

**March 27-29—Westec 2012.** Los Angeles Convention Center, Los Angeles. Westec returns in 2012 redefined with a renewed commitment to local manufacturing. The manufacturing event includes keynote presentations from industry leaders in aerospace/defense, renewable energy and the manufacturing economy. The show also consists of technical sessions on topics that include small parts machining, high-speed alloy machining, milling, drilling, cutting advanced carbon fiber, carbon laminates and advances in additive manufacturing. Attendees view emerging technologies and emerging equipment applications and many other topics with an emphasis on using technology to innovate. Westec offers a place to network, form relationships and build partnerships, putting an emphasis on new developments, integration, lean methods, and how to manufacture with composites, titanium, or other advanced materials. For more information, visit [www.westeconline.com](http://www.westeconline.com).

**April 23-27—Hannover Messe 2012.** Hannover Fairgrounds, Hannover, Germany. The world's leading trade show for industrial technology returns in 2012 with a full lineup of trade shows. The eight co-located shows include Industrial Automation, Energy, MobiliTec, Digital Factory, Industrial Supply, CoilTechnica, IndustrialGreen Tec and Research and Technology. China is the official partner country in 2012. Discover new perspectives on energy, automation and industrial supply and engineering topics as well as a broad range of events and displays affecting the global industrial market today. Other Hannover highlights include Metropolitan Solutions, TectoYou, Job and Career Market and Energy Efficiency in Industrial Processes. For more information, visit [www.hannovermesse.de](http://www.hannovermesse.de).

**May 8-10—Mfg4 2012.** Hartford, Connecticut. GE Energy, Medtronic, Boeing, Raytheon, Sikorsky and other manufacturing organizations know the best source of innovations and solutions may be outside their industries. That's why they—in partnership with a dozen additional industry innovators—are presenting Mfg4 with the Society of Manufacturing Engineers (SME). Mfg4 presents solutions for buyers and sellers across the aerospace, defense, medical and energy manufacturing industries. Conference sessions include improving manufacturing processes, digital manufacturing, machine accuracy and volumetric compensation, fundamentals of robotics and many more. Exhibitors include Carl Zeiss, Fanuc, Heidenhain, Marposs and many more. At the heart of the Mfg4 event floor is the Insight Intersection, an area where small groups of professionals meet for practical exchanges of information. Each morning at Mfg4, exhibitors and sponsors can reserve this space to host breakfast meetings or working sessions with customers and prospects. For more information, visit [www.mfg4event.com](http://www.mfg4event.com).

**May 8-10—Modern Furnace Brazing School.** Cincinnati. Preserving the tradition originated by the late Robert Peaslee, a brazing pioneer who invented the first nickel-base brazing filler metal, Wall Colmonoy offers another session of Modern Furnace Brazing School at the Aerobrazing Engineered Technologies' Brazing Engineering Center. Engineers, technicians, quality man-

agers and others will experience "hands-on" applications and learn about brazing technology from leading industry experts. This three-day seminar offers knowledge and practical application about brazing design, metallurgical aspects/brazing operation, brazing atmosphere and furnace equipment, brazing material selection and applications and quality control. Brazing School attendees will tour the facility and see the actual brazing application on the shop floor. They will also have the opportunity to apply different forms of filler metal to Wall Colmonoy supplied samples, have them vacuum brazed and discuss the outcomes. Attendees are encouraged to bring brazing issues, parts/components to the seminar where they will be provided expert advice regarding their brazing difficulties or concerns. For more information, visit [www.wallcolmonoy.com](http://www.wallcolmonoy.com).

**May 10—Analytical Gear Chart Interpretation: Reading Between the Lines (Part 1).** Dwight Smith, president of Cole Mfg. Systems, presents this AGMA Gear Education Webinar Series from 1:00 pm to 2:30 pm Eastern time. The webinar is an introduction to the methodology of analytical gear inspection and the evaluation and interpretation of the resulting data. The application of this information to identify and correct manufacturing errors will be explored. Attendees will gain knowledge in identifying major gear characteristics measured and methods used, evaluating pitch, profile and helix and using inspection data to understand the causes and cures of manufacturing errors. People relatively new to gear manufacturing/inspection, including quality control personnel and manufacturing employees, will achieve a better understanding of how gears are measured and evaluated. Others from quoting, processing and sales also can gain knowledge of inspection reports beyond the "wiggly lines." For registration information, visit [www.agma.org](http://www.agma.org).

