

Tue, 25 February 2025
Weekly Newsletter



NEWSLETTER #893

Ennostar

Comprehensive
Automotive Optoelectronics
Solution



ADB



EXTERIOR
DISPLAY



DMS



INTERIOR
DISPLAY



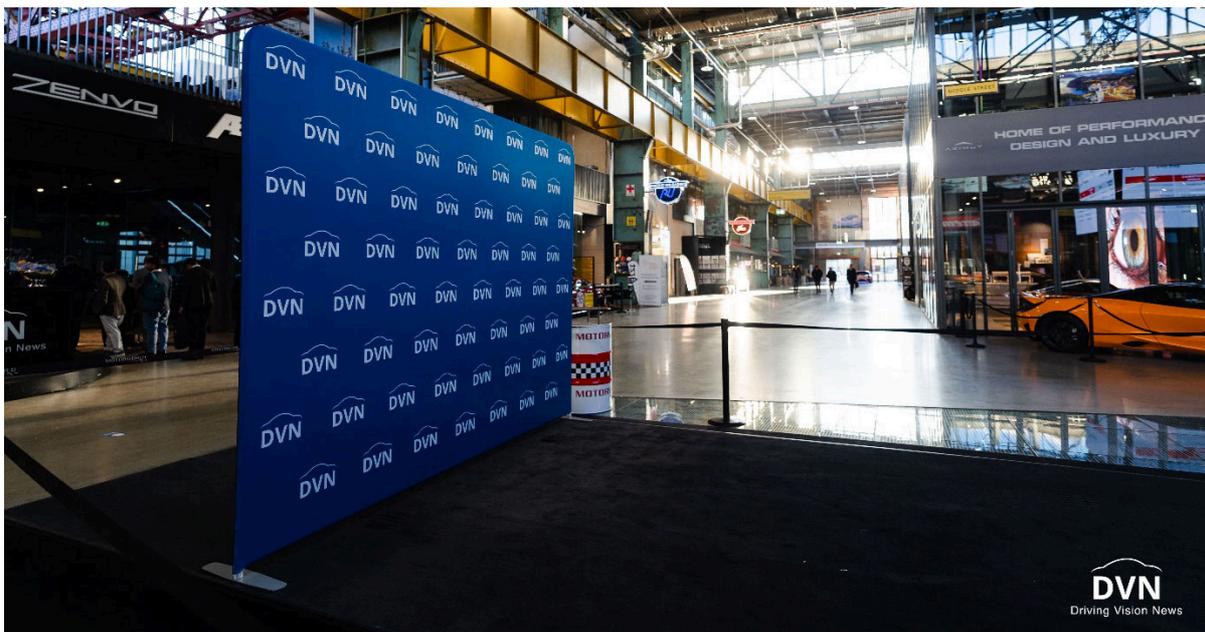
50M HUD



AMBIENT
LIGHT

Editorial

Grand Success @ DVN Munich: Tech, Tech, Tech, Networking



DVN @ Munich 2025 brought more than 500 people—another new record—together to tell, show, listen, and learn about the latest vehicle lighting challenges. More competition, barriers formed by geopolitical turbulence, less money for innovation, and less time for development, to name a few. At the same time, there's unprecedented need for innovative design, breakthrough technology, and new ways of working—accommodating AI, using digital twins, and incorporating sustainability from start to finish, for instances.

That's a stiff workload. Sounds like a hard uphill climb. So, will everyone lose motivation to innovate, and just go for cheaper solutions and cheaper suppliers? I really don't think so! Not when I see the record-high attendance at this DVN event, the great participation by exhibitors (48 this time, yet another new record!) and all the new

technology being dreamed up, developed, refined, and commercialized in the vehicle lighting and driver-vehicle vision world.

A lot of designers and stylists come to our events to see the new technology, and that surely indicates vigorous health in the ecosystem. The demand for good design drives the lighting industry to innovate in important ways.

I was quite impressed at the new technology coming from the display world. Films for in-car displays and HUDs, mini- and microLEDs with smaller and smaller pitches, laser + MEMS for projection. Technology for V2X communication with displays and projections is clearly ready. We have started to see it in China and it is coming in Europe. Now our job is to make it safe and valuable for customers and end-users.

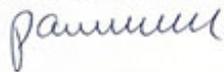
Speaking of safety: public complaints about traffic glare are increasing all over the world. We in the industry have a big central role in addressing it, and that will have to be done thoughtfully and carefully. To that end, DVN held a session about glare with universities, research institutes, and regulators. Getting an informed, multilateral discussion happening is a very fine start!

Next week, I will be able to take a deep dive into our Munich event with the detailed report made by all our Senior Advisers. The content was so important that I can't do it now.

Sincerely yours,

Paul-Henri Matha

DVN Chief Executive Officer and Lighting General Editor

A handwritten signature in blue ink, appearing to read "pammuuu", is positioned below the printed name and title.

In Depth Lighting Technology

Headlamp Lens Frost-Up: Problems and Solutions



Car users, particularly in America, are regularly posting videos showing what they describe as a serious design flaw: some headlamps are recessed such that they're practically guaranteed to scoop and collect snow, which completely occludes the lenses.

He's got a point: snow is opaque, so snow-packed headlamps won't light the driver's way at all. Maybe not such a big deal if it's just a little light, fluffy, dry snow—the kind that can easily be brushed off before driving, and isn't as likely to build up while driving. But wetter, heavier snow, ice, and freezing slush can quickly and easily accumulate while driving, nullifying the driver's vision and spoiling the car's conspicuity, in weather and road conditions where visibility and conspicuity are especially important. And what of a vehicle parked outside in a storm? Its lights might well be so heavily encrusted that they cannot readily be cleared. Then the driver must choose between unsafe driving and no driving.

And it's not just passenger cars and light-duty trucks, either; heavy trucks, buses, and other commercial vehicles are at risk, as well—including emergency vehicles which have to be fully ready to safely drive at any moment, even in terrible weather.

