



Automotive Plastics NEWS

JUNE 2016
VOLUME 45, ISSUE 4



SPE[®] ANNOUNCES DATES, DEADLINES FOR 46TH-ANNUAL AUTOMOTIVE INNOVATION AWARDS COMPETITION & GALA

The SPE[®] Automotive Division has announced the dates, location, and theme for its 46th-annual *Automotive Innovation Awards Gala*, the oldest and largest recognition event in the automotive and plastics industries, and deadlines for the event's annual parts competition. This year's *Awards Gala* will be held Wednesday, **November 9, 2016** at Burton Manor (www.burtonmanor.net) in Livonia, Mich., where winning part nominations (submitted by **September 15, 2016**) and the teams that developed them will be honored during an evening that celebrates automotive plastics innovation.



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AUTOMOTIVE DIVISION MEETING SCHEDULE & SPECIAL EVENTS CALENDAR



AUTOMOTIVE

SPE Auto. Div. Board Meeting

American Chemistry Council - Auto. Ctr.
Troy, MI USA

5:30 - 7:30 p.m.
June 13, 2016

SPE Auto. Div. Board Meeting

American Chemistry Council - Auto. Ctr.
Troy, MI USA

5:30 - 7:30 p.m.
August 22, 2016

SPE Auto. Div. Golf Outing

Fieldstone Golf Club
Auburn Hills, MI USA

ALL DAY
September 6, 2016

16th-Annual SPE Automotive Composites Conference & Exhibition (ACCE)

The Diamond Banquet & Conference Center
at the Suburban Collection Showplace
Novi, MI USA

ALL DAY
September 7-9, 2016

First Round - Automotive Innovation Awards Judging

Celanese Corp.
Auburn Hills, MI USA

8:00 a.m.- 5:00 p.m.
September 29-30, 2016

18th-Annual SPE TPO Automotive Engineered Polyolefins Conference (TPO)

Detroit-Troy Marriott
Troy, MI USA

ALL DAY
October 2-5, 2016

SPE Auto. Div. Board Meeting

American Chemistry Council - Auto. Ctr.
Troy, MI USA

5:30 - 7:30 p.m.
October 3, 2016

Second Round / Blue Ribbon - Automotive Innovation Awards Judging

Celanese Corp.
Auburn Hills, MI USA

8:00 a.m.- 5:00 p.m.
October 10, 2016

46th-Annual SPE Automotive Innovation Awards Gala

Burton Manor
Livonia, MI USA

5:00-11:00 p.m.
November 9, 2016

SPE Auto. Div. Board Meeting

American Chemistry Council - Auto. Ctr.
Troy, MI USA

5:30 - 7:30 p.m.
December 5, 2016

Automotive Division Board of Directors meetings are open to all SPE members. All events are listed on our website at <http://speautomotive.com/ec>
EEmail Steven VanLoozen at auto-div-chair@speautomotive.com for more information.

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CHAIR'S MESSAGE

by Steven VanLoozen,
SPE Automotive Division Chair



I would like to thank every one of our members for their support of SPE. This is my last time writing to all of you as chair of the Automotive Division, but I know that

I am turning over the position to an extremely experienced and capable replacement in Matt Carroll. Many of you know Matt from his 22 years with General Motors and his work on the SPE Detroit Section board. Matt is a natural leader and I can't think of anyone better suited to steer our division forward.

The 11th-annual AutoEPCON held on May 10, 2016 in Troy, Michigan, U.S.A. was an extremely well-attended conference with over 300 participants. The annual event provides an excellent opportunity for materials producers, automotive parts manufacturers, and OEMs to see the latest innovations in automotive engineering plastics applications. This year's conference featured excellent keynotes from leaders at FCA US LLC and General Motors as well as excellent presentations by several key parts manufacturers, including Contitech, Magna, and Mahle. Thanks to all the speakers and attendees for supporting the conference and we look forward to seeing you all again next year.

The 16th-annual ACCE will be held September 7-9, 2016 in Novi, Michigan, U.S.A. This is an excellent opportunity to see the most recent automotive applications utilizing polymer composites and hybrid composite/metal constructions. SPE's Automotive and Composites Divisions co-organize this event, which is widely considered the *world's leading automotive composites forum*. We have had a record number of abstracts submitted to date and expect this year's conference to be our best yet.

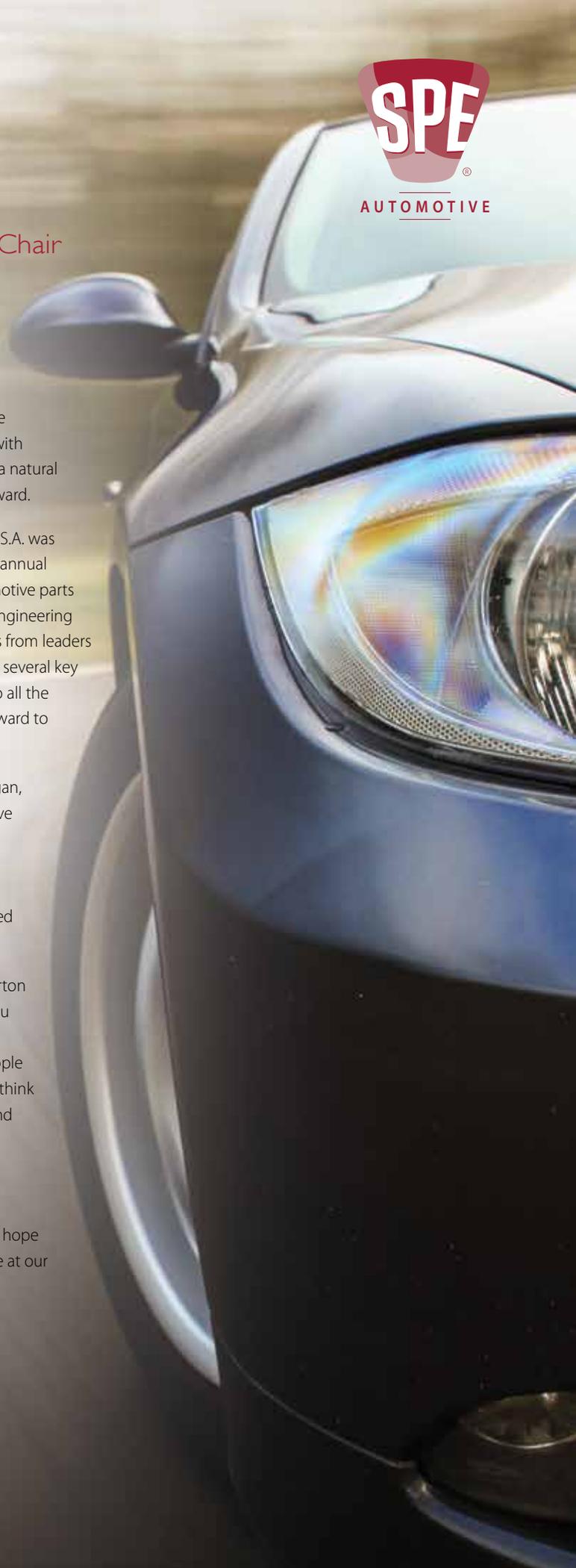
Our 46th-annual Automotive Innovations Awards Gala will return to Burton Manor in Livonia, Michigan, U.S.A. on November 9, 2016. As many of you know, this event is an excellent way to showcase commercial plastic/composite innovations and allows our industry to congratulate the people who helped bring these ideas to reality. Please take a few moments to think about the innovations you or your colleagues have been working on and that are now commercial and consider submitting nominations for consideration.

