



SPE® to hold the Second Conference on Design & Development With Engineering Plastics

The Detroit Section and Automotive Division of SPE announced that they have teamed up to host a special 1-day technical conference and exhibition on advances in engineering plastics for the automotive industry. Called Design & Developments with Automotive Engineering Plastics, the event will be held April 24, 2007 at the Best Western Sterling Inn in Sterling Heights, Mich.

Said SPE Automotive Division past Chair, Dr. Norm Kakarala of Delphi, the person who envisioned this conference, "We're very excited about the Automotive Engineering Plastics Conference because it fills a unique niche in the educational efforts of both the Automotive Division and the Detroit Section in promoting the benefits of plastics to the automotive industry. We already have annual events focusing on thermoplastic polyolefins, thermoset and thermoplastic composites, and paint alternatives. We also put on a widely attended awards recognition event that covers all polymeric materials. So turning our efforts to highlight the role that engineering plastics are having in the automotive industry seemed a logical next step."

Both the Automotive Division and the Detroit Section of SPE are actively involved in holding technical conferences each year. Conferences are an important part of both groups' charter to help educate a broad spectrum of the automotive industry on the benefits of various polymeric technologies. The automotive industry's key decision makers have indicated that they find these conferences to be one of the most effective means of learning about rapid innovations and new uses for polymeric materials.

The 2007 Automotive Engineering Plastics Conference will feature technical presentations on the newest advances in materials technology, predictive engineering, process enhancements, and application developments for thermoplastic and thermoset engineering materials for the automotive industry. Tabletop exhibits will be on display throughout the event. A light lunch and an "After Glow", plus several coffee breaks will also be provided throughout the conference to allow further networking opportunities for all who attend.

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AUTO EPCON

Automotive Engineering Plastics Conference

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Treasurer's Report

John Fialka

The 2007 SPE Automotive Division Innovation Awards was a success with net proceeds exceeding \$40K. Income from the event was \$217K and expenses are \$175K. The bank account balance is in good standing at \$87K with \$60K in checking and \$27K in savings. The Automotive Division has donated \$32K in 2006 to support the PlastiVan outreach program. It is an educational program on plastics that is well received and appreciated at elementary and middle schools.

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Automotive Division Meeting Schedule and Special-Events Calendar

Division Board of Directors Meeting APC, Troy, MI	April 9, 2007
AutoEPCON Best Western Sterling Inn Sterling Heights, MI	April 24, 2007
ANTEC 2007 Duke Energy Center Cincinnati, Ohio	May 6-10, 2007
Division Planning Meeting Location TBD	June 2007
7 th -Annual SPE Automotive Composites Conference MSU Management Education Center, Troy, MI	September 11-13, 2007
37 th -Annual Innovation Awards Gala Burton Manor, Livonia, MI	November 2007

Automotive Division Board of Directors meetings are open to all SPE members. Call Mark Lapain at (248) 567.5455 for more information.



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Chairman's Message

Mark Lapain

The Automotive Division was recently informed by SPE International that we have been selected as a Pinnacle-Gold Award Winner for 2007. This honor is the culmination of a lot of hard work by numerous volunteers and reflects the progress we continue to make as a Division. Each of our key events - the Innovation Awards Competition & Gala, the Automotive Composites Conference & Exhibition (ACCE) and the Automotive Engineering Plastics Conference (AutoEPCON) - made significant improvements.

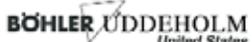
The income generated by these events has enabled the Division to expand its educational outreach, giving us the chance to impact new and diverse school districts and increase our scholarship funding. The Pinnacle Award will be presented to our Division at the "SPE Celebrates" banquet, during ANTEC 2007 in Cincinnati, OH. Accepting the award on behalf of the Automotive Division will be Nippani Rao of DaimlerChrysler, our Division Councilor. I want to sincerely thank the Board of Directors, Committee Chairs and all the volunteers who helped us win this prestigious award. Congratulations to all on this well deserved honor.

