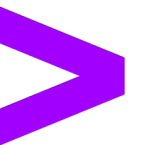
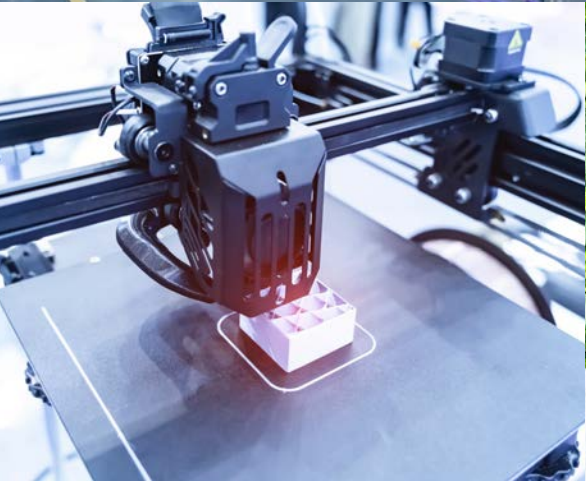


January 2024

Innovate

Trends and innovations that matter





Learn about the latest announcements impacting the industry, from the industry-first 100% recyclable foam and trim product line for vehicle seats, to the Industrial Language Model (LLM) revolutionizing intelligent manufacturing processes, innovative powder coating technology for new material combinations, and more.



**Industrial is
a front-runner
in combining
human ingenuity
with technology
and innovation.**

Thomas Rinn

**Senior Managing Director,
Global Industrial Lead, Accenture**



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SymphonyAI unveils industrial language model for smart manufacturing

SymphonyAI, a leader in AI SaaS, has introduced one of the world's first industrial Large Language Model (LLM), a groundbreaking initiative in smart manufacturing. Trained on a vast industrial dataset with over 1.2 billion tokens and 3 trillion data points, the LLM, hosted on Microsoft Azure, accelerates industrial transformation by providing contextualized information for faster decision-making, boasting up to 90% faster delivery of actionable knowledge. The Industrial LLM's self-learning capabilities adapt in real time, offering insights into diverse manufacturing processes. Available for private preview, developers can leverage the Industrial LLM API for custom applications, fostering a new era of intelligent manufacturing and supporting educational initiatives in universities and colleges.

Valmet Automotive piloting metaverse collaboration

Valmet Automotive and Telia, one of Finland's leading ICT companies, collaborate on a pilot project where a service robot has scanned Valmet's Innovation Center in Finland and created a matching virtual world, the metaverse. This initiative is part of the MURO innovation project, led by VTT and Telia, exploring the potential of 5G robots. The virtual world can be accessed with VR glasses or on a PC screen, allowing experts from around the world to collaborate in real-time, providing location-independent work and flexibility in operations. Valmet Automotive envisions various applications for this technology, such as engineering, maintenance, repairs, and training conducted remotely worldwide. The transition from testing to actual implementation is expected to take 2-3 years. The industrial metaverse is anticipated to be transformative, simplifying engineering processes and enabling real-time experimentation.



