Thu, 9 May 2024
Weekly Newsletter

DVN Interior

NEWSLETTER #211

Editorial

Yet More Awesome Technologies At DVN Interior Workshop

DVN INTERIOR WORKSHOP EXHIBITION HALL

Last week's newsletter was headlined, **Future Interiors, Awesome Technologies at DVN Interior Workshop**. This week, we bring you another round of the amazingness shown at the event by reporting on the remaining sessions. You'll find coverage of nine lectures from the HMI and Smart Surfaces session, and of the Light and Health; Interior Lighting and Materials and Sustainability sessions. Such a fireworks show of technology!

On behalf of the whole DVN Interior team, I thank all speakers and exhibitors—whose expo booths will be shown and described in the complete report we'll publish next week—for their outstanding contributions. Special thanks as well to all attendees, with their active participation in the session Q&As.

We're looking forward to seeing you all at our next event, timed with the Torino Interior and Design Day the end of October. Stay tuned for more information about that and, of course, about next year's DVN Interior Workshop.

We are so proud to being able to present so much technologies thanks to you and the community.

Sincerely yours,

Philippe Aumont
DVN-Interior General Editor

In Depth Interior Technology

DVN Interior Workshop Report · Part II

HMI and Smart Surfaces I

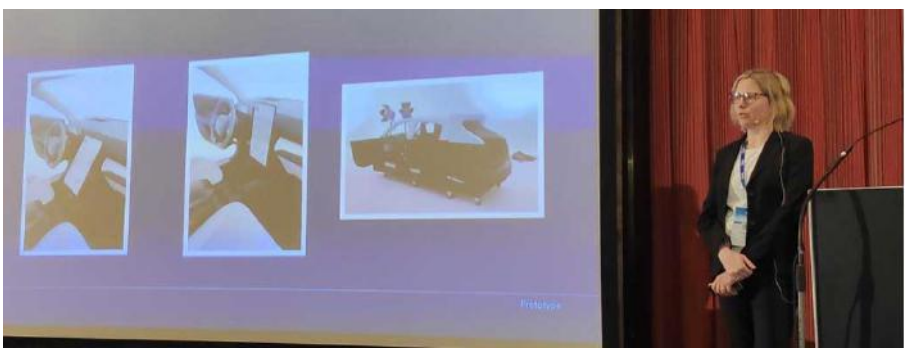
HMI (Human-Machine Interfaces) play a crucial role in the effective interaction between humans and machines. HMI is accepted when it aligns with the user expectations and simplifies the operator's experience.

Smart surfaces are revolutionizing the automotive industry, enhancing aesthetics and functionality. They can display information and respond touch or proximity with haptic feedback.

Session chair: Carsten Befelein

Trends and Innovations in HMI-UX Research and Concept Development

Ford Motor Co.; Iris Lydorf, HMI-UX Researcher



DVN IMAGE

Iris Lydorf, an HMI-UX researcher at Ford, described the concept development process at Ford:

"When it comes to concept development, we follow the design thinking process. Starting with creating personas and looking for current trends, we then identify the main passion and pain points of our customers. In ideation sessions, we think about solutions for those issues using techniques of user journeys and how might we question. In the next step, we develop prototypes to test our ideas with customers. Based on those findings, we might need to redefine the problems and/or come up with different ideas.

Focusing on the most wanted customer needs of personalization, connectivity, and minimalism, for the new Ford Explorer we developed a welcoming and calm digital cockpit. The 15-inch center stack display is moveable and integrates the climate control and wireless Apple CarPlay/Android Auto. Following the need for flexible storage solutions, we created the modular mega console with exchangeable cases."

Toward Codriver Displays with Switchable Privacy

Pforzheim University; Prof. Dr. Karlheinz Blankenbach

DVN-IMAGE: PROF. DR. KARLHEINZ BLANKENBACH / UNI PFORZHEIM / GERMANY

Prof. Dr. Karlheinz Blankenbach has over 30 years' experience with displays and is member of several committees related to display technologies. He described how displays in dashboards are growing toward pillar-to-pillar size as introduced recently in luxury cars. The co-driver (front seat passenger) can then directly enjoy content on the 'co-driver display' (CDD) and need no longer to turn their head toward the central information display (CID). However, the human driver is not allowed to watch distracting content on the co-driver display, so the viewing direction of the driver is monitored. The easiest but least appreciated solutions to handle that are to allow no distracting content, or to use fixed privacy foils like in ATMs. The best approach is the electronically switchable privacy display, (SPD) which allows the driver to watch allowed content with the car in motion, while limiting restricted content to when the vehicle is stopped or in autonomous mode; meanwhile, the co-driver can watch whatever they want, whenever they want.

Blankenbach presented in his lecture fundamentals for switchable privacy displays and related measurements toward future standardization. Basically, all SPD methods reduce the luminance for the angular range of the driver when switched ON. The most essential parameters are when SPD is activated: remaining luminance of the image for the driver, degradation of the luminance for the co-driver, perceived non-uniformity for driver and co-driver as SPD ON strongly affects the luminance over observer angle.

User-Centered Solutions for Interior Cabin Decoration & HMI

PolyIC / Kurz, Dr. Wolfgang Clemens

DR. WOLFGANG CLEMENS FOCUSES ON TOUCH AND PROXIMITY SENSOR APPLICATIONS IN AUTOMOTIVE HMI SYSTEMS.


POLYIC/KURZ IMAGES

Dr. Clemens described solutions for the mobility of the future like curved and seamless surfaces, large and 'hidden-til-lit' panels, surface decoration with light and function, and combinations of different functions for displays and switches.

He presented in his lecture Poly TC touch sensors, use cases in capacitive switches in automotive HMI applications, complete HMI systems (molding, decoration and sensor integration) in one production step, in-mold electronics and functional foil bonding, new concepts with infotainment, décor and lighting, touchpad with integrated force detection, plastic based touchscreen panels, haptic feedback and innovative decoration and functional solutions for interior and exterior.

Ceres Holographics

Ceres Holographics demonstrated the world's first in-plane HUD implementation with multiple, separate transparent displays displaying content on one windshield—a technology we **covered** last week.

HMI and Smart surfaces II

Session chair: Olimpia Miglore

This session, with respect the to the previous one dedicated also to HMI, was slightly more centered on user experience and the evolving trend of larger displays fully occupying the cockpit area.

Most lectures highlighted the driver distraction caused by increasing numbers of displays, especially when functions need to be searched within different menus.

How can we ensure information is not overwhelming and still easily at hand, and most of all, ensuring safety during driving?

How to transform a car which contains many 'cold' electronic features in a car that can still generate the driving emotions of the old-timers?

Evolution of Display and HMI

Rémi Mathieu, Product Marketing Manager, Valeo Interior eXperience Product Group

VALEO IMAGE

Valeo's Car Interior Vision 2028

Valeo has stressed the need to go back to the roots, when cars were raising more emotions than today. This is highlighted comparing old cars, mainly from the 1970s, with modern ones and showing how, in the past, emotions (Alfa Romeo Emozione icon) were conveyed mainly from a more direct interactions of the driver with the car functions (buttons and analogic displays). Differentiation might be the key, to allow car owners to find more direct connection to their vehicles.

Valeo's vision for 2028 shows the steering wheel evolution, where controls for far displays, which are located closer to the windscreen, are placed on both sides the wheel. Distant, P2P(pillar-to-pillar) displays convey a 'panovision' effect which is less invasive when the driver sitting in a relax position during autonomous driving, but can be still fully controlled from the steering wheel or armrest's HMI. HMI design should also become more 'empathic', with AI assistants and transparent surfaces, transforming pure technique in something more emotional, with a touch of luxury.