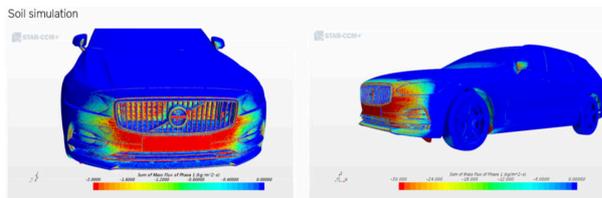
Even short of total blockage by opaque snow or frozen slush, ice and frost buildup on lamp lenses can distort the beam, sending light where it shouldn't be (which causes glare) and away from where it should be (which degrades the ability of people and cameras to see what they must). For many years, it wasn't much of a problem even with recessed lights; yesterday's tungsten, halogen, and HID lamps readily self-defrosted, because with those technologies the light and heat are coincident—they both exit together out the front of the lamp. As a result, no regulations developed to require any degree or speed of lens-clearing analogous to the presence and performance requirements for windshield and backglass defoggers; the closest ever to evolve was the old requirement in Scandinavian countries for headlamp wipers—pressure-jet washers would not suffice—and that requirement was quashed in the early-1990s drive to eliminate country-specific lighting requirements throughout Europe (that was when France lost their yellow-headlights requirement and the UK lost their dim-dip requirement).

But with LEDs, it's different: the light goes forward out the front, but the heat goes rearward. So the lenses run cold, and frost, ice, snow, and slush can adhere and accumulate. There has still been no movement toward a regulation addressing the matter, but it has been under scrutiny. A broad and deep [study](#) was done in 2014 in Sweden (naturally!) as a master's degree thesis, looking at methods of tackling the

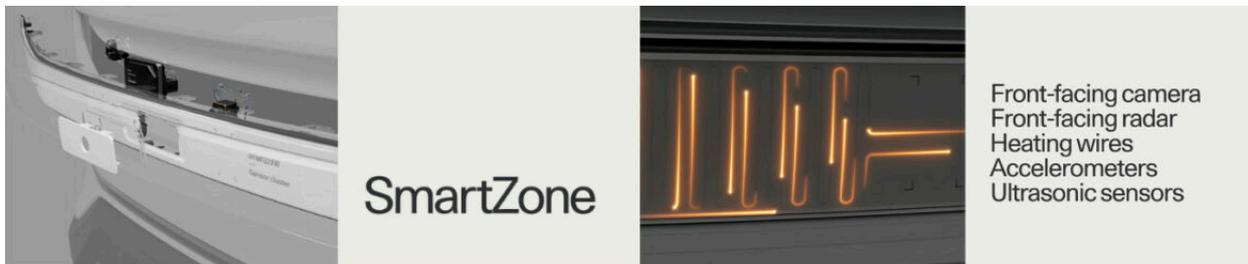
problem on front and rear lights, and effective ways of testing the performance of frost-up countermeasures.

Even in the absence of regulations, industry has been working to devise solutions, especially for commercial vehicles. During the DVN event last week in Munich, JW Speaker CTO Dragan Popovic spoke on this topic. It's one he's well positioned to discuss; Speaker were early to market with LED headlamps for trucks and buses, and they're headquartered in Wisconsin, which gets some of the United States' harshest winter driving conditions.

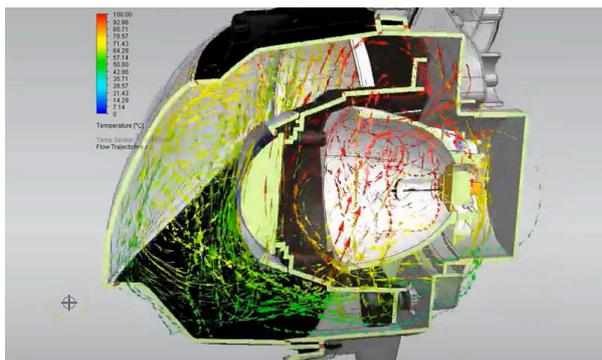
This phenomenon is well known by automakers—for lamps, yes, and also for ADAS sensors. DVN CEO Paul-Henri Matha, when he was working at Volvo Cars, gave a presentation about sensor impairment in winter conditions at the AutoSense event in October 2020, focusing mainly on cameras and radars.



In the false-colour image shown here, the red area signifies sticking snow. In this particular example there is no snow sticking to the lamps, but there is on the bumper and grille, where sensors are often located. Solutions exist for radar integration, as on the Polestar 3 (smart zone with heating element)

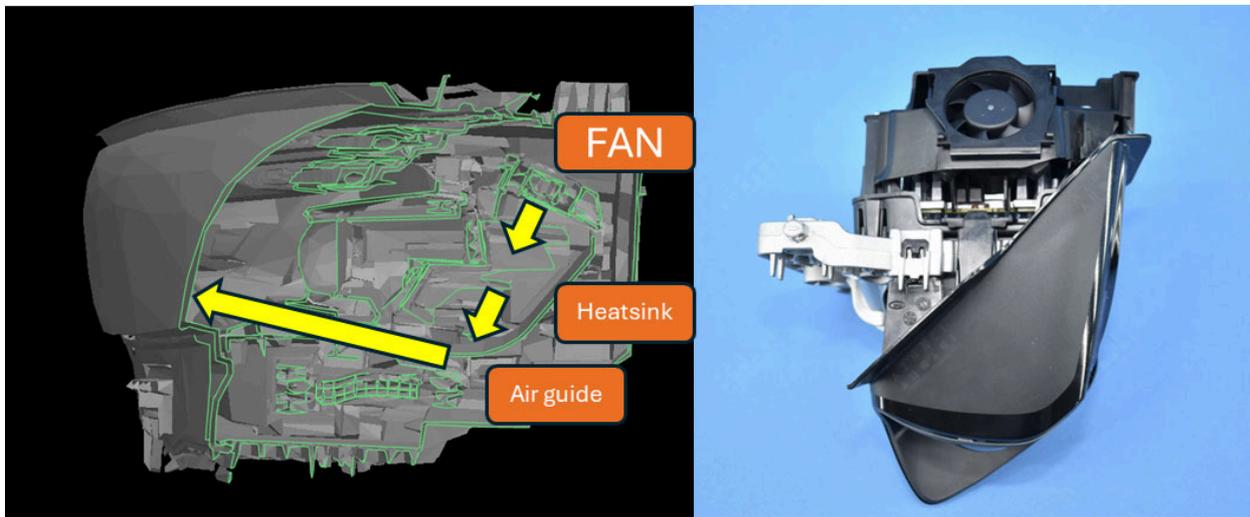


Before LED lamps came along, headlamp outer lens temperature was around 100 °C (depending on the particulars of any given lamp design) and so there was generally not much need for a defrosting solution—indeed, the bigger concern at that time was that heat baking dirt onto the lens!



But LED headlamp lenses tend to run at around 40 to 70 °C. Initial solutions were to redistribute heat from the back of the LEDs round to the inside-front of the lamps with air guides, fans, heat pipes, and other suchlike.

