

MEET THE NEXT GENERATION OF AUTOMOTIVE COMPOSITES ENGINEERS

SPE ACCE Attendees Encouraged to Participate in Student Poster Competition Judging Sponsored by Magna 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. This year's competition is our biggest yet with 31 graduate, 9 undergraduate, and 3 high school students from 18 schools in the U.S. and Canada presenting their research at the 2016 ACCE. Please join us in welcoming the students and take 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 members of the automotive composites community and ask them what it's 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 attendees, 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, and the First-Place winner of the high school category will receive plaques from *Tom Pilette*, global vice president - Product and Process Development and *John Thelen*, vice-president - Engineering at **Magna Exteriors**, this year's competition sponsor. This will take place during a formal recognition ceremony from **3:30-3:45 p.m.** in the Diamond Ballroom on the first day of the conference. Additionally, student participants will receive monetary support to help defray travel expenses.

A wholly-owned operating unit of Magna International, Magna Exteriors is a global supplier of exterior products and systems. The company's broad capabilities position it as a full-service supplier to its customers, and include: design and engineering, styling, tooling, manufacturing, assembly and sequencing, testing, continuous improvement, consumer and market research, benchmarking, and electrical/electronic system integration, among others. As a market leader with a focus on innovation, Magna Exteriors produces a wide array of products including bumper

fascia systems; exterior trim; modular systems; Class A body panels; and structural components for automotive, commercial truck, consumer, and industrial markets.

Explaining why his company sponsored this year's poster competition, Pilette said, "As we innovate for the future we want to understand the next generation of transportation users. What better way to examine the needs and ideas of this group than to support the SPE ACCE student poster competition? Exploring the visualization and transformation of the mobility industry through these talented individuals will drive innovation, and innovation drives Magna."

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;
- Conclusion are supported by information presented;



John Thelen, vice-president - Engineering, Magna Exteriors



Tom Pilette, global vice president - Product and Process Development, Magna Exteriors

DRIVING **EXCELLENCE.**
INSPIRING **INNOVATION.**



Magna is proud to sponsor the 2016 ACCE Student Poster Competition

FOCUSED ON THE ROAD AHEAD

At Magna, we take great ideas and develop them from innovation to industry standard. We also know great thinking happens outside our four walls, and that our world class manufacturing capability enables us to commercialize great ideas which benefits inventors, entrepreneurs, customers, and ultimately all who share the road.

Magna – from idea, to innovation, to industry standard.

Student Poster Competition

- 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). He was assisted this year by Dr. David Jack, associate professor of Mechanical Engineering at Baylor University.

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

Graduate Students

- 1) *Turning Carbon Dioxide into a Tough Biobased Epoxy Interpenetrating Network Composites*, [Ghodsieh Mashouf Roudsari](#), **University of Guelph**
- 2) *Poly(meso-lactide) for Vacuum Assisted Resin Transfer Molding*, [Dylan S. Cousins](#), **Colorado School of Mines**
- 3) *Fabrication of Continuously Reinforced Filaments using Dual Extrusion Technology for use in Fused Filament Fabrication*, [Mubashir Ansari](#), **Virginia Polytechnic Institute and State University**
- 4) *Biosourced Thermoplastic Structural Foams of PLA/PBSA as Potential Next Generation Lightweight Alternatives*, [Sai Aditya Pradeep](#), **Clemson University**
- 5) *Thermal and Mechanical Properties of Waterborne Polyurethane Crosslinked by Rendered Animal Proteins*, [Xiaoyan Yu](#), **Clemson University**
- 6) *Nondestructive Analysis of the Temperature and Phase Change of Materials Using Ultrasound*, [Benjamin Blandford](#), **Baylor University**
- 7) *Length Effect on Long Semi-Flexible Fiber Orientation during Injection Molding*, [Hongyu Chen](#), **Virginia Polytechnic Institute and State University**
- 8) *Mechanical Behavior of Carbon Fiber Composites Using Fused Deposition Modeling*, [Delin Jiang](#), **Baylor University**
- 9) *Mechanical Properties of Fiber Filled Polymers in Axisymmetric Flow and Planar Deposition Flow*, [Blake Heller](#), **Baylor University**
- 10) *Fabric Permeability and Stiffness Characterization for Composite Liquid Molding*, [Shailesh Alwekar](#), **University of Tennessee**
- 11) *Studies on the Synthesis and Characterization of Epoxidized Soybean Oil (ESO) for Structural Applications*, [Shatori S. Meadow](#), **Tuskegee University**
- 12) *Investigation and Identification of the Bondline between a Carbon Fiber Reinforced Laminated Composite and a Metal Structure via Ultrasonic Techniques*, [Sarah L. Stair](#), **Baylor University**
- 13) *Numerical Determination of Elastic and Viscoelastic Mechanical Properties of Aligned Short Fiber Reinforced Composites*, [Zhaogui Wang](#), **Baylor University**
- 14) *Effect of Spinning Conditions of Mesophase Pitch Fibers on the Properties of Carbon Fibers*, [Victor Bermudez](#), **Clemson University**
- 15) *Non-Contact Cure Monitoring in Composites Manufacturing using Material Vibration Data*, [Liuda Prozorovska](#), **Vanderbilt University**
- 16) *Rapid-Cure Matrix Chemistries for Automotive Applications*, [Andrew Janisse](#), **University of Southern Mississippi**
- 17) *Design and Development of Thermoplastic Leaf Spring for Light Truck Application*, [Marvin A. Munoz Sanchez](#), **University of Alabama at Birmingham**
- 18) *Process Optimization of Compression Molded Epoxy/E-Glass Pre-Pregs for Light Truck Leaf Spring Application*, [Reyes A. Baeza](#), **University of Alabama at Birmingham**
- 19) *Design and Engineering a High Performance Green Material from Poly(lactic acid) and Acrylonitrile Butadiene Styrene*, [Ryan Vadori](#), **University of Guelph**
- 20) *Tailored Reinforcement of PA6 Based LFT with Different Stacking Sequence*, [Yuchao Liu](#), **Western University**
- 21) *Temperature Effect on Mechanical Properties of PA6 Based LFT-D Composite*, [Yuchao Liu](#), **Western University**
- 22) *PAN Precursor Draw During Spinning: Effects on Mechanical Properties and Morphology of Resultant Carbon Fiber*, [Sarah Edrington](#), **University of Kentucky/Center for Applied Energy Research**
- 23) *Study on Fiber Attrition of Long Glass Fiber-Reinforced Thermoplastics under Controlled Conditions in a Couette Flow*, [Sara Simon and Sebastian Goris](#), **University of Wisconsin-Madison**
- 24) *Experimental and Numerical Modeling of Tri-Axial Braided CFRP Crush-Tubes*, [Suhail Hyder Vattathuralappil](#), **Michigan State University**
- 25) *Multi-Material Joining with Reversible Adhesives*, [Erik Stitt](#), **Michigan State University**