Digital Detox Cabin

Kalpak Patankar, Marelli Director of Product Development

MARELLI IMAGES

Marelli showed their new Digital Detox Cabin.

It is a cabin space to recharge energy and relax, conceived as a seamlessly continuous with the living room, with the same level of comfort. Information is hidden behind natural surfaces and displayed only when needed, to avoid overwhelming driver and passengers with superfluous data. Sustainable materials, high quality surface materials and ambient lighting create a pleasant atmosphere reminding the one of our own home interiors.

Several patented technologies are included in the concept: My Avatar, the cruise companion, CAMEX, AI engine and automatization routine on board and in the cloud, Horizon View Pro Platform for the P2P display and MFL, the multifunctional layer switch.

Demo Car 2.0 - Crystal-Clear Innovations for the Future Interiors

Felix Hake, Marquardt Product Innovation Management

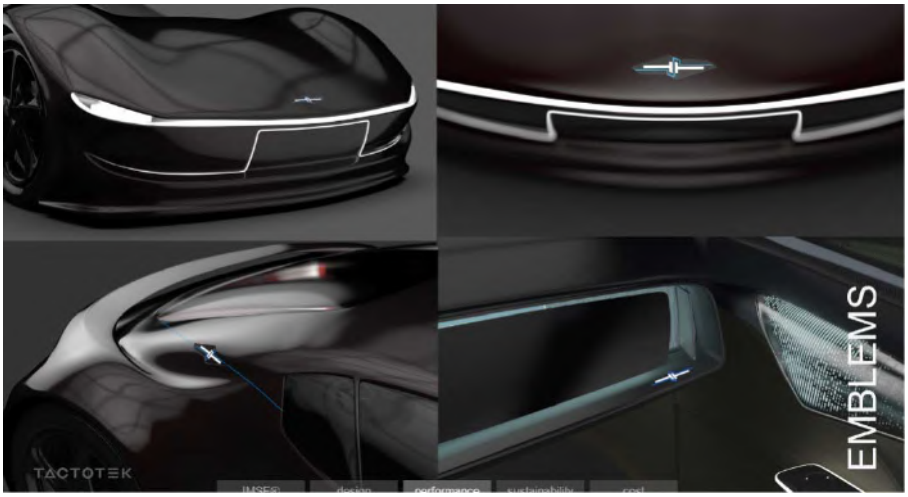
MARQUARDT IMAGE

Marquardt stressed the need to transform the car interior in a more human centered environment, as in their Demo Car 2.0 concept, which we've previously described. Interesting to see HMI, combined with lighting, applied to the exteriors, with sensors detecting the exterior environments and AI analyzing data to provide real time response of HMI features.

The interior ahs controls which need to adapt and switch easily between driving and autonomous mode, to ensure safety and same type of information in both situations. In particular HMI, which is Marquardt core product, is well eqiupped with holographic touchless displays, rotary wheels with active haptics and steering wheels with info displays. Swarovski details all over the car lend their sparkle, and HMI controls with glass surfaces remain transparent when not in use.

The Role of IMSE in Shaping the Future of Automotive Design, Performance and Sustainability

Dominique Heilborn, Tactotek Automotive Director



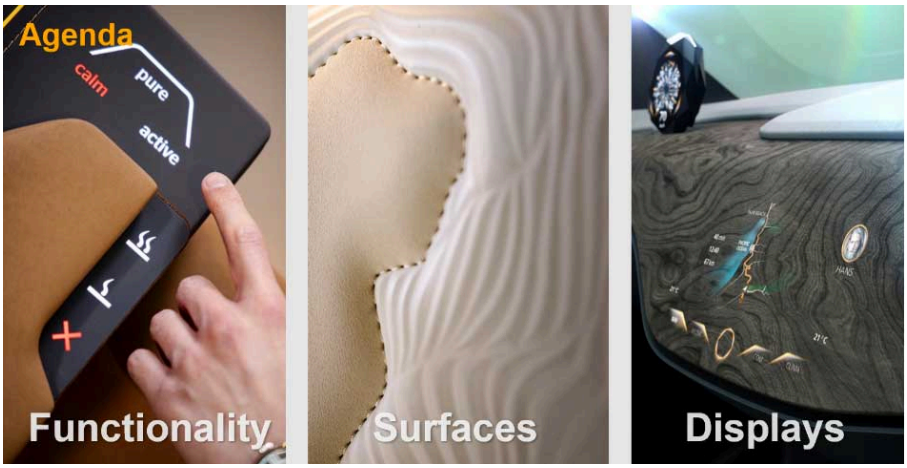
TACTOTEK IMAGE

Tactotek introduced the basics of their IMSE technology (in-mold structural electronics), defining and describing the advantages for lighting applications. Edge-to-edge lighting is achieved with a reduced number of LEDs, using the overmolded PC as a light guide, reducing the number of parts needed. The implementation of the IMSE Technology is particularly suitable for applications like lit emblems, both for exteriors and interiors.

And IMSE allows reduction of greenhouse gas emissions up to 65 per cent, depending on the adopted design.

'Visionary Interior Meets User Experience - How We Actively Shape the Automotive Transformation

Dr. Tim Wolfer - Continental, Functional Printing Project Manager



CONTINENTAL IMAGE

Continental's surface technology division gave this presentation of their vision for future car interiors with innovative HMI and sustainable materials. The shy-tech display technology, supporting the concept of invisible technology on demand, is the alternative to P2P systems like the world's first curved 47.5'' display. Swarovski mobility products appear again, integrated in microLED displays with innovative design, bringing a touch of luxury to the cockpit area.

Innovative materials also featured, such as Acella—a 50-per-cent bio-based textile with recycled-PET backing; Benova Eco Protect lightweight vegan leather, and Xpreshn, a carbon-neutral recyclable woodlike material which can be integrated without any change in customer processes.

Also very interesting: their heatable surface technology, a weight-saving system for integration in many surface materials or components, based on the efficient and fast near-body heating technology.

Interior News

Interior Light and Health at DVN-I Workshop

INTERIOR NEWS

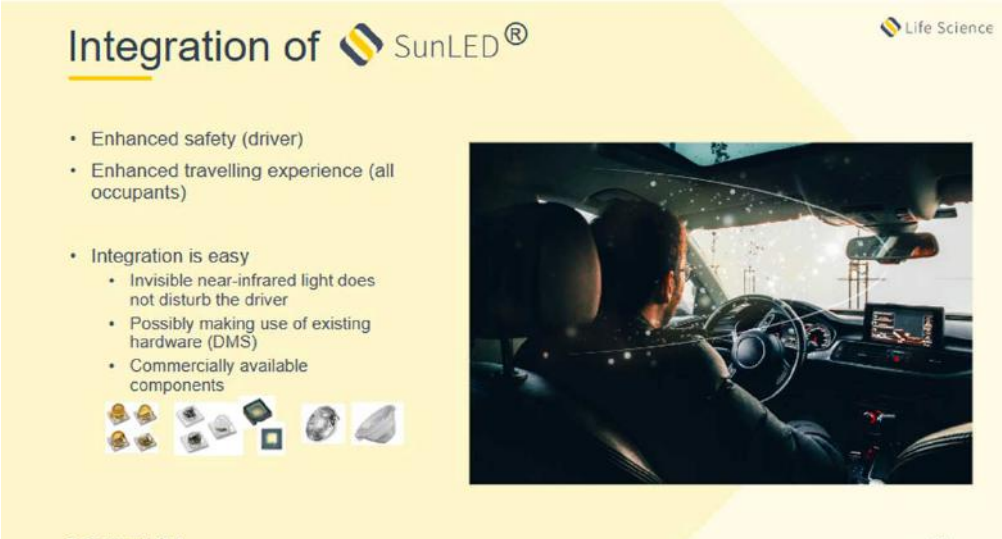
EMISSION ANALYTICS IMAGE

Session chair: Philippe Aumont

IAQ (interior air quality) has been a frequent topic in the DVN Interior newsletter, especially during the worst of the Covid pandemic. Health, in general, remains a main topic, as there's more and more technology available in the vehicle (light, sensors…) which can be used to improve occupants' health, keep them on task, and keep them occupied during autonomous driving, for good psychological health.

