Thu, 14 March 2024
Weekly Newsletter

DVN-I
Automotive Interior

NEWSLETTER #203

Editorial

First-Ever Sustainability Roundtable At Köln Workshop

HYUNDAI CONCEPT WITH SUSTAINABLE MATERIALS (HYUNDAI IMAGE)

The DVN Interior Köln Workshop is just five weeks from now, and will include a very interesting session about materials and sustainability, followed by a first-ever sustainability panel discussion. It will be a unique opportunity to understand the diverse, complex sustainability challenges facing the auto interior sector today and tomorrow.

This week's in-depth report is about the momentum starting in the industry, as automakers and suppliers are increasingly taking sustainability seriously. Every week, there is more news about industry efforts, and we're on duty all the time, watching and publishing the most relevant items for you.

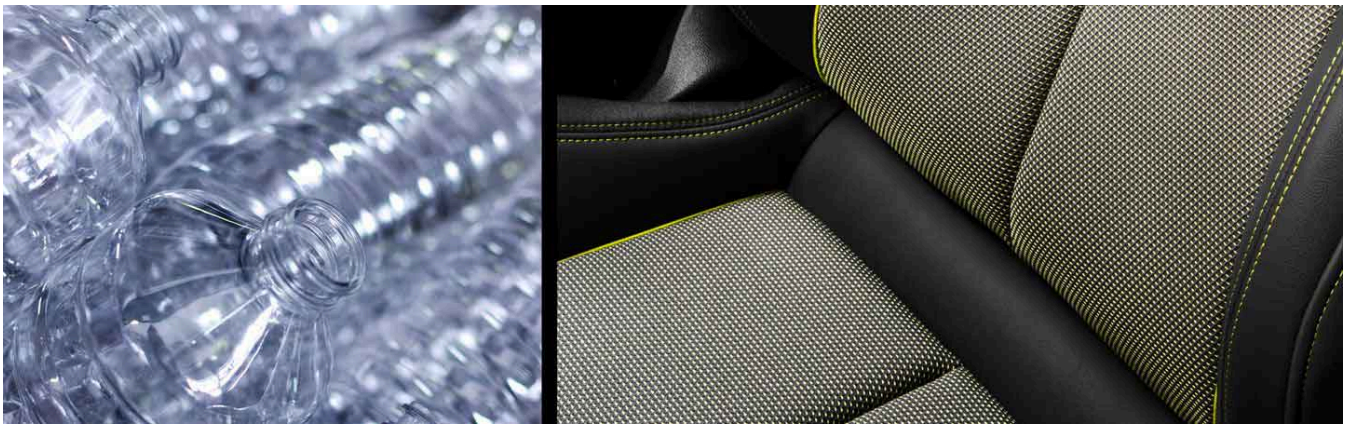
The Köln sustainability panel talk will include Stellantis, Dow MobilityScience, Delo, and Mocom—a great opportunity for attendees to liaise with experts in materials and car interior integration. Today we also bring you step 4 of the survey we announced a month ago; please vote by hitting this link. results of the survey will be presented at the Köln Workshop on 23-24 April. By the way, it's time to **register**, if you've not already done so.

Sincerely yours,

Philippe Aumont
DVN-Interior General Editor

In Depth Interior Technology

Drive for Sustainable Car Interiors



AUDI A3 SEAT UPHOLSTERY AT RIGHT STARTED OUT AS PET BOTTLES AT LEFT. (AUDI IMAGE)

The upcoming DVN Interior Workshop will include a very interesting materials and sustainability session you won't want to miss! Lectures on the docket so far include:

Materials and Sustainability for Automotive (**Stellantis**)

Material Science for Circular, Durable, and Comfortable Premium Interiors (**Dow MobilityScience**)

Innovating Automotive Interiors: Energy-Efficient Adhesives Powering Lighting, HMI and Sensors for the Future, Product Management Consumer Assembly (**Delo**)

Carbon Fiber Recycling—Sustainable Lightweight Solutions (**Mocom**)

Afterward will be a first-ever DVN sustainability panel discussion, grappling with questions and answers about the diversity and the complexity of what sustainability means for car interiors

PXHERE.COM IMAGE

Sustainability is no longer just a faddish buzzword in today's car interior lexicon. Statistics reveal a compelling narrative: 66 per cent of consumers now consider sustainability one of their top five criteria for a purchase decision. This shift in consumer mindset is propelling the industry toward a greener future, where the focus is on more than just the engines and exteriors. Designers are actively reimagining the materials that grace a car's interior.

The path to achieving sustainability in automotive interiors is not as straightforward as replacing all traditional materials with entirely natural alternatives—it's not just a matter of completely eliminating plastics and synthetics in favor of natural materials.

Still, natural-source materials are ascendent. Automakers and suppliers are actively exploring the use of bamboo, cork, hemp, kenaf, rice hulls, agricultural waste from food crops and more in their interior parts and fabrics. Parts and fabrics made from these materials are successfully incorporated into production, but plastic remains essential to achieve things like functionality and performance in automotive parts.

Global Chemists R&D Hub for Plastic Waste

SABIC IMAGE

Sabic, BASF, Covestro, Dow, LyondellBasell, Mitsubishi Chemical, and Solvay have signed an agreement with Dutch TNO, which will host a new hub and execute R&D projects for sustainable plastic waste processing and to develop mechanical and chemical recycling routes.

TNO is leading the technology development. Managing Director Henk-Jan Vink says, "We are very proud to be selected as the host and orchestrator of this great initiative. This unique co-creation between the LCET members, our experts and innovation partners will result in practical and disruptive technology solutions to allow increased levels of circular plastics with a lower environmental footprint. TNO is confident to further build on its experience in the field of circular modelling, packaging and materials know-how and provide the industry with fit-for-use solutions".