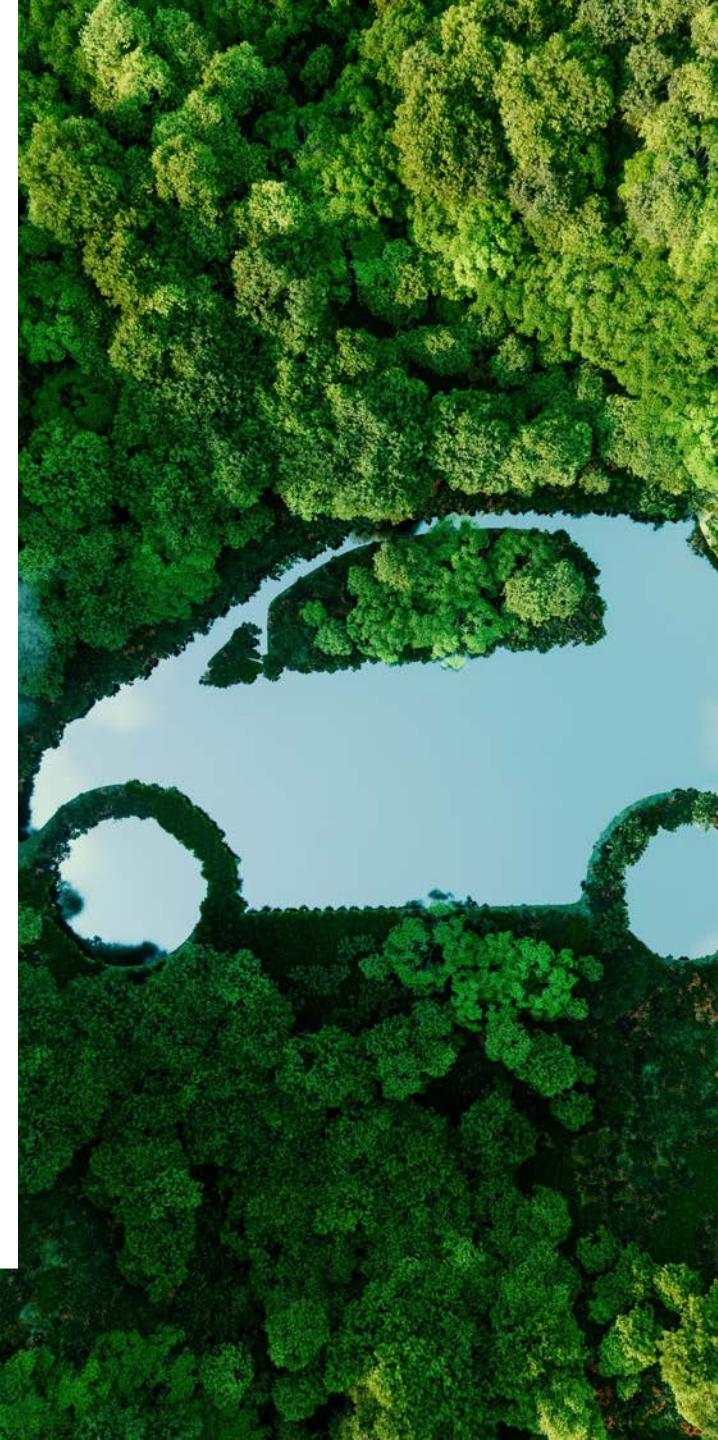


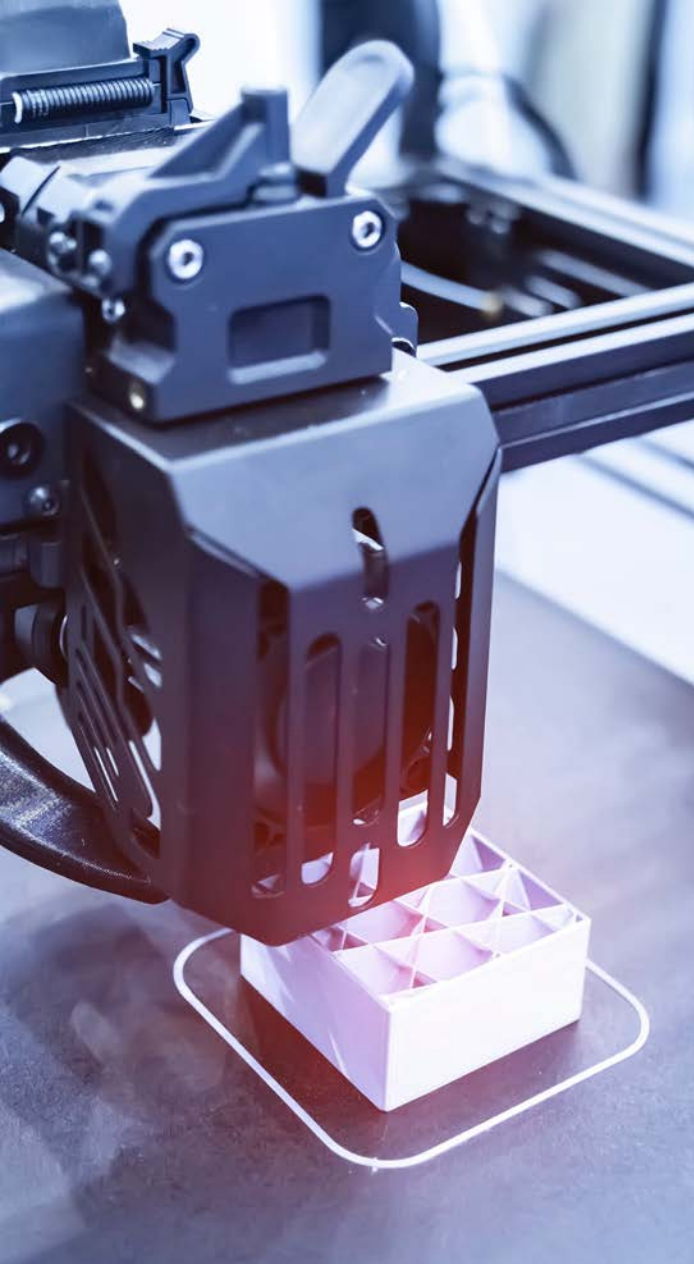
FORVIA's VIBE: transforming driving experience

FORVIA, the 7th-largest supplier of automotive technology, has partnered with a premium German OEM to introduce its VIBE technology, set to debut in a next-gen premium SUV by 2025. FORVIA's goal is to transform the driving experience and set new standards for safety, entertainment and well-being by seamlessly integrating tactile sensations into the car seat. VIBE emits low-frequency vibrations and offers haptic alerts for various driving situations such as blind spots, lane changes, speed limits and driver drowsiness, enhancing safety. It also enhances the entertainment aspect of driving by synchronizing vibrations with audio played on the vehicle's audio system. In addition, VIBE includes wellness programs for relaxation and energy enhancement.