I would like to again thank all the Automotive Division Board and SPE members who have helped me along during my two years as chair. We hope all of you have a great summer and we look forward to seeing everyone at our events coming up this fall.

Kind Regards,

Steven VanLoozen

Steven VanLoozen
SPE Automotive Division Chair
BASF Corp.



"This is an important year for automakers selling into the U.S. as it represents the midpoint assessment period for 2025 CAFE (corporate average fuel economy) standards," explains Jeffrey Helms, global automotive director, Celanese Corp. who returns as the 2016 *SPE Automotive Innovation Awards* chair. "Regulators are currently reviewing automaker status with regard to increasing fuel-efficiency ratings toward the 2025 targets. That will put the spotlight on methods and materials for taking mass out of vehicles, which should be good for plastics and composites. We feel it's no coincidence that the last few years have represented the highest attendance in the history of our



Automotive Innovation Awards Gala and we expect that trend to continue in 2016. Automakers and their suppliers are very interested in any and all design, material, and process options that can help them meet regulatory targets while still offering exciting, safe, beautiful, and affordable vehicles that customers want to buy. This led to selection of *Plastics: Innovation in Motion* as our 2016 program theme."

About the Automotive Innovation Awards Competition & Gala

Since 1970, the *SPE Automotive Innovation Awards Competition* has highlighted the positive changes that polymeric materials have brought to automotive and ground-transportation industries, such as weight and cost reduction, parts consolidation, increased safety, and enhanced aesthetics and design freedom. At the time the competition started, many OEM designers and engineers thought of plastics as inexpensive replacements for more "traditional" materials. To help communicate that plastics were capable of far more functionality than their typical use as decorative knobs and ashtrays indicated, members of the board of directors of SPE's Automotive Division created the competition to recognize successful and innovative plastics applications and to communicate their benefits to OEMs, media, and the public.

Over the years, the competition drew attention to plastics as an underutilized design tool and made industry aware of more progressive ways of designing, engineering, and manufacturing automotive components. From its humble beginnings, the competition has grown to be one of the most fiercely contested recognition events in

the automotive and plastics industries. Today, polymeric materials are no longer substitutes for more expensive materials, but rather are the materials of choice in hundreds of different applications throughout the vehicle. Without plastics, many of the auto industry's most common comfort, control, and safety applications would not be possible.

During the competition phase of the event, dozens of teams made up of OEMs and suppliers work for months to hone submission forms and presentations describing their part, system, or complete vehicle module to support claims that it is the year's "Most Innovative Use of Plastics." To win, teams must survive a pre-competition review and two rounds of presentations before industry and media judges.

There is no cost to nominate parts. However, nominations that are accepted into the competition need to be presented (in person or via webinar) by their nominating teams during the first round of *Automotive Innovation Awards Competition* judging, September 29-30 in Auburn Hills, Michigan U.S.A. Finalists from that round advance to a second presentation before a panel of Blue

Ribbon judges made up of media, retired chief engineers, and other industry experts on October 10 (also in Auburn Hills). Winners of each part category, the Grand Award, Hall of Fame, and Lifetime Achievement winners will all be honored during the *Automotive Innovation Awards Gala* on November 9. This annual event typically draws over 700 OEM engineers, automotive and plastics industry executives, and media. Funds raised from the event are used to support SPE educational efforts and technical seminars, which help educate and secure the role of plastics in the advancement of the automobile.

Current competition categories include:

- Aftermarket,
- Body Exterior,
- Body Interior,
- Chassis / Hardware,
- Electrical Systems,
- Environmental,
- Hall of Fame,
- Materials,
- Process, Assembly & Enabling Technologies,
- Powertrain, and
- Safety.

Learn more: <http://speautomotive.com/inno> and <http://speautomotive.com/awa>.



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Shown above are members of the large team that developed last year's Materials category as well as Grand Award winner of the Automotive Innovation Awards Competition, the Ultralight Class A Body Panels on the 2016 model year Chevrolet Corvette sports car produced by General Motors Co.



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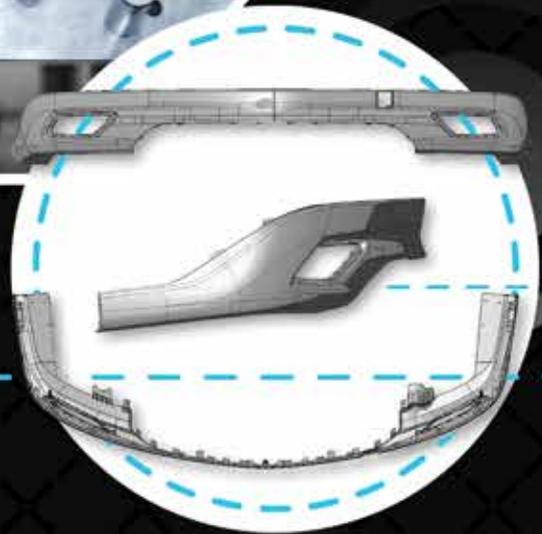
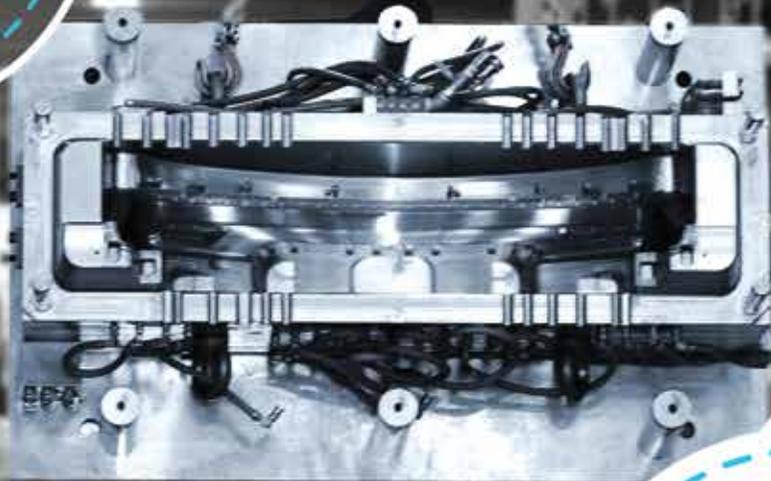
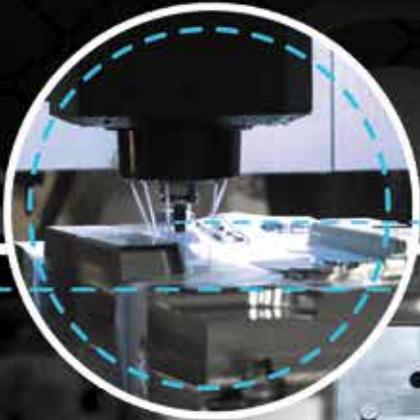
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LIFETIME ACHIEVEMENT AWARD WINNER ANNOUNCED FOR 2016 SPE AUTOMOTIVE INNOVATION AWARDS GALA