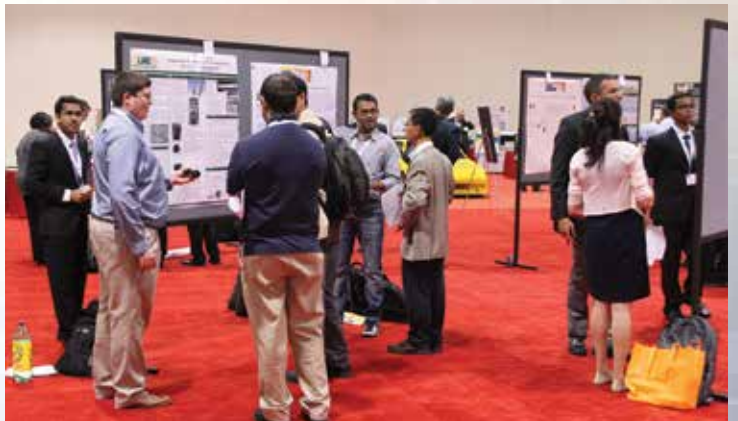
- 26) *Carbon Fibers Derived from Lignin-Pan Polymer Blend Precursors*, [Jing Jin](#), **Clemson University**
- 27) *Increased Impact Strength of Filled Polypropylene by 3D Printing*, [Lu Wang](#), **University of Maine**
- 28) *Thermoplastic Composite Additive Manufacturing for High Performance Tool Production*, [Anthony Favaloro](#), [Eduardo Barocio](#), and [Bastian Brenken](#), **Purdue University**
- 29) *Thermogravimetric Analysis of Glass Fiber Reinforced Polyamide*, [Thomas Whitfield](#), **Western University**
- 30) *Powder Coating of Plastic Components*, [Xinping Zhu and Shan Gao](#), **Western University**
- 31) *The Engineering of Nylon/PBT Blend for Applications in the Automotive Industry*, [Dylan Jubinville](#), **University of Guelph**


Undergraduate Students

- 32) *Mechanical and Thermal Properties of Epoxidized Pine Oil Foams*, [Nathaniel Brown](#), **Clemson University**
- 33) *Wet Laid Thermoplastics – Processing, Modeling and Characterization*, [David McConnell and Hicham Ghossein](#), **University of Tennessee**
- 34) *Novel Green Activation Process of Biocarbon for Industrial Uses*, [Jonathan Mazurski](#), **University of Guelph**
- 35) *3D Printed Advanced Green Composite Materials for Customized Automotive Applications*, [Joyce Cheng](#), **University of Guelph**
- 36) *Healable and Reassembly-Capable, Perforated Metal-to-Composite Joints with Thermoplastic Resins*, [Jeffrey Masten-Davies](#), **Michigan State University**
- 37) *Computational Design of Reversible Adhesive Joints*, [Kevin Schuett](#), **Michigan State University**
- 38) *Measurement of Strains in Thin Bond-Lines using FBG Rosettes*, [Neha Joshi](#), **Michigan State University**
- 39) *Enhancing Fracture Toughness in Adhesives Using Micro-Bubble Additives*, [Benjamin Swanson](#), **Michigan State University**
- 40) *Green Composites using Cotton Gin Waste*, [Juan Ignacio Caballero and Pinar Zabin](#), **Michigan State University**

High School Students

- 41) *Recycled CO₂-Based Polyurethane Foams Containing Sustainable Fillers*, [Beste Aydin](#), **Bloomfield Hills High School**
- 42) *Closed-Loop Recycling of Post-Consumer PET for Automotive Foams*, [Kristine Wang](#), **Bloomfield Hills High School**
- 43) *Sustainable Fillers as a Replacement for Mineral Fillers in Polyamide Composites*, [Matthew Remillard](#), **Father Gabriel Richard High School**




**AUTOMOTIVE
COMPOSITES
CONFERENCE
& EXHIBITION**
World's Leading Automotive Composites Forum
 SOCIETY OF PLASTICS ENGINEERS
 AUTOMOTIVE & COMPOSITES DIVISIONS

View 15 years of the SPE ACCE Archives free of charge 24/7 at <http://speautomotive.com/aca>



Learn why polymer composites are crucial resources for transportation OEMs trying to meet emissions and fuel-efficiency mandates.