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SPE® ANNOUNCES BEST PAPER AWARD WINNERS FOR 2011 AUTOMOTIVE COMPOSITES CONFERENCE & EXHIBITION

Winners from Industry, Academia Honored for Excellence in Technical Writing on Automotive Composites Technologies

TROY (DETROIT), MICH. – Four winners – one from industry and three from academia – were honored for excellence in technical writing during opening ceremonies at the eleventh-annual ***SPE® Automotive Composites Conference & Exhibition (ACCE)*** on September 13, 2011. Dr. Hannes Fuchs, senior engineer at Multimatic Engineering received the highest score this year; Xian Jiang, a doctoral candidate in the department of Chemical Engineering and Material Science at Michigan State University received the second highest score; and Dr. W.H. Katie Zhong, a professor in the School of Mechanical and Materials Engineering, at Washington State University (WSU) and Francesco Deleo, a doctoral candidate in the Department of Aeronautics & Astronautics at the University of Washington and also a *2010-2011 SPE ACCE scholarship award winner* both tied for third place. The winners received the highest average rank by the conference peer review committee out of a field of 49 contenders (31 of whom submitted formal papers) that cleared peer review early enough this year to be considered.

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Hannes Fuchs gave a paper entitled *Automotive Composites Consortium Composite Underbody Component & Assembly Structural Test-Analysis Correlation* in the **Finalizing the Design & Development of a Structural Composite Underbody** session. The paper, co-authored by Eric Gillund, lead Structures Engineer, also at Multimatic Engineering, discussed preparation and fabrication of underbody test assemblies for the United States Council for Automotive Research's (USCAR's) multi-year study on the feasibility of a structural-composite underbody for a midsize car. Fuchs, who also won an *SPE ACCE Best Paper Award* in 2010, is a senior engineer at Multimatic Engineering and has 19 years of experience in advanced engineering and research and development of composite and lightweight structures. He came to the automotive industry from the NASA-Virginia Tech Composites Program and from post-doctoral research activities at the NASA Langley Research Center. Initially joining then General Motors Corp.'s Research & Development department, Fuchs conducted research on advanced lightweight and crashworthy carbon composite automotive structures. After nearly six years, he joined Multimatic where he has managed and directed engineering activities including design engineering, computer-aided engineering, prototype and production manufacture, tooling, and testing of a wide range of advanced and composite structures. He is recognized as an industry expert in the design and application of lightweight structures and materials and holds BSME and MSME degrees from the University of Maryland as well as a Ph.D. from Virginia Tech.

Xian Jiang, who shared authorship of the paper with Dr. Lawrence T. Drzal, University Distinguished Professor Chemical Engineering and Materials Science, Mechanical Engineering at Michigan State University, presented a paper on *Synthesis of Bipolar Plates for Fuel Cells Based on Exfoliated Graphene Nanoplatelets Filled Polymeric Nanocomposites* in the **Nanocomposites** session. The objective of Jiang's research was to investigate the potential of using exfoliated graphene nanoplatelets (GNP) as the conductive filler to construct highly conductive polymeric nanocomposites to substitute for conventional metallic and graphite bipolar plates in polymer electrolyte membrane (PEM) fuel cells. Jiang is a PhD candidate in the department of Chemical Engineering and Material Science at Michigan State University. He previously received a bachelor's degree in Engineering at Zhejiang University, in China. His research interests include multifunctional composites materials, graphene nanocomposites, nano-structured materials, and bipolar plates for automotive applications. Before participating in the SPE ACCE, Jiang had published four journal articles and three papers in conference proceedings.

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SPE Announces Best Paper Award Winners for 2011 ACCE
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W.H. Katie Zhong will present her talk on *Enabling Faster Resin Infusion Processing of Automotive Composites: A "Nano-Nectar" Technology Leading Epoxy to High Performance and Low Viscosity* in the **Nanocomposites** session as well immediately following Jiang's presentation from *9:30-10:00 a.m*. Her topic is a revolutionary new method of incorporating nanofillers into epoxy resins. Called "nano-nectar," the liquid nano-reinforcement (LNR) can easily be dispersed in the base epoxy matrix and proves highly effective for reinforcing and toughening the resin as well as for contributing dramatically to reduced viscosity, which is a significant process benefit for fiber-reinforced plastics in that it takes less energy to manufacture composite parts thanks to lower power requirements for flow and part consolidation. Zhong is a professor in the School of Mechanical and Materials Engineering, at Washington State University (WSU). She started her academic career in 1994 in the Composites and Manufacturing Program of the Department of Materials Science and Engineering at Beijing University of Aeronautics and Astronautics (BUAA) in Beijing, China, where she received her PhD. In 1999, Zhong was promoted, becoming the youngest full professor at BUAA, and one of the youngest full professors in all of China. She has worked closely with the aerospace industries, and since 2006 she has been consultant and educator for Boeing engineers in the field of nanotechnology. She has conducted many research projects on nanocomposites, bio-nanomaterials, electronic materials, and nano-manufacturing technology. Zhong has authored more than 200 publications, including over 130 peer-reviewed journal papers, one book, four book chapters, and 70 conference papers.

