

June 12–14—Gear Failure Analysis Seminar St. Louis, Missouri. Explore gear failure analysis in this hands-on seminar where students not only see slides of failed gears but can hold and examine those same field samples close up. Experience the use of a microscope and take your own contact pattern from field samples. Gear engineers, users, researchers, maintenance technicians, lubricant experts, and managers should consider attending. Instructors include Rod Budny (RBB Engineering) and Andy Milburn (Milburn Engineering). For more information, visit www.agma.org/education/advanced-courses/2019-gear-failure-analysis/.

June 23–26—Powdermet 2019 Sheraton Grand, Phoenix, Arizona. The leading North American technical conference on powder metallurgy and particulate materials, Powdermet 2019 is a hub for technology transfer for professionals from every part of the industry, including buyers and specifiers of metal powders, tooling and compacting presses, sintering furnaces, furnace belts, powder handling and blending equipment, quality-control and automation equipment, particle-size and powder-characterization equipment, consulting and research services, and more. It is co-located with the Additive Manufacturing with Powder Metallurgy (AMPM 2019) conference where attendees will have access to over 200 technical presentations from worldwide experts on the latest research and development. A new metal additive manufacturing tutorial will take place Sunday, June 23 from 1:30pm - 4:30pm. Powdermet is sponsored by the Metal Powder Industries Federation and APMI International. For more information, visit www.mpif.org/Events/POWDERMET2019.aspx.

June 25–27—Rapid Tech + FabCon 3D Erfurt, Germany. Rapid.Tech + FabCon 3D is one of Europe's key information and communication platforms for additive manufacturing processes. It focuses on the latest developments in rapid prototyping, the manufacturing of end products using additive techniques, and how the technology can be transferred into mass production. The unique nature of Rapid.Tech + FabCon 3D has been impressing exhibitors, visitors and participants alike for some 15 years now. The 2018 show boasted 5,000 guests visiting with 208 exhibitors from 14 countries about innovations in industrial and creative 3D printing. A whole forum is being dedicated to software and processes for the first time this year. The lectures will cover a broad spectrum of processes, from adapting the design of internal development and production processes to 3D printing, establishing secure processes between several partners, to new disruptive business models that are only possible thanks to additive manufacturing (AM). Discussions from Autodesk on additive design and 3D printing optimization from Dassault Systèmes will also be a part of the program. For more information, visit www.rapidtech-fabcon.com.

July 10–11—Dritev 2019 Bonn, Germany. Increased CO₂ discussions, sustainable mobility and electrified drives: The automotive transmission world is changing. Why the understanding of the transmission changes, how it is to be understood as part of the overall powertrain and why cross-component know-how becomes more and more important are some of the subjects that will be discussed. Attendees can expect more than 1,500 developers, around 100 international exhibitors and 80 specialist lectures on one of the world's largest networking platforms for powertrain and transmission development. A special thematic focus of the Dritev 2019 is on the special topic Noise, Vibration, Harshness (NVH), which is both audible and tactile vibrations in motor vehicles in the range from 20 Hz to 100 Hz. Innovative analysis techniques identify these vibrations, reduce them and thus increase ride comfort

for the passengers. Another special topic is the increase in powertrain power density. Here, the use of new materials and procedures should help. More than 100 national and international companies present innovative solutions at the accompanying trade exhibition. The exhibition has become the central marketplace of the industry. Here, participants will get an overview of the most important suppliers in the development, simulation and production of transmissions and transmission components. Conferences include "Powertrain solutions for commercial vehicles," "EDrive," and more. For more information, visit www.dritev.com.

July 10–11—AGMA Bevel Gear System Design Oak Lawn, Illinois. Learn how to design and apply bevel gears systems from the initial concept through manufacturing and quality control and on to assembly, installation and maintenance. Engage in a practical hands-on guide to the bevel gear design, manufacture, quality control, assembly, installation rating, lubrication and, most especially, application. Engineers, technicians, and others involved in the selection, application and/or design of bevel gear systems should attend. Ray Drago is the instructor. For more information, visit www.agma.org/education/advanced-courses/2019-bevel-gear-system-design/.

July 23–24—8th WZL Gear Conference USA

Westminster, Colorado. Attendees can expect a selection of presentations from the research portfolio of WZL including information on gear design, manufacturing, gear checking, and testing. Highlights include requirements for hard finishing, gear optimization, superfinishing, trends in gear production, Internet of production, gear hobbing, gear modifications and a workshop tour of Kapp/Niles in Boulder. For 50+ years the annual WZL Gear Conference in Aachen, Germany, has been the basis for the exchange of experiences and close cooperation between the members of the WZL Gear Research Circle. The WZL Gear Conference takes place for two days which are exclusively devoted to the latest research on gear design, manufacturing, and testing for the North American market. Register at the website: www.kapp-niles.com/index.php?id=811&L=4.

August 6–8—CAR Management Briefing Seminars

Grand Traverse Resort, Traverse City, Michigan. The Center for Automotive Research (CAR) MBS leads the industry in providing a context for auto industry stakeholders to discuss critical issues and emerging trends while fostering new industry relationships in daily networking sessions. Seminars include targeted sessions on manufacturing strategy, vehicle lightweighting, connected and automated vehicles, advanced powertrain, supply chain, sales forecasting, purchasing, talent and designing for technology, future factories, design optimization, the mobility ecosystem and more. CAR MBS 2019 will focus on the auto industry's commitment to change, across the spectrum of technology, strategy, mobility, policy, and manufacturing issues. This August, join us to connect with more than 1,000 stakeholders, representing automakers, suppliers, startups, media, government, and academia. For more information, visit www.cargroup.org.