Dr. Lawrence T. Drzal, university distinguished professor of Chemical Engineering and director-Composite Materials and Structures Center at Michigan State University's College of Engineering (MSU, East Lansing, Michigan, U.S.A.), has been named the 2016 **Lifetime Achievement Award** winner by the SPE Automotive Division. Drzal, the first academic winner of the award, is a composites expert who has specialized in surface and interfacial aspects of adhesively bonded joints plus the fiber / matrix interphase in composite materials and their processing; adhesion fundamentals; sustainable bio-based structural

composite materials; and nanocomposite materials. During his career Drzal has given over 400 invited presentations at national and international conferences, published over 375 research papers, and has been awarded 35 patents. He will be honored for his role leading transportation composites innovations at the 46th-annual **Automotive Innovation Awards Gala** on **November 9, 2016** at Burton Manor (www.burtonmanor.net) in Livonia, Michigan, U.S.A.

Drzal credits his early engineering and co-op training coupled with his industrial and military service for his "problem definition" approach to research, which has been characterized by observation of phenomena and identification of unresolved problems around the common themes of technological advancement, sustainability, environmental friendliness, and benefit to society. As a result, Drzal says he always has had the desire to provide both practical knowledge and fundamental knowledge in each research area and research project he and his students have undertaken.

He is a founding member of both the Adhesion Society and the American Society for Composites and has served as president (1998-1999) of the Adhesion Society. He has chaired the Gordon Conference on Adhesion and the Gordon Conference on Composites and has served in many other professional activities related to chemical engineering,

ACHIEVEMENT AWARD

composite materials, and adhesion. He served on the editorial board of journals in the adhesion and composite materials fields (*Composites Part A: Applied Science and Manufacturing; Journal of Biobased Materials and Bioenergy; Carbon Letters; and Nanocomposites*) and was associate editor of the *Journal of Adhesion*.

Over his long and distinguished career, Drzal has received numerous honors and awards including:

- 2016, University of Delaware's Medal of Excellence in Composite Materials;
- 2008, Best Technical Paper Award, Thermoset Division, Society of Plastics Engineers;
- 2006, Fellow, Society for the Advancement of Materials and Process Engineering (SAMPE);
- 2006, Educator of the Year, Society of Plastics Engineers (SPE) - Composites Division;
- 2005, Best Paper Award, Coatings for Plastics Symposium;
- 2004, Fellow, SPE;
- 2004, Fellow, American Society for Composites (ASC);
- 2003, Highly Cited Materials Science Researcher, ISI;
- 2003, Best Paper Award, SPE Composites Division, ANTEC 2003;
- 2002, Fellow, American Institute of Chemists, Adhesion;
- 2002, Robert Patrick Fellow, The Adhesion Society, Adhesion Science;
- 2002, Member, European Academy of Sciences, Adhesion and Surface Modification of Polymers;
- 2002, Fellowship, Japan Society for the Promotion of Science;
- 1997, University Distinguished Professor, Michigan State University;
- 1997, 1994, 1993, 1991, Best Performing Research Award, Michigan Materials and Processing Institute;
- 1997, Best Paper Award, ASC;
- 1996, Technomic Award, ASC, Outstanding Achievement in Research, Education and Service in the Field of Composite Materials;
- 1994, Award for Excellence in Adhesion Science Research, 3M and The Adhesion Society, Adhesion Science;
- 1993, Distinguished Faculty Award, Michigan State University;
- 1992, Edwin P. Plueddemann Award, Dow Corning and International Conference on Composite Interfaces, Excellence in Composites Interfacial Research;
- 1992, Withrow Distinguished Scholar Award, College of Engineering, Michigan State University;
- 1990, Best Academic Paper Award, Advanced Composites Conference;
- 1983, Best Paper Award, SAMPE Technical Conference;
- 1981, US Air Force (USAF) Scientific Achievement Award, USAF Systems Command;
- 1979, Charles J. Cleary Award, USAF Materials Laboratory, Scientific Materials Research Award;
- 1968-1971, National Science Foundation (NSF) Graduate Traineeship, Case Western Reserve University;
- 1967, Engineer of the Year, College of Engineering, University of Detroit.

Drzal earned a B.S. degree in Chemical Engineering from University of Detroit and a Ph.D. in Chemical Engineering and Polymer Science from Case Western Reserve University. He joined MSU's College of Engineering as a professor of Chemical Engineering in 1985 and became director of the school's Composite Materials & Structures Center in 1986. A decade later, he became a university distinguished professor of Chemical Engineering & Materials Science.

On **Wednesday, November 9, 2016**, Drzal will be honored for his significant contributions to transportation composites at the 46th-annual **SPE Automotive Innovation Awards Gala** at Burton Manor (www.burtonmanor.net) in Livonia, Michigan, where winning part nominations and the teams that developed them will be honored during an evening that celebrates automotive plastics innovation. The evening begins with the VIP Cocktail Reception at 4:30 p.m. that is sponsored by Celanese Corp. At 5:00 p.m. the main exhibit area will open for general admission and guests can review this year's **Automotive Innovation Awards** part nominations, as well as enjoy the specialty and antique vehicles that always are a highlight of the show. Dinner will begin at 6:30 p.m. and the awards program itself will last from 7:00-9:00 p.m. For those who wish to extend merrymaking and networking activities, the ever-popular **Afterglow** – also sponsored by Celanese – will run from 9:00-11:00 p.m.