Occupant Health & Wellbeing: From Passive Monitoring to Active Enhancement

Dr. Anne Berends, Seaborough Program Director for Life Science



Seaborough is an R&D startup company founded in 2013 in Amsterdam, with three programs: electronics, (nano)materials, and life science. It is owned by Momentum Capital, an Amsterdam-based entrepreneurial

investment fund. Theirs is a fabless business model, as a technology enabler, to licence a patent portfolio to manufacturers.

The importance of driver health and safety cannot be stressed enough, as drowsiness itself accounts for millions of car accidents yearly.

Seaborough says SunLED is a proven technology to enhance health and wellbeing, including drowsiness reduction. It is said to bring vechicle occupants the healthy parts of sunlight.

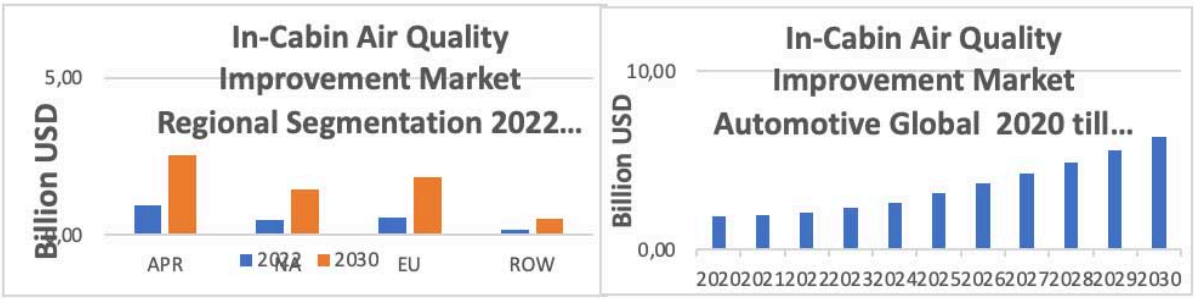
Natural sunlight contains a lot of invisible yet healthy near-infrared light (NIR). This healthy effect on our body is called the photobiomodulation effect. It has been clinically proven by Chrono@Work and Groningen University, with benefits including good physical health, heart rate reduction, good mental health and less drowsiness, as well as immune protection.

Integration of SunLED is simple (potentially in existing DMS hardware), and invisible near-infrared light does not disturb the driver. Active enhancement of driver health forms a logical next step in DMS evolution, going from monitoring the driver, to enhancing the lives of vehicle occupants.

Seaborough says SunLED adds value to the travelling experience in autonomous vehicles, and they are looking for partners to bring the technology to market

Interior Cabin Disinfection by UVC Radiation

Dr. Ralf Schäfer, Ralf Schäfer Consulting



In-cabin hygienics has been a growing concern since years, with a peak during Covid. It is the case for airlines, public transport, car leasing and renting, car sharing, as well as private vehicles. The gravity center of this trend is Asia. Investigation driver are the airline industry and research institutes, car industry is a follower. Lecture addressed UVC disinfection as the main topic.

UVC generates faster disinfection than UVA/B, UVC attacks germs. Different radiation sources can be used at different wave length. Low UVC doses of 20 to 100 $^{J}/_{m^2}$ lead to effective inactivation of germs like MRSA bacteria, Covid 19, and influenza.

Surfaces are the critical area, as surface contamination lasts longer than air contamination, especially plastics (most interior surfaces) and steel which have the longest decay times.

In China, there is a growing trend for equipment of air disinfection systems in passenger cars. As an example, SAIC Roewe cars (Ei5, RX Plus) are equipped with testing and disinfection effective indication, via integration of UVC source in vehicle HVAC. Aftermarket products are front runners for application and market development.

Human exposure is no problem, confirmed by tests made on skin and eye behavior for UVC (254 nm) and FUVC (222 nm). For materials and surfaces, discoloration is the main attention point for (plastic) material suppliers.

Final question is will cabin interior industry grasp the FUVC opportunity?

Interior Lighting at DVN-I Workshop

INTERIOR NEWS

INTERIOR LIGHTING Q&A

Automotive interior lighting isn't just for fashion fun, it shapes the driving experience, making it safer and aesthetically pleasing. We placed nine presentations on this important topic.

Sustainable Modern Luxury

Lydia Hewitt, Jaguar Land Rover Product Lead for lighting attributes & interior lighting

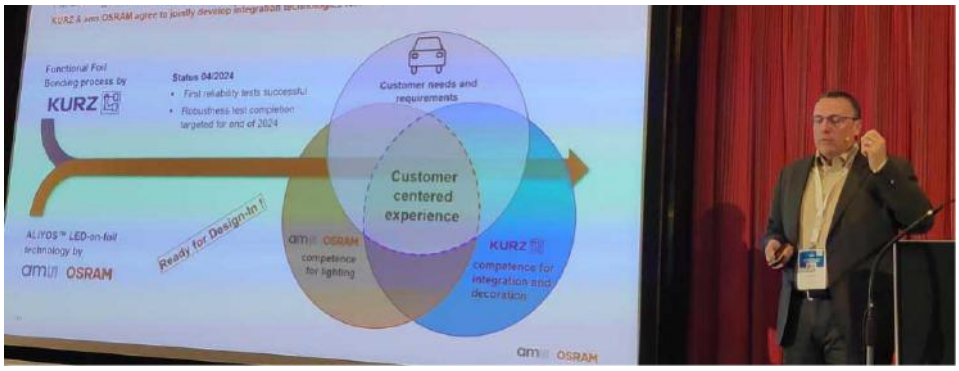
Lydia Hewitt explained that 75 per cent of those surveyed, across markets, agree that "a car that is good for the environment means that you have to compromise on the quality of the vehicle or the driving experience". People don't know what automotive sustainability looks like or understand the impact of practices. Against this backdrop, all ideas seem like a good idea, unless they inherently imply risking the loss of those luxury codes.

She said the idea that sustainability is all about nature, neutrals, and plants is outdated and that sustainable modern luxury is making way for a whole new wave of semiotics for the sustainable automotive landscape.

Jaguar Land Rover, thanks to Lydia Hewitt, received a DVN Interior Special Award for combining luxury and sustainability in their strategy. Special DVN Interior Applause!

Stronger Together – Partnering to Enable the Next Level of Interior Lighting

Michael Brandl, AMS Osram Director of System Engineering for Automotive Interior and Exterior LEDs



Through a Press Release published at the DVN Interior Workshop, AMS Osram and Dominant Opto Technologies have unveiled a collaborative partnership aimed at integrating AMS Osram's Open System Protocol (OSP) into Dominant's upcoming generation of intelligent RGB LEDs tailored for automotive ambient lighting. See last week's interior news for more detail.