Siemens FLOEFD: thermal dissipation in halogen headlamp



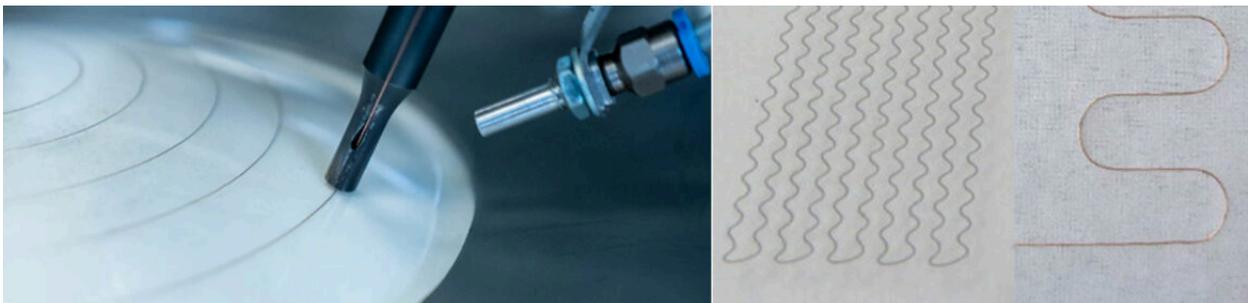
Thermal redistribution in Mercedes GLC LED headlamp (A2MAC1)

There are multiple reasons why those techniques might not be suitable. For one thing, they might not be enough; LEDs and their associated optical techniques have grown much more efficient since the first LED headlamps, and now good beams can be produced with very low wattage—there very well might not be enough heat anywhere in the headlamp to effectively defrost the lens and keep it clear. So other techniques are being developed and deployed. Heating elements in or near the lens, for example, particularly on trucks in North America.



There's a variety of heating element technologies and techniques.

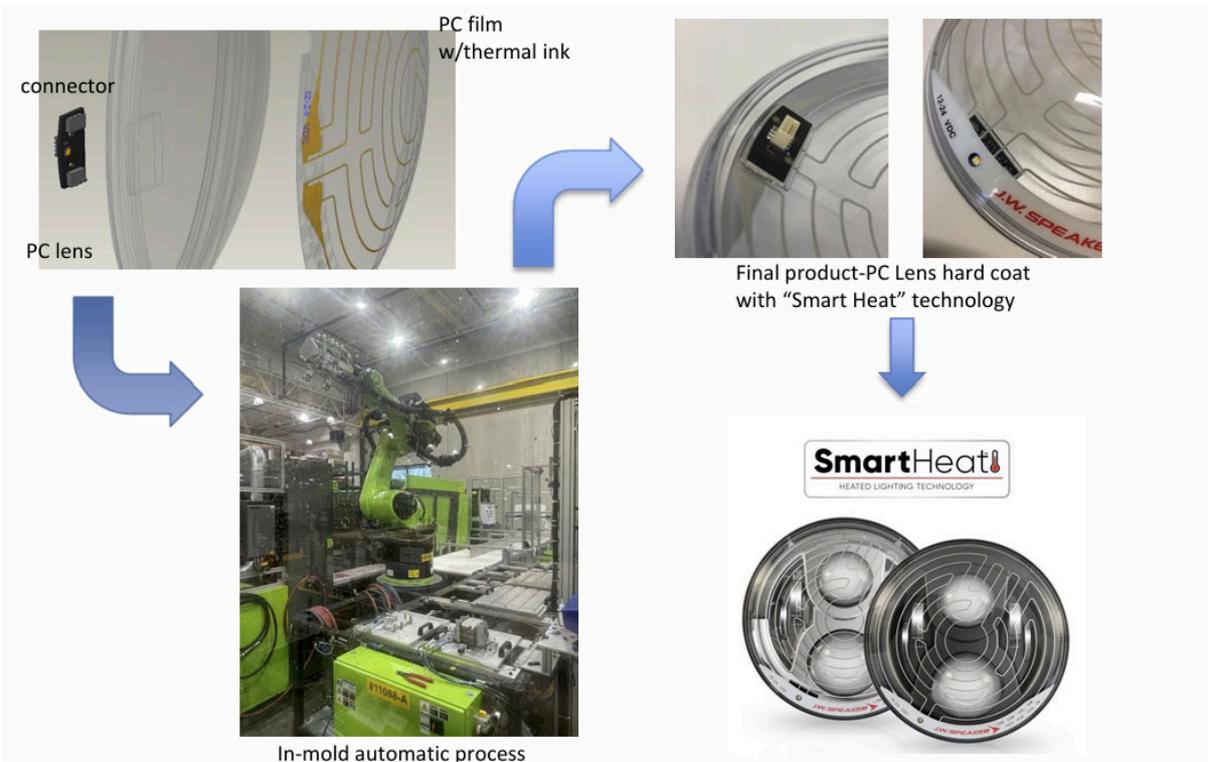
One of the most common and direct ones involves integrating **heating wires** within the headlamp lens, as shown here on a truck headlamp.



Heater grids printed with thermal ink

This technology is deployed, for example, by JW Speaker, who call their system Smart Heat. It involves clear films with conductive inks screen-printed on. The 3D film undergoes a thermoforming process after screen printing. Connection to the films is done in the injection mould tool via an insert-moulded PCB: films and PCBs are placed into the moulds. Resin encapsulates the ink and connections during the injection moulding process, for an extremely robust and reliable product. NTC sensors regulate automating de-icing process depending on ambient temperature, and a microLED indicates when heating is active (to facilitate a driver's pre-trip safety check and continually promote this point of technical excellence).

A million JW Speaker heated-lens lamps are currently in service. The cost is around USD \$5 to \$7 for a rectangular surface of 150 × 100 mm, with power consumption of about 20W.



Grote also put this sort of technology on headlamps they supply for trucks like the Freightliner Cascadia, Western Star 49X and 57X, and Mack Granite.