During ANTEC 2007, the Automotive Division will be holding a technical session that focuses on the latest developments in materials technology, design and testing for the automotive market. Tom Pickett of General Motors is the technical chair and Norm Kakarala of Delphi will be the moderator. I'd also like to recognize the technical review team, which included Tom, Norm, Jay Raison and Suresh Shah of Delphi, Michael Shoemaker and Kalyan Sehanobish of Dow Automotive. If you will be attending ANTEC this year, our technical session will be on the afternoon of Tuesday, May 8 at the Duke Energy Center.

The Automotive Division website has recently undergone some structural changes. The modifications enable us to directly edit the website's content ourselves, eliminating the need to use an outside supplier for simple text changes or to post updated flyers. The end result will be more timely and effective updates to keep members and attendees of our events better informed. Down the road, the next step will be to change the aesthetics and layout of the website. Special thanks to Peggy Malnati of Malnati & Associates and Monica Prokopysheh of DaimlerChrysler for leading this effort, which improves the dissemination of key information and interaction with Division members.

The next key event on the Automotive Division calendar is AutoEPCON, a one-day conference that focuses on advancements in engineering thermoplastics. It will be held on April 24, 2007 at the Sterling Inn in Sterling Heights, MI. The technical paper tracks have really come together and this conference promises to build on the success of last year's inaugural event. Twenty technical presentations have been lined-up, along with several keynote speakers and an industry panel. If you are interested in attending, please check out the AutoEPCON flyer within this newsletter.

In closing, I'd like to thank you for your membership in the Society of Plastics Engineers, and the Automotive Division. If you have any suggestions on how we can improve your membership experience or provide more relevant content at our events, please let us know. And if you think we're doing a good job, we'd like to know that too. A key objective of the Automotive Division Board is to make your SPE membership experience positive and helpful. Please let us know if we're succeeding. You can send comments to us from our website using the link at www.speautomotive.com/cont.htm. As always, I look forward to seeing you at our upcoming events.

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Parts and Executive Nominations Sought for the 37th-Annual Innovation Awards Competition

This year marks the 37th time the Automotive Division will hold its annual Automotive Innovation Awards contest and recognition program for the Year's Most Innovative Use of Plastics in transportation applications. Although the number of award categories, the duration and sophistication of the awards ceremony, and the number of nominations competing for the top prizes have all increased over the decades, the original purpose has not changed (see Sidebar A).

The Automotive Division is now accepting nominations for both this year's Parts Competition and the Executive Awards Competition. Nomination forms, competition rules, and flyers about each competition can be found at www.speautomotive.com/inno.htm.

"It's never too early to start working on this year's submissions for the SPE Automotive Innovation Awards Competition," says Brian Grosser, SPE Automotive Division chair-elect and the returning Automotive Innovation Awards event chair for 2007. "Competition is fierce for these coveted prizes and the most successful nominations are often those that receive the most careful preparation."

Parts Nominations for "Year's Most Innovative Use of Plastics"

SPE's Automotive Innovation Awards Competition is the largest competition of its kind in the world and is the oldest and largest recognition event in the automotive and plastics industries. Dozens of teams made up of OEMs, tier



suppliers, consultants, and polymer producers work for months to hone submission forms and presentations describing their part, system, or complete vehicle module and why it merits the claim as the year's Most Innovative Use of Plastics. An additional Hall of Fame category is awarded to parts that have been in continuous commercial production for 15 or more years. More recently, the event has also recognized outstanding leadership among automotive and plastics industry executives.

The SPE Automotive Division is currently accepting part, component, and module nominations in these categories:

- ✓ Body Exterior
- ✓ Body Interior
- ✓ Chassis / Hardware
- ✓ Environmental
- ✓ Hall of Fame
- ✓ Materials
- ✓ Performance & Customization (Automotive Aftermarket)
- ✓ Powertrain
- ✓ Process / Assembly / Enabling Technologies, and
- ✓ Safety



"Most Innovative Use of Plastics" Trophy

The SPE Automotive Innovation Awards Competition was started in 1970 to recognize the positive changes that polymer-based materials were bringing to the automotive industry, such as weight reduction, parts consolidation, and enhanced aesthetics and design freedom. At that time, 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 common use as decorative knobs and ashtrays, members of SPE's Automotive Division Board of Directors created the Automotive Innovation Awards Competition to recognize successful and innovative plastics applications and to communicate their benefits to OEMs, the media, and the general public. Over the years, the competition had the effect of highlighting plastics as an underutilized design tool and also drawing attention to more progressive ways of designing, engineering, and manufacturing automotive components.