Recycling in Automotive Series Production

AUDI IMAGE

Shredded PET bottles in seat covers and old fishing nets made of nylon in floor mats—the first approaches by car manufacturers to the issue of sustainability already exist, but what happens to the plastic, glass, and metal from vehicles at their end of life? End-of-life vehicles (ELV) are an important piece of the sustainability puzzle.

Audi's Head of Supply Chain Sustainability Johanna Klewitz says up to 60 per cent of the materials from ELV can be reused. With her team and 15 partner companies, she investigated the technical feasibility of recycling aluminum, steel, glass, and plastic from more than 100 ELVs.

"It was important for us to avoid downcycling," says Philipp Eder, project manager for circular economy in the supply chain at Audi. Downcycling describes the reuse as a material of lower quality.

When selecting materials, automakers and suppliers balance CO_2 neutrality, recycled materials, harmlessness in terms of health, customer satisfaction, and cost.

In the BMW iX, 30 per cent of the vehicle's weight already consists of secondary raw materials. BMW's target is 50 per cent. Polestar is promising a completely climate-neutral car. With the Polestar 0, they want to bring a climate-neutral EV to market by 2030. Together with 14 supplier companies, Polestar is working on production without greenhouse gas emissions.

Forvia Materi'act

Forvia Materi'act was founded in 2022 (as reported in DVN-I) to develop recycled and bio-based polymers, coatings, and low-carbon fibers, primarily for the automotive industry. They have established a joint venture with PCR Recycling to develop and supply recycled polymer material for sustainable automotive products—door panels, center consoles, instrument panels and other components made primarily from plastic. The products are expected to emit up to 85 per cent less CO_2 by 2030.

Covestro's Pilot Plant for Bio-Based Aniline Production

COVESTRO IMAGE

Covestro has begun to produce bio-based aniline to enable industrial production of petroleum-free material. Aniline is used in the plastics industry, particularly in the production of MDI, which is used in seat pads and insulation foam. Covestro CTO Dr. Thorsten Dreier says, "Until now, aniline has been produced from fossil raw materials such as petroleum, which releases CO_2 and fuels climate change. With our new process, we are contributing to building up a circular, bio-based economy, and I am very proud that we have now succeeded in making the jump to the next technological level".

Covestro has also entered into a long-term supply agreement with Encina, a US-based producer of ISCC Plus-certified circular chemicals. Benzene and toluene, the materials Covestro will receive from Encina, are crucial components in Covestro's manufacturing processes. They are used for producing MDI and TDI, used for manufacturing rigid PU foams for headliners, and flexible ones for seats.

Asahi Kasei's Sustainable Material Cycle

ASAHI KASEI AKXY2 CONCEPT CAR (ASAHI KASEI IMAGE)

Asahi Kasei was the first supplier to market with a process using CO_2 as a starting material for the production of polycarbonate. Now, around 15 per cent of global polycarbonate production is based on this technology. In order to use polycarbonate as a glass substitute and for other lightweight applications in vehicles, Asahi Kasei is currently developing a hardcoating technology that provides the material with abraison and weather resistance in accord with UN Regulation 43 (for vehicle glazing, currently almost all made of glass).

Asahi Kasei is also developing a novel process technology for the production of bio-sourced base chemicals from bioethanol. This technology enables the production of most synthetic fibers and engineering plastics from biomass feedstocks, including those that could previously only be produced from petroleum.

As part of a joint project with Microwave Chemical, Asahi Kasei is depolymerizing airbags and car parts made of polyamide 66 from used-up vehicles. For this they use microwave technology, to reduce the ecological footprint compared to conventional manufacturing processes.

Kraiburg's Recycled-Content TPE

KRAIBURG IMAGE

Kraiburg TPE, a company that produces and develops thermoplastic elastomers, has launched a novel series of thermoplastic elastomer (TPE) products with a minimum of 73-per-cent recycled content, catering to a range of technical applications in the automotive.

The automotive industry is increasingly adopting lightweight and eco-friendly materials to comply with stringent regulations and meet consumer demands for sustainability.

The recycled raw materials have undergone thorough R&D to ensure sustainability without compromising the performance standards demanded by automakers and suppliers. The materials are available in varying hardness ratings, and are formulated to maintain performance while integrating recycled content. Tessi-Supply's selection of these compounds for inlay cases and floor mats underscores their versatility and suitability for automotive interior applications.

In addition to the recycling content TPE for automotive series, Kraiburg has other sustainable solutions tailored for automotive, consumer electronics, wearables and industrial applications.

Recycled PET Honeycombs by EconCore

EconCore, based in Leuven, Belgium, makes sustainable honeycomb sandwich materials. Now they've installed a new production line to make their lightweight honeycombs based on recycled PET (RPET).

The RPET honeycomb cores are manufactured using up to 100-per-cent recycled postconsumer and postindustrial waste, and can be laminated with conventional FRPs to form sandwich panels and parts. When made in combination with PET or PET composite skins, the honeycombs deliver a fully recyclable, lightweight panel solution.

COO Tomasz Czarnecki says, "The demand for development of sustainable material solutions is very evident these days and it runs through the DNA of EconCore. Over the past years we have been extending the range of applications of our PP honeycomb technology where its cost and weight efficiency, combined with excellent recyclability, were allowing for dynamic market evolutions."

Applications for these honeycomb materials include trunk trim, headliners, door panels, seatbacks, parcel shelves, and more. Benefits are weight, cost, thermal tolerance, and reduction of CO_2 emissions and environmental impact.

Interior News

Harman's Connectivity Solutions at MWC 2024

INTERIOR NEWS

HARMAN IMAGE

Harman, a Samsung subsidiary, designs and engineers connected products and solutions for automakers and consumers, including connected car systems, audio and visual products, enterprise automation solutions, and connected services.

At the Mobile World Congress (MWC) show in Barcelona just recently, Harman showcased their latest offerings to democratize automotive connectivity. These included the Ready Connect 5G Telematics Control Unit, designed to reduce automaker implementation costs while improving the in-cabin experience.