Convergence of Displays & Lighting

Tony Allson and Jean Baptiste Trollé, Forvia-Faurecia Clarion

The convergence of displays and lighting allows spreading of information and ambience seamlessly over large surfaces in the cockpit, from the IP to the DP, and even peripheral surfaces too. When they are combined, the light functionals and displays can become cosmetic. They both benefit from each other, extending the HMI across larger surfaces. The combination and interaction creates a sustainability, and cost and power story by using the benefits of different technologies for information where it's needed.

Human Centric Lighting in Tomorrow's Mobility – How to Access it Virtually?

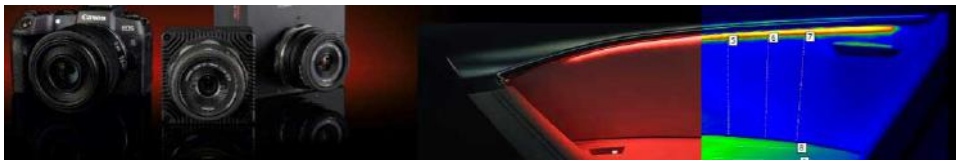
Prof. Dr. Benedikt Lamontain, Magdeburg Stendal University of Applied Sciences

Prof. Dr. Benedikt Lamontain gave an outlook on what virtual and sustainable product development of interior lighting systems could look like. The vision is to have a virtual setup that can be used for evaluating

the visual and non-visual effects of interior lighting systems of upcoming vehicles without having physical prototypes, yet.

Measurement Innovation: Advancing Light Measurement Technologies for Automotive Interiors

Tanja Thiele, Technoteam Application Engineer



Tanja Thiele focused on cutting-edge developments in light measurement technologies and their specific applications within the automotive sector. It highlights the innovative aspect of the technology and its role in enhancing the functionality and aesthetics of vehicle interiors.

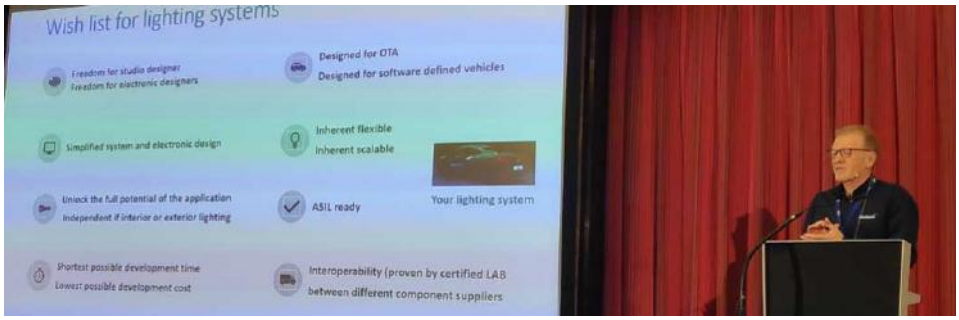
NightSight Assist

Iñigo Mateo, Antolin Innovation Research Specialist

Iñigo Mateo described how the NightSight Assist system comprises the lighting systems for enhancing night driving. The technology based on pupil diameter control and is developed and tested by strong medical support. Inigo Mateo confirmed, that the NightSight Assist is adaptable to every profile and is ready for integration.

The Ambient and Dynamic Lighting of Tomorrow's Interior Applications

Roland Steger, Melexis Business Development Manager EMEA

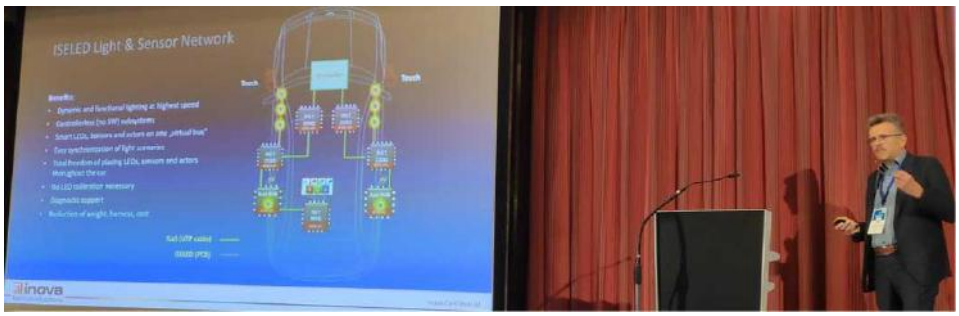


MELEXIS IMAGES

The ambient and dynamic lighting solutions of tomorrow from Melexis provides freedom for studio and electronic designers by a simplified, flexible and scalable system and electronic design, with short development time at low costs, designed for OTA and SDV, ASIL ready and proven interoperability. According to Roland Steger, the lighting solutions of Melexis fulfill nearly the whole wish list of the customers for automotive lighting systems.

System Solution and Calibration of the ISELED LEDs Being Used Behind Different Surfaces

Thomas Rothhaupt, Inova Semiconductors Director



Thomas Rothhaupt explained that the number of LEDs particularly for interior and functional lighting will be increasing exponentially. New features and functions, such as colours and dynamic light effects will be introduced. A few hundred of LEDs inside a car will be state of the art. This will require a new system and network approach by the car manufacturer.

There are a few challenges, such as the local positions of the LEDs inside the car behind different surfaces. Cabling, weight, power consumption and cost of the system should be as low as possible. Controlling the light system should be centralized and as easy as possible. Components and solutions should be available from multi sources and providers and an eco-system of major players in the industry should help automakers to implement it.

He presented in his lecture potential solutions for a Light & Sensor architecture. Latest products and technologies such as ISELED and ILaS allow an advanced system approach. Such a central software defined lighting system architecture and particularly the calibration of the system behind different surfaces was discussed allowing new features and benefits.

Multi-Junction LEDs - High Voltages for Automotive

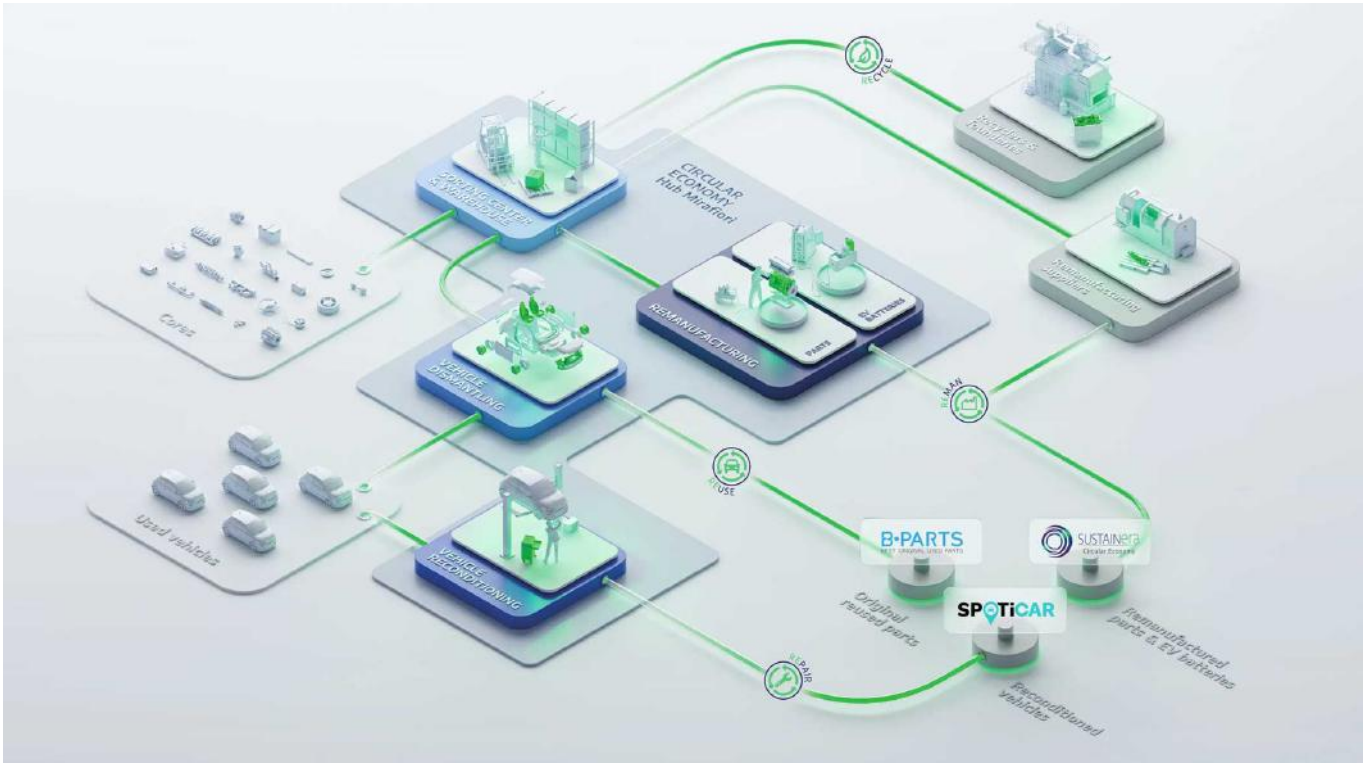
Nils Benter, Seoul Semiconductor Business Development Manager