From its humble beginnings, the SPE Automotive Innovation Awards Competition has grown to be one of the longest running and most fiercely contested recognition events in the plastics and automotive industries. And 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. In fact, without plastics, many of the auto industry's most common comfort, control, and safety applications would not be possible.

New Awards Recognize Executive Leadership

While SPE's Automotive Innovation Awards Competition has always recognized the teams of OEM, tier integrator / molder, toolmaker, and materials supplier that make innovation possible in automotive plastic components, since the year 2000 the event has also honored outstanding leadership among automotive and plastics industry executives. The Automotive Division is currently seeking nominations for executives in three award categories.

✓ The **Lifetime Achievement Award** recognizes the technical achievements of automotive industry executives whose work (in research, design, and engineering, etc.) has led to significant integration of polymeric materials in vehicles.



Barbara A. Sanders of Delphi Thermal Systems (with SPE Automotive Division Chairman, Mark Lapain) r the 2006 Lifetime Achievement Award.

✓ The **Executive Leadership Award** was started in 2004 and honors automotive executives who have demonstrated leadership in integrating polymeric materials on global vehicle platforms and who have been recognized both within the industry as well as in their community as leaders. While this award's recipient may not have been directly involved in fostering technical advances with polymers - as a recipient of SPE's Lifetime Achievement Award will have done - the honoree will have led his/her company to profitability, increased marketshare, and been at the helm of new vehicle launches that were considered a commercial success.

✓ The **Special Recognition Award** acknowledges a person or team that has made important contributions in the automotive plastics arena. The winner may be an individual contributor or may have led a team, and be employed in industry or academics. The area of contribution may be research, education, or engineering. A team may have developed and launched a vehicle of particular interest or a

unique new technology. Examples of good candidates for this award include the Vehicle Development Teams for plastics-intensive vehicles; Chief Engineers; Scientists who have developed new materials or enabling technologies to allow polymeric materials to work more effectively in transportation-industry applications; and Educators who have devoted themselves to advancing awareness and understanding about the benefits of plastic and rubber products.

Awards Gala Considered the "Best Networking Opportunity in Town"

Winners of the Automotive Innovation Awards Competition are announced at the Innovation Awards Gala, an annual event in November that typically draws 600 to 800 OEM engineers, automotive- and plastics-industry executives, and media. This glittering evening of celebration - unofficially called the "Academy Awards of the plastics and automotive industries" - honors innovation and the hardworking teams that bring it to market. This event has been described as "the best networking opportunity in town," by automotive executives attending the gala.

As is customary, proceeds raised from this event are used to fund SPE educational efforts and technical seminars, which help to secure the role of plastics in the advancement of the automobile and other forms of transportation.



The 2006 VIP cocktail reception (Sponsored by Ticona Engineering Polymers) was one of the absolute best networking opportunities in town, according to several supplier executives in attendance. OEM and Supplier executives were able to meet and interact with program sponsors and VIPs.



Auto EPCON

Continued from Page 1

The all-inclusive cost of attending the event is \$150 USD for non-SPE members, \$125 USD for SPE members, and \$50 USD for students. Members of the media are invited to attend the 1-day event at no charge. Pre-registration is recommended to speed entry into the conference. For media or individual registrations, please contact Patricia Levine, SPE Automotive Division, p.levine@yahoo.com or call +1.248.244.8993. For more information about the SPE Automotive Engineering Plastics Conference, visit the Automotive Division's website at www.speautomotive.com, or the Detroit Section's website at www.spedetroit.com.



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 applications, materials, processing, equipment, tooling, design, and development.