TREASURER'S REPORT

by Bonnie Bennyhoff,
SPE Auto. Div. Treasurer

As of May 18, 2016,
the division's account
balances were:

Checking:	\$192,641.81 USD
Savings:	\$ 27,444.42 USD
Total:	\$220,086.23 USD



PAST SPE AUTOMOTIVE LIFETIME ACHIEVEMENT AWARD WINNERS:

First given in 2000, the SPE Automotive Lifetime Achievement Award recognizes the technical achievements of individuals whose work – in research, design, and/or engineering – has led to significant integration of polymeric materials on passenger vehicles. Past winners include:

- J.T. Battenberg III, then chairman and chief-executive officer of Delphi Corp.;
- Bernard Robertson, then executive vice-president of DaimlerChrysler;
- Robert Schaad, chairman of Husky Injection Molding Systems, Ltd.;
- Tom Moore, retired vice-president, Liberty and Technical Affairs at then DaimlerChrysler;
- Mr. Shigeki Suzuki, general manager - Materials Division, Toyota Motor Co.;
- Barbara Sanders, then director-Advanced Development & Engineering Processes, Delphi Corp.;
- Josh Madden, retired executive at General Motors Corp. (GM) & Volkswagen of America;
- Frank Macher, former CEO of Collins & Aikman Corp., Federal Mogul Corp., and ITT Automotive;
- Irv Poston, retired head of the Plastics (Composites) Development-Technical Center, GM.;
- Allan Murray, Ph.D., retired technology director at Ford Motor Co.;
- David B. Reed P.E., retired staff engineer, Product Engineering, GM;
- Gary Lowndale, P.E., then chief technology officer, Plasan Carbon Composites;
- Roy Sjöberg, P.E., retired, staff engineer - Body, Chevrolet-Pontiac-Canada Div., General Motors Corp. & retired, executive engineer- Viper Project, Chrysler Corp.;
- Dr. Norm Kakarala, retired, senior technical fellow, Inteva Products LLC; and
- Fredrick Deans, P.E., chief marketing officer, Allied Composite Technologies LLC.



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Designer's Den



A Full Polymer Product Development Process: Closing the Loop between Material, Design, Simulation & Validation

by Ben Chouchaoui, Ph.D.

Too often products made of solid or foamed elastomers, rigid thermoplastics or thermosets, or polymer composites are developed by a trial-&-error (make-&-break) method, despite broad access to today's virtual prototyping tools. Physical parts continue to be built for testing, and results are then used to alter materials, part geometry, and process settings and tooling. Then, more prototypes are made and tested until satisfactory outcomes are reached. Indeed, if any computer-aided engineering (CAE) work is done at all, it is seldom undertaken before a material is selected, a product is designed, a tool is built, prototypes are made, and then samples are tested. Sadly, CAE analysis is often requested as a last attempt to troubleshoot problems identified after the fact.

Successive attempts to design functional polymeric products delay their entry to market and can increase program costs significantly. Any new rounds of compound development, tool modification, and/or molding and testing add weeks to months to the launch timeline. Besides, any changes made during the prototyping phase, even if minimal, stretch program budgets. The later a change occurs, the more cost it adds. In the end, the limited and late use of virtual prototyping tools like finite-element analysis (FEA) and computational fluid dynamics (CFD), under computer-aided design, engineering, and manufacturing (CAD/CAE/CAM), result in inefficiencies and a lack of design creativity. Today's product developer ought to integrate materials characterization with parametric CAD and CAE/CAM to reasonable accuracies (less than 15% error). Products do still need to go through "What if?" scenarios; however these steps would take place in the "virtual world" using FEA/CFD software.

Granted, numerical modeling of polymeric materials requires the use of advanced material models. Engineers working with rigid polymers need to define what failure is for a given design; those working with more ductile materials, which are hyperelastic and therefore nonlinear, need to invest time in performing much more involved characterization work in the laboratory. Both types of materials also are viscoelastic, meaning their properties are dependent on time and temperature, which calls for further lengthy testing on coupons. Use of short-fiber reinforcement complicates modeling of polymeric parts by adding fiber distribution and orientation issues, which in turn makes anisotropy a consideration. Long or continuous fibers or fabric reinforcements in polymers raise complexity another notch. It is important in such cases to develop methodologies for "homogenization" (combining long fibers or meshes with the matrices in which they are embedded), in order to arrive at more accurate material models to use in simulation.

When setting up an analysis involving polymeric materials, nonlinearity arises from three phenomena to account for: 1) large rotations or translations (noticeable to the naked eye), 2) self-contact or contact between neighboring parts (e.g. as when a passenger sits down inside a vehicle, calling for application of deformable-to-deformable (occupant-to-seat) or deformable-to-rigid (foam-to-hardware) boundary conditions), and 3) a polymer's nonlinear response to loads or strains.

In general, hyperelastic materials (ductile polymers) undergo four basic deformation modes — uniaxial, equi-biaxial, planar, and volumetric — with each mode being either tensile or compressive. Vulcanized rubber, for example, is considered nearly incompressible, so equi-biaxial tension and compression (ET and EC) become equivalent to uniaxial compression and tension (UC and UT). Conversely, uni-axial tension and compression are independent, whereas neither planar tension nor compression (PT or PC) alone suffices to characterize a hyperelastic material. Four tests — feasible in the laboratory — are in the end necessary to establish a more accurate material model for hyperelasticity: UT, UC, PT, and volumetric compression or VC. Still, ET can replace UC with relatively compressible polymers in "open" designs.

Furthermore, developing a polymeric product requires the understanding of its functional limits, which unfortunately are often unknown to manufacturers and users alike, e.g., "How much load would actually break a fiber-reinforced plastic component being developed?" Design parameters depend on the application at hand, as well as the influence of processing

(such as the presence and severity of knitlines, dimensional stability of the polymer chosen, batch-to-batch variations, etc.).

Another parameter that needs to be accounted for in a design consists of the amount of force needed to insert a plastic clip in a factory or during servicing, assemble a hose on a nipple, or actuate a cupholder inside a vehicle. Friction is, in such cases, a chief impediment. Testing for friction consists of applying various normal weights to a polymeric sample mounted to a harder substrate, then dragging it against a simulated mating surface, with or without lubrication, at varying speeds. An average could be used as a friction coefficient, or "reaction to drag with movement" could be programmed via subroutines into general-purpose FEA software.

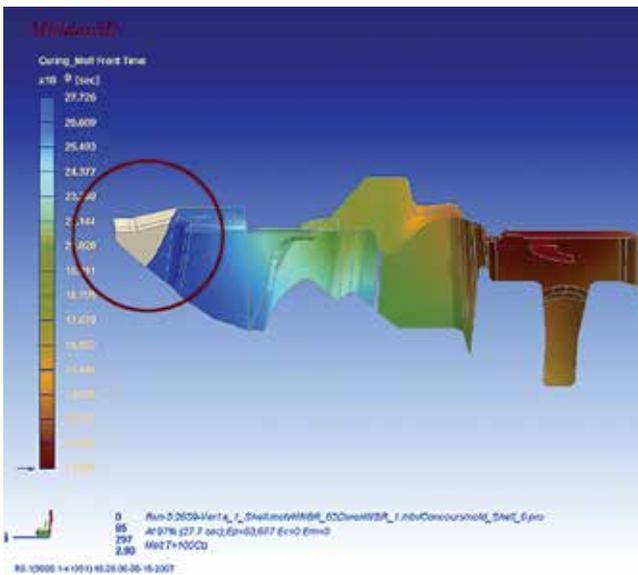
Still, if sealing is particularly involved, as it is around the openings in a constant-velocity (CV) boot, then the least material condition (LMC) must be used to monitor contact pressure. This means running further experiments to define "minimum pressure to seal," e.g. a ring gasket of square cross-section (a matter of simplicity) can be compressed, then pressurized internally until it seals. The process is repeated for each polymer compound and surface finish, as well as for each temperature of interest, and after specified aging of ring seals in heat and/or fluids. A "minimum pressure to seal" results as the ratio of "load to nominal cross-section of ring gasket" at deflection in slope of "leak rate vs. compression."