Part No.			3030W	Ice Blue	1515	5050	12V MJT
			STW8C22WE	STIBC22WE	SYHRH220E	STW8442ZA	Low power
Color			White	Ice Blue	White (Display)	White	White
Image							
Dimension	mm³		3.0 x 3.0 x 0.65	3.0 x 3.0 x 0.65	1.5 x 1.5 x 1.4	(5.0 x 5.0 x 0.65)	3030
Forward Current	mA	typ. / max.	30 / 150	10 / 150	20 / 40	80 / 150	tbd.
Forward Voltage	V	Typ.	5.5	5.5	5.97	11.9	11.6 ~ 12.2
Luminous Flux	lm	Typ.	29.0	5.6	13.3	150	20 ~ 30

Nils Benter presented about how the electrical architecture of cars is under discussion. He described an interior LED trend to use high-voltages LEDs (V_f between 6 and 12 V). The first high voltage LEDs are already in the marked used e.g. in the overhead console, but also in display backlighting higher voltages are in discussion. With the Multi Junction Technology (MJT) SSC has a quite unique method in place to create such new chips.
MJT offers the opportunity to increase the electrical dimming range, the package efficiency and higher flux values per emitter. But changing the rules of LED design, it needs the cooperation of all participants in the market.

Materials & Sustainability at DVN Interior Workshop

INTERIOR NEWS



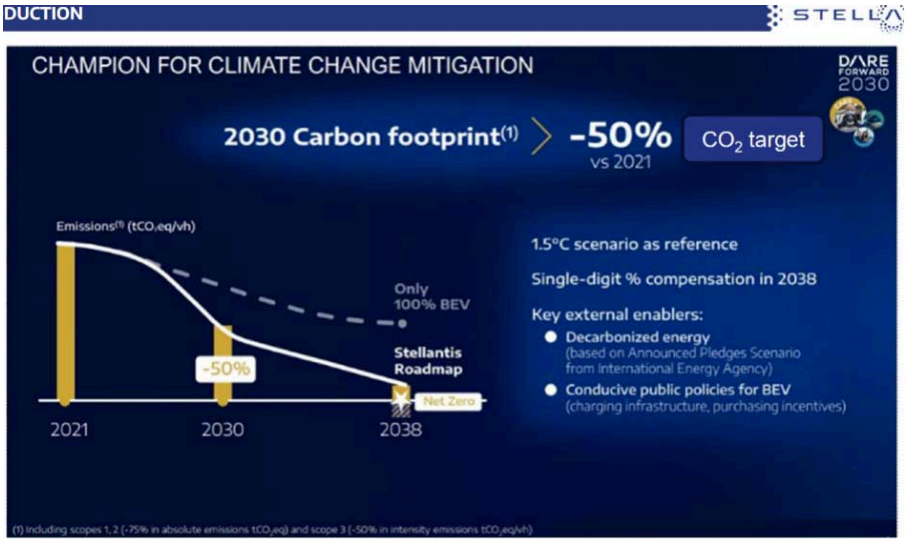
THE CIRCULAR ECONOMY HUB MIRAFIORI (STELLANTIS IMAGE

Session chair: Olimpia Miglore

Materials, and especially new material are pivotal on the road of car interior to sustainability. That's is the purpose if this session, to illustrate the multiple efforts in that direction, through various concrete examples

Materials & Sustainability for Automotive

Gabriele Giaccio, Stellantis Italian Polymer Team Manager



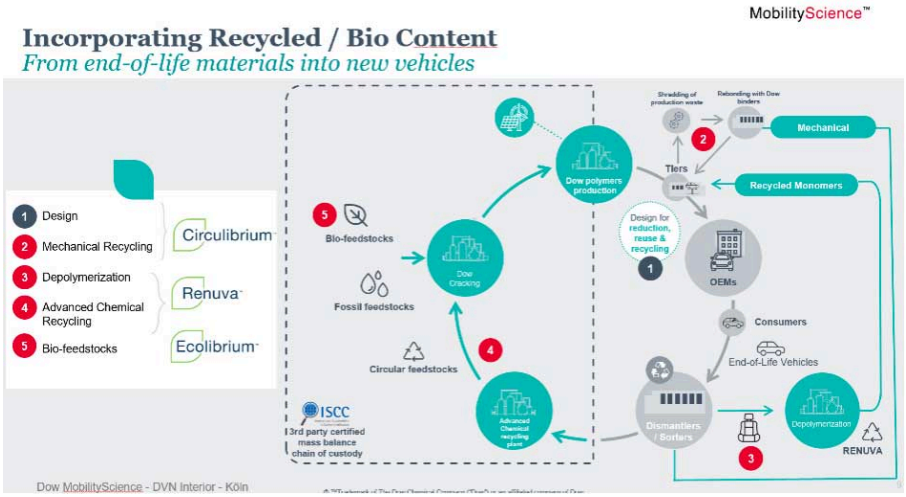
STELLANTIS IMAGE

Stellantis has introduced their circularity strategy, established in accordance with the mandatory End-of-Life (ELV) and BEV-EV directives of the European Community for automakers. These defines that new vehicles must contain a minimum of 25 per cent recycled plastic coming from post-consumer recycled waste, of which 25 per cent must be from ELVs' recycled plastic.

Guiseppe Ciaccio illustrated the general strategy to carbon neutrality and some solutions for soft trim (mono-material strategy) and plastic material recycling (mechanical recycling and use of bio feedstocks). For what concerns materials, the main challenge seems to be developing bio polymers / fillers with good thermal / mechanical performances and competitive cost.
Also, an overview of the main activities implemented by the OEM to support the circular economy has been shown: the Circular Economy Hub in Mirafiori, Turin, where dismantling, sorting and remanufacturing of parts take place, and several EU collaborative research projects for recycling of bio-PU foam, mycelium fibers for non-woven fabrics, tires recycling and use of lignin biomass to replace BPA in epoxy resins.