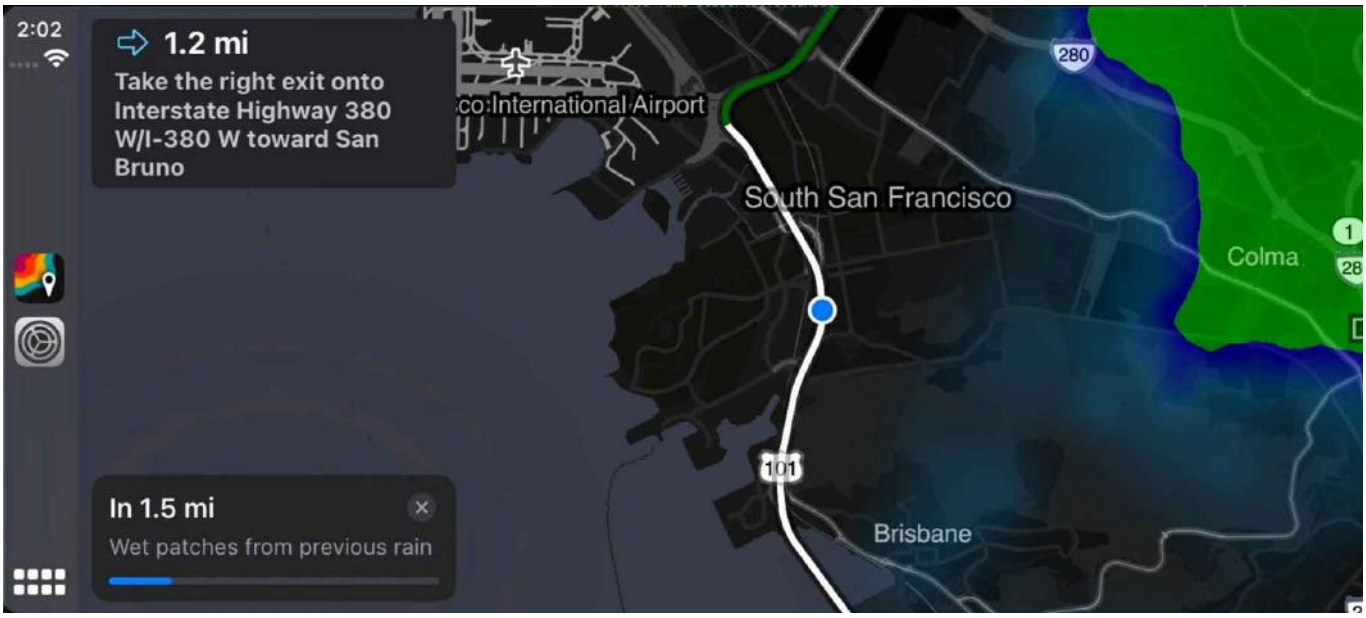
Harmon says Ready Connect enables "compelling" in-vehicle connected experiences and enhanced safety features. Through partnerships with parent company Samsung and Traffic Technology Services, Harman integrates smart conformal antenna technology into Ready Connect, to optimize packaging design and connectivity performance. In collaboration with TTS, Ready Connect can enable real-time traffic information delivery, enhancing driver navigation without reliance on roadside sensors.

Also on display: new 5G telematics control units, designed to expand in-cabin experiences while simplifying automaker integration efforts. And Harman also showed the Ready Vision QVUE system, which integrates audio and visual components to enhance driver safety by providing real-time updates and hazard alerts. Powered by Samsung Neo QLED, it provides clear visual performance to minimize distractions by displaying relevant information closer to the driver’s line of sight.

The Ignite Store was demonstrated, as well—an in-vehicle app platform that enables automakers to curate a catalog of secure and reliable apps. With over 70 available apps, the Ignite Store can be integrated with Ready Vision QVUE for push notifications and connectivity.

MyRadar Launches on Apple CarPlay, Android Auto

INTERIOR NEWS



MYRADAR IMAGE

MyRadar, an app with more than 15 million active users, has launched on CarPlay and Android Auto. By leveraging data and forecasting technology, the app helps users reach their destinations safely and efficiently. MyRadar can also be used in cars with built-in Google technology.

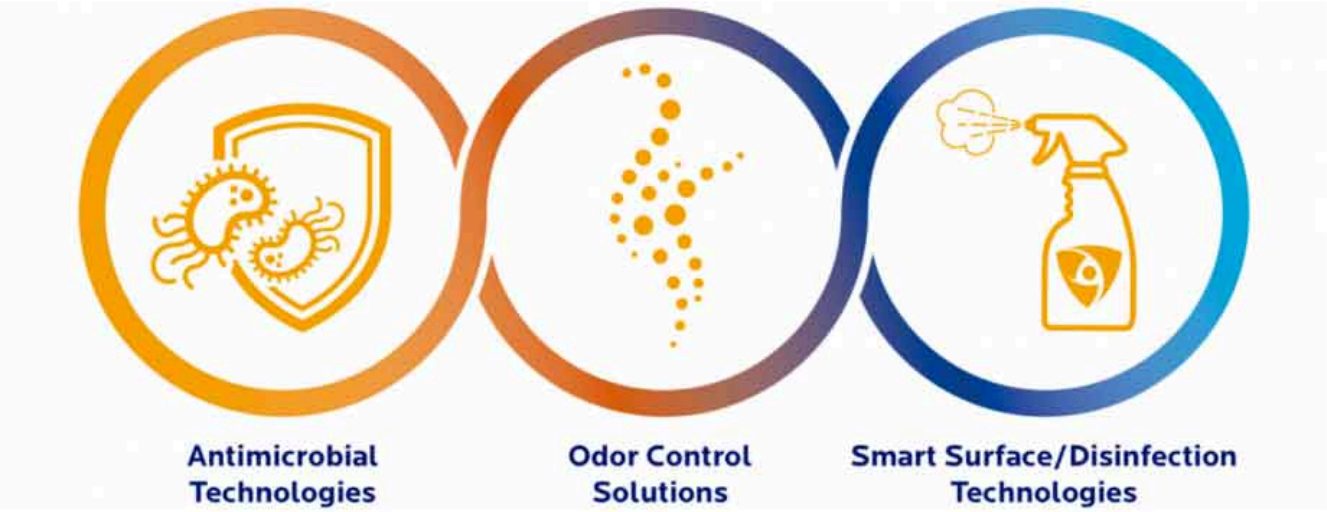
RouteCast, a feature of MyRadar, is designed to calculate drive times by integrating weather forecasts and road-condition data. It provides information such as road temperature, crosswind alerts, and surface condition hazard reports along the route. Updates are generated every 15 minutes, and the Timetable feature suggests optimal departure times based on expected weather conditions.