Auto EPCON Technical Presentation Schedule

April 24, 2007 - Best Western Sterling Inn, Sterling Heights, MI

Materials:

Morning Session

Moderators: Maria Ciliberti, Craig Dlugos, Ticona

Material Solutions for Sealed Engine Covers and Oil Pans
Patrick Granowicz, Dupont Automotive

High Performance Engineering Thermoplastics Made with Renewable Resources

Dr. Joseph Kurian, Dupont Automotive

Compatibilized Low Gloss ABS/PA Blend for MIC Interior and Exterior Applications

Vineet Kapila, BASF Corp.

Glass Fiber/Nanocomposite Mineral-Reinforced Polyamide for Engine Fans and Shrouds

Thilo Stier, A.Schulman Inc.

A New Cost Effective PBT Alloy for Automotive Applications
Thilo Stier, A.Schulman Inc.

Afternoon Session

Moderator: Tom Miller, BASF

PPS Compounds and Alloys Compatible with Alternative Fuels

Dr. William Sattich, Chevron Phillips Chemical

Company

PPS Compounds for Automotive Head Lamp Reflectors
Michael Greer, Chevron Phillips Chemical

Company

Development of High-Flow, Hydrolysis-Resistant Polyester for Automotive Connectors

Kenneth Price, Ticona/Molex

Engineering Resins for non-Painted Appearance Applications

Bruce Mulholland, Ticona

Innovative High Strength Glass Microspheres for Extruded and Injection Molded Plastics

Andrew D'Souza, 3M Automotive

Design & Applications:

Morning Session

Moderators: Dr. Jay Raison, Dr. Suresh Shah, Delphi

Crystallization Rate Control of PA 66/6I Polymers for MIC Body Exterior Structural Components

Jim Dutchik, Asahi Kasei Plastics North America

Electrostatic Charge Mitigation – Acetals in Fuel Applications

Dr. Jeremy Klug, Ticona

Improving Structural Analysis Using Moldflow's MPI and BASF's FIBER

James Mcguire, BASF

Big Science – Part by Part

Volker Plehn, Dupont Automotive

RIM Technology for Integrated Skin & Foam Interior Skins
Michael Shoemaker, Dow Automotive

Afternoon Session

Moderator: Sandra McClelland, Chevron Phillips

Color Infusion Advancements: An Automotive Applications Enabling Technology,

Doug Stratton, Bayer Material Science

Designing Successful Rocker Covers in PA66

Charles Taylor, Solutia, Inc.

Flexible Designs Using Bonded Hybrid Approach for Front End Modules

Ashish Kotnis or Samar Teli, Dow Automotive

Blow Molded Seatbacks that Meet Luggage Retention Requirements

Keith Kauffmann or Samar Teli, Dow Automotive

Gas or Water Assist Molded Under the Hood Components
Greg Crawford, GAIN Technologies

SPE Automotive Composites Conference Returns with Exciting Changes for 2007

Theme Highlights Composites' Roles in Driving Performance and Productivity

After a record-breaking year in 2006, the SPE Automotive Composites Conference & Exposition (ACCE) returns this September for its 7th-annual technical program, exhibition, and networking receptions. The organizing committee is hard at work planning this year's event and hopes to make the 2007 conference the largest and best yet.

The ACCE is cosponsored by the Composites and Automotive Divisions and is considered to be the world's leading automotive composites forum. As such, it draws exhibitors, speakers, and attendees from Europe, the Middle East, and Asia / Pacific as well as North America.

Last Year's Conference Breaks Numerous Records

Last year's ACCE conference drew record attendance thanks to a significantly expanded program with more technical papers, keynote presentations, panel discussions, networking receptions, sponsors, and exhibit space than any previous show in the event's history.

Attendees came not only from the United States and Canada, but also from Australia, Germany, India, Italy, Japan, Korea, New Zealand, the Netherlands, and the United Kingdom.

Of those attending last year's conference, one-third were from transportation OEMs and more than 15% represented Tier suppliers - extremely desirable numbers for a show like this. Another quarter of those attending identified themselves as being from resin suppliers, compounders, or distributors, or producers of prepregs or sheet-form composites. Additives and reinforcements suppliers and distributors made up another 10% of those who attended the event.