Pioneering 100% recyclable auto seating

Magna International has unveiled an industry-first, 100% melt recyclable foam and trim seating solution under its EcoSphere product family. The innovative product line uses mono-material polyethylene terephthalate (PET) to create sustainable trim materials, trim padding, structures, and foam. All components of foam pad and trim cover sets, including hooks, adhesives, threads and padding, are made of the same PET material, allowing for easier disassembly without the need to separate the components when the vehicle reaches the end of its lifespan. The material can then be melted down and used for other purposes, contributing to a circular economy. Magna plans to roll out this approach in 2026 for a North American automaker. The initiative aligns with Magna's commitment to a net-zero goal, emphasizing recycled and bio-based materials, energy-efficient manufacturing, and responsible end-of-life management to reduce greenhouse gas emissions and overall carbon footprint.





Innovative powder coating technology for new material combinations

Schaeffler AG, a leading motion technology company, has acquired Desktop Metal's Aerosint SA, a Belgian startup specializing in additive manufacturing technologies. Renamed "Schaeffler Aerosint SA," the startup will be integrated into the Schaeffler Group, offering the first industrial solution for simultaneous multi-material printing like metals and ceramics. Aerosint's patented Selective Powder Deposition (SPD) technology enables the creation of uniform layers with multiple materials. This SPD technology is applicable in various additive manufacturing processes, including laser melting, binder injection, and indirect methods. Additive manufacturing simplifies the production of intricately shaped components, aligning with Industry 4.0 principles and offering sustainability benefits such as reduced material consumption and enhanced energy efficiency. Schaeffler Special Machinery will integrate SPD into its multi-material 3D printing system, available from 2024.

Turning waste into carbon sink: Swiss startup opens plant to store CO₂ in waste concrete permanently

Swiss startup Neustark, a spin-off from ETH Zurich university, has opened a commercial-scale carbon capture plant near Berlin, Germany in partnership with building and recycling company Heim. The plant can permanently store over 1,000 tons of CO₂ annually by injecting captured gas into granules of demolition concrete. This concrete can then be reused to build new infrastructure. Through mineralization, CO₂ is transformed into limestone, binding it to the concrete and sequestering it for thousands of years. Neustark aims to turn demolition concrete, the world's largest waste stream, into a carbon sink. They also sell carbon removal credits to companies. Thanks to a recent investment from building materials company Holcim, which intends to install the technology at its cement-making facilities, Neustark plans to remove 1 million tons of CO₂ by 2030.



Hitachi Rail Ltd. transforms railway maintenance with metaverse and AI

Hitachi Rail's metaverse project is transforming railway maintenance and design through AI. The project utilizes front-facing cameras on trains to capture images of tracks, which are then analyzed using AI algorithms to detect any abnormalities. These abnormalities are then simulated and color-coded in the metaverse for effortless interpretation, accelerating the process of diagnosis and repairs. The integrated metaverse and AI approach improves safety and reliability, benefiting customers. The system also serves as a valuable educational tool for hands-on training in dealing with irregular conditions. Beyond maintenance, Hitachi Rail utilizes these technologies to aid in train design and interior solutions as well as for enhancing collaboration and learning.

Progress in highway-ready autonomous trucks

The ATLAS-L4 project, a collaboration between twelve partners*, is developing self-driving trucks in accordance with German laws for autonomous driving. The project focuses on automating hub-to-hub transportation to improve safety and efficiency, with an ultimate goal of proving the feasibility of Level 4 automated, driverless vehicles on highways. The project has achieved significant milestones, including the successful coverage of initial kilometers by MAN's prototype with sensors and built-in computers. This prototype collects data for autonomous driving development and has demonstrated effective communication between components and realistic environment detection. Moreover, safety-relevant subsystems necessary for Level 4 autonomy have been designed and tested. The Control Center for technical supervision is now operational, and a thorough risk analysis, including cybersecurity measures, has been conducted.

*MAN Truck & Bus, Knorr-Bremse, Leoni, Bosch, Fernride, BTC Embedded Systems, Fraunhofer AISEC, Technical University of Munich, Technical University of Braunschweig, TÜV SÜD, Autobahn GmbH and the Würzburger Institut für Verkehrswissenschaften (WIVW) GmbH



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