

Tue, 3 September  
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Weekly Newsletter



NEWSLETTER #869



**SYNIOS® P 2222:** new  
standard platform for  
automotive signaling

amul **OSRAM**

## Editorial

### Personnel Stability Is Key To Lighting Leadership



Pistons & Pretzels @ Gothenburg, 2024

September is starting, and a lot of new cars have been revealed all through the year. When I was young, I was able to recognize the car by their exterior design, not by their lamps. Now it becomes very complex, because a lot of cars have the same shape—in addition to a lot of new unfamiliar brands. Not so easy to tell between a Changan CS75 Plus and a Chery Exceed Yaoguang. Same for a previous Audi Q5 and a new Audi Q5...

...Except for the lighting! Lighting is becoming, more and more, a key brand differentiator, with its innovative shapes, signatures, and UX interaction (such as welcome and farewell displays).

Lighting designers play a crucial role, and they need to be aware of the latest technology on the market to bring it to reality as fast as possible. That is why development speed is becoming more and more important for our industry, and same for partnerships between automaker designers, R&D, purchasing, and tier-1 and -2 suppliers.

A lot of automakers have been changing their design staff—just look at Audi, JLR, Polestar, Volvo, and Ford, to name only a few. Here is hoping they will be careful not to overly change the lighting staff; to meet the rapid-fire challenges of providing constant new lighting content requires the sturdy, close working relationships possible only with long-term personnel stability.

Sincerely yours,

**Paul-Henri Matha**

*DVN Chief Operating Officer and Lighting General Editor*



# In Depth Lighting Technology

## New Audi Q5: Last Opus of Marc Lichte Design?



Audi have just released their final opus of Quadrilogy of new vehicles. After the Q6 e-tron, A5, and A6 e-tron, it's time now for the new Q5.

The first generation of Q5 started in 2008 with 1.6 million sold units. For generation 2, production moved from Ingolstadt to Mexico, and will remain in Mexico for the newly-current 3<sup>rd</sup> generation—it's the 5<sup>th</sup> generation of front lighting package for the Q5, counting facelifts. The car's main market is North America (44 per cent), followed by Europe (35 per cent). The Q5 has ICE, MHEV, and PHEV powertrain options. Start of production for the new one is scheduled for Q1 2025.



It's an Audi, so naturally there's a great deal of lighting content. Like all other vehicles based on the new E<sup>3</sup> 1.2 electronic architecture, we find front and rear active signaling and driver's choice of eight different presence light signatures.



Audi is proposing a Matrix function with a bi-matrix module (lens height 45mm, 16 ADB segments), plus additional high beam reflector spot and cornering / all-weather module.



For front signalling, there are 15 different pixels that allows different signatures and a very interesting, partially reciprocally incorporated turn indicator and daytime running lamp. A fine piece of art!



Not counting US (with side marker light + reflector and, at a guess, red turn signal) versus rest-of-world (no side markers, yellow turn signal) differences, there are three different rear lamp setups. The base lamp has LEDs, but without any sequential activation. The first-upgrade version includes sequential activation. And the top version has Audi's famous Digital OLED 2.0 with 266 segments on this car (compare: 450 segments on the A6).



All versions have the same rear design with 7 different lamps. Audi have changed their previous Q5 design generation—which had a unique tailgate lamp without any body lamp, plus auxiliary lights down in the bumper for when the hatch was open, so the main lights were out of position—to a new design similar to that on the Q6, A6, and A5.



The licence plate lamp is now incorporated in the trunk lamp, while the rear fog lamps are moved to the bumper.

The CHMSL is intentionally designed to provide a reflection on the rear window to provide a nice effect. In Europe it is a plain projection, but in the US- and China-spec models you can see a projected Audi logo and callout.



As to the interior illumination: there's Audi's 'dynamic interaction light' which spans the entire width of the interior as an LED strip and supports the occupants' interaction with the vehicle. The IAL serves to showcase the interior and offers, for example, a welcome function or indicates when the vehicle is locked and unlocked. It also provides safety support; for example, the dynamic indicator light is visualized. This enhances the display in the virtual cockpit. The IAL always remains an additional display and does not replace the turn signals in the virtual cockpit. This dynamic interaction light is part of the optional Ambient Lighting Plus package.



Audi lighting design boss Caesar Muntada says, "We design not only the shape of the light in a series-production vehicle, but its entire movement. Thanks to the perfect symbiosis between our lighting design and the new technology, the light of the Q5 appears livelier and more intelligent than ever before. We have given the light signature its own personality and the digital world its own aesthetics at the same time. With the active digital light signature, the new Q5 continues an era of unique design and aesthetics that can only be found at Audi".

