



## **SPE® ANNOUNCES WINNERS OF SCHOLARSHIPS FOR GRADUATE-LEVEL RESEARCH IN AUTOMOTIVE COMPOSITES**

### ***Students from Virginia Tech, University of Illinois Urbana/Champaign to Receive Funds for Research in Composites for Ground Transportation Applications***

TROY (DETROIT), MICH. – Two graduate students will each receive a \$2,000 USD scholarship check from the **Society of Plastics Engineers – Automotive & Composites Divisions** at this year's **SPE Automotive Composites Conference & Exhibition** (SPE ACCE), September 15 & 16, 2009 to help underwrite research in composites for ground transportation. **Gregorio Manuel Vélez-García**, originally from Puerto Rico and a Ph.D. candidate at **Virginia Polytechnic Institute and State University** (Virginia Tech, Blacksburg, Va.), and **Zeba Farheen Abdul Samad**, originally from India and a doctoral candidate at the **University of Illinois-Urbana/Champaign** (Urbana, Ill.), were selected from the pool of qualified applicants by SPE ACCE committee members and will report the results of their findings during next year's tenth-annual SPE ACCE, which takes place in September 14-16, 2010. Vélez-García will use his scholarship for development work on a new method for predicting fiber orientation in fiber-reinforced, injection-molded thermoplastics, while Abdul Samad will use her scholarship to continue her work on aromatic thermosetting copolyester (ATCP) / carbon fiber composites. This is the third year SPE has offered these scholarships.

### **About Gregorio Manuel Vélez-García**



Gregorio Manuel Vélez-García was born and grew up in a small fishing village of Vieques on the east side of Puerto Rico. His educational experiences from middle school through his Master's were complemented with research programs sponsored by the National Science Foundation (NSF), National Institutes of Health (NIH), and the National Aeronautics & Space Administration (NASA). He earned B.S. and M.S. degrees in Chemical Engineering from the University of Puerto Rico-Mayaguez (UPRM). In 2000, Vélez-García began teaching classes on process manufacturing, process design, fundamentals of polymer science and engineering, and materials science at his *alma mater*, UPRM. He also was a consultant to the electronics, medical device, pharmaceutical, and biotechnology industries in Puerto Rico, and has been a traveling lecturer in Latin America giving talks on polymer processing in Spanish. In 2004, he began work on a Ph.D. in Macromolecular Science and Engineering at Virginia Tech., sponsored by UPRM as well as an NSF Integrative Graduate Education & Research Traineeship Program (IGERT) fellowship. As part of this fellowship, he completed a summer internship at Oak Ridge National Laboratories, working towards a simple method to characterize fiber-length distribution in long glass fibers. In 2006, he began working on a short-fiber composite project sponsored by NSF and the U.S. Department of Energy (DOE). From this research activity, he has produced three journal articles and 11 conference presentations as second author, and nine conference presentations as lead author. He is currently working on three additional journal articles that focus on his experimental and numerical work in short-fiber composites. Next year, Vélez-García will return to teach at UPRM, where he will also be responsible for developing the school's new Polymer Processing & Composites Center, which will provide support to Puerto Rico's aerospace and medical-device industries. Vélez-García is an active member of SPE and a councilor for SPE's Caribbean Section.

Vélez-Garcia's scholarship work will focus on improving predictive models for fiber orientation in reinforced injection-molded thermoplastics so they more closely match experimental results. Recent experimental work has shown that fiber orientation evolves more slowly than the widely used Folgar-Tucker model predicts, so Vélez-Garcia will begin with a simplified Folgar-Tucker model that uses a constant determined from rheological studies. The new predictive approach also uses experimentally derived model parameters to overcome assumptions made in traditional simulations.

### **About Zeba Farheen Abdul Samad**

Zeba Farheen Abdul Samad holds an undergraduate degree in Polymer Engineering and Technology from the Institute of Chemical Technology, Mumbai, India – where she developed a passion for composites while working on mica/ABS materials for her senior thesis. She joined Professor James Economy's research group in the Department of Materials Science and Engineering at the University of Illinois at Urbana/Champaign in 2006. A focus of her research group is the synthesis and characterization of novel polymers for use as matrix materials in composites. Abdul Samad's primary research interest is designing polymeric materials for high-temperature applications, specifically for composite matrix materials. She is currently working on novel aromatic thermosetting copolyester matrix systems for high temperature stable composite applications as well as on silver-based bactericidal systems for enhancing shelf-life of milk in tropical temperatures. Abdul Samad was awarded the Perkin-Elmer Award from the Composites Division of SPE (2007-2008) and was the recipient of the Bostik Award at SPE's Annual Technical Conference (ANTEC) in 2009.



Abdul Samad will use her scholarship to continue her work on aromatic thermosetting copolyester (ATCP) / carbon fiber composites, a promising new family of materials that show liquid crystalline structures during melt and post-cure. As a matrix resin, not only does ATSP offer high thermal stability and thermal fatigue resistance, flame retardance, and damage tolerance, but it also possesses unique properties like easy processing of nearly void-free structures and the ability to form adhesive self-bonds.

### **About the ACCE**

The ACCE typically draws over 400 speakers, exhibitors, sponsors, and attendees from 14 countries on 4 continents with fully one-third indicating they work for an OEM involved in ground transportation or aerospace/aviation. Interestingly, over the past few years, the types of transportation OEMs represented at the show have continued to broaden beyond traditional automotive and light truck, to include agriculture, truck & bus, heavy truck, and aviation. This trend may indicate greater interest in technology sharing among transportation OEMs and suppliers.

Held annually in suburban Detroit, the ACCE provides an environment dedicated solely to discussion and networking about advances in the automotive composites industry. Its global appeal is evident in the diversity of exhibitors, speakers, and attendees who come to the conference from Europe, the Middle East, and Asia / Pacific as well as North America and who represent transportation OEMs 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 the SPE Automotive and Composites Divisions.

For more information about the SPE Automotive Composites Conference, visit the Composites' Division website at [www.4spe.org/communities/divisions/d39.php](http://www.4spe.org/communities/divisions/d39.php), or the Automotive Division's website at [www.speautomotive.com/comp.htm](http://www.speautomotive.com/comp.htm), 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 International or other SPE events, visit the SPE website at [www.4spe.org](http://www.4spe.org), or call +1.203.775.0471.

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Thank you!