The remaining attendees represented machinery OEMs and distributors, consulting firms, testing or engineering services companies, universities, trade associations or engineering societies, media, government agencies, and venture capital / financial-services organizations.



Dates, Location for '07 Conference

The 2007 event is September 11-13 at the MSU Management Education Center in Troy, Mich., a suburb of Detroit. This location has been home to the conference since its inception in 2001. As with last year's program, the conference is once again 3 days and will take over the entire facility.

Dale Brosius, executive director and chief-operating officer for Quickstep Technologies Pty. Ltd., and immediate past chair of SPE's Thermoset Division, is returning as ACCE program chair in 2007. He said, "This year's conference theme is 'Driving Performance and Productivity,' which reflects the challenges facing automakers and the supply community. Consumers continue to demand higher performance in their vehicles - faster acceleration, better style and comfort, higher electronics content, and improved fuel economy - yet remain unwilling to sacrifice features like cost, safety, and vehicle size.

Fortunately, the low mass, energy management, and design freedom of composites can help OEMs achieve these often conflicting objectives. The supply community is working hard to address issues like global competitiveness and cost pressures facing the OEMs, as many of the displays, papers, and keynote addresses presented at the ACCE each year demonstrate."

According to Dr. Frank Henning of Fraunhofer Institut Chemische Technologie (ICT) in Germany, who is the returning ACCE program vice-chair and technical

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ACCE 2007

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program co-chair, "Our committee has been hard at work since October reviewing areas for improvement and planning the 2007 show. It is our goal to maintain our reputation as the leading forum for automotive composites discussion in the world. To do that, we search internationally for the most innovative technology and applications we feel are advancing the field of ground transportation. We also listen to feedback from our attendees and try to plan our technical program around topics they identify as being important."

Brosius adds "We'll continue to pursue an even stronger international flavor in 2007, as good automotive composites ideas are being developed all over the world, and we feel Detroit is still the best place to present them to the global automotive community."

Call for Papers Issued; 2007 Program Begins to Take Shape

The organizing committee has already issued a Call for Papers for peer-reviewed technical presentations and keynote addresses for this year's show. Authors wishing to be considered for inclusion in this year's program should submit abstracts as soon as possible, and full papers (or slide presentations) by May 31, 2007 for peer review. Final corrected papers or presentations in the conference format are due by July 31, 2007 to assure inclusion in the conference's annual proceedings, which is published on CD and

given to all attendees. Abstracts and papers should be e-mailed to ACCEpapers@gmail.com.

"Our committee searches the globe to find composites technologies that can answer OEM challenges," explains Henning. "We work hard to assemble quality presentations and invite key exhibitors to highlight the types of solutions that composites can provide automakers."

Continues Brosius, "For example, we're planning a panel discussion on Marketing the Value of Composites, which we feel will not only help startup technology companies, but also better explain composites' value proposition to OEMs and tier suppliers. We're also seeking keynote speakers from the wind-energy and aviation industries - both large consumers of carbon-fiber and fiberglass composites - to help highlight areas of potential technology transfer for ground transportation. And, responding to requests at last year's OEM panel discussion, we've added a new technical track on design and analysis of composites."

Topics already identified by this year's planning committee include: Advances in Thermoset and Thermoplastic Composites; Bio- & Natural Fiber Composites; Recycling of Composites; Bonding, Joining, & Finishing of Composites; Enabling



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ACCE 2007

Continued from page 8

Technologies; Nanocomposites; New Composite Materials & Processing; Structural Composite Applications, and Virtual Prototyping & Testing of Composites. In addition, conference planners are already working on this year's panel discussions, which tend to be among the most lively and well-attended discussions at the conference each year. The committee is also seeking keynote addresses that will be of particular interest to the automotive composites industry.

New for 2007 - Best Paper Awards

For the first time in its seven-year history, the organizing committee will bestow three "Best Paper" awards at the conference to recognize excellence in technical writing. The winning entries will be selected from among written papers (not slide presentations) submitted for peer review in the categories of New Materials, Processing / Enabling Technologies, and New Composite Applications. Winning authors will receive plaques commemorating their achievement during a special ceremony at this year's conference.