Beyond consumer use, MyRadar is collaborating with commercial organizations for integration into trucking and logistics fleets. Combining RouteCast with the MyRadar app will reportedly allow operations centers to track vehicles and send optimized routes to drivers.

MyRadar CEO Andy Green says, "With the launch of CarPlay and Android Auto, MyRadar is more available than ever before with the best weather data to help drivers and travelers make informed decisions and get where they need to go".

Microban for Cleaner, More Durable Interior Surfaces

INTERIOR NEWS



MICROBAN IMAGE

Microban International has been working on incorporating antimicrobial technologies into car surfaces, materials, and components to improve their sustainability.

Car interiors offer ideal surfaces for microbial growth, and the average steering wheel has been shown to contain more bacteria than a public toilet seat. One of the most important trends is of course the need to improve the vehicle circularity degree by increasing the longevity of materials and car parts such as interiors and bodyshells,

Automakers have long invested in innovative and durable coatings to protect their components from harsh environmental conditions and maintain the original interior surface appearance in their vehicles. These is particularly true for plastic and polymer composites, whereon coatings often are applied for durability.

Shared mobility services make interior hygienicity and durability even more important; car seats often experience severe wear and tear, necessitating early replacement and therefore more textile waste. Traditional upholstery materials, like leather and synthetic fabrics, have an intensive production process consuming vast amounts of water and energy, driving a need to prolong their life as much as possible.

Microbes and other microscopic agents can wreak havoc on car components and interiors over time. Without innovative solutions, car upholstery, floor mats, and other interior components are prone to stains and unpleasant odors, which users eliminate using cleaning chemicals that pollute waterways, degrade air quality, and impair product performance. This is where integrated antimicrobial treatments come into play: antimicrobial technology provides surface protection from degrading microbes for the lifetime of the product. This not only keeps car interior surfaces cleaner between cleanings but also enhances the longevity of components.

Moreover, when customers spot a car equipped with antimicrobial technology, they feel more comfortable and safer and this in turn, acts as a powerful incentive for greater participation in car sharing, resulting in fewer vehicles on the road: lower emissions, reduced traffic

Škoda's Green Roadmap and the New Octavia

INTERIOR NEWS

Like most automakers, Škoda is making great efforts in achieving sustainability goals. In fulfilling their 'Green Future' strategy, they are launching six new all-electric models over the coming years, aiming to increase the all-electric share of European car sales to over 70 per cent by 2030.

Besides electrification and green fuel, Škoda is also introducing sustainable materials in most of their new models, with the goal of doubling the use of recycled plastics from 2025.

A great example of the company's roadmap is the new Octavia, Škoda's best-selling model. The Octavia is now on the market with nine new interiors design selections, emphasizing the use of eco-friendly and recycled materials.

Recycled fabrics are present in the Lodge and Sportline Design trims, and sustainably treated leather in the Suite Design trim. The leather is tanned using sustainable materials, including coffee husks and olive leaves, to replace traditional chemicals. To complement the eco-friendly approach, the new interior looks after occupant health with optional ergonomic front seats with an AGR (Healthy Back Campaign) seal of approval as well as ventilation and massage functions.

Other Škoda models get in on the eco-action, as well; the seat covers in the Lodge trim for the Enyaq iV are made from 100-per-cent new, Woolmark-certified wool. The covers offer a unique feel and ensure outstanding seating comfort.

Even in their 'Simply Clever Features' line, Škoda is introducing elements like the ice scraper and the optional umbrella in the front door made from sustainable materials.

Škoda is not only using off-the-shelf green materials, but also proactively searching for new solutions. Together with the Technical University of Liberec, Škoda has developed a sustainable, ecological material made from sugar beet pulp. And they're doing research into another material based on the reed plant miscanthus. Both could be used in the interior of new Škoda models in the future, for example for the door trim and decorative inlays in the dashboard.

The holistic approach of Škoda's strategy also includes a 'GreenRetail' approach promoting eco-friendly operations at dealerships, and 'GreenFactory' bringing together all of the activities that help to conserve resources during production.

Tactotek's Munich Innovation Center is Company Milestone

INTERIOR NEWS

TACTOTEK CEO JUSSI HARVELA WITH DVN ADVISOR GERD BAHNMÜLLER (DVN IMAGE)

Printed-electronics expert company Tactotek is taking a significant step in their global expansion by opening a new office in Munich. The opening ceremony took place on 26 February, one day before the DVN workshop there in Munich.

The Munich office will serve as a strategic hub for the German-speaking region, and as a central hub for Tactotek's innovative In-Mold Structural Electronics (IMSE™) technology. The presence in Munich underlines the company's commitment to maintaining and further strengthening close partnerships with German automakers and suppliers.