Grote truck headlamps with heated lenses—aided by body designs which don't form snow scoops



Heating pads are another method of applying heat to defrost lenses and keep them clear. These are typically flexible, thin, and made from conductive materials that can be applied to the internal surface of the headlamp housing—for example, these Hella lamps on Peterbilt 279 and Kenworth T680 trucks (pads are circled with a thin white line in the middle photo here)

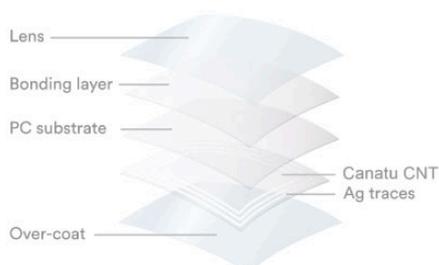


Clear conductive heaters are another line of attack on the problem. Various companies have been innovating in this space with transparent films. One example is Canatu, who use films with carbon nanotubes—one of the best materials there is for thermal conductivity. CNTs are 1,000× more conductive than copper. Applied on a plastic substrate, Canatu's CNTs form a very thin coating with very small thermal resistance, providing even and power-efficient heating across the whole area. The Canatu film heaters are also energy-efficient, using 40 per cent less energy compared to wire heaters for any given level of heating performance. Such a film heater can be 3D formed before integration. The material is highly stretchable (>200 per cent) and can be bent to a radius of just 1 mm. Film heaters using Canatu CNTs can be thermoformed or high-pressure formed into any 3D shape, offering design freedom for complex geometries. They can be seamlessly integrated into a headlamp's plastic cover lens through film insert molding. For glass lenses, the heater can be sandwiched between interlayers and laminated between the B- and C-surfaces, or it can be laminated behind the glass on the D-surface.



High optical performance

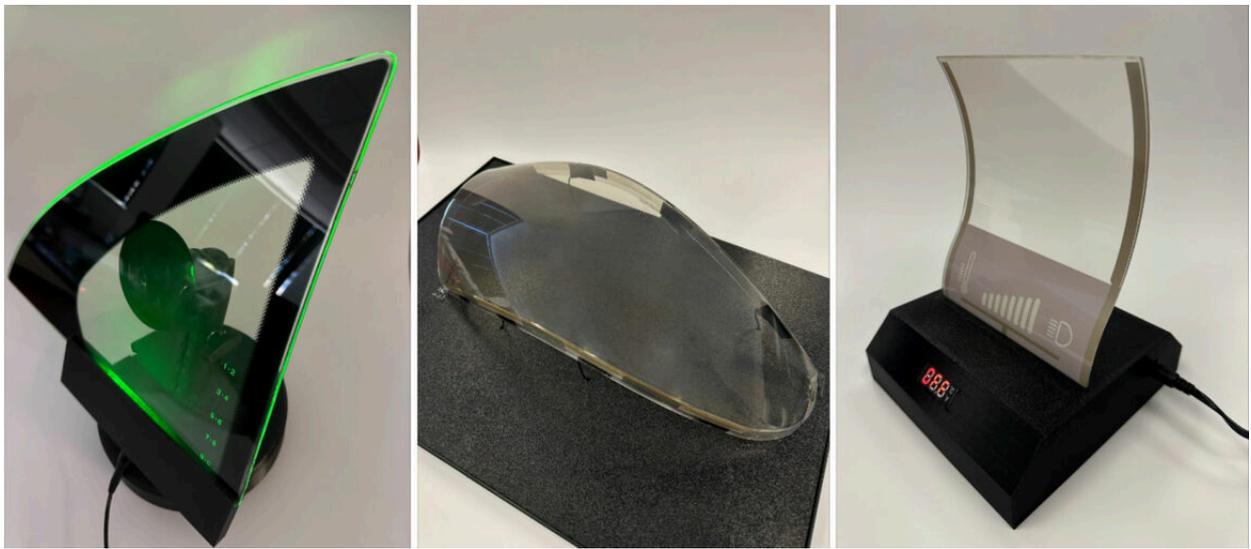
Canatu headlight heaters are transparent and wire-free, offering superior optical clarity without haze or distortion. This ensures that a vehicle's headlights maintain their intended beam shape for optimal road illumination.



Robust

Canatu headlight heaters can be seamlessly film insert molded within the plastic stack during the headlamp lens injection molding process. This integrated design enhances reliability and ensures durability against harsh weather conditions.

Dupont'sC3 nanooffering uses silver nanowires for transparent conductive films, inks, and coatings. This enables transparent heating for headlamps and lidar-radar-camera sensors (as well as smart surfaces, EMI shielding, and IR reflection).



A lidar heater application of this technology will start production this year; the headlamp application target is 2026-2027.

Lighting News

DVN Interview: Canatu's Samuli Kohonen

LIGHTING NEWS



At SEMICON in Japan last month, we spent time talking and listening with Samuli Kohonen, Canatu's sales VP, about their new partnership with Denso.

DVN: What can you tell us about Canatu's new pact with Denso? It's a memorandum of understanding at this point, yes?

Samuli Kohonen: We are a technology company and a leader in advanced carbon nanomaterial. We develop the most advanced carbon nanotubes (CNT) for semiconductor, automotive, and medical diagnostics industries. Denso is one of Canatu's largest shareholders and Canatu and Denso already started joint development based on previous a licence agreement and contract. The key areas in the MOU signed on 4 December 2024 for CNT are research and development, mass production technologies, and global supply chain development.

That is, specifically, we develop new applications for transparent heaters with Canatu CNT. Canatu film heaters have high transmittance and heat an entire surface with wire-free. The film heater can be integrated into a plastic lens (like PC) by laminating or insert moulding. One application will be for sensors and cameras. As autonomous driving technology continues to evolve, vehicles must detect their surroundings accurately by cameras and sensors. It's a problem that frost, ice, and condensation obstruct visibility, degrading accuracy and acting against correct detection. Canatu CNT can be a solution to prevent these problems.

DVN: How about lidar? It must work in all weather; the lens must always be clear of fog, ice, snow, and condensation.

S.K.: CMT holds great promise for a wide range of applications. Lidar could be one of them. There is no date [yet] for implementation. The program with Denso is currently in the R&D coöperation and exploratory stage.

DVN: How about headlamp lenses?

S.K.: Film heaters can be a potential solution for headlamp problems related to weather, but the target at present is for sensors and cameras.