Material Science for Durable, Safe and Comfortable Car Interiors

Dr Esther Quintanilla, Dow Mobility Science Marketing Fellow, and Dr François de Buyl, R&D / TS&D Fellow



DOW MOBILITY SCIENCE IMAGE

Dow Mobility Science is the winner of the DVN Interior Award for the best lecture, elected by the workshop audience, using the Slido App poll system. Well-deserved prize, due not only to the high quality of the material presented but also to the ability of the two presenters, Dr. Esther Quintanilla and Dr. Francois de Buyl. Dr. Quintanilla explained how Dow is giving a strong contribution to comfort in the car interiors with research on VOC/Odor, Aesthetics , Haptics and Ergonomics. Both presenters gave then a thorough explanation on how circularity can be applied to virtually any kind of material integrated in the car interiors, starting with PU, to POE Impact Modifiers for PP, to Silicone for Airbag and ADAS assembly, and many others. Dow is highlighting also the need of eco-systems supporting the dismantling and recycling of parts and materials and the fundamental cooperation between automotive supply chain partners, to achieve a real design for circularity.

Innovating Automotive Interiors: Energy-Efficient Adhesives Powering Lighting, HMI and Sensors for the Future

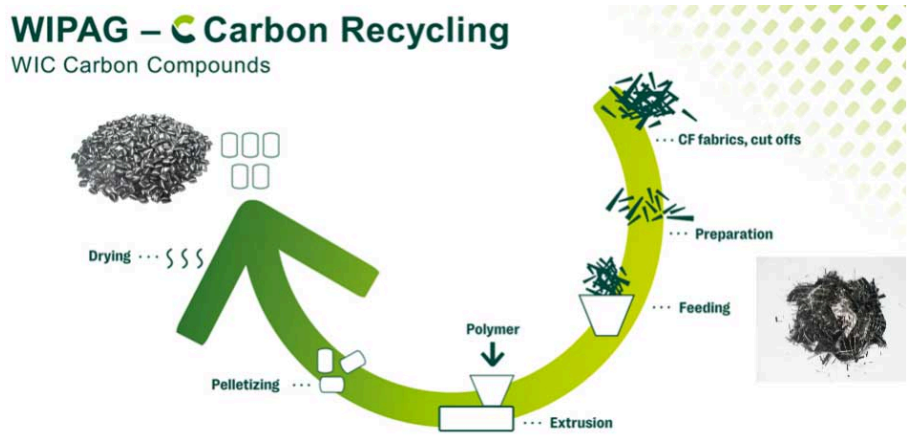
Sven Hujo, Delo Industrial Adhesives Specialist Product Management

DELO IMAGE

Delo has been showing av overview of their main strengths and recent successes: within HMI, bonding of Head Up Displays and Optical Elements. Within interior lighting applications, the successful bonding of Mini and Micro-LEDs has been shown, together with the process used to bond LEDs in In-Mold Electronics. Delo is also market leader in active alignment for camera sensing applications, with tailored adhesive colors for hiding optical elements. Finally, the energy saving option of light curing, which allows 98% of CO^2 reduction compared to heat curing.

Carbon Fiber Recycling—Sustainable Lightweight Solutions

Werner Aumüller, Wipag Automotive Business Development Manager



WIPAG IMAGE

Wipag is part of the Otto Krahn group, together with several other companies specialized in distribution of thermoplastics and ceramic technologies. The company is the 3rd largest in the world for carbon fiber recycling. Carbon fiber demand has an average annual growth of 10 per cent since 2010, due to the high demand for strong, lightweight materials. Carbon fiber scrap is difficult to dispose via landfill or incineration, but WIPAG has developed a technology to process this scrap in a meaningful and efficient manner. Recycled carbon fiber has a high tensile and flexural modulus, good bending stiffness, low density, low coefficient of thermal length expansion, good wear resistance and good electrical conductivity/EMI-shielding properties. Applications of recycled carbon fibers can be found today in many vehicle components like dashboard and armrest, windscreen and BIW parts.

Hyundai Film Ensures Cooler Interior

INTERIOR NEWS

HYUNDAI MOTOR IMAGE

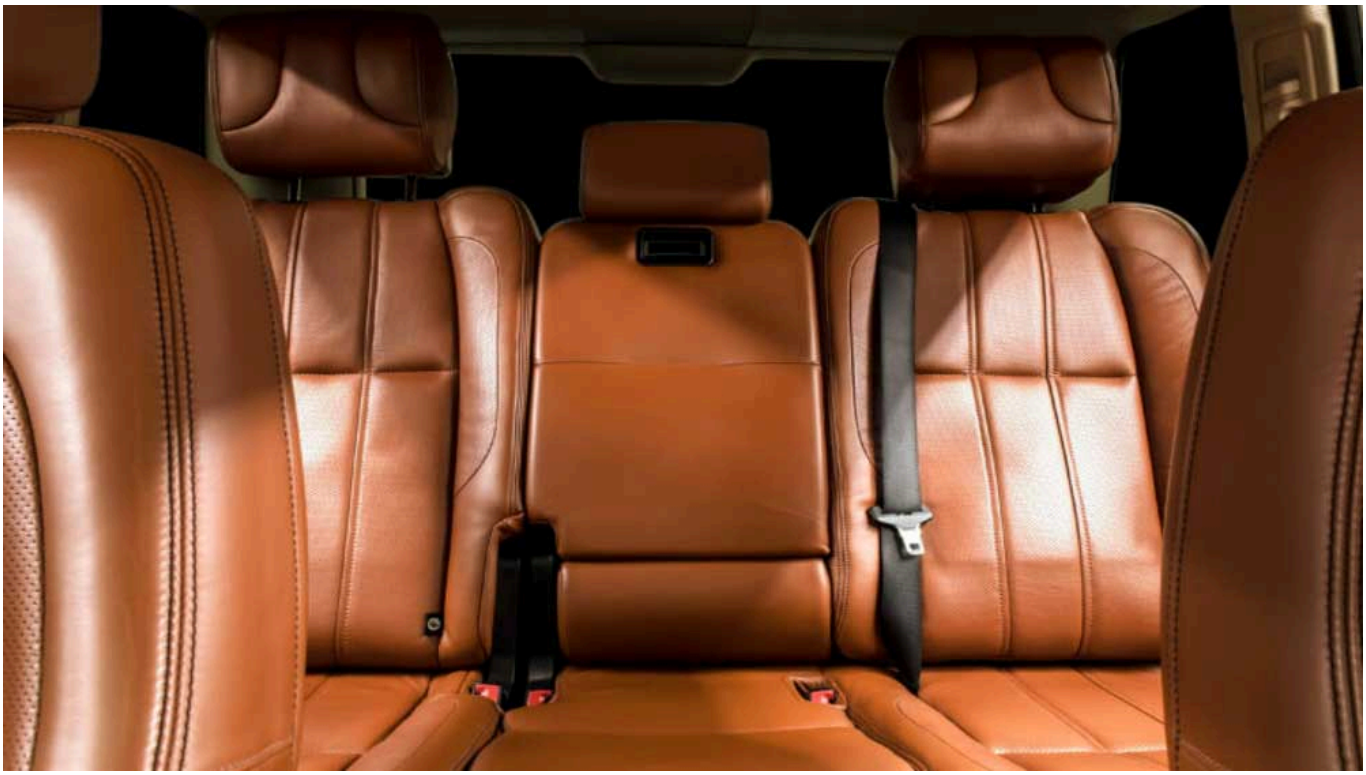
Car Interior thermal management is partly done while improving windshield and windows. As a sign, automotive windows specialists attended the DVN Interior Köln Workshop.