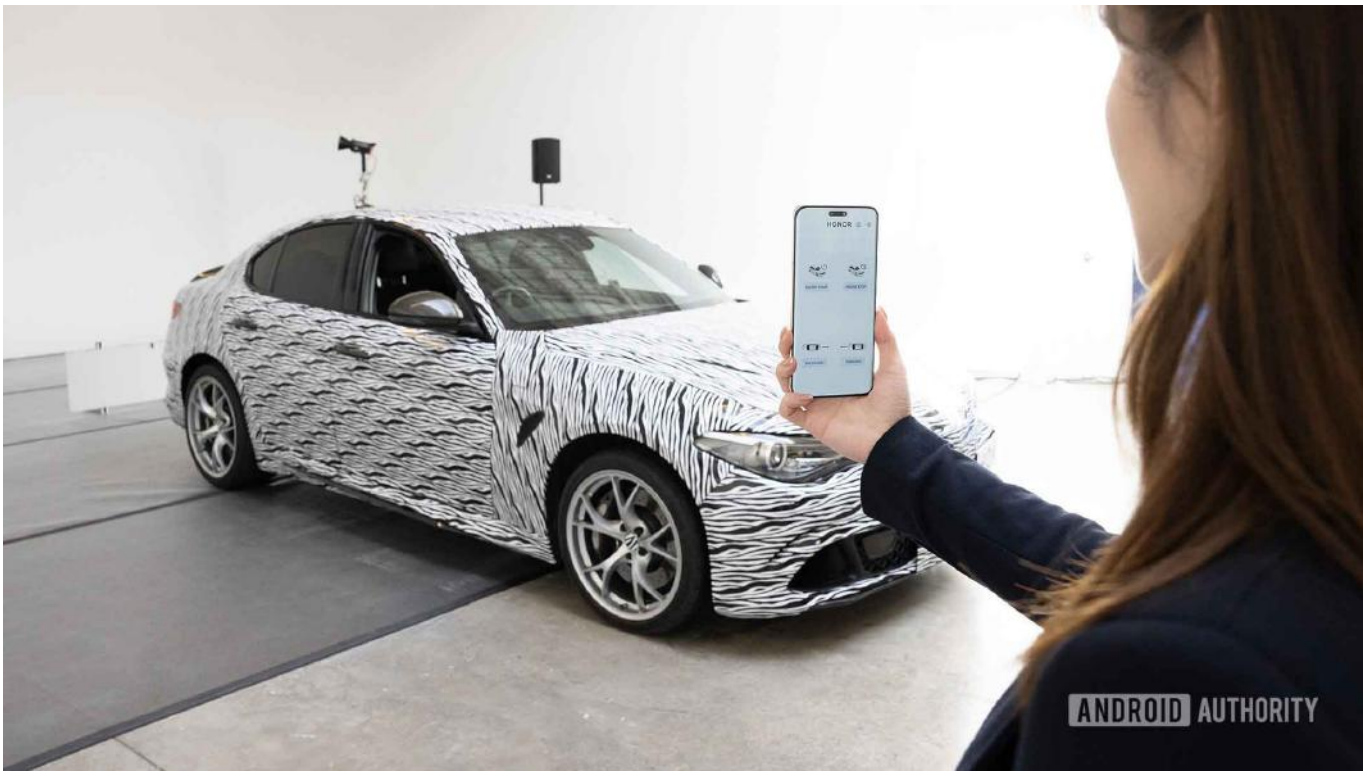
The opening was presided over by senior executives and Tactotek CEO Jussi Harvela, who emphasized the importance of the new office. The Munich office will serve as a sales and service base to further strengthen proximity to customers and promote collaboration.

The choice of Munich as a location not only reflects the economic strength of the region with its good transport infrastructure, but also underlines Tactotek's appreciation of creativity and technological excellence. The company is convinced that the opening of the Munich office will further drive innovation and looks forward to setting new standards in the printed electronics industry.

See last year's DVN-Interior coverage of Tactotek IMSE days

Car Control With Honor Phone, Eyes

INTERIOR NEWS



Honor's car control experiment is a glimpse of your future phone – see video

It's no trick: Honor really did this recently at the MWC exhibition in Barcelona. By tracking which bit of the screen you look at, the phone enables you to send commands to the car instantly: engine on, engine off, move forward and move backward. And there's no need to worry about accidentally sending commands by mistake; the eye tracking can tell the difference between a deliberate gaze and an accidental glance.

One of Honor's latest innovations is called the Magic Portal, an AI-powered feature that claims to be able to understand what you're trying to do and make it happen. Magic Portal is said to understand intent: not just what app you're in, but what you want to do. Instead of having to carry out multiple steps to get things done, Magic Portal calculates what the most likely goals will be and shows you the most appropriate options.

Honor's MagicOS 8.0 listens to your words, tracks your eyes, and looks at your fingers to calculate what you're doing and what you want to do. It has what Honor calls a "multimodal intent recognition engine", which uses multiple sensors to track your gestures, follow your eye position, and listen to your voice in real time with high accuracy.

This technology could lead to potential integration into a vehicle, or at least, to park your car into tiny city parking lot, where you can’t get out of the vehicle when parked. But how much pushback might it get from people who don't particularly relish the thought of their phone listening to their every word, all the time—particularly in countries like the USA and China with weak or nonexistent data privacy laws? Time will tell.

The Design Lounge

Car Theft

THE DESIGN LOUNGE

PORSCHE TAYCAN WITH HEADLAMPS RIPPED OUT (CDN-MOTOR IMAGE)

Jesse James, when put in front of a judge and asked why was he robbing banks, said, “because that’s where the money is”. While we do not know all facts, the tale is descriptive of the circumstances. This was the time and place when a set of standards, ethics and ideas were defining the modern new world. Land, gold, labor, natural resources and currency, outlined economy’s most efficient and faster pace yet. ‘Where the money is’ stands as precise as a specific location, yet as abstract as any perception of value can be. Alluding to places where the chances to find concentrated wealth were much higher, the simple-minded Jesse, in a sense, had it right.

We could indeed draw parallels to every historic moment. Today’s perception of value seems to be interweaved with technology. It is a lot harder though to spot ‘where the money is’ among durable industrial properties and immaterial resources and possessions. Other than a specific physical location, technology is ubiquitous, thus becomes itself a form of currency. Another way to see it, is that the amount of technology in specific products converts them into novel definitions of treasure and vanity.