# Lighting News

## Techno-Reptilian Lamps on New GAC Aion T-Rex

LIGHTING NEWS



The Tyrannosaurus Rex is the GAC-owned Aion brand's first global strategic model, and it is said to take inspiration from the T-Rex, or at least from popular ideas of what a T. Rex was like: combining power, technology, and emotion with a unique hardcore design and power aesthetic.

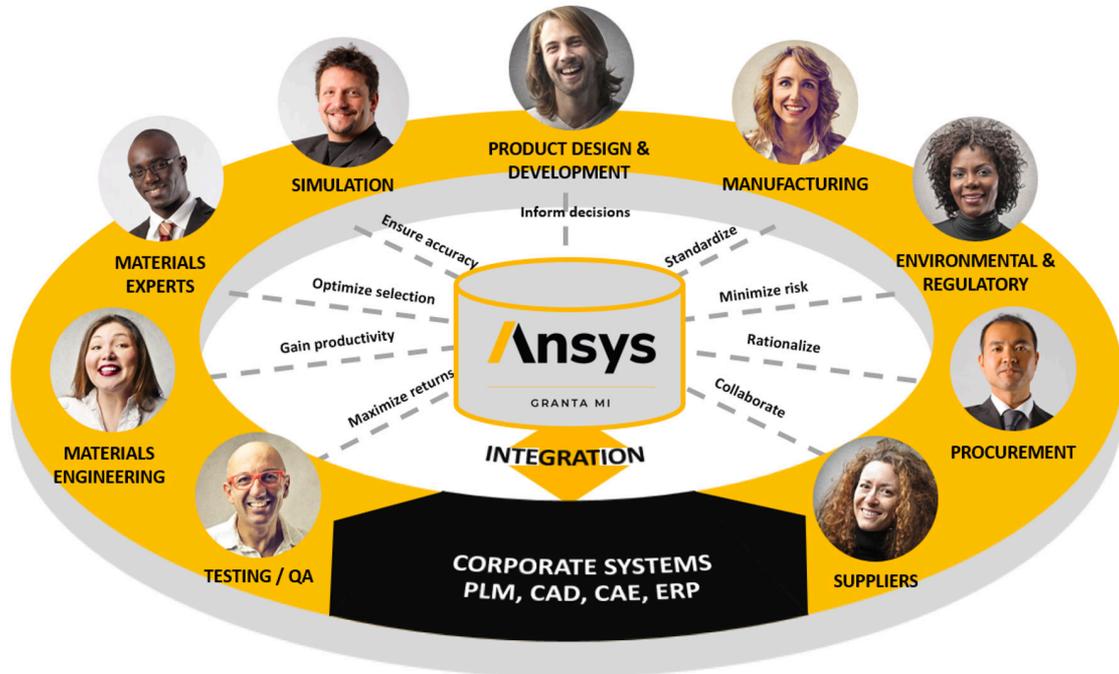
The front face blends the technological and mechanical with 'memory points'. The headlamps, at once technological-looking and eyelike, key into this image. These 'Cyber Dragon Claw' headlamps were designed jointly by Aion and Hasco Vision. They incorporate 'triple kernel technology' with a 15 × 120 mm ultra-narrow low + high beam integral module that achieves light weight, small size, and high performance.



# General News

## Why Material Knowledge Matters

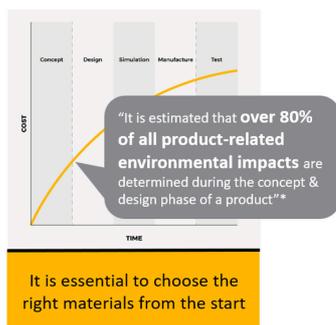
### GENERAL NEWS



### **Special to DVN by Benedikt Dürbeck, Ansys Sr Application Engineer for Materials & Sustainability.**

With increasing global demands for sustainability and stricter environmental standards in product development, material knowledge is becoming increasingly important. But what exactly is material intelligence?

In essence, it is data, information and experience about the materials used in an organization. It includes information on the physical, chemical, thermal, tactile and mechanical properties of the materials, as well as details of their testing programs. This knowledge enables companies to select the most appropriate and environmentally friendly materials for their needs and, in some cases, reduce material consumption.



