

CTI Symposium USA 2019

The Past, Present and Future of Vehicle Electrification

Matthew Jaster, Senior Editor

The CTI Symposium USA is the International Congress and Expo for Automotive Transmissions, HEV and EV Drives. The event features a two-day introductory seminar, a transmission expo, evening networking party and test drives for the latest development cars. Participants include automotive suppliers, transmission manufacturers, OEMs, metal processing, mechanical engineering and others from North America, Europe and Asia. Topics include powertrain technologies, hybrid transmissions, future considerations, commercial vehicles, starting devices, manufacturing and more. Autonomous driving, NVH, tools and performance forecasting will also be discussed.

Introductory Seminar

The Symposium begins with *Basics and Practice of Hybrid and Electric Drives, Automotive Transmissions*. Newcomers and beginners will get an overview of the basics of hybrid, electric and conventional drives during the Introductory Seminar. Based on road resistance, propulsion systems and auxiliaries HEV and EV concepts will be compared, the role of launch devices, transmissions and other drivetrain elements will be defined.

The Introductory Seminar will be held by the Institute of Automotive Engineering (IAE), Technical University of Braunschweig, Germany. The IAE under the direction of Prof. Dr Ferit Küçükay has a rich and very well grounded experience in all relevant areas of automotive research and development. It is the leading institute in Germany for automotive transmission development. With its close contact to the automotive and supplier industry, technical service providers, inspection authorities and public research institutions as well as national and international interdisciplinary working methods it is very well experienced in solving complex problems and ensuring up-to-date seminars. The IAE holds this introduction regularly as an integral part

of the CTI Transmission Symposium in Berlin (Germany) and in Shanghai (China).

Symposium Day One Highlights

The keynote address will be *The Ford MHT: Reinventing What is Possible in a Hybrid Vehicle* by Dave Filipe, vice president global powertrain engineering, Ford Motor Company. Other speeches include *The Electric Truck: Why?* by Alexander Edwards, president of Strategic Vision, USA and *Electrification Transformation* by Steven Tarnowsky, director, electric vehicle and charging infrastructure at General Motors, USA. A panel discussion on *Truck Electrification in the U.S. Market* will be chaired by Larry Nitz from General Motors and feature panelists from Ford, GM, Navistar, and Strategic Vision, USA.

Symposium Day Two Highlights

Speeches on day two include *The E-Mobility Eco-System as the Differentiator* by Stephan Tarnutzer, AVL Powertrain Engineering, USA, *New Mobility Concepts and Its Impact on Transmissions* by Mayank Agochiya, managing director, FEV Consulting, Inc. USA, and *The Evolution of Commercial Vehicle Drivetrains in an Increasingly Connected and Electrified World* by Professor Giorgio Rizzoni, director for automotive research at The Ohio State University.

Parallel Sessions

Throughout the week of the show, other sessions will be available to attendees on topics like EV, HEV drivetrains/transmissions, commercial vehicles, sealing and bearing lubrication, electrification enablers, and NVH improvements.

Exhibition 2019

Here's a brief look at some of the exhibitors that will be on-hand in Novi during



the CTI Symposium USA 2019 that PTE readers will find valuable:

AVL is a company for the development, simulation and testing of powertrains (hybrid, combustion engines, transmission, electric drive, batteries and software) for passenger cars, trucks and large engines. The company offers combined solutions of powertrain engineering, simulation software, and testing and instrumentation systems. (www.avl.com)

BorgWarner Inc. provides clean and efficient technology solutions for combustion, hybrid and electric vehicles. With manufacturing and technical facilities in 66 locations in 18 countries, the company employs approximately 29,000 worldwide. (www.borgwarner.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 provides prototype and production transmission components and assemblies. Throughout its 65 year history, the company's capabilities have grown in high-precision gears, shafts, carriers, machined housings and inspection services. (www.deltaresearch.com)

ECM USA provides high quality vacuum furnaces, spare-parts, service, and

R&D testing for customers in North, Central and South America for the ECM Group. With experienced engineering, advanced manufacturing and installation expertise, these vacuum furnaces provide high up-time to demanding production environments all over the world. (www.ecm-usa.com)