For instance, after looking at the staggering price tag of f-35 fighter jet program, we can clearly state that each plane, now, is worth far more than its weight in gold. What would be the car equivalent of that? Perhaps it does not exist, or maybe it does but in a different form.

Cars have been, for over a century, the most complex and widely-diffused industrial products. If we were to see them as an economic system instead of a durable assembly, out of their tens of thousands of parts manufactured across the world, remotely assembled and locally distributed, the global value chain has often created enormous wealth per business sector. Electric starters and closed body designs contributed to the overall profitability in the automotive business of the 1920s, while the luxury segment triumphed during the Great Depression of the 1930s. After the 1950s, when car ownership became a symbol of prosperity, innovations like seatbelts and air conditioning became lucrative in the 1960s. Computerized engine management systems and improved safety and luxury drove sales in the 1980s. Brand diversification was the focal point during the globalization of the 1990s, and so on.

Cars evolved into seamless technology integrators to such high standards that only a specialist could point out quality and value differences between components. That is also the way design process is operated: from the big picture to the details and not the other way round. However, there are cases where one single component or feature absorbed a particular attention. The 1998 Lexus RX300 design brief—the world's first luxury crossover—describes the tail lamps as 'like jewels behind glass', spotting very clearly where a considerable effort and investment would be put within the overall budget. Placing the money to a specific area for the benefit of the overall is another design approach and when done right, it can be just as effective. Headlamp complexity grew along with technology, giving designers equal opportunities to augment perceived but also real values. Besides the great technology, headlamps hold the expression, the character and the brand signature. Looking at them, day or night, we can often spot the make and in times model and year. Brandwise, this is priceless. A famous design director once said 'when cars look straight forward, they become their headlamps'. This is also truth financially and at night.

New headlamp designs can absorb more design resources than an entire front end of mid segment berline (grille, hoood, bumper, fenders). While we don't know the automotive equivalent of the F-35 program, a headlamp concentrates a far greater value per square inch than any other surface of a car-exterior program. In addition, because it is mostly transparent and every detail is visible, the design funds invested are proportional.

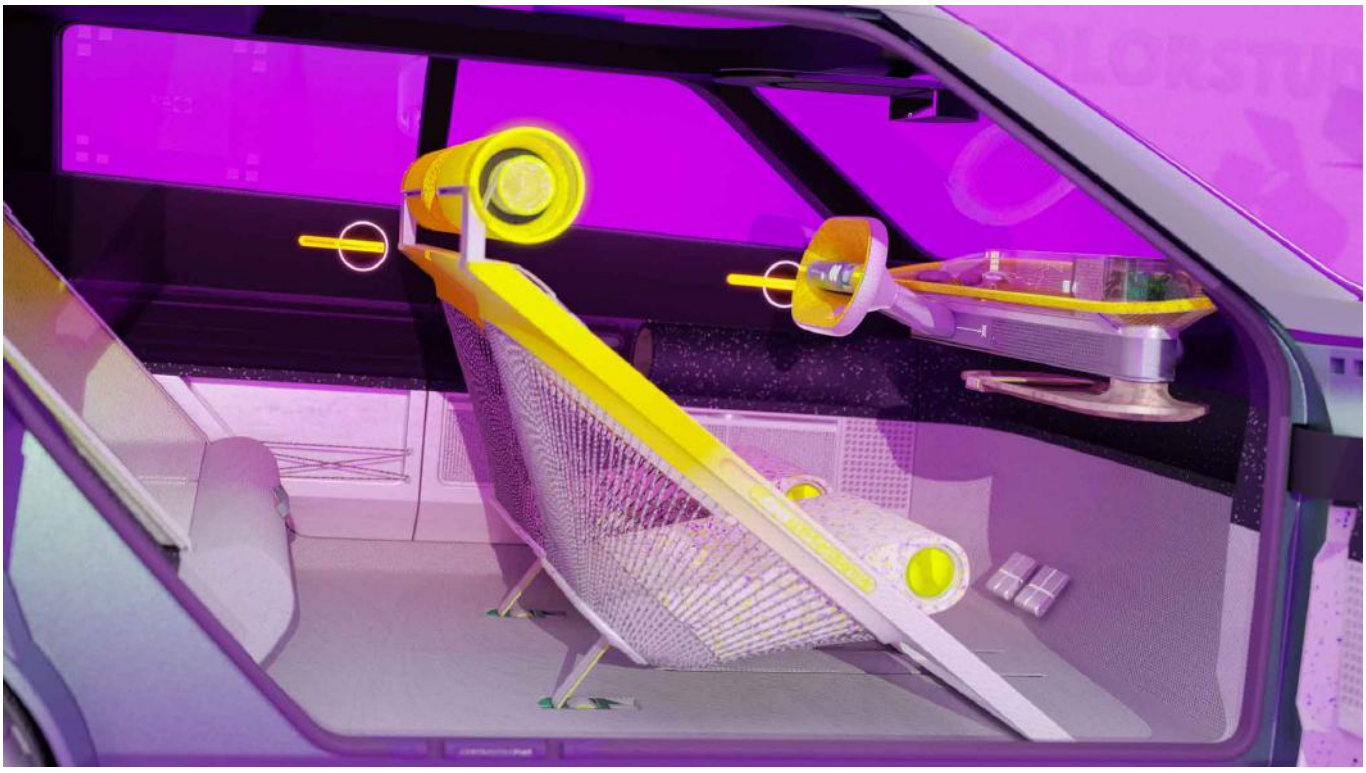
Besides chrome, an entire array of CMF applications implemented, often reaching very high standards. 'Light does not forgive design mistakes' is the moto and equally the ultimate test of any surface, simple or complex. Micro prisms, fish eyed lenses, shiny mirrors, cosmic-dust surface-treatment on light absorbing blocks next to highly reflective iridescent planes all the way to the glass cover that with latest technologies converts itself from transparent glass to a display, are some of the most sparkling elements that intensely coexist within a tiny space. I think it is fair to say: brilliant!