DVN Field Trip: Indiemicro

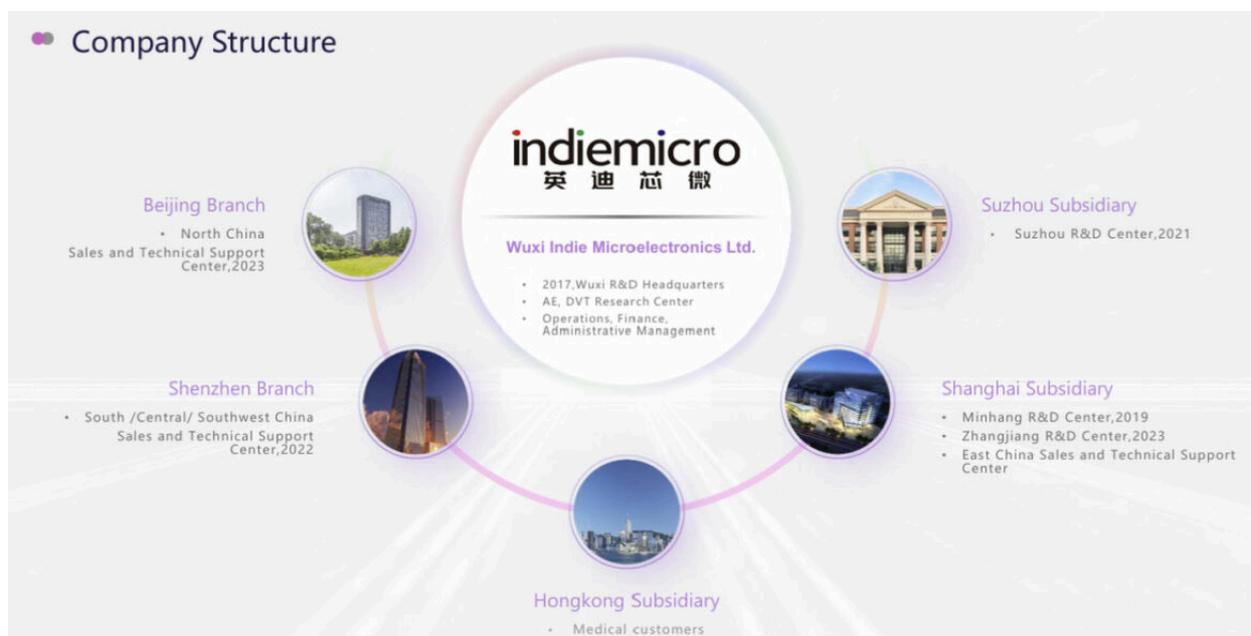
LIGHTING NEWS



By Paul-Henri Matha

I had the chance to visit Indiemicro's office in Pudong during my last trip to Shanghai, where I met with Jim Zhuang. He's Indimicro's Head of Product Marketing.

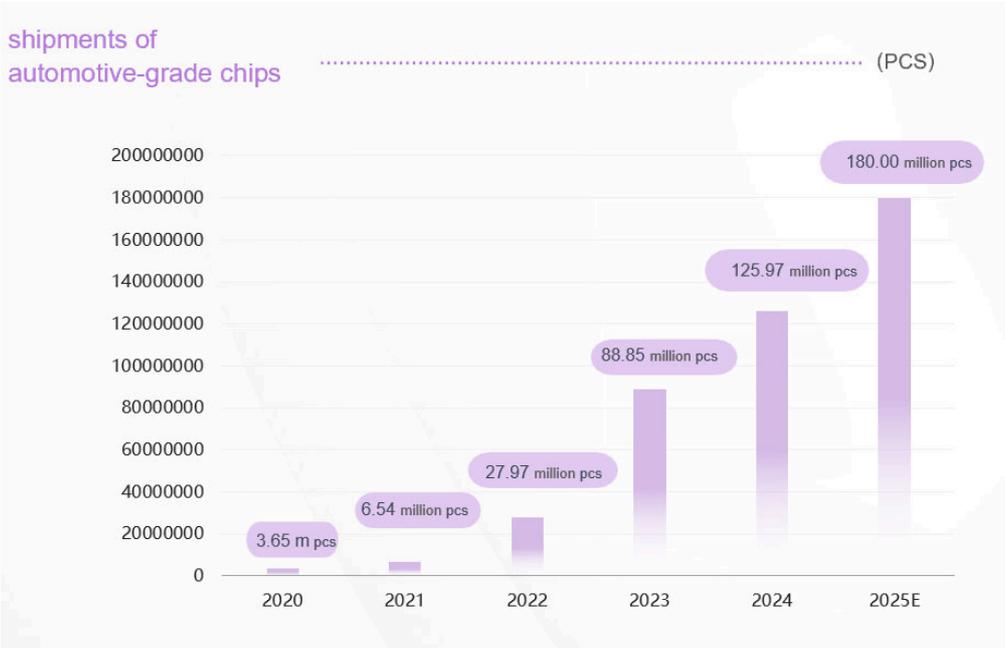
Indiemicro was founded in Wuxi in 2017, and have expanded R&D now in Suzhou, Shanghai (Minhang and Zhangjiang) on top of Wuxi. There are over 100 R&D personnel, and two sales and technical support centres in Beijing and Shenzhen.



Their automotive portfolio is focused on ICs for lighting, motor controls, and smart sensors.



Indimicro are growing fast in the hyperdynamic Chinese automotive market—that applies particularly in lighting there, which has soared from 250,000 pieces delivered in 2019 to an estimated 126 million pieces in 2024 (estimated revenue USD \$90m).



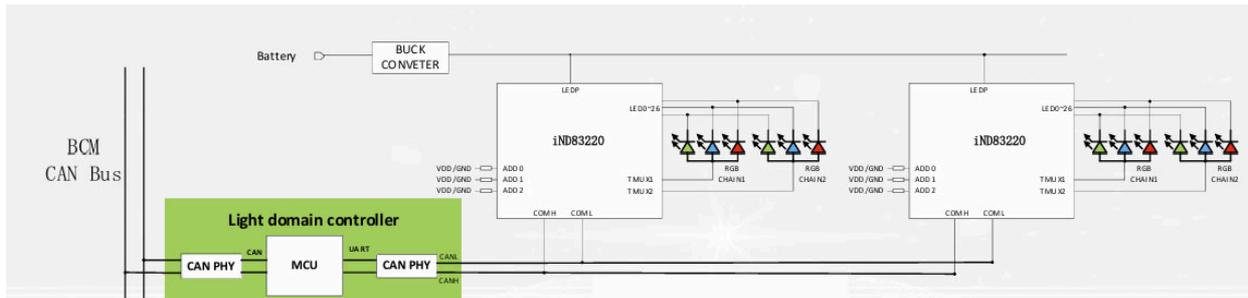
Indimicro are a fabless company, working with Global Foundry in Singapore, Xfab in Germany, and Huahong Grace in China. They supply a great many of the major tier-1s, including Valeo, Forvia, Keboda, Koito, Marelli, Yanfeng, Hasco, and Antolin, and their products are found in vehicles from almost all the world's OEMs.