Graduate Scholarships for Composites Research

Another change for this year's program is the decision to use proceeds from the 2006 program to fund two scholarships for graduate research in composites that will have potential impact on ground transportation and particularly the automotive industry. The committee hopes to give scholarships annually and to have the prior year's winners present their work at the current year's conference.

This year, two scholarships - each for \$2,000 USD - will be given in honor of long-time journalist and composites-industry insider, Steve Loud.

All Exhibits Together in Ballroom

Yet another important change for the 2007 program is that all exhibits will be together in the ballroom rather than spread out over four rooms on the west side of the building. This will make it easier for attendees to visit all the exhibitors during breaks to get a sense of the range of products and technologies available to solve their design and production problems. Also, it will ensure all exhibitors have good traffic, since food and beverage for

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ACCE 2007

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breakfasts, breaks, and evening receptions will be in the ballroom. Lunch will be moved to the rooms previously used for exhibits on the west side of the building.

Sponsorship, Attendance Prices Held

Even though the conference has continued to grow, and more benefits have been added to the program each year, costs to sponsor, exhibit, and attend have been kept low to encourage participation.

Costs for sponsorship have not changed since 2003, when the event was only 2 days. Sponsorship is still \$4,000 USD for Premier and \$2,000 USD for Associate levels, and an additional \$500 to add a tabletop display or 8-ft booth. Attendance fees have not increased since 2005, when the conference went from 2 to 3 days. The cost is still \$349 USD for SPE members and \$449 for non-SPE members or for renewing SPE members. The \$449 fee includes 1 year of membership in SPE, so many active members choose to renew at the conference to save \$18 on their membership fees.

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 applications, materials, processing, equipment, tooling, design, and development.

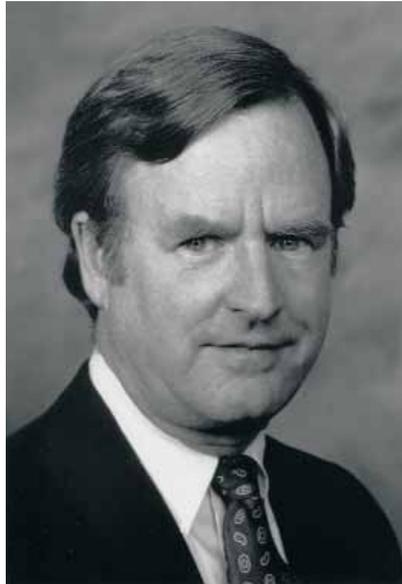


The SPE Automotive Division website (www.speautomotive.com/comp.htm) is a good place to find forms, press releases, papers or presentations of interest from prior years' conferences, as well as updates on the current year's program schedule, so please check back often.

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ACCE Scholarships for Graduate Research in Composites to be Given in Honor of Journalist, Steve Loud

The first SPE ACCE scholarships for graduate research in composites will be given this year in honor of longtime composites industry insider and journalist, Steve Loud, who died last summer.



"I think Steve could have easily worn the title of 'Mr. Composite,'" his wife, Susan Loud says. "He was such a believer in the composites industry and did his best to support it and move it forward during his 43-year career."

Steve was born in Detroit and grew up in nearby Birmingham, Mich. in a family that worked for the auto industry. He received a degree in Business from the University of Michigan in 1963 and began his career at Owens Corning in sales and marketing, where he stayed for the next 18 years. In 1981, Steve moved his family to California to become vice-president of Teledyne Ryan before starting his own company, Composites Worldwide. With his wife, Susan, he published award-winning print and online newsletters on high-performance composite materials and processes, plus maintained the Composites News supersite on the Web.

Throughout his career, Steve was a members and supporter of a number of professional organizations and conferences. He was a SAMPE member for over 25 years and was named a Fellow in 2002. He was also a member of SPE, ACI, ASCE, ASM International, COBRAE, EPTA, SAE, SAMPE-Europe, SAMPE-Japan, SME, TISP, and TRB. He was active in the SME / CMA, Composites Europe (EuCIA), and JEC Composites shows, and JISSE.