Francesco DeLeo presented the results of his 2010-2011 SPE ACCE scholarship research in the **Virtual Prototyping & Testing** session. His paper, *Crashworthiness Energy Absorption of Carbon Fiber Composites: Experiment and Simulation,* was co-authored with Dr. Paolo Feraboli, assistant professor-Aerospace Structures & Materials, Department of Aeronautics & Astronautics at the University of Washington, and also director of the Automobili Lamborghini Advanced Composite Structures Laboratory (ACSL) in at the university. The presentation discussed the merits and weaknesses of a progressive failure composite material model in order to evaluate the effect of geometric features on crush behavior, both from an experimental and numerical standpoint. Francesco Deleo is a doctoral candidate in the Department of Aeronautics & Astronautics at the University of Washington in Seattle. Since January 2011, DeLeo Francesco has been co-teaching a metal fatigue and fracture mechanics course in the U.S. as well as abroad together with Dr. Safarian of the U.S. Federal Aviation Administration. DeLeo has served as a teaching assistant for several graduate-level courses, including Integrity of Metallic Aircraft Structures, Finite Element Analysis, and Integrity of Composite Aircraft Structures. Prior to his current position, he worked first as undergraduate and then as master's student in the Automobili Lamborghini Advanced Composite Structures Laboratory (ACSL) under the direction of Dr. Paolo Feraboli. His research focused on dynamic analysis using LS-DYNA on crash and impact damage. DeLeo received a BS degree in 2007 and an MS degree in 2011 from the University of Washington. He is co-author of 4 journal publications and presented at several conferences.

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SPE Announces Best Paper Award Winners for 2011 ACCE
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About the SPE ACCE

Held annually in suburban Detroit, the SPE ACCE typically draws 400+ speakers, exhibitors, sponsors, and attendees from 14 countries on five continents and provides an environment dedicated solely to discussion and networking about advances in transportation composites. Its global appeal is evident in the diversity of exhibitors, speakers, and attendees who come to the conference from Europe, the Middle East, Africa, and Asia / Pacific as well as North America and who represent transportation OEMs -- traditional automotive and light truck, as well as agriculture, truck & bus, and aviation – and tier suppliers; composite materials, processing equipment, additives, and reinforcement suppliers; trade associations, consultants, university and government labs; media; and investment bankers. The show is sponsored jointly by SPE's Automotive and Composites Divisions.

Sponsors and exhibitors for the 2011 show included: Ticona Engineering Polymers, Dieffenbacher GmbH, Magna Exteriors and Interiors, Continental Structural Plastics, RTP Co., Bayer MaterialScience, American Composite Manufacturers Assoc.'s (ACMA's) Automotive Composites Alliance (ACA), Addcomp North America, Inc., AOC Resins, Asahi Kasei Plastics North America, Inc., Toho Tenax America, Inc., PPG Industries, Acrolab, Ltd., OCV Reinforcements, Bulk Molding Compounds Inc., The Composites Group, Quantum Composites, Ashland Inc., American Chemistry Council - Plastics Div., Dassault Systèmes, BASF, e-Xstream engineering, Flow International Corp., Polystrand, Williams, White & Co., Plasan Carbon Composites, Mitsubishi Rayon Co. Ltd., Newport Adhesives & Composites Inc., National Research Council Canada (NRC), DASI Solutions, LayStitch Technologies, Core Molding Technologies, Inc., Plasticomp, LLC, Multimatic Engineering, Romeo RIM, Inc., *Reinforced Plastics* magazine, *Composites Technology* magazine, *High-Performance Composites* magazine, *CompositesWorld Weekly* eZine, *Ward's AutoWorld* magazine, WardsAuto.com, *Plastics Technology* magazine, Plaspec Global Plastics Selector, *Polymotive* magazine, *Automotive Design & Production* magazine, AutoField Blog, *China Plastics & Rubber Journal*, *China Plastics & Rubber Journal International*, *Plastics Engineering* magazine, *Automotive NewsWire* eZine, SAE International, *Automotive Engineering International* magazine, JEC Group, Composites Europe, and Modern Plastics India Magazine.

The mission of SPE is to promote scientific and engineering knowledge relating to plastics. SPE's Automotive and Composites Divisions work to advance plastics and plastic-based composites technologies worldwide and to educate industry, academia, and the public about these advances. Both divisions are dedicated to educating, promoting, recognizing, and communicating technical accomplishments for all phases of plastics and plastic-based composite developments, including materials, processing, equipment, tooling, design and testing, and application development.

For more information about the SPE Automotive Composites Conference & Exhibition, visit the Automotive Division's website at **http://speautomotive.com/comp.htm**, or the Composites' Division website at **http://compositeshelp.com**, or contact the group at +1.248.244.8993, or write SPE Automotive Division, 1800 Crooks Road, Suite A, Troy, MI 48084, USA. For more information on the Society of Plastics Engineers or other SPE events, visit the SPE website at **www.4spe.org**, or call +1.203.775.0471.

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