

Focus on sustainable mobility: At this year's 33rd Aachen Colloquium, experts from science and industry once again discussed the latest developments in the mobility sector.

In the context of mobility, the themes of efficiency, safety, and environmental friendliness have been comprehensively discussed, promoting networking and international exchange between industry and academia to collaboratively develop innovative approaches. The Aachen Colloquium Sustainable Mobility, led by Professor Lutz Eckstein from the Institute for Automotive Engineering (ika) and Professor Stefan Pischinger from the Chair of Thermodynamics of Mobile Energy Conversion Systems (tme) at RWTH Aachen University, is recognized as one of the leading conferences in the automotive and mobility sector worldwide. In over 100 expert presentations—accompanied by a trade exhibition featuring around 30 exhibitors—numerous participants exchanged ideas on one of the world's most crucial topics: the future of mobility. The speakers presented the latest findings and innovations across various mobility fields, such as digitalization, automation, hydrogen applications, electric drives, driving dynamics, and "out-of-the-box" mobility.

The opening on Tuesday morning received special attention with keynote speeches from high-ranking executives in the mobility sector.

Dr. Sabine Klauke, CTO of Airbus, kicked off the event by addressing the current challenges and technical developments in the areas of decarbonization, climate change, and sustainability. On one hand, existing technologies must enhance efficiency, as demonstrated by Airbus with the A321 XLR, achieving a fuel savings of 30%. On the other hand, the production of sustainable aviation fuel (SAF) must be rapidly increased, and the development of disruptive technologies like hydrogen aircraft must be advanced. To meet these future challenges, cross-industry collaboration is essential.

Dr. Holger Klein, CEO of ZF Group, emphasized that the automotive industry is undergoing one of the largest transformations in its history, and explained how ZF is sustainably addressing this challenge. The focus should not only be on the product but on the entire lifecycle. Remanufacturing is important and must be considered from the design stage. With ZF REMAN, ZF achieves a reuse rate of up to 90%.

In light of a holistic lifecycle approach, Mr. Shunichi Inamijima, Corporate Vice President at Nissan, stressed that besides the usage phase, production and recycling, culminating in a "circular economy," will be crucial aspects for achieving climate neutrality. A significant step, according to Mr. Inamijima, will be the "EV Democratization," the moment when electrified vehicles become the norm. Nissan is pursuing this path through battery electric vehicles (Nissan Zero Emission) as well as series hybrid vehicles (Nissan e-Power).

Ms. Ruiping Wang, CEO of Aurobay, highlighted in her keynote presentation that the market for plug-in hybrid vehicles (PHEV) and range-extended electric vehicles (REEV) is rapidly growing

in China. Hybrid drives offer a viable solution to support the transition to more sustainable mobility. By 2025, Aurobay plans to launch a new, specially developed engine for hybrid drives with an efficiency of 44%. Diversifying energy sources through green methanol and green hydrogen will be a crucial lever for decarbonizing the transport sector.

In the concluding panel discussion on Wednesday afternoon, there was an engaging and insightful exchange between Prof. Ralf Herrtwich, Senior Director Automotive Software at NVIDIA, Stephan Durach, Senior Vice President Connected Company Development at BMW, and Dr. Nikolai Ardey, Executive Director of VW Group Innovation, on the topic "The Use of Artificial Intelligence in Automotive Applications." Dr. Ardey emphasized that the automotive industry and many other sectors are becoming AI-driven enterprises. Those who fail to adapt to this change will be displaced by others.

Against the backdrop of the new possibilities offered by artificial intelligence in software and its functions, Prof. Herrtwich stated that the transition to software-defined vehicles (SdV) entails a profound shift in thinking about automobiles. Vehicle architecture must be designed to continuously integrate new functions in the future. Older models will also benefit from this ongoing software development, enhancing the driving experience continually.

Stephan Durach underscored that a key task lies in integrating various software products into a seamless overall experience. However, this does not mean generating every single line of code in-house, as this approach is not scalable.

At the accompanying trade exhibition, renowned companies showcased their latest developments and innovations. For example, the fka booth presented a driver safety demonstrator that highlighted the importance of driver monitoring systems to reduce distractions while driving and lower accident rates. Another focus was a LiDAR demonstrator that showcased the performance of these sensors under challenging conditions like poor weather and dirt to enhance vehicle autonomy. The LevelXData platform introduced its latest feature, allowing users to efficiently search high-quality traffic data and scenarios and extract tailored datasets for the development of ADAS and AD systems. Additionally, an ESG quiz was offered to raise visitor awareness of sustainability issues and emphasize the relevance of a strong ESG strategy in the mobility sector. A corner module was also presented, combining drive and steering into one unit, providing advantages for skateboard architectures.

At their exhibition stand, FEV showcased innovative approaches to reducing CO2 emissions and increasing energy efficiency in vehicles, including solutions for electromobility and hydrogen drives. Notably highlighted was the Accessible People Mover (APM) from Toyota, a CO2-neutral vehicle for local transport, developed by FEV in collaboration with Toyota, which was successfully used at the 2024 Olympic Games. FEV presented flexible electric drive solutions, such as an adaptable rotor drive and a dual-rotor motor for pedelecs and e-bikes.

In the field of battery development, FEV introduced the ALBATROSS 2.0 battery management system and a solution for bidirectional charging. Other highlights included fuel cell technology

for IVECO's light commercial vehicles and a hydrogen direct injection engine with minimal emissions. FEV also demonstrated digital solutions like an AI-based voice assistant and autonomous driving within the framework of a Software Defined Vehicle (SDV). Furthermore, the company unveiled its strategic realignment in energy storage solutions for the energy sector and presented its new brand, FEV aerospace, for the aerospace industry.

The diverse topics related to sustainable mobility will continue to be of high importance for research and industry in the future, leading to the scheduling of the 34th Aachen Colloquium. From October 6 to 8, 2025, the Institute for Automotive Engineering (ika) and the Chair of Thermodynamics of Mobile Energy Conversion Systems (tme) will once again bring together automotive and mobility experts from academia and industry at Eurogress Aachen.

Further information is available at: [Aachen Colloquium Sustainable Mobility - Start page \(aachener-kolloquium.de\)](https://aachener-kolloquium.de)

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