Indie have developed a complete set of ICs for vehicle lighting applications:

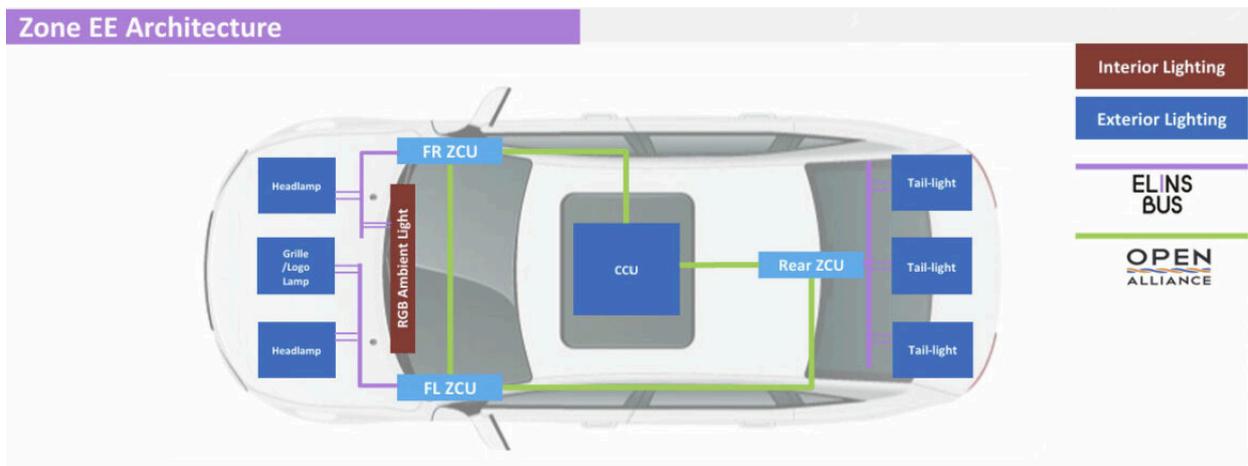
- SoC (system on chip) including LIN transceiver, MCU, and LED IC
- Touch SoC with LIN or CAN interface



Indiemicro also are proposing their own bus for smart RGB leds—ELINS, based on UART over CAN.



This protocol can be used also for MCU less application from zone controller for exterior lighting application



Indiemicro are the current market leader in China for interior LED ICs with significant share, especially based on LIN or CAN RGB applications.

Smart RGB and sequential exterior LED activation including ELINS bus are already in the market on cars like the Changan CS 75 and Avatr with Marelli exterior lighting, GAC MPV with Hasco exterior including LDM, and interior lighting on the Avatr 07.

Their main competitors are Texas Instruments, Infineon, NXP, Elmos, and Melexis. Newcomers are entering the business from consumer display application—Macroblock and Raffar, for example—with a different approach based on SPI interface.

Nissha's Film Innovations

LIGHTING NEWS



L-R: Nissha's Alexander Kissling and Volker Schuster; DVN's Wolfgang Huhn

By Wolfgang Huhn, DVN Senior Adviser

Nissha's name is a combination of the Japanese words for Japan and Printing. The company was founded in Kyoto in 1929 as a specialist in high-end art printing. Today, Nissha are a global player in printing, coating, laminating, moulding, patterning, and metal processing. In the interior lighting business, Nissha are involved in decorative and adhesive foils, in-mould labelling technology, and IMD as well as decorative and functional lighting. Another important area is touch films for consumer communication applications.

Sales of around €1bn are generated by nearly 6,000 employees, with 41 per cent coming from industrial materials (films, mouldings, metallized paper, etc.), 33 per cent from film-based touch sensors, 22 per cent from medical technologies, and 4 per cent from other businesses. Nissha have a global presence with 48 bases around the world. The European Innovation Centre and a factory are located in Thuringia, Germany, mainly supplying interior products to the automotive industry as a tier-2 supplier.

Due to the widespread use of large displays in new car interiors, the decorative IML film business is shrinking; Nissha are responding to this trend with innovation. Promising new business is being generated in car exteriors, such as films with integrated heaters and integrated sensors in the front end, films in the outer lenses of headlights to differentiate car lines, and others not yet revealed to the public.

FIM (film insert moulding) technology can be used for dynamic lighting applications. Evenly-distributed light scattering in film material and light-scattering in printed layers

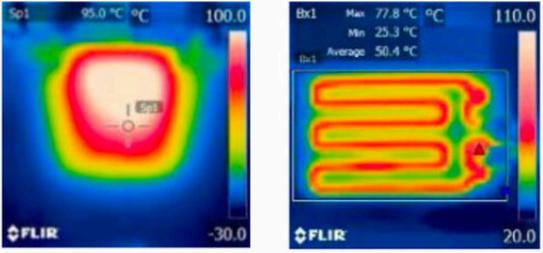
with precise control are very interesting for creating new æsthetic designs and functions. In sensors, Nissha are working on integrated touch-, force-, and temperature sensors, as well as transparent heating foils with embedded wires.



Interior



- Functional Trim
- Mutech - „Hidden Display“
- Ambient Lighting
- Interior Heating



Exterior



- Functional Panels (Front/Rear)
- Head Lamps
- Decorative Trim
- Roof Modules

Nissha's new films are highly efficient and can help reduce LED power consumption by improving the optical efficiency of the entire lighting system, both interior and exterior. This seems to be a valuable approach when considering the several thousand LEDs in the interior of a luxury car. Exterior communication displays (ISD, as reported in our [2024 DVN study](#)) will also need more optical efficiency in the future.

From what I saw during my visit, Nissha are a thriving tier-2 supplier with a portfolio of products and innovations with the potential to create highly visible innovations for the world's OEMs in terms of æsthetics, design, function, and sustainability. To be honest, I was really surprised by what I saw in the innovation centre and in the factory; it was way beyond my expectations.

Hella's New Asian Corporate Hub Opens in Shanghai

LIGHTING NEWS



Forvia Hella China just moved their corporate centre to a new office at the Fu Building – Forvia China Headquarters, in Shanghai. By fostering closer collaboration and enhancing synergies within the Forvia Group under one roof, they are poised to seize new market opportunities and drive sustained growth in the region.



2025 DVN Awards

LIGHTING NEWS



DVN's annual award ceremony was held at the DVN Lighting event in Munich on 19 February.