If we try to find a design just-rightness to the overall process, we could certainly state that at the front corners of a car we find a significant concentration of value per square inch with incomparable aesthetic credentials.

A new type of car theft is on the rise; a Porsche Taycan was found without its headlamps. The beautifully designed and highly desirable shooting brake was not stolen, but its headlamps went missing. Seems that a modern Jesse James found out where the money is!

Fiat's New Panda-Inspired Concepts

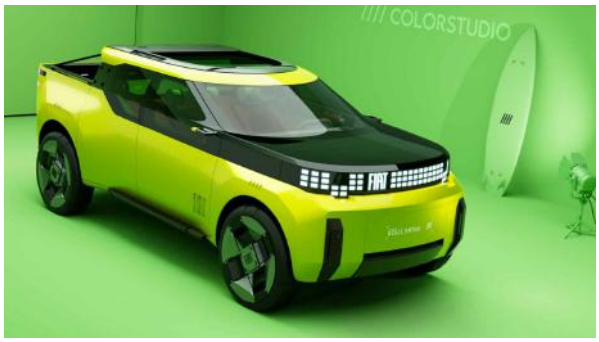
THE DESIGN LOUNGE



FIAT IMAGES IN THIS ARTICLE

Fiat has unveiled new production concepts, ranging from pickups to city cars, all of which are sustainable and affordable.

The range of Panda-inspired concepts is slated for worldwide availability. There's a camper, an SUV, a fastback, a pickup, and a city car, all described as different interpretations of the brand's inclusive, accessible, and ingenious spirit.



All the models are a display of Fiat's efficient use of space alongside sustainable materials. Parts deemed redundant, such as the foam in the seats, have been removed—less weight, and fewer polluting materials.

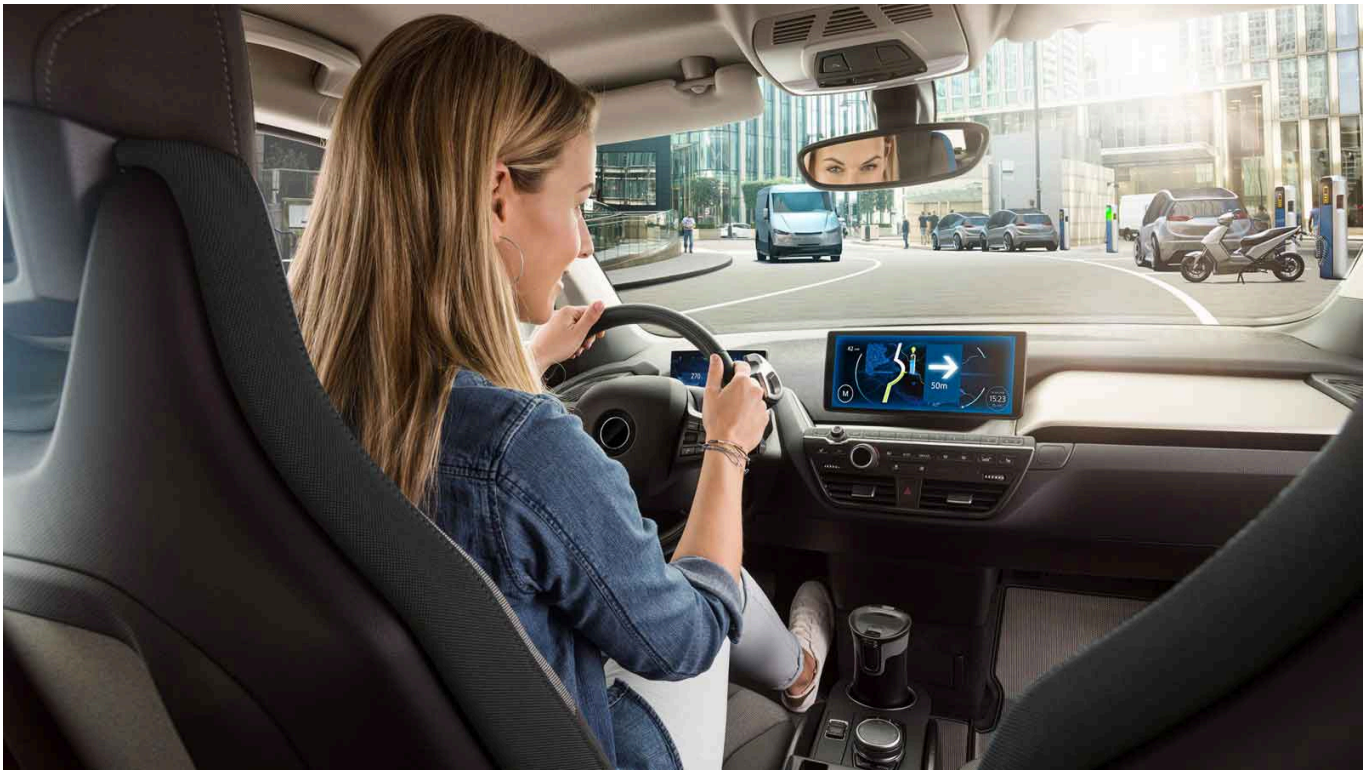
The new models will share up to 80 per cent of common parts which increases the efficiency in manufacturing. This will benefit buyers in terms of pricing, and individual distinctiveness.

The first product will be released during the brand's 125th anniversary celebration this year. The rest of the models will be released one at a time every year until 2027. **Video is available at this link.**

News Mobility

Autonomous Driving: Safer with Generative AI?

NEWS MOBILITY



BOSCH IMAGE

Bosch and Microsoft want to jointly investigate how generative artificial intelligence (AI) might improve automated driving systems. That was an announcement by Bosch at their in-house exhibition "Connected World" in Berlin.