Both Steve and Susan were also media sponsors and big supporters of the SPE ACCE and the Innovation Awards Gala, which for them "felt like coming home," said Susan Loud.



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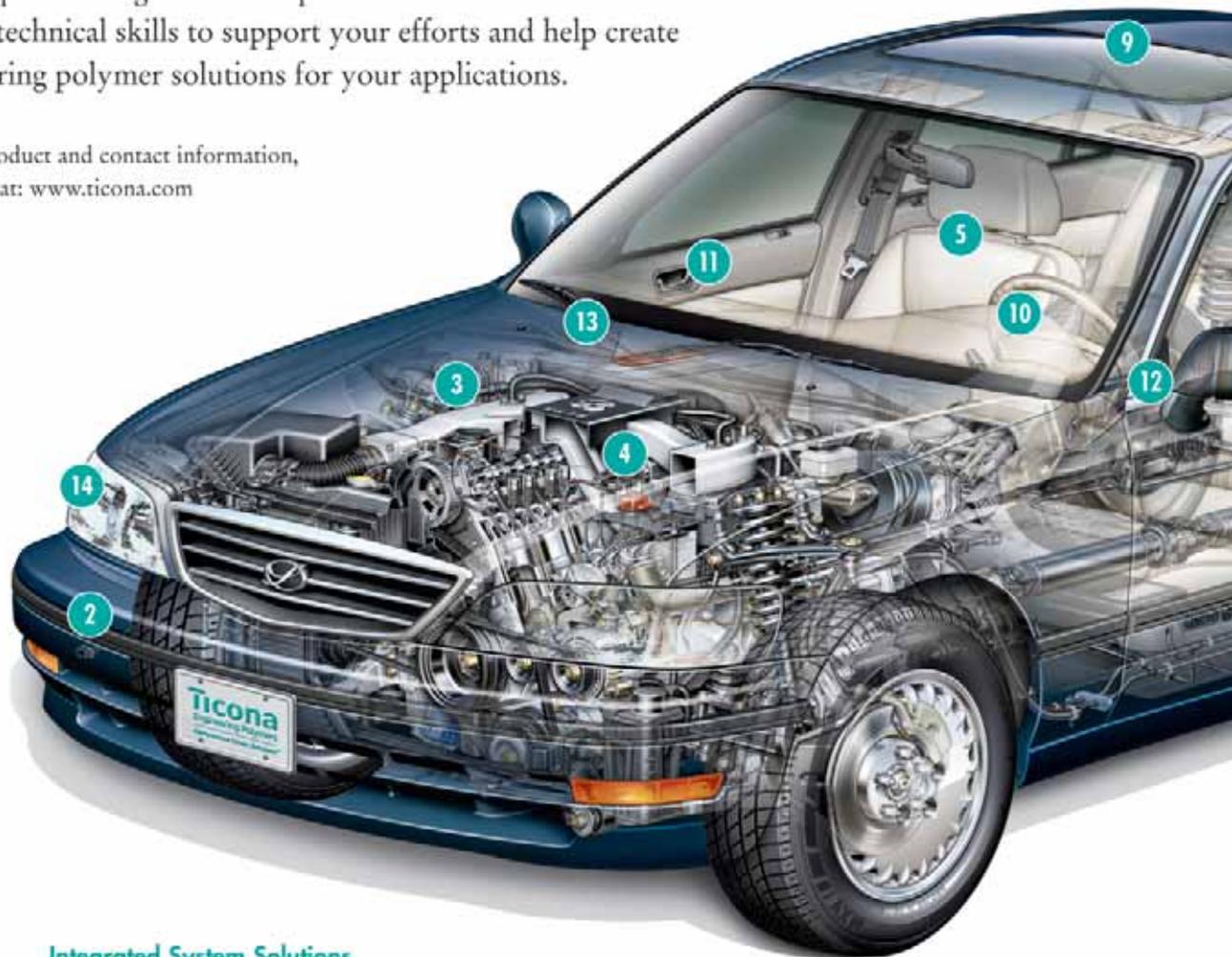
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SPE® Automotive Composites Conference Scholarships