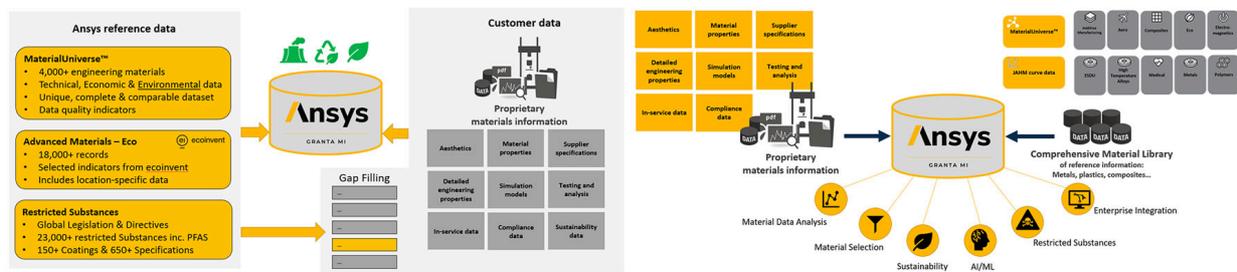
\*\*<https://ec.europa.eu/jrc/en/research-topic/sustainable-product-policy>

## Digital Prototypes: Use less material, develop faster

The global demand for greater efficiency and sustainability has driven the digital transformation of the manufacturing industry. The introduction of simulation and computational tools has fundamentally changed product development and testing. Physical prototypes and tests are increasingly being replaced by digital models and simulations, reducing material consumption, shortening development cycles and lowering costs. This digital transformation makes it possible to identify design flaws and optimization potential early on.

By virtually testing and comparing different materials and designs, companies can develop greener solutions. These innovative approaches optimize the use of materials, reduce waste and extend the life of products. In addition, early consideration of sustainability issues in the design phase enables compliance with global environmental standards and minimization of the environmental footprint.

Another benefit of this evolution is the use of centralized data management systems that give all stakeholders access to up-to-date and accurate materials data. This improves communication and coordination so that decisions can be made faster and on a more informed basis. Improved team networking also promotes the integration of sustainability goals throughout the product development process.



## Material flow optimization

A comprehensive materials management system can address the complex and critical needs of organizations in industries as diverse as aerospace, automotive, and healthcare. Key features of such a system include:

- **Centralized materials data:** A centralized database ensures that all information about materials, including their properties, specifications, and test data, is easily accessible to all members of the team.
- **Material traceability:** Traceability of materials throughout the product lifecycle provides transparency and accountability. This is valuable for quality control, recalls, and audits.
- **Data integration:** Seamless integration with other software systems enables efficient data exchange, streamlining workflows and reducing duplication of effort.
- **Material selection and optimization:** Engineers and designers have access to comprehensive data to make informed material decisions, minimize design errors, avoid product defects, and reduce costs.
- **Cost reduction:** Reduce production costs by optimizing material usage and reducing the need for physical prototypes.
- **Compliance and risk management:** Structured documentation of material information supports regulatory compliance and risk management.
- **Sustainability and eco-design:** Information on carbon footprint, toxicity, and recyclability of materials supports environmentally responsible decisions.



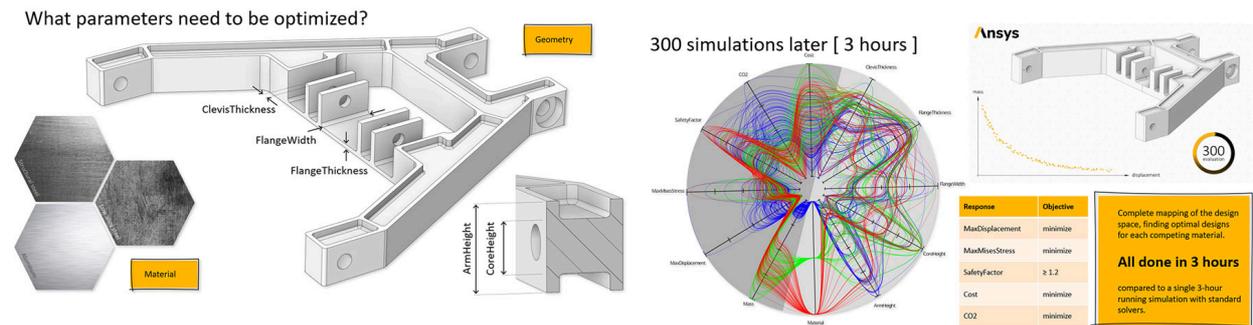
## Digital thread for sustainable success

Materials intelligence is a key building block for corporate sustainability. In-depth knowledge of material properties and their environmental impact - including carbon footprint, toxicity, and recyclability - enables companies to select materials that support their sustainability goals and reduce their environmental footprint.