Current driver assistance systems are capable of recognizing obstacles on the road. The latest generation of radar and ultrasonic sensors used in parking assistance systems already use AI, but have difficulty distinguishing whether an object on the road is a plastic bag or damaged vehicle parts, for example.

Generative AI refers to models that have been trained with large amounts of data and can generate new content such as text or images based on this. The technology should enable vehicles to better assess situations and react accordingly.

Bosch hopes to be able to use generative AI to sensitize assistance systems better and more quickly to the differences in the future. If the assistance systems reliably recognize the dangers, they could warn the driver with instructions or brake independently, according to the vision. "Bosch is working on opening up a new dimension of AI applications in vehicles," said CEO Stefan Hartung.

Geely Puts Satellites in Space for AVs

NEWS MOBILITY

GEESPACE IMAGE

A "Long March 2C" rocket was launched from the Chinese spaceport in Xichang, Sichuan, this past 3 February. On board were eleven satellites from Geespace, a subsidiary of Geely.

The eleven communications satellites that have been successfully catapulted into low Earth orbit are already the second group of Geely satellites that are now hovering at an altitude of around 600 kilometers in the atmosphere. The first batch of nine satellites had already been launched in the summer of 2022.

Geely is currently building the world's first satellite network specifically for the automotive industry. By 2025, they plan to expand this "Geely Future Mobility Constellation" from its current 20 satellites to 72. Geely will then be able to offer "high-resolution remote sensing" of cars and trucks all over the world with an accuracy of one to five meters. The positioning of the vehicles, and their navigation in real time without any time delay, will be made possible via base stations on earth that communicate with the satellites.

In a second phase, Geely plans to put 168 more satellites into circulation, which will even make it possible to locate the cars with centimeter precision. This is of interest in logistics, for example, when unmanned transport vehicles need to follow each other at very close intervals in ports or loading stations.

Several electric cars from subsidiary brands of the Geely Group, including the Zeekr 001 FR and 007 and the Galaxy E8, are already equipped with satellite receivers. The commercial vehicles of Geely subsidiary Farizon Auto, which will be fully autonomous in the future, can already be ordered.

Geely founder Li Shufu, who is known in Germany as a major shareholder in the Daimler Group and whose company holds shares in Volvo and Lotus, among others, firmly believes in the future of autonomous driving, and that this can and will be realized with the help of satellite communication. Li believes that this will be cheaper in the long run than stuffing every single car with expensive sensors such as lidar and millimeter wave radar or cameras.

Geely refers to this as "space ground integration". Connected vehicles controlled from space would have an advantage. Unlike cars on other technological routes, which use their own cameras and chips to perceive their immediate surroundings, they can also be informed of the position of all other road users, according to Geely. This enables new dimensions of safety and logistics, as well as possible networking with modern traffic control centers in "smart cities". Geely intends to make its satellite data available to other car brands and even to manufacturers of consumer electronics in the future.

General News

Stellantis-Leapmotor EV JV Approved

GENERAL NEWS

STELLANTIS CEO CARLOS TAVARES (L), LEAPMOTOR CEO ZHU JIANGMING (R)

A joint venture to allow Stellantis to build and sell Leapmotor's electric vehicles outside China has received approval from a Chinese regulator, according to two sources familiar with the matter.

China's National Development and Reform Commission (NDRC) has given approval for the joint venture, said one of the sources, adding that the deal is still waiting on regulatory approval in other markets.

Stellantis said last October they were buying a 21-per-cent stake in Leapmotor for USD $1.6bn, to get exclusive rights for the export, sale, and manufacturing of Leapmotor's products outside China—a first for a western automaker.

Stellantis will own 51 per cent of the Dutch-based joint venture, which will help the automaker to broaden offerings of low-priced BEVs in Europe. The joint venture targets 500,000 sales outside of China by 2030, according to Stellantis's third-quarter presentation released on 31 October.

LEAPMOTOR T03 INTERIOR (LEAPMOTOR IMAGE)

Last month, Stellantis CEO Carlos Tavares said the automaker could build EVs based on Leapmotor technology in Europe, North America, and other markets where they need affordable models to compete with Chinese EV makers.

Stellantis is considering building up to 150,000 low-cost EVs a year from Leapmotor in Fiat's Mirafiori plant in Turin to be sold by Stellantis's European dealers, Automotive News Europe said.

Is this Really the End for Apple's Car?

GENERAL NEWS

IS THE APPLE CAR INCLUDED HERE, OR IS THE ICAR DEAD-DEAD-DEAD? (HYUNDAI IMAGE)

Apple is said to have buried their EV ambitions. But are they stopping altogether, or looking to acquire instead of developing in-house? Will it be a self-driving car without a steering wheel or pedals? Or simply an electrically powered limousine with a striking Apple design?

Ten years after its launch, Apple's Project Titan is now being buried. According to the Bloomberg report, Apple CEO Tim Cook's deputy Jeff Williams and Apple EV manager Kevin Lynch told about 2,000 involved Apple employees the project was being scrubbed. Previously, Cook is said to have definitively rejected the development of a sedan with a selling price of around $100,000, which was to be launched at the end of the decade.

Project Titan was best known for the fact that Apple regularly poached managers and engineers from car companies such as Tesla, Mercedes, VW, and BMW. "Apple is Tesla's graveyard," Tesla boss Elon Musk once mocked.

Just like many managers, a lot of prominent engineers also left the Apple after a few years. That was mainly due to the fact that Apple boss Cook simply could not decide whether his company should put its own cars on the road or whether it would be better to position itself as a supplier for autonomous driving or even as the operator of a robotaxi fleet.

This also became increasingly difficult when it came to partnerships. Apple is said to have negotiated partnerships with BMW, Mercedes, VX, Nissan, and Toyota, among others. The most advanced talks were with Hyundai.