500 people attended the event, where five winners were revealed—selected by 796 voters representing 122 companies. Without further ado, here they are!

Best Front Lamp: Opel Grandland



The Opel Grandland got 26 per cent of votes from 38 different companies.



Best Rear Lamp: Audi A6 e-tron



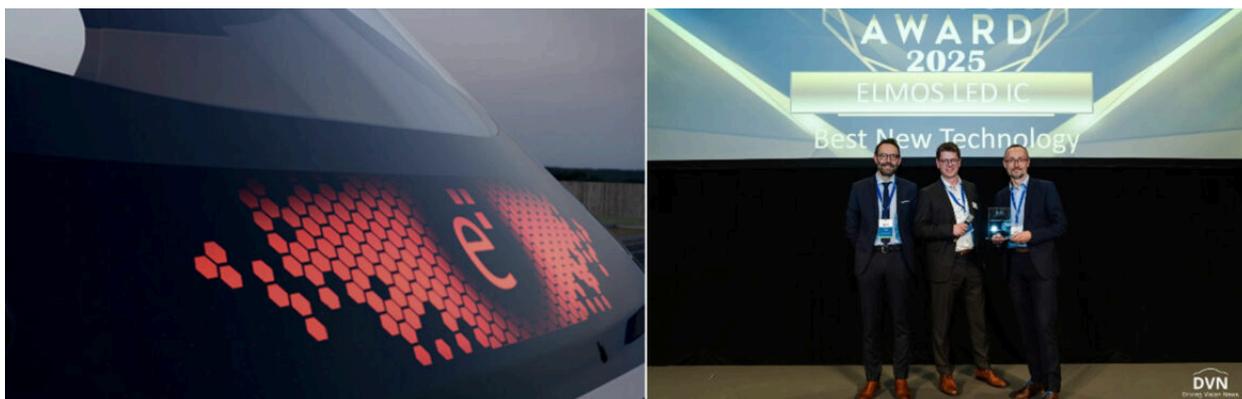
The Audi A6 e-tron got 27 per cent of votes from 43 companies.



Best Technology: Elmost Multichannel LED IC



The Elmos Multichannel LED IC garnered 23 per cent of votes from 41 companies.



Best Lighting UX: Mahindra Be6



The Mahindra BE6 won with 32 per cent of votes from 41 companies.



Best Concept Car Lighting: BMW Neue Klasse



The BMW Neue Klasse took 36 per cent of votes from 66 companies.

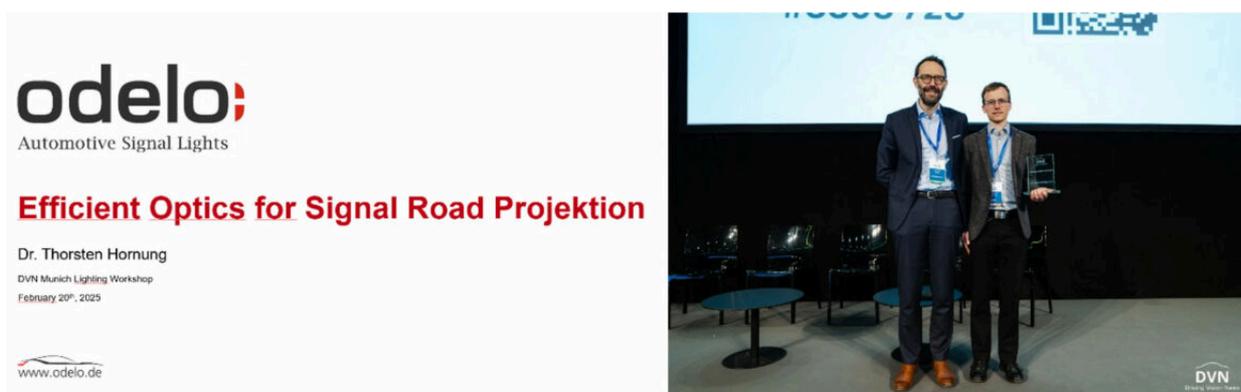


Best DVN Lecture of 2024: Zeekr Design



Zeekr Design's lecture topped the voting, with 32 per cent.

Best Lecture @ DVN Munich '25: Odelo



Odelo's Dr. Thorsten Hornung's lecture about efficient optics for signal road projection came away with the most on-site votes for best presentation at the Munich event.

General News

OPmobility 2024 Figures

GENERAL NEWS

In € million By segment ⁱ⁾	2023	2024	Change	LFL change ^{c)}
Exterior & Lighting	5,579	5,494	-1.5%	-1.2%
Modules	3,112	3,486	+12.0%	+12.9%
Powertrain	2,707	2,667	-1.5%	-0.5%
Economic revenue^{a)}	11,399	11,647	+2.2%	+2.8%
Joint ventures	1,084	1,163	+7.2%	+10.3%

OPmobility's revenue totalled €11,647m in 2024, up 2.2 per cent, and 2.8 per cent like-for-like, compared to 2023, mainly driven by their modules and exterior activities. This growth is mostly due to the transformation into revenue of the high order intake recorded in recent years by the exterior systems activity, as well as the first full-year effect of the modules plant in Austin, Texas. The YFPO joint ventures, which mainly manufacture exterior parts in China, reported like-for-like growth of 10.3 per cent in 2024.

- For exterior and lighting, revenue decreased by 1.2 per cent like-for-like versus 2023. In this segment, exterior systems revenue benefits from the high order book recorded in recent years. Lighting revenue decreased in 2024 year-on-year due to a weak order book prior to acquisition by OPmobility. In a highly competitive environment, the lighting business maintains strong commercial momentum, recording nearly €3bn in orders in just two years and securing its growth prospects from 2026.