Integrating this material data into a 'digital thread' maximizes the benefits for sustainability initiatives. A digital thread is a framework that enables seamless integration and data exchange between digital and physical environments. It connects all relevant data and processes from the initial product idea through development, production, use, and disposal or recycling of a product. This linkage creates a continuous flow of information that significantly improves visibility, traceability, and efficiency throughout the product lifecycle.

By connecting materials data with innovation processes through a digital thread, companies can make both their research and development activities and their production processes more sustainable. The link to supply chain data also ensures that suppliers adhere to sustainable standards and ethical sourcing practices, resulting in responsible and environmentally friendly supplier relationships.

In particular, engineers benefit from the accessibility and depth of high-quality material information to gain an overview of the design space/possible alternatives while maintaining full control over their design.



A well-maintained digital thread for materials enables companies to make informed and sustainable decisions throughout the product lifecycle. This leads to reduced environmental impact, optimized resource utilization, improved regulatory compliance, and achievement of overall sustainability goals. These approaches have the potential to take operational sustainability to a new level, with long-term benefits for both the environment and the business.

# Valeo Querétaro Tech Centre Opens

## GENERAL NEWS



Valeo have just inaugurated their new technical centre in Mexico. The ceremony included Marco Del Prete, Head of the Ministry of Sustainable Development of Querétaro, Mauricio Kuri González, governor of Querétaro, and Delphine Borione, French ambassador to Mexico.

The Querétaro technical centre will support a wide range of products, including central computer units, displays, lighting modules, and high-voltage electrification systems through the full development cycle. Over 100 engineers specializing in software, electronics and system design, as well as system validation, already work here and hundreds more are expected to join in the years to come.

Valeo North America President Jeffrey Shay called the new centre "a dynamic hub for research, development and collaboration, empowering Valeo to work closely with global automakers and other partners to accelerate innovation". Marco Hernández, National Director of Valeo Mexico, emphasized that the new centre will not only develop technology, but will also be a meeting place for local and national talent, helping to train future leaders in the automotive industry.

# EV, ADAS PACE Award Finalists Named

## GENERAL NEWS



Automotive News has just selected 25 finalists for the 2025 PACE Awards, given to suppliers in recognition of a technological innovation in product or process that has reached the commercial market. Awards will be bestowed next April at a ceremony in metro Detroit.

In addition to the PACE Award finalists, 22 products have been chosen as finalists for the annual Automotive News PACE Pilot honour, which recognize pre-commercial and post-pilot innovations in the automotive or future mobility spaces—including products, processes, software, and IT systems.

Among PACE Awards for EV and ADAS tech, some of them have links to the lighting and sensor world:

- Hanon Systems: VR-LED photocatalyst for air disinfection
- Hyundai Mobis: ADAS-linked ADB (AADB) Predictive Control System
- Luminar: Iris long-range lidar
- Marelli: Digital OLED taillight
- OLEDWorks: World premiere of second-generation Atala OLED technology in the new Audi Q6 e-tron
- Swift Navigation: Reliable, high-integrity lane-level positioning to unlock functionally-safe L<sup>3</sup> AD systems

# Chengdu Auto Show Unveilings

## GENERAL NEWS



The Chengdu Motor Show 2024 kicked off on 30 August. Nearly 130 Chinese and foreign car companies made appearance during the motor show, with more than 1,600 vehicles on display.

Here's a DVN list of vehicles interesting for their lighting content:

### **Zeekr 7X**

This third Zeekr car, after 007 and MIX, includes the maker's 'Stargate' front display.



## Xpeng Mona 03

BEV with starting Price at \$16,900. Xpeng received over 30,000 orders in the 2 days after launch.



## Changan CS75 Plus SUV

Full-width front and rear position lamp and three horizontal slides of low beam and high beam modules.



## Chery Exceed Yaoguang

Similar full-width front and rear position lamp.



A D-shaped decoration is added under the headlights; is this a future ISD?



### Avatr 07

The Avatr 07 adheres to the brand's recognizable family style, featuring double-layered LED DRLs. The vehicle's dimensions are 4,825L × 1,980W × 1,620H mm, with a wheelbase of 2,940 mm. The rear design returns to a more traditional SUV look, with a smaller rear window and sleek, narrow taillights.



The Avatr 07 also has Huawei Qiankun ADS 3.0, lidar, parking assistance, upgraded urban navigation capabilities, and a new collision-avoidance system.