Testing on the product level should start by using FEA. Still, significant changes in the roles of simulation and physical testing have been occurring in many industries as they become further integrated into the product development cycle. Involving mechanical modeling (CAE) with CAD has helped create FEA simulators for traditional materials. Nonetheless, a major challenge remains in getting departments not involved in modeling to accept predictions as the basis for engineering decisions. This is where correlating FEA to physical testing can help build simulation credibility.

In the ideal world, product development groups would combine 1) material characterization, 2) definition of design parameters, 3) performance FEA and processing CFD, and 4) correlation of predictions to real-life testing, then further accelerating such validation. Model building in materials, geometries, boundary conditions, and loading remain key to assure the accuracy of any simulation. Closing the loop between all four product development building blocks is imperative to transitioning from physical to virtual product development, in particular in cases involving complex polymeric behaviors.

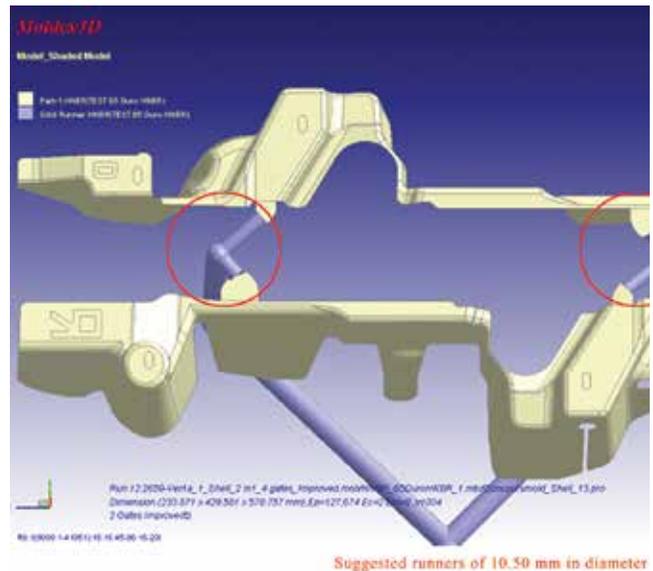


A good example of how using virtual prototyping tools early in a program can help anticipate and solve issues before parts are commercialized was found with this injection-molded underhood trim component (left and right sides) using fiber-reinforced polypropylene. In this case, no CAE work was done prior to producing tools for the program. During preliminary tryouts for the tools, the tier supplier kept getting short shots in both left and right parts produced in this family tool at the same critical location as shown in the photo.



Windsor Industrial Development Laboratory Inc. (WIDL) and a new toolmaker were brought in to troubleshoot the problem

as quickly as possible. Using geometry from an older part (no analysis had been done prior to cutting tooling for the part in question), the new toolmaker scanned the mold and created a CAD file of the part. WIDL was provided that file, along with the location and size of gates, runners, and venting points, as well as process conditions, which were used to run a CFD in order to attempt to replicate the issue that was causing the short shot. Sure enough, with the then-current gating scheme, the CFD program predicted the part would freeze off before it completely filled — right at the spot the tier supplier was having problems.



After iterative cycles of exploring "What if?" scenarios, modifying the model, and running new simulations, the analysis work suggested that by adding a 10.5mm-wide runner at key locations, the issue could be solved. Based on these results, a single tool was modified and sent to a trial house where parts filled successfully without any further short-shot issues. With the success of the first tooling change, the remaining tool sets for the program were modified the same way and shipped back to the customer. Production resumed and no further problems occurred.

Designer's Den

CONTINUED FROM PAGE 14

ABOUT DR. BEN CHOUCHAOU

Dr. Ben (Benabdallah) Chouchaoui is the founder and owner of Windsor Industrial Development Laboratory Inc. (WIDL) in Windsor, Ontario, Canada. Now in its 15th year, the firm offers research & development services, including materials selection and characterization (testing) and computer-based analyses (FEA & CFD) in the automotive and industrial markets. Originally from Algeria, Chouchaoui dreamed of being an innovator from an early age. He attended boarding schools run by a variety of organizations in his home country, which he credits to giving him a broad perspective on learning and thinking. Always a top student, after graduating from the Polytechnic School of Algiers (Algeria, Algiers) and taking a year off to work on an engine design project for French Berlier, Chouchaoui was offered a scholarship by the Canadian International Development Agency (CIDA) to pursue his Master's degree in Applied Mechanics at the Polytechnic School of Montréal (Montréal, Québec, Canada). That was followed by another scholarship for his Doctorate degree in Materials and Computer Simulation at the University of Waterloo (Waterloo, Ontario, Canada). He received immigrant status in Canada in 1993 and joined JOH Rubber Inc. in Leamington, Ontario as an R&D engineer where he became head of the R&D department within two years. From there he moved to LDM Industries in Auburn Hills, Michigan, USA as a senior engineer where he was then assigned the responsibility of launching the company's underhood business (through acquisition, joint-ventures, and development of new technologies). He formed WIDL in 2001 from his basement and has since expanded the business, which now occupies a former abandoned industrial facility in Windsor.

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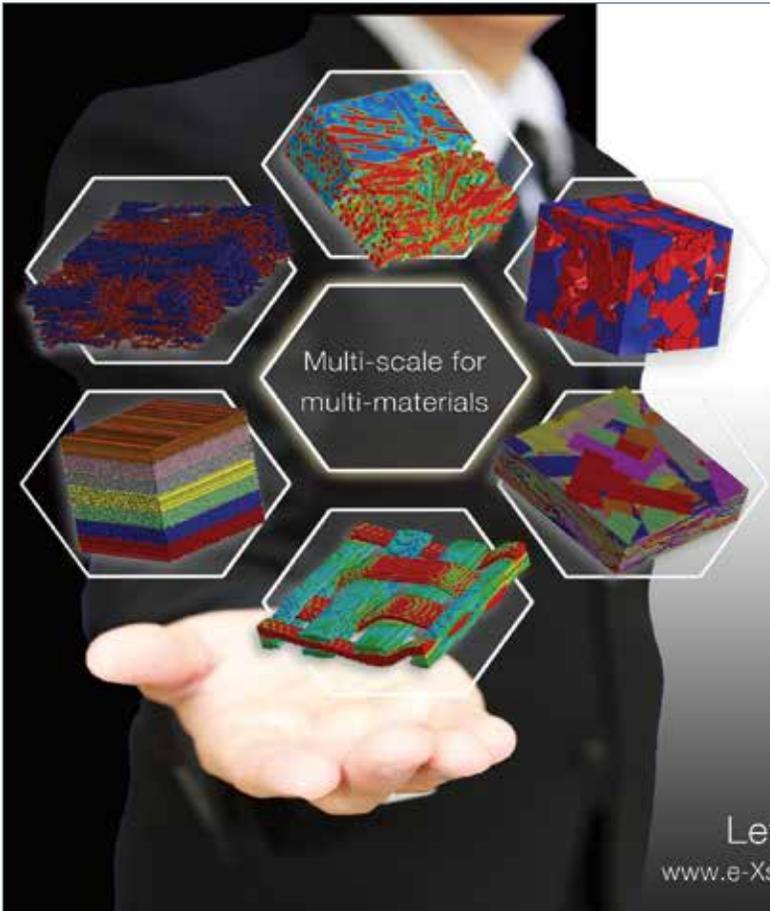
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SECRETARY'S REPORT