In € million By region	2023	2024	Change	LFL change ^{c)}	Automotive production ⁱ⁾	Performance vs. Automotive production
Europe	5,835	5,832	-0.1%	+0.0%	-4.9%	+4.9pts
North America	3,150	3,395	+7.8%	+7.8%	-2.6%	+10.4pts
Asia	1,955	1,929	-1.3%	+1.2%	+0.5%	+0.7pts
China	1,048	941	-10.2%	-8.7%	+4.6%	-13.3pts
Asia excl. China	907	988	+8.9%	+12.9%	-4.5%	+17.4pts
Rest of the world⁵	458	491	+7.1%	-	-	-
Economic revenue^{a)}	11,399	11,647	+2.2%	+2.8%	-1.2%	+4.0pts

- In Europe, revenue totalled €5,832m—stable on 2023. In this region, where automotive production decreased by 4.9 per cent, mainly due to a 5.9-per-cent drop in BEV sales compared to 2023, the group continue to outperform automotive production by 4.9 points. This performance was supported mainly by the exterior systems activity, as well as by the modules activity, which continues to benefit from the ramp-up of the Slovakia and Czechia sites.
- In North America, revenue totalled €3,395m and represented 29 per cent of 2024 group revenue, up 1.5 points on 2023, in line with the group's growing presence in Africa and South America. Revenue increased by 7.8 per cent YoY and LFL in North America, outperforming the market by 10.4 points. This strong growth was mainly driven by the modules plant in Austin, Texas and by the exterior business, with notably the Cadillac Lyric, Volkswagen Atlas and Chevrolet Equinox programs. In 2024, C-Power recorded fuel tank and depollution system production volumes in this region similar to 2023.
- In China, where 8 per cent of sales are generated, the group recorded revenue of €941m in 2024, a decrease in a market growing 4.6 per cent, driven by strong demand for new energy vehicles. Increased electric vehicle production, mainly by local companies, continues to impact C-Power, which is developing in the hybrid vehicle segment. At the same time, the exterior systems business through YFPO, the joint venture with Yanfeng, recorded revenue growth in 2024.
- In Asia excluding China, where OPmobility generate another 8 per cent of their sales, revenue totalled €988m in 2024, up 8.9 per cent (12.9 per cent LFL) year-on-year and 17.4 points higher than automotive production. The Modules business group continues to grow through the SHB joint venture in South Korea, the main country contributing to revenue in this region. Finally, the C-Power and Exterior businesses continue to grow in India, the group's growth driver.

2024 operating margin totalled €440m, compared to €395m in 2023, with an operating margin of 4.2 per cent of group revenue, up 0.4 points.

The exterior & lighting operating margin totalled €251m in 2024, representing 5.3 per cent of revenue, up 0.3 points over 2023 mainly due to a significant improvement in the exterior systems business operating margin.

Magna International 2024 Figures

GENERAL NEWS

	THREE MONTHS ENDED DECEMBER 31,		YEAR ENDED DECEMBER 31,	
	2024	2023	2024	2023
Reported				
Sales	\$ 10,628	\$ 10,454	\$ 42,836	\$ 42,797
Income from operations before income taxes	\$ 381	\$ 310	\$ 1,542	\$ 1,606
Net income attributable to Magna International Inc.	\$ 203	\$ 271	\$ 1,009	\$ 1,213
Diluted earnings per share	\$ 0.71	\$ 0.94	\$ 3.52	\$ 4.23
Non-GAAP Financial Measures⁽¹⁾				
Adjusted EBIT	\$ 689	\$ 558	\$ 2,329	\$ 2,238
Adjusted diluted earnings per share	\$ 1.69	\$ 1.33	\$ 5.41	\$ 5.49

Magna posted sales of \$42.8bn for the year ended December 31, 2024, compared to \$42.8bn for the previous year—a period in which global light vehicle production was substantially unchanged. Adjusted EBIT increased to \$2.3bn for 2024 compared to \$2.2bn for 2023. Magna typically provide outlooks for the current year and two years ahead. Recently, industry challenges including light vehicle production volatility, uncertain EV sales, OEM program recalibrations, market share shifts, and government policy turbulence have made forecasting more difficult. As a result, Magna are providing a current-year outlook and updating the 2026 outlook provided last year.

2025 and 2026 Outlook Assumptions

	2025	2026
Light Vehicle Production (millions of units)		
North America	15.1	15.4
Europe	16.6	17.0
China	29.7	30.8
Average Foreign exchange rates:		
1 Canadian dollar equals	U.S. \$0.69	U.S. \$0.69
1 euro equals	U.S. \$1.03	U.S. \$1.03

2025 and 2026 Outlook

	2025	2026
Segment Sales		
Body Exteriors & Structures	\$15.7 - \$16.3 billion	\$16.8 - \$17.6 billion
Power & Vision	\$14.1 - \$14.5 billion	\$15.2 - \$15.7 billion
Seating Systems	\$5.3 - \$5.6 billion	\$5.3 - \$5.7 billion
Complete Vehicles	\$4.0 - \$4.3 billion	\$3.7 - \$4.1 billion
Total Sales	\$38.6 - \$40.2 billion	\$40.5 - \$42.6 billion
Adjusted EBIT Margin ⁽³⁾	5.3% - 5.8%	6.5% - 7.2%

BrightView Technologies Closes Funding Round

GENERAL NEWS



Hella Ventures, the corporate venture capital arm of Forvia Hella, together with Technology Venture Partners, lead the Series B investment in BrightView Technologies to accelerate market growth, drive research and development, and strengthen production capabilities.

BrightView are specialists in computational optics, designing and manufacturing advanced optical films that use complex microlens elements to precisely shape light distributions. CEO Jennifer Aspell says the funding "reflects the strength of our team, technology and the exciting growth opportunities ahead (...) this milestone propels us closer to our vision of transforming computational optics across many segments of the technology industry. From advanced displays and AR/VR to automotive, 3D sensing and commercial lighting, BrightView's world class optical expertise, digital pixel technology and rapid speed to market drive innovation and deliver exceptional value for our customers".

And Forvia Hella's Innovation VP Martin Vollmer said, "BrightView's exceptionally high expertise in optics aligns seamlessly with our mission to shape the future of mobility. We're thrilled about the possibilities this strategic partnership unlocks in pushing the boundaries for micro- and nanoöptic applications". Vollmer has joined BrightView's Board of Directors, bringing his deep knowledge of the automotive industry and providing guidance for this high growth segment.

"BrightView is at the forefront of a transformative shift in the optics industry, and we're proud to support the next stage of its growth and innovation," said Don Bossi, chairman of the BrightView Board and general partner at Technology Venture Partners. "This investment underscores our confidence in BrightView's ability to revolutionize segments of the industry on a global scale."

The integration of micro- and nanoöptics in automotive lighting enables enhanced performance, increased design flexibility by reduced packaging space, and affordable innovations for exterior and interior applications. The technology is also set to further improve the Forvia Hella FlatLight.

Look over there!

Christmas Eve Light Show: Mahindra Be6

LOOK OVER THERE !

Our onrunning series "Look over there!" points DVN readers at interesting videos about car lights and related topics. This week, it's a Mahindra video. Take a look at this light show they put on for this past Christmas, showing off the advanced lighting technology and design in the Be6.

