

The One-Stop Shop for Automatic, HEV and EV Drives

CTI Symposium USA Examines North American Transmission Market Strategies

Matthew Jaster, Senior Editor

This event, organized by the German Car Training Institute (CTI), focuses on the latest technical innovations in automotive transmissions, hybrid and alternative drivetrains with experts and suppliers from the United States, Asia and Europe. The symposium—taking place May 14–17 in Novi, Michigan—will examine current debates on economics, politics and the environment.

Topics will be examined from the perspective of technology, customers and the context of market success. Keynote speakers include Dan Nicholson, vice president, global propulsion systems, General Motors, USA, Dr. V. Anand Sankaran, director, electrified powertrain engineering, Ford Motor Company, Dr. Johannes-Joerg Rueger, executive vice president, Robert Bosch GmbH and more.

The automotive industry currently has a wide range of challenges to master. With electrification, automation and digitalization all increasing the technical complexity of automobiles, it's becoming more and more important for the various research fields involved to mesh.

Looking at Connectivity

As drives become more electrified, automotive transmissions are increasingly joining a networked system that extends out beyond the drive and vehicle. Meanwhile, growing electrification places even higher demands on E/E systems. Hence, one of the most important topics across all research fields is how to ensure functional safety in automobiles. The ISO 26262 safety lifecycle affects all stages of vehicle development, and poses big planning and development challenges for carmakers that need to integrate electronic components successively in ever-shorter time frames.

Autonomous driving will have an additional effect on drive development work. Already, satnav systems enable drivers to choose either the fastest, or the most economical route. Data about the nature of the planned route plays a key role in those decisions. Autonomous automobiles that can access that data, as well as traffic information, will play a significant role in optimizing energy management in electrified drivetrains.

In response, this year's CTI Symposium USA—which grew again last year with 660 participants—will mesh drive development with two other key topics: autonomous driving and cyber security. As part of the Automotive Week USA, it will team up with the CTI conference 'ISO 26262' and the 'CTI Autonomous Driving Summit' to provide comprehensive insights into the latest drive and automobile development trends.

A Focus on Trucks

With top-notch experts, a dedicated lecture series and three plenum presentations, trucks will be a focal point at this year's event. Electric delivery trucks could soon be a common sight in cities; local authorities would switch completely to e-busses, while autonomous truck platoons would make highways safer. Compared to passenger cars, the truck market is strong and acceptance is broad. As for cost efficiency, trucks seem to be moving faster than cars in several ways.

All over the world, automotive mobility faces a fundamental transformation in the near future. Professor Dr. Giorgio Rizzoni, director, Center for Automotive Research, Ohio State University, offers an independent scientific outlook on developments in the upcoming decade.

Taking the status quo as a starting point, his plenary talk will address key topics ranging from specific drivetrain architectures and e-motor configurations, through innovations in power electronics right up to cloud-based connectivity. Trucks are increasingly coming into focus, with the need to cut pollution in urban conglomerations adding most pressure to electrify the sector without delay.

Spotlight on Exhibitors

Here is a short list of some of the exhibitors that will be participating in the CTI Symposium USA:

AVL is a company for the development, simulation and testing of powertrains (hybrid, combustion engines, transmission, electric drive, batteries and software) for passenger cars,



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trucks and large engines. The company offers combined solutions of powertrain engineering, simulation software, and testing and instrumentation systems. (www.avl.com)

BorgWarner Inc. offers clean and efficient technology solutions for combustion, hybrid and electric vehicles. With manufacturing and technical facilities in 66 locations in 17 countries, the company employs approximately 29,000 worldwide. (www.borgwarner.com)

Continental's Powertrain division develops and produces efficient system solutions for vehicle powertrains to optimize fuel consumption. The comprehensive range of products includes gasoline and diesel injection systems, engine management and transmission control, including sensors and actuators, exhaust-gas after-treatment technologies, fuel supply systems, and components and systems for hybrid and electric drives. (www.continental-automotive.com)

Dana supplies highly engineered driveline, sealing, and thermal-management technologies that improve the efficiency and performance of vehicles with both conventional and alternative-energy powertrains. Serving three primary markets—passenger vehicle, commercial truck, and off-highway equipment—Dana provides the world's original-equipment manufacturers and the aftermarket with local product and service support through a network of nearly 100 engineering, manufacturing, and distribution facilities. (www.dana.com)

Delta Research offers prototype and production transmission components and assemblies. Throughout its 65 year history, the organization has increased its capabilities for high-precision gears, shafts, carriers, machined housings and inspection services. (www.deltaresearch.com)

Product Innovations

CTI Symposium USA holds the Transmission Expo during the week, featuring 80+ exhibitors and 700+ attendees to showcase transmission and powertrain technologies. Here are some of the technologies that will be featured at the show:

Torque Sensors from Methode Electronics Inc.

Magnetoelastic sensors are the first solution that allows measuring torque and other forces economically so that it can be integrated into high volume applications. The current status quo for force measurements—strain gauge type sensors—require extensive manual labor during application, fault susceptible telemetries and recalibration due to aging effects, making them expensive and difficult to integrate.

Magnetoelastic sensors have a number of advantages that make them ideal for high volume production applications. The technology has a small space requirement and the sensing object (e.g. driveshaft) does not need to be modified. There is no need for telemetry which makes the technology true NON-contact. Magnetoelastic sensors has exceptional long term stability and have proven their performance in many high volume applications over more than the last 10 years beside automotive in eBikes, electronic power steering and agricultural. (www.methode.com)

Hoerbiger TorqueLine Twin Cone & Disconnect Clutch

The TorqueLine Twin Cone replaces traditional multi-disc clutches, reducing drag losses by as much as 90 percent. The system offers high power density and decreases actuation forces by up to 60 percent. The TorqueLine Disconnect Clutch, optimizes drag losses by combining a traditional multi-disc with a conical friction based disconnect system: the clutch disc carrier is connected and disconnected by an integrated presynchronization element. (www.hoerbiger.com)

Nitriding and Coating Technologies with RÜBIG Industrial Furnaces

RÜBIG Industrial Furnaces is a globally active producer of customized heat treatment plants (plasma/gas nitriding and plasma coating). The Know-how reflected in the systems has been gained in the in-house job shop. With their Micropuls and Gascon technologies, RÜBIG offers the latest in nitriding and coating technologies. (www.rubig.com)

Future for Mobility

How will technology change for automatic, HEV, EV Drives? The CTI Symposium offers the technical knowledge, market strategies and international developments on transmissions and powertrain components to answer this question. From the electrification of automobiles to the quest for optimum fuel efficiency, this event will provide a roadmap to the future of the automotive industry. **PTE**

For more information:

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