It correlates with Hyundai and The "Nano Cooling Film", designed to improve heat dissipation through the use of a nanostructure with excellent heat transfer properties. It consists of three transparent layers that selectively block or radiate certain wavelengths of solar heat. The outer layer of the nanofilm radiates heat in the mid-infrared range from the vehicle interior to the outside, while the two inner layers reflect the incoming heat in the near-infrared range, thus reducing the total amount of heat reaching the vehicle interior.

In a study, Hyundai found that the temperature near the driver's head was reduced by up to 10.98 °C compared to conventional tinting film and by up to 12.33 °C compared to no tinting. In addition, the film can also be combined with conventional tinting film. Hyundai Motor presented the nano-cooling film for the first time at the "Nano Tech Day" media event in July 2023. As part of the "Made Cooler By Hyundai" campaign, the film is now being applied to 70 customer vehicles in Lahore (Pakistan) to confirm its effectiveness. Daytime temperatures there can reach up to 50 °C in summer.

Sustainability and Circularity: The European Union's Deforestation Regulation and the Leather Industry's Response

INTERIOR NEWS



BRIDGE OF WEIR LEATHER IMAGE

The European Union's Deforestation Regulation (EUDR), slated to take effect on January 1, 2025, is a response to global concerns regarding deforestation and its environmental impact. The regulation will support the EU's efforts to halt deforestation in global supply chains by requiring companies importing commodities like beef, palm oil, coffee, paper and derived products to certify that these products have not been obtained as a result of deforestation, with geolocation data used to confirm the products' origins.

The automotive industry, with its use of leather in vehicle interiors, plays a significant role in the leather market and has faced scrutiny for not addressing its deforestation risks adequately. Despite efforts to mitigate these risks, some areas of the automotive supply chain still fall short in responsible and sustainable sourcing of materials.

The leather industry has potential to influence sustainability, as supporting deforestation and conversion-free (DCF) hides can strengthen economic positions for beef producers and provide leverage for leather purchasers, according to the World Wildlife Fund (WWF). Collaboration with beef and dairy industries and increasing consumer awareness of leather's sustainability potential can "deepen leather's enduring sustainability legacy and ensure its environmental impact is minimal", the WWF says.

Companies like Bridge of Weir Leather also have the power to influence operations, implement sustainable practices and promote deforestation-free supply chains. Bridge of Weir Leather has invested heavily in its production facilities to ensure compliance with upcoming EUDR regulations. The company states that it maintains full transparency in its operations and tracks its materials to guarantee ethical practices.

By adopting deforestation-free leather, automotive brands can meet consumer expectations and help promote circularity in product lifecycles.

VW ID.Code Concept Previews Future EVs for China

INTERIOR NEWS

VW IMAGES

At the Beijing auto show this year, Volkswagen gave an initial preview of their future Chinese-market models designed "in China, for China" with the world premiere of the ID Code. VW brand CEO Thomas Schäfer says it brings a new design, new technology standard and a holistic brand experience specially tailored to the needs and wishes of Chinese customers.

The ID.Code has been consistently designed for L^4 fully automated driving. When the driver activates this autonomous mode, they become a passenger and can read, talk, or go online. To realize this autopilot function, Volkswagen has integrated modern sensor, light, camera, and screen systems. They enable full communication with the surroundings. The systems and the drive are powered not only by a lithium-ion battery, but also by a photovoltaic system integrated into the transparent "Energy Roof".

If the driver or an authorized user approaches the vehicle it starts a visual and acoustic welcome scenario and provides the driver and guests directly with the current weather forecast for the next two hours. Completely newly developed "Smart Windows" with semi-transparent displays are integrated into the side windows. As soon as the driver approaches, an AI-supported avatar appears on the displays of the respective front side window. It provides the driver directly with important information and reminds him, for example, to take an umbrella if rain is forecast. The same avatar is also used in the interior and provides all passengers with information.

The interior of the show car is a variable and online networked lounge. High-quality, environmentally friendly, and animal-free materials as well as high-end sound, ambient lighting and air conditioning systems are designed to provide greater travel comfort. The infotainment landscape and controls have also been completely redesigned. As mentioned, the avatar familiar from the exterior also accompanies the driver and passengers in the interior. The window surfaces become a digital stage for the avatar and other displays.

The comfortable seating system can also be adapted to the respective driving mode. In Level 4 autonomous driving, for example, the steering wheel retracts into the cockpit. This creates additional space to turn the front seats 180 degrees. It is also possible to move the seats into a sleeping position for longer journeys.

The Design Lounge

Tuning

THE DESIGN LOUNGE

Property and privacy are correlated to the automobile ever since its existence, far more than to any other type of transportation, vehicle, system or device. Designers over several decades have competed exhaustively on its personality and uniqueness, however its mass-production industrial nature imposes a unanimity per market-segment, unifying under one label all buyers of equivalent incomes. Color and trim choices offered by OEMs are often vast, yet they remain as very educated selections. Chances are that even if you pick the most extravagant of all color combinations given by the brochure -willing even to endure several months' delivery delay, eventually you will overtake on the highway an identical vehicle. We have all experienced it to some extend and unlike disappointment, the instant bond, that may occur at that very moment between two otherwise unrelated owners, is precious. Pure and spontaneous aesthetic preferences communicate on deeper irrational values, that make the choice, on what is considered to be the second most expensive investment in one's life. It is a bit like finding your soulmate. All this is very personal stuff, yet not enough to get you out there as a unique individual case; you are still in the market segment. Like winning a video game thanks to your chosen options, while those are pre-designed as part of the game.

In 2014, during an OEM's design masterclass according to which the audience would not be, as usual, business people or design students, but a far different type of crowd. They were seasoned tuning professionals. From the get going, an instant sense of brotherhood was on the air. Yet different, because they were not really car-designers. That was one of the very few, if not the only one moment, outside of their strict and highly specialized, often elitist, professional entourage, that designers could find their soulmates, 'brothers'. From a different mother though. Same but different.

They all spoke with similar vocabulary to the design piers but with different grammar; like a design-dialect, according to each specific person/tuner or family of tuners, club or company. Their design references were

mostly empirical, yet with a prodigious historic and technical depth, superior in many cases to any design studio expert's. Some were even specialized in one and only type-year vehicle. They used the same familiar tools for prototyping because, indeed, they only do prototypes. Both had read the same design books, but some read them backwards. Designers create a unique prototype in order to mass produce it and convert it into a common, accessible product; the tuners take a common, mass-produced product and make it unique. Instead of starting from the beginning, on a blank sheet of paper, their process starts after the product has been in the market. Designers start with a dream, tuners end with a dream, the same dream: 'what if every single car was a prototype'. The two universes have been running in parallel all along, borrowing cues often from each other, but without actually meeting officially.

Low side skirts, high rear wings, fat fenders, spoilers, 'deemed' lights, one-piece bonnets with no bumpers, no bumpers, short tail, splitters, dive planes, hood vents, NACA Ducts or diffusers are all ingredients to a tuning recipe and every single choice requires a very experienced eye to 'dose' the local (and visual) performance of each part. To designers, are all highly controlled endings of tangent car-body surfaces that signify a lot for the overall perception of the vehicle's silhouette and identity. Inspired by pure aerodynamics and safety, in times functional in times decorative, through the distant dialog and exchange of the two worlds, they became fundamental automotive characteristics.

