

Meet the Next Generation of Automotive Composites Engineers

SPE ACCE Attendees Encouraged to Participate in Student Poster Competition Judging Sponsored by Faurecia Automotive Exteriors

The student poster session is an annual event at the ACCE where students from U.S. and international universities present state-of-the-art work related to materials and manufacturing technologies relevant to automotive applications. Over 20 graduate and undergraduate students from 10 universities in the U.S. and Canada are presenting work at the 2015 ACCE. Topics include characterization of fiber lengths / distribution in discontinuous fiber composites, prediction of fiber flow, advances in nano-bio composites, low-cost carbon fiber applications, and metal-composite hybrids. Please join us in welcoming the students and taking a good look at their hard work, which will be on display throughout the conference in Hall C (where lunch is served). This provides the students with an excellent opportunity to meet and talk with members of the automotive composites community and learn what it is like to work as an engineer or scientist in this field. It also provides OEMs and their suppliers with the opportunity to meet the next generation of automotive composites engineers and scientists and potentially to hire them.

Judges made up of media, industry experts, ACCE participants, and SPE board members will review all posters with student authors during the first day of the conference. **Interested conference attendees may participate in the competition by inquiring at the front registration area about how to become a judge.** Students of winning posters judged to be in the Top 3 in graduate and undergraduate categories will receive plaques at a formal recognition ceremony during lunch on the second day of the conference, and all student participants will receive monetary support to help defray travel expenses, courtesy of competition sponsor, **Faurecia Automotive Exteriors**. Faurecia is the world's sixth-largest automotive supplier, with four business groups: Automotive Seating, Emissions Control Technologies, Interior Systems, and Automotive Exteriors. In 2014, the group posted sales of \$25-billion USD and employed 99,500 people in 34 countries at 330 sites and 30 R&D centers around the world.

Explaining why his company sponsored this year's poster competition, Patrick (Pat) Szaroletta, president, Faurecia Automotive Exteriors North America said, "Innovation is part of Faurecia's DNA, so supporting the SPE ACCE student poster competition is a natural way for us to encourage innovative thinking in what essentially is the future of our industry. We're proud to be a part of SPE and to showcase the expertise,

creativity and ingenuity of these future plastics engineers as they bring their fresh perspectives and new ideas to today's challenges."

Students and their posters will be ranked according to the following criteria:

- Content (student and poster demonstrate clarity of topic, objectives, and background);
- Motivation for research and technical relevance to conference theme;
- Methodology and approach to problem;
- Quality of proposed research results/findings;
- Conclusions are supported by information presented;
- Presentation (display aesthetics are pleasing and there is a logical flow between sections);
- Knowledgeable (presenter has a good grasp of the subject);
- Understandability (poster is effective even without student being present to explain it); and
- Overall rank vs. other posters and presenters.

Since 2008, the SPE ACCE poster competition has been organized annually by Dr. Uday Vaidya, SPE Composites Division board member and education chair, as well as professor of Mechanical, Aerospace and Biomedical Engineering, University of Tennessee - Knoxville, University of Tennessee/Oak Ridge National Laboratory Governor's



Chair in Advanced Composites Manufacturing, and chief technology officer with the Institute for Advanced Composites Manufacturing Innovation (IACMI).

Topics, student authors, and schools accepted into this year's competition at press time include the following (names of student presenters are underlined):

Student Poster Entries

1. *A New Technique to Measure the Fiber Length Distribution of Discontinuous Fiber-Reinforced Plastics:* Sebastian Goris, Tim Osswald, **University of Wisconsin-Madison**;
2. *Direct Particle Simulation to Predict Fiber Motion in Polymer Processing:* Camilo Perez, Daniel Ramirez, Sebastian Goris, Tim Osswald, **University of Wisconsin-Madison**;
3. *Fiber Orientation Measurements Using a Novel Image Processing Algorithm for Micro-Computed Tomography Scans:* Sebastian Goris, Tim Osswald, **University of Wisconsin, Madison**;
4. *Effects of Peroxide and Thermal Treatment on the Properties of Banana Pseudostem Fibers:* Patrick Chester, **Baylor University**;
5. *Novel Electrically Conductive Biobased Hybrid Adhesive from Distillers' Dried Grain with Solubles (DDGS) and Graphene:* Michael Biancanello, Tao Wang, Manjusri Misra, Amar K. Mohanty, **University of Guelph**;
6. *Emerging Materials: Torrefied Soy Biomass in the Production of Thermoplastic Composites:* Ronald Koslakiewicz, Alper Kiziltas, Wonsuk Kim, Alan Argento & Deborah Mielewski, **University of Michigan-Dearborn**;
7. *Green Nanocomposites from Biobased Poly(Trimethylene Terephthalate) and Graphene: Process Engineering and Performance Evaluation:* Geoffrey Beamish, Petri Myllytie, Amar K. Mohanty, Manjusri Misra, **University of Guelph**;
8. *Wet Laid Thermoplastic Carbon Fiber Composites:* Hicham Ghossein, **University of Alabama at Birmingham**;
9. *Hybrid Metal-Composite Laminates:* Pritesh Yeole, **University of Tennessee-Knoxville**;
10. *Woven Fabric Composite Stiffness Property Prediction through Finite Element Modeling of Representative Volume Elements:* Christopher Boise, **Baylor University**;
11. *Investigation of Woven Fiber Reinforced Laminated Composites Using a Through Transmission Ultrasonic Technique:* Sarah Stair, **Baylor University**;
12. *Reversible Bonded Joints using Graphene Modified Thermoplastic Adhesives:* B.J. Ewing, E.G. Koricho, A. Khomenko, M. Haq, and L.T. Drzal, **Michigan State University**;
13. *Hybrid Material, Stiffness Matching Perforated Aluminum-to-Composite Joints:* J. Caudhill, E.G. Koricho, A. Khomenko, and M. Haq, **Michigan State University**;
14. *Novel Hybrid Fastening of Aluminum to Composites Joints:* Kalie Collins, A. Khomenko, E.G. Koricho, G.L. Cloud, and M. Haq, **Michigan State University**;
15. *Self Sensing Characteristics of Carbon Fiber Reinforced Composites using Electrical Resistivity Measurements and Guided Waves:* N.T. Saikiran, D.R. David, O. Karpenko, E.G. Koricho, A. Khomenko, M. Haq, L. Udpa, S. Udpa, P. Rajagopal, and K. Balasubramaniam, **Michigan State University**;
16. *Robust, Rapid Measurements of Interlaminar Crack Growth in Composites:* D.R. David, N.T. Saikiran, N.T. Saikiran, O. Karpenko, E.G. Koricho, A. Khomenko, M. Haq, L. Udpa, S. Udpa, P. Rajagopal, and K. Balasubramaniam, **Michigan State University**;
17. *Fused Deposition Modeling Nozzle Geometry Manipulation for Preferred Fiber Orientation in Printed Parts:* Nate Spinnie, Blake Heller, **Baylor University**;
18. *Non-Isotropic Material Distribution Topology Optimization for Fused Deposition Modeling Products:* Robbie Hagland and Douglas E. Smith, **Baylor University**;
19. *Impact Resistant Composites and Modeling of the Damage Zone within a Laminate:* Colin Gregg, **Baylor University**;