SPE Automotive Division Board

February 8, 2016 Minutes

Next board meeting April 11, 2016
at American Chemistry Council (ACC) office



ATTENDEES

Peter Bejin
Bonnie Bennyhoff
Teri Chouinard
Matt Carroll
Fred Deans

Brian Grosser
Jeff Helms
Norm Kakarala
Mark Lapain
Peggy Malnati

Mike Masserant
Yvonne Merritt
Al Murray
Nipanni Rao
Tom Pickett

Monica Prokopyshen
Suresh Shah
Dawn Stephens
Steve VanLoozen

Meeting was held at the ACC in Troy, 5:30 p.m. – 7:02 p.m.

EDUCATION – Monica Prokopyshen

Bonnie Bennyhoff is presenting the "Chemistry and Designing with Plastics" workshops at Explorathon®, March 23, 2016. The education summary for the Pinnacle report was circulated for review and submitted to Steve and Matt. Fred is meeting with tribal leaders at Great Lakes Composites Institute about SPE programs and student chapters. The institute is one of 5 nationally recognized Native American technical schools in the U.S.

MEMBERSHIP – Steven VanLoozen

Teri has taken over the membership committee and will follow up on recent lapsed memberships. Currently the division has about 1,100 members, with 475 lapsed. An additional request was made for Teri to evaluate how many of the OEMs recruited by the board renewed their memberships after one year. Goals for the year are recruiting new members and membership retention. There are still funds in the recruitment budget. The focus is on recruiting early career individuals.

Peter Bejin indicated that Ford approved a 2016 budget line item to enable early career, core technical Ford employees to attend conferences and become SPE members.

TREASURER'S REPORT – Bonnie Bennyhoff

The fiscal year is July 1 to June 30. As at Feb. 8, 2016 the account balances were:

Checking:	\$154,946.79
Savings:	\$27,441.72

Karen or Barb need to forward checks, mailed to the ACC address, to Bonnie for processing. The 2015 AutoEPCON check was deposited. Communications, marketing, and rent invoices were received since the last report.

COUNCILOR'S REPORT – Tom Pickett

Highlights of the February 5, 2016 Councilor Meeting included the following.

Financial Review – Cash was well managed and advertising and sponsorship revenues were up 30%. The SPE International audit is scheduled for March 2016.

Governance Reform – Scott Owens provided an update on the composition of the governance body, which will include representatives from sections, divisions, SIGs, and young professionals.

Virtual Elections - Wim De Vos discussed the move to virtual elections. The electronic election will start Monday, April 4th at 10:00 a.m. and end Monday, April 11th. Please refer to the Councilor's report and The Chain for further details.

2017 ANTEC – Suresh Shah

Suresh Shah & Matt Carroll volunteered to act as technical program co-chairs for next year's Automotive Division session.

2015 IAG – Jeff Helms

Final 2015 attendance was 650 – 670.

Revenue:	\$233,900
Expenses:	\$179,201
Exemptions:	\$ 10,713 (student tables)
Net Revenue	\$223,187
Less 6% SPE Royalty	\$ 13,391
Net Proceeds	\$ 41,308

The large ticket items were show production, \$68,350 (vs. \$68,800 in 2014) and facility costs, \$42,290 (vs. \$36,844 in 2014.) Net proceeds up \$16,000 over last year.

2016 IAG – Jeff Helms

Wednesday, Nov. 9, 2016: Theme – *Plastics: Innovation in Motion*

First Round Judging: Sept. 29-30, 2016

Blue Ribbon Judging: Oct. 10, 2016

Please submit recommendations for additional Blue Ribbon judges.

As of Feb. 8, there was one opening for an IAG category captain. Please contact Jeff Helms if you are interested.

MARCOM – Peggy Malnati

ACC: Sept. 7-9, 2016 The call for papers fliers were printed in late November for early December shows. Print ads are running in magazines and on websites globally and include the early-bird sponsors. The program guide template is complete. Rani Richardson of Dassault Systèmes is the 2016 chair. The Composite Division's Creig Bowland and Michael Connolly are technical program chairs. As of February 8th, there were 45 paid early-bird sponsors.

IAG: Duplicate trophy orders are still coming in for the 2015 event. As well, press releases and blog postings are still being picked up. The 2016 program guide cover art is complete, the website is updated, and ad swaps are complete.

SECRETARY'S REPORT

CONTINUED FROM PAGE 19

SPE website: The site was updated in December with a new header banner and side event buttons. On event pages, 2016 content was added. Jan 2016 holds the all-time record at 76,457 unique hits followed by Dec. 2015 (69,963) and Nov. 2015 (66,601). SPEAD doesn't pay for position.

Automotive Plastic News: The next issue goes to press at month end. The launch of a digital edition was proposed with provisions for print versions for marketing purposes.

Year-End Reporting: The Communications Excellence Report was submitted mid-January and the Pinnacle report was on target for submission by the Feb. 15 deadline.

Scholarships: The SPE Foundation will collect and administer the ACCE scholarships, but the ACCE team will determine the winners. Plans are in process to give two Dr. Jackie Rehkopf endowed scholarships in 2016 regardless of whether we reach our \$100K endowment goal (fund is currently at \$47,025 USD).

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SOCIETY OF PLASTICS ENGINEERS
AUTOMOTIVE & COMPOSITES DIVISIONS



2016 Automotive Composites Conference Shaping Up

Global Audience

The 2016 SPE Automotive Composites Conference & Exhibition (ACCE), scheduled for September 7-9 in the Detroit area (the Diamond Center at the Suburban Collection Showplace, Novi, Michigan, USA) is coming together well. Now in its 16th year, the ACCE attracts a global audience to the Motor City to discuss the latest advances in transportation composites. Typically attendees hail from 15 countries on five continents; OEMs from the automotive, commercial truck, agricultural equipment, off-highway, and aviation/aerospace industries are present along with their tier suppliers, materials and reinforcement suppliers and prepreggers, consultants, university and research institutes, media, and investment bankers.