Klingelberg was founded in 1863. The company provides innovations in the areas of calculation, production, and measuring technology. With the acquisition of the core business of Höfler Maschinenbau GmbH in 2012, Klingelberg expanded its product portfolio with the addition of gear manufacturing machines for cylindrical gears, thereby strengthening its position as a single-source system supplier. (www.klingelberg.com)

Oerlikon Graziano is a provider for the design, development and supply of transaxles for high performance cars, highly specialized in transmission systems for 4WD (PTU, RDM and transfer case assemblies), electric and hybrid transmissions for passenger cars and commercial vehicles, as well as a key player in applying innovative technology, as DCTs, AMTs and their hybrid derivatives to premium supercars. (www.oerlikon.com/graziano)

Ricardo is an independent engineering services company with niche manufacturing capability. Extensive experience of designing and developing an extremely wide range of driveline and transmission systems on a global basis, from cost-optimized MT's to advanced DCT's and AT's and on to high performance e-axles and hybrid transmissions. (www.ricardo.com)

Saint-Gobain Performance Plastics L+S GmbH specializes in design, testing and manufacturing of seal rings, thrust washers and radial plain bearings. In line with the global trends in automotive and transmissions developments, these solutions are designed to increase efficiency by reducing leakage, drag losses and component wear. In addition these engineered components can be used where their compact installation, low mass and easy assembly allow their high performance to be combined with economic efficiency. (www.seals.saint-gobain.com)

Schaeffler is a supplier and development partner to the automotive industry. Schaeffler's technology spans the entire

vehicle drivetrain, including the engine and transmission, as well as the chassis and all types of accessory components for passenger cars, heavy trucks and everything in between. High-precision products from Schaeffler's INA, LuK and FAG brands help lower fuel consumption and emissions without sacrificing, safety, performance or driving comfort. The company's expansive product portfolio encompasses energy-efficient solutions for conventional drivetrains with internal combustion engines, innovative products for hybrids and components for electric vehicles. (www.schaeffler.us)

SMT is an international provider of drivetrain design, analysis and simulation software as well as technical consultancy services. SMT has in-depth experience in all industries that involve gear-shaft-bearing systems. Increasing development efficiency, reducing costs and driving innovation has been the core outcome from all of its global projects. (www.smartmt.com)

CTI Checklist

CTI is a great show to learn about the latest transmission technology and the trends and policies that will be the focal point in the coming years in the automotive industry. As an attendee of many of the previous installments, here are some insights prior to coming to the show.

Don't Skip the Basics

Are you relatively new to hybrid, electric and conventional drives? Are you new to the automotive industry in general? I cannot stress enough how valuable Prof. Dr. Ferit Küçükay's introductory seminar is at the beginning of the show. Transmission concepts, future trends and current working methods are examined in great detail and the information is current and up-to-date with the complex problems facing the auto industry today. It's well worth your time—even if you've attended the introductory seminar in the past—to listen to the information provided by the Institute of Automotive Engineering (IAE), Technical University of Braunschweig, Germany.

Move Around

It's easy to grab a cup of coffee or four and stay in one area and absorb the

information of the day. Don't do this. Get up and move around to different sessions on drivetrains and powertrain controls or calibration, sensors and lubrication. There are plenty of topics of interest and while you can't physically attend all of them at once, it's a good rule of thumb to diversify your time. Learn a little bit about some areas of the industry that you may know little about.


Utilize the Exhibition Hall

See who's exhibiting and make sure to stop by and see how certain companies may be able to help solve your challenges at work. It's not rocket science, but sometimes during symposiums, people forget to take the time to chat with peers about work-related challenges and problems that need to be solved. They run from one conference to another without spending some time in the exhibit hall. Don't do this. Talk, engage, and network even if it's only during a coffee break or lunch.

And Speaking of Networking...

If time allows make a point to join in on the CTI Networking Night taking place at the Henry Ford Museum. There will be food, drink and discussions on topics that may have been missed or skipped during the day. This is a great way to meet new contacts in a more relaxed environment and ask follow-up questions.

Get the Whole Crew Involved

Is this your first CTI Symposium? Is it your fifth? Don't forget how valuable these conferences and exhibitions can be for many of your co-workers. If you attended last time, send the new hire, send your boss, or send a group of engineers tackling a new transmission project. Call it strength in numbers. There's information available at CTI that can benefit many different workers at your plant. A well-informed and educated staff can only help your business. 

For more information:

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