and a computer virus (both committed to the same purpose). The right answer was: 'once inside the bank, the thief cannot multiply'. In a similar, hopefully less risky and less harmful way, we are thieves of screenshots and stages in action, able to see all life's little tragedies and comedies, with a potential risk to be choreographed in a dangerous climax. 'Voyeurism' is the exact term referred to the use of the one-sided camera as a main tool of communication with the world. On the opposite end, static behind a screen, we become audience of a script created by someone else in a different location through a dissimilar experience and, as spectators this time, we see just enough to put it together and imagine the complete story based on our very personal real-life experience and vision to the world.

The use of available lighting and settings creates a specific to the camera illusion of realism necessary to absorb any audience (*Samsung's 4.1-86.1mm on 16 megapixels and 21x optical zoom, Iphone's wide and ultra-wide cameras backed up by a TrueDepth camera raising the count to 12 megapixels each...*), coupled by dramatic sound enhancement of the scene (*active noise canceling, blue tooth codec earplugs etc..*). What is most striking to the contemplative quality of the play is the continuous interfering cutting back-and-forth (scrolling) from our side, in order to define the overall picture that goes above and beyond the screen frame, and as we move, mobility acquires new skills.

After all, a car interior cannot be at the same time a telephone-booth, a hotel room, a bank transaction crypto floor, an itinerant broadcasting studio, a new gen parking system and a metaverse sanctuary. Is mobility about to become an observation instead of an act?

_____*INDUSTRIOUS*__

Tesla's New Crash Safety Tech With Real-World Data

NEWS MOBILITY

TESLA IMAGE

Tesla says their latest crash safety technology is based on real-world data collection using its large fleet of vehicles equipped with sensors and driver-assistance systems **questionably marketed** as "self-driving" technology. By collecting data from the millions of Tesla vehicles on the world's roads, and replicating real-world crash scenarios, Tesla claims to be engineering safer vehicles than can be designed using compliance with regulatory and industry-standard crash testing requirements and methods.

With the data set, Tesla claims to be able to detect within 10 milliseconds what type of crash has happened—and eventhe exact seat position and steering wheel position, however the driver adjusted them—to deploy the airbags accordingly. The data collected through the sensors embedded in over amillion Tesla cars is especially interesting, it includes a wide array of situations—small versus big, car versus truck, car versus cyclist or pedestrian, and so on. Nevertheless, as spectacular fatal Tesla crashes continue to stack up, the world's auto safety regulators are increasingly vocal about Tesla's **open scorn** for safety regulations and standards and the agencies tasked with enforcing them.

General News

Visteon-Blackberry Digital Cockpit Solutions

GENERAL NEWS

GEELY'S XINGYUE L WITH INTELLIGENT COCKPIT BY VISTEON, ECARX, AND QUALCOMM

Visteon and Blackberry have announced an expansion of their collaborative work to accelerate the deployment of digital cockpit solutions for automakers and suppliers around the world.

Blackberry, Based in Ontario, Canada, provides intelligent security software and services. Visteon, headquartered in Michigan, is a supplier of digital instrument clusters, displays, Android-based infotainment systems, domain controllers, ADAS, and battery management systems.

As part of the multi-year agreement, Visteon will use a range of Blackberry QNX software and services to build next generation digital consolidated cockpits, including digital instrument clusters for multiple automakers.

The strategic agreement is the most recent milestone in the collaboration between the two companies. Past achievements include the October 2017 announcement which saw Visteon select Blackberry's safety-certified QNX Platform for Instrument Clusters 1.0 software for a digital instrument cluster project the company won with a major Chinese automaker.

For future digital cockpit projects, Blackberry will provide Visteon with their QNX Software Development Platform, QNX OS for Safety, QNX Hypervisor, QNX acoustics middleware, QNX Black Channel Communications Technology, Blackberry Jarvis, as well as professional engineering services for system-level integration, performance optimization, and solution validation.

For example, Visteon's SmartCore domain controllers help automakers accelerate the digital transformation of their cockpits with digital instrument clusters, Android-based infotainment, secure OTA updates and connected applications to create premium in-vehicle experience. With the increasing industry acceptance of Android-based operating systems globally, Visteon is experiencing an acceleration in the adoption of the SmartCore technology by automakers in all regions. Today, the company has SmartCore business with ten automotive customers, and expects the technology to be a key growth driver in the coming years.

Car OTA Subscriptions Ape Netflix/Spotify Model

GENERAL NEWS

IN 2019, BMW PLANNED TO CHARGE AN ANNUAL FEE TO USE APPLE CARPLAY.

GM thinks consumers might pay $135 every month for emergency assistance, enhanced maps, and software-enabled upgrades that boost acceleration.

It's a model familiar to consumers who dole out monthly money to Netflix for video, Spotify for music, XBox for video games, and Amazon for "free" shipping. UBS estimates that the so-called "subscription economy," powered by pandemic-induced changes in buying habits, will grow 18 per cent annually for the next four years, hitting $1.5tn in 2025.

Now automakers want in on the moneyshower. Original-equipment subscription hooks could include technology such as dash cam, light guides, and software that you may use only if you pay extra money every month; Tesla has started to popularize the model.

General Motors told investors this month that subscription services could bring in an additional $20bn to $25bn annually by 2030; 4.2 million customers already pay for GM's OnStar security services, which include an app that costs $15 every month. EV startup Rivian said in recent financial filings that they could bring in an additional $15,500 over the life of each car with software-enabled services, including an autonomous driving feature and subscriptions for infotainment, internet connectivity, and diagnostics. BMW last summer created buzz with plans to charge subscription fees for features like heated seats. In the US, the automaker offers subscriptions for an onboard dash cam and a remote car starter.

Experts estimates that such an endless-payment model could piggyback on electrification, as a new technology enables new other things. The automakers' dream is that a car becomes a money tree, a smartphone-like device that will require ongoing purchases to continue providing the functionality expected by its users—where people forget they've subscribed, allowing businesses to charge their credit cards in perpetuity. Regulators and consumer advocates may limit the opportunity, but the magic of marketing may yet triumph.