Technical Program Growing

Organizers already have received abstracts for over 80 regular session talks and two keynotes, with around 100 expected for the final program. Although the deadline for abstracts has passed, and the deadline for non-commercial papers or presentations will be over by the time this issue arrives in your mailbox, the committee still has room for another 15-20 papers in the technical program. To submit, please go to <http://SubmitACCEpapers.com> and set up an account prior to submitting the abstract. Detailed instructions can be found under Forms at <http://speautomotive.com/comp>. Final draft of papers or presentations must be submitted by **July 15th** to allow time for peer review, so please act fast if interested. Technical sessions currently planned include:

- Additive Manufacturing & 3D Printing;
- Advances in Reinforcement Technologies;
- Advances in Thermoplastic Composites;
- Advances in Thermoset Composites;
- Bonding, Joining & Finishing;
- Enabling Technologies (process/machinery advances);
- Nanocomposites;
- Opportunities & Challenges with Carbon Composites;
- Sustainable Composites (recycled, bio-based, and natural fiber-reinforced composites);
- Virtual Prototyping & Testing.



Additionally, there will be a special eight-paper session on precompetitive research by the United States Council for Automotive Research LLC (USCAR, Southfield, MI, US) and its member companies on validation of material models for crash testing of carbon composite bumpers.

Keynotes are currently planned from Lockheed Martin, Local Motors, Institute for Advanced Composites Manufacturing Innovation (IACMI), Dassault Systèmes, and Plasan Carbon Composites, plus at least one panel discussion. A preliminary technical program should be published in late June/early July. Watch for it at <http://speautomotive.com/comp>.



Strong Support from Sponsors & Exhibitors

Thanks to a significant number of returning sponsors and exhibitors as well as some new ones, the conference is on solid financial footing. It's because of the support of sponsors/exhibitors that the ACCE planning committee is able to offer those who work directly for transportation OEMs as well as speakers free admittance to the show. It also helps the team keep registration fees (\$475 USD for members and \$575 USD for non-members, who also receive a free year of membership in SPE) for the three-day event very reasonable, especially when compared with many of the commercial organizations who have been holding conferences in the area. The ACCE attracted just under 1,000 attendees last year and is expected to set a new attendance record for 2016. At press time, support for the conference was being provided by:

- **Premier Plus Sponsors/Exhibitors:** Ashland Inc., Carver Non-Woven Technologies LLC, Hexion Inc. (also *Reception Sponsor*), and Core Molding Technologies, Inc.;
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- **Breakfast Sponsor:** SAMPE (Society for the Advancement of Material and Process Engineering);
- **Coffee-Break Sponsor:** Johns Manville;
- **Advertising Sponsors:** DSC Consumables, Inc. and Shear Comfort Ltd.; and
- **Media/Association Sponsors:** AutoBeat Daily, Automotive Design & Production magazine, China Plastics & Rubber Journal (CPRJ), CPRJ International, CompositesWorld, Industrias Plásticas, Noticiero del Plástico, Plastics Engineering magazine, Plastics News, Plastics Technology magazine, Plastics Technology México, PrototypeToday.com, Reciclado y Plasticos, Rubber Fibres Plastics International magazine, and TheMoldingBlog.com.

Learn more: <http://speautomotive.com/comp>; review 15 years of ACCE proceedings free: <http://speautomotive.com/aca>; register: <http://attendacce.com>.

16th-Annual

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Innovations in Automotive Composites: from Motor City to the World

ATTEND THE WORLD'S LEADING AUTOMOTIVE COMPOSITES FORUM

The Automotive and Composites Divisions of the Society of Plastics Engineers (SPE®) invite you to attend the 16th-annual SPE Automotive Composites Conference and Exhibition (ACCE), September 7-9, 2016 in the Detroit suburbs. The show – which has become *the world's leading automotive composites forum* – will feature technical paper sessions, panel discussions, keynote speakers, networking receptions, & exhibits highlighting advances in materials, processes, and applications technologies for both thermoset and thermoplastic composites in a wide variety of ground-transportation applications.

PRESENT BEFORE AN ENGAGED, GLOBAL AUDIENCE

The SPE ACCE draws over 900 attendees from 15 countries on 5 continents who are interested in learning about the latest composites technologies. Fully a third of attendees work for a transportation OEM, and roughly a fifth work for a tier integrator. Few conferences of any size offer such an engaged, global audience vitally interested in hearing the latest composites advances. Interested in presenting your latest research? Approved papers will be accessible to attendees on a cloud-based server and later will be available to the general public.

SHOWCASE YOUR PRODUCTS & SERVICES

A variety of sponsorship packages – including displays, conference giveaways, advertising and publicity, signage, tickets, and networking receptions – are available. Companies interested in showcasing their products and/or services should contact Teri Chouinard of Intuit Group at teri@intuitgroup.com.

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SOCIAL & MEMBERSHIP REPORTS

by Teri Chouinard,
SPE Automotive Div. Social Chair,
Membership Chair



Golf Outing Benefits Student Chapters

The 22nd-annual SPE Automotive Division golf outing will be held Tuesday, Sept. 6, 2016. Sponsorship is off to a great start with support pledged by returning Dinner sponsor, Plastic Engineering & Technical Services, Inc., (PETS) and returning Lunch sponsor, Celanese Corp. Returning Contest Hole sponsors include Neutrex/Purgex and ID Additives and Hole sponsors signed up to date include Ashland, Chromaflow, and Plasan Carbon Composites. The event also features Longest Drive, Closest to the Pin, and Longest Putt competitions, with prizes awarded to the winners to keep things lively and interesting. The scramble format makes it fun for all levels of play. Trophies for first, second, and third place teams make it competitive for more advanced golfers.

Please join us for a day of fun, fresh air and camaraderie at the award-winning Fieldstone Golf Club in Auburn Hills, Michigan, U.S.A. The course is consistently hailed as one of the decade's top three public golf courses in Southeast Michigan and features an exceptional variety of hole designs by renowned architect, Arthur Hills, who meshes the diverse landscape and wetlands with gently rolling fairways through majestic hardwoods. The division's annual golf outing attracts over 100 plastics industry professionals. Foursomes are only \$500 USD, which includes continental breakfast, lunch at the turn, and a nice buffet dinner. Sponsorships are still available. Your participation helps us to support SPE Student Chapters, which benefits the future of our industry. See: <http://speautomotive.com/golf>.



The winning team at the 2015 SPE Automotive Div. golf outing was from Plastic Engineering & Technical Services, Inc. (PETS).