Tuning language (nouns): beamer or beemer, chevy, Lambo, caddy, cherry, Vee-dud, Merc, vette, beater, land yacht, gas-guzzler, box, machine, chariot, wagon, saloon, whip, ride, cruiser, 'set of wheels', rat rod, lemon, compact, truck, bucket, clunker, crate, heap, junker, rattletrap, wreck, rig, roller, stang…

Besides the most obvious ones that refer to brand names, many of them convert in design-language as a specific market segment or vehicle type, nevertheless a lot of them translate as just 'car' in the lack of specific design vocabulary or otherwise a much longer detailed description. Indeed the onomatopoeic, or rather onomato-poetic, dialect averred to be far more descriptive and overall richer from in-studio design etymology. In the case that an entire phrase would be misunderstood, the gap was bridged by using gesture language, a skill that both designers, and apparently tuners, master to the highest of all levels when it comes to form semantics.

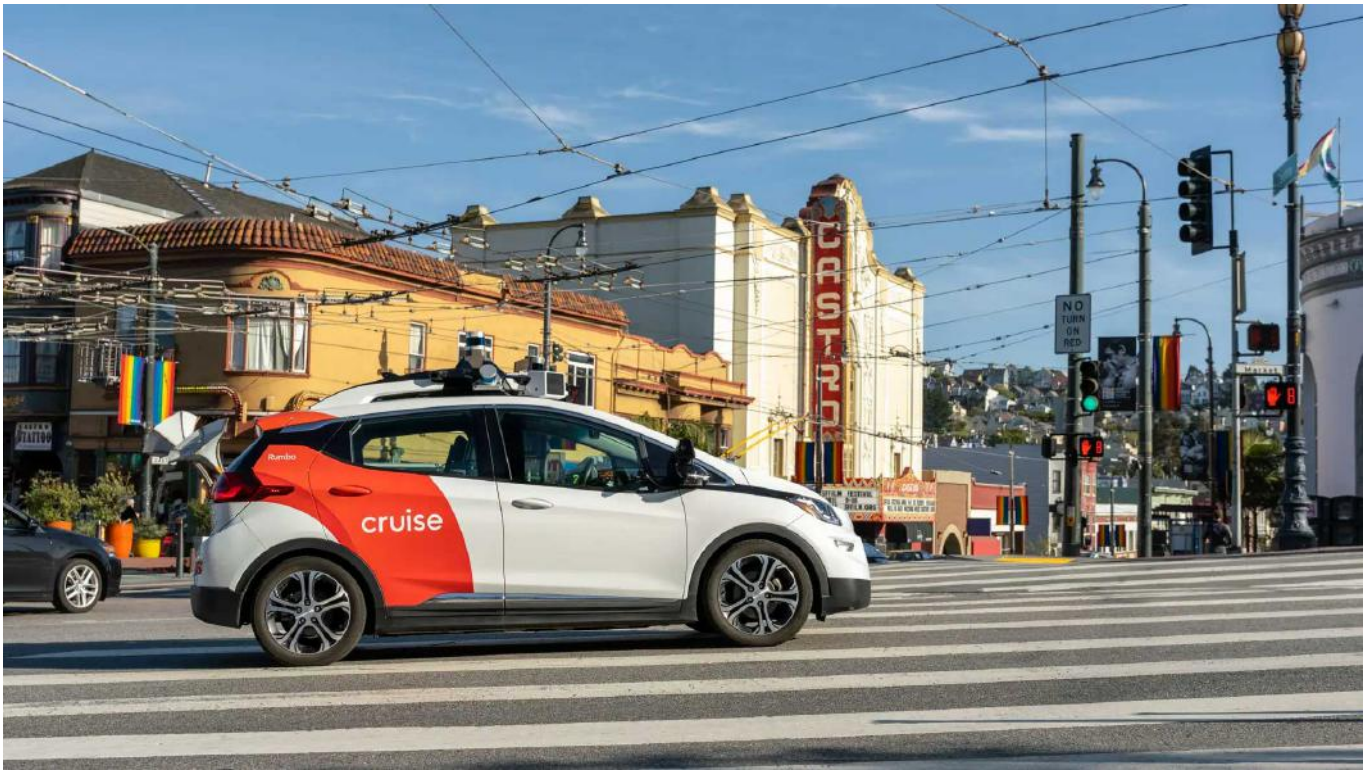
'Ride or die', in tuning dialect, where two verbs form a noun, signify not just a vehicle-type, segment or brand but 'your-car'. And that is maybe what is all about. Not the best-car, but strictly 'my-car'. The mere fact that the event took place, is because brands understood that these people do a great job of social mythology, aka branding. In an unexpected and often twisted kind of way, nevertheless very impactful, they expressed over the years, powerful automotive narratives reaching a wide spectrum of populations, while OEMs have often struggled with that. The price to pay for a perfect product is the loss of any personal touch to the overall process and that is where tuners come in, expressing the most personalized version of car ownership and equally an unattainable dream that becomes reality. As Chris Bangle once said: *'we get into our cars and we become them … cars are avatars, extensions and expressions of ourselves, in motion'.*

In the digital era, as automakers increasingly use software to control vehicle functions, tuning becomes a way to retain ownership and control. Whether you're adjusting fuel maps, tweaking shift points, or unlocking hidden features, car tuning is an art that combines technical knowledge with creativity and passion, opening the way to a new era of repair-friendly designs.

News Mobility

Cruise Returns to Service after Accident

NEWS MOBILITY



CRUISE IMAGE

Vehicles from GM's Cruise robotaxi company are returning to the road around six months after a serious accident. The cars will initially only be driven by humans in order to update map data and collect fresh information about the surrounding area. The first city is Phoenix, Arizona, with more to follow.

In this phase, information about traffic lights, lanes and traffic routing, for example, will be collected anew, Cruise explained. As a second step, autonomous test drives with safety drivers at the wheel are planned. On this basis, it will then be decided in which city the vehicles will once again be on the road without people at the wheel.

Safety will now be the focus of the restart, Cruise emphasizes. In recent months, the vehicles have continued to be driven on a test site, among other things.

Meanwhile, cruise competitor Waymo is expanding to Los Angeles. The Google sister company announced that it will be offering paid rides in fully autonomous vehicles there. It is the third city with a Waymo robotaxi service - after Phoenix and San Francisco. However, there are still waiting lists because there is so much interest. In San Francisco, Waymo's driverless electric Jaguar cars continue to be part of the cityscape, despite problems—driving on the wrong side of the street, blocking a highway ramp, and **being set on fire**.

General News

Xiaomi's 10,000th SU7 Built in Just 32 Days

GENERAL NEWS

XIAOMI IMAGE

Xiaomi is a Chinese electronics company specializing in smartphones, which announced plans for an EV arm called Xiaomi Automotive in March 2021.

Just over a month after launching their first-ever BEV, smartphone developer Xiaomi is touting some big production numbers for the SU7. Better yet, such output supports encouraging orders to date as the Chinese tech company is off to a hot start in its newly entered vehicle manufacturing segment.

They presented first glimpse of Xiaomi's first model – the SU7 in November 2023, and a month later, it officially launched the BEV as a challenger to Porsche and Tesla.

XIAOMI IMAGE

The BEV received over 50,000 orders in the first 27 minutes of going on sale, creating a waitlist of up to seven months. This led Xiaomi to rethink its production strategy and try to crank out more SU7s than originally planned to keep up with demand. Although it is new to EVs, Xiaomi appears to be wielding its manufacturing expertise, and its assembly lines are humming in China, just one month in.