**May 14-16—Lubrication and Wear: Advanced Concepts.** South Bend, Indiana. Attendees will bridge the gap between component design and failure as a result of relative motion between surfaces in contact and apply the latest lubrication technology to bearings. Course participants will receive an understanding of regimes of lubrication, 2-D and 3-D surface topographical characterization, surface and subsurface stress analysis, grease lubrication, applications in rolling element bearing design and much more. The American Bearings Manufacturers Association (ABMA) is focused on keeping the American bearing industry up-to-date through comprehensive educational programs and real-world applications. For more information, visit [www.americanbearings.org](http://www.americanbearings.org).


**May 15-17—Gear Materials: Selection, Metallurgy, Heat Treatment and Quality Control. Milwaukee.** Instructors Raymond Drago and Roy Cunningham of Drive Systems Technology, Inc. help attendees discover how both the gear design engineer and the gear metallurgist can better grasp their related, critical roles in the exciting world of gear processing, heat treatment and inspection. The gear design engineer is responsible for the initial selection of material and heat treatment, but the finalization of both material and thermal process-

ing must be a joint effort. This seminar shows how the gear design engineer first approaches the problem of material selection and heat treatment technology, as influenced by the performance and life requirements of the gear set. It also shows how the gear metallurgist can participate in and thereby optimize the finalized gear manufacturing process. Interspersed in the course are examples of gear-related problems, failures and improved processing procedures. Analyses and comments on a number of relevant failures are given. For more information, visit [www.agma.org](http://www.agma.org).

**May 22-23—Vacuum Carburizing Symposium 2012. Troy, Michigan.** This two-day event from ALD-Holcroft will be held at the Michigan State University, Management Education Center and will include round trip transportation for an evening visit to ALD Thermal Treatment in nearby Port Huron, Michigan to tour their 100,000+ square foot facility. The operation features more than 35 vacuum carburizing chambers and nine 20-bar quenching chambers for nitrogen and/or helium. These modules are spread across six totally automated ModulTherm systems. The Technical Symposium will cover topics including the Mathematical Model of LPC, Comparative Analysis of Carbon Sources, LPC in the Aircraft Industry, High Temperature LPC, Gas Quench Design, Vacuum Carburizing in the Commercial Heat Treating Arena, Materials Developed Specifically for Vacuum Carburizing, and much more. All of the technical papers are developed and presented by industry experts who are routinely involved with the practice of Low Pressure Vacuum Carburizing (LPC), and the speakers will be available for question-and-answer as well as open discussion during several networking opportunities. For more information, visit [www.ald-holcroft.com](http://www.ald-holcroft.com).

**June 19-20—International VDI Congress Drivetrain for Vehicles 2012.** Friedrichshafen, Germany. Sustainable driving, lower CO<sub>2</sub> consumption, a paradigm shift towards electromobility: the automotive industry has some difficult demands to satisfy. Vehicle transmission developers and users will be gathering at this important industry meeting-point now in its tenth incarnation. The conference will be directed by Dr.-Ing. Hans-Joerg Domian, director of new products and methods, design tasks, ZF Friedrichshafen AG. Opening papers tackle the subjects of the future of driveline development, potential CO<sub>2</sub> savings and the role of electrification' as well as electromobility. Alongside future-oriented transmission components for electric and hybrid vehicles, the program will also include current developments in the fields of double-clutch and automatic transmissions, manual transmissions and all-wheel drives, efficiency, components, materials and production engineering as well as clutches and operating strategies. The machines section is entirely new: here attendees can learn about, for example, technical trends in agricultural machines, new developments in construction machinery drives, infinitely variable power take-off drives or improvements in the ease of gear shifting. For more information, visit [www.transmission-congress.eu](http://www.transmission-congress.eu).

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KISSsoft USA, LLC  
3719 N. Spring Grove Road  
Johnsburg, Illinois 60051  
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