SPE ACCE Welcome Reception

On Sept. 6, 2016, SPE ACCE and Automotive Div. golf outing attendees are invited to join us for a welcome reception in the Fireside Lounge at the Hyatt Place Hotel at the Suburban Collection Showplace in Novi, Michigan, U.S.A. where the 16th-annual SPE ACCE will be held. Guests can relax, network, and enjoy beverages and appetizers starting at 8 pm. Yes – this is the same day as our golf outing. ACCE attendees are encouraged to participate in both networking opportunities. See: <http://speautomotive.com/comp>.

Membership

May is looking like a good month for membership as we gained eight new members between May 1 and May 14, 2016. Companies represented by these members include Daimler Trucks, Flex –N-Gate, Radici Plastics, Zyve Technologies, and Monahan Products. Total division membership is currently at 964 active members, a 13% drop from the start of the year due to expiring memberships. Hopefully, these colleagues will renew and our numbers will look better by the next quarter. We will be contacting lapsed members and encouraging them to renew by reminding them about the numerous benefits of SPE membership, including:

- Industry information & solutions
- Career building and assistance with job searches
- Training & education, including access to a large database of technical papers and ongoing webinars
- Knowledge & networking
- The Chain™ social media resource exclusively for members
- Discounts at conferences & events

Additional benefits of membership in the Automotive Div. include:

- All the benefits above, plus
- Closer networking among automotive plastics industry professionals
- Key industry contacts and valuable relationship-building opportunities
- The "Automotive Plastics News" newsletter

Please share your thoughts about how the board can provide more value for membership and grow our division. Send your ideas to teri@intuitgroup.com or call +1.248.701.8003.



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Lunch	\$2000. USD	2 foursomes, signage & 100 fliers printed & distributed at the event promoting sponsoring company or its products
Dinner	\$3000. USD	3 foursomes, signage, company message / logo on dinner table centerpieces, 100 fliers printed & distributed at the event promoting sponsoring company or its products

<http://speautomotive.com/golf>

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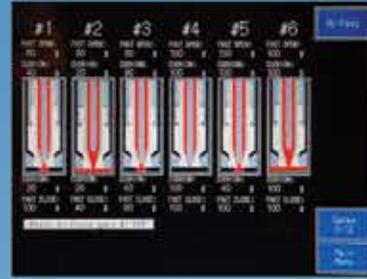
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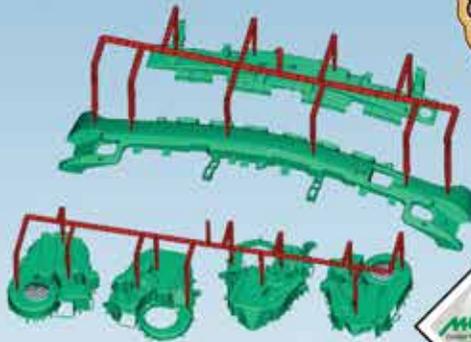
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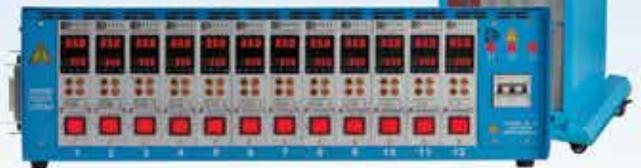
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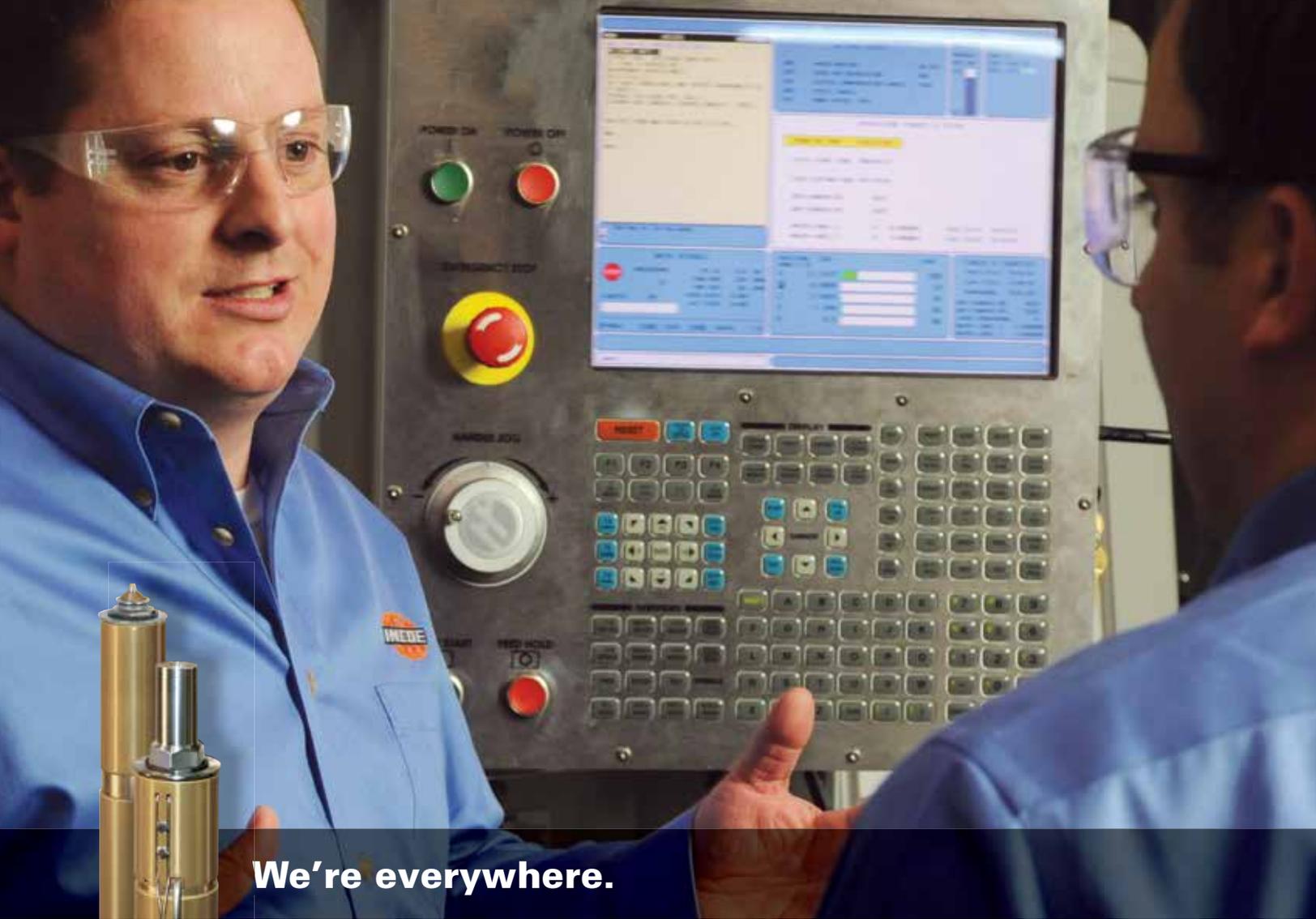
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