The Automotive & Composites Divisions of the Society of Plastics Engineers International (SPE) have collaborated since 2001 to organize and host the **SPE Automotive Composites Conference & Exposition**. The conference has become the *world's leading automotive composites forum* and draws speakers, attendees, sponsors, exhibitors, and media from around the world to discuss the latest advances in automotive composites materials, reinforcements, processing methods, enabling technologies, virtual prototyping, bonding / joining, secondary finishing, and, of course, applications.

In 2006, the Divisions approved a set-aside from the conference's proceeds to fund several scholarships for graduate students attending an approved college or university anywhere in the world and doing graduate research that has potential impact on the automotive composites industry. Students interested in applying for these scholarships should fill out the application form on the next page and should also submit a 2-page



description of the work they plan to do and how that research will help advance the use of composites in automotive or other ground-transportation applications. Also required is a letter of recommendation by the student's academic advisor / mentor. The student's research need not focus specifically on an automotive application if a strong-enough case is made that the research ultimately has application in the automotive industry. Deadline for submitting an application is June 30, 2007.

Currently there are **2 scholarships of \$2,000 USD each will be awarded** to 2 students. All applicants should have demonstrated or expressed an interest in the polymer composites field based on course load and/or research projects.

They should be preparing for a career in the plastics or composites industries and with an interest in automotive applications, such as: plastics engineering, composites engineering, polymer science, chemistry, physics, chemical engineering, mechanical engineering, aerospace engineering, automotive engineering, or industrial engineering. All applicants must be in good standing with their colleges or universities at the time they apply for the scholarships. In case of a tie, financial need may become a consideration in the selection process.

SPE will select the winning students in July during peer review meetings on the conference's technical program. Both students and faculty advisors will be notified by fax, e-mail, or phone on or before August 1, 2007. The awards will be announced to media just before the conference, although the checks will be available early August in time for Fall Semester. Students or their advisors may also pick up the checks at the SPE Automotive Composites Conference, which this year falls September 11-13, 2007 in Troy (Detroit), Michigan, USA.

A final research summary report on the results of the student's research is due back to conference organizers by June 30, 2008 and the scholarship recipients (or a student or faculty member from their school) are expected to attend the 2008 ACCE conference to present their findings.

Application Criteria

1. Applicants must be full-time graduate students currently enrolled in a graduate program at an accredited college or university who have demonstrated interest in the plastics /composites industry by academic major, extra classes, and research work. Applicants must also be in good academic standing with their school at the time they apply.
2. Applicants must be engaged in a Master's or Doctoral thesis or other research that involves the use of composites (or composite reinforcements or additives, or composite processes or finishing, or composite prototyping, or design of composite applications). The work must have some applicability to the automotive or ground-transportation industries. The stronger the link made between the research and the use of composites in the automotive industry, the greater the chance of winning a scholarship.
3. Financial need of applicants may be a consideration in selecting recipients of the scholarships in the event of a close tie.
4. Applicants should submit the application form (next page), a 2-page description of their research project and how it impacts the field of automotive composites, a *curriculum vitae* (CV) of their background, and a letter of recommendation from the faculty advisor / mentor who will oversee the research.
5. Students should plan to submit a research report to the committee by June 30, 2008 and to attend the 2008 ACCE conference (mid-September) to present their findings to conference attendees.

The SPE ACCE Scholarship Application Form for the 2007-2008 School Year

Name of Applicant: _____
(Family Name) (First Name)

College / University Attending in 2007-2008 _____

Mailing Address at School (include Street or Dorm Room if necessary to deliver mail)

Phone #: _____ eMail Address: _____

During School, Applicant is Living: With Parents On-Campus Off-Campus (Independently)

During 2007-2008, Applicant is: Undergraduate Student Graduate Student Age: _____

Current Course of Study: _____ Target Graduation Date: _____

Projected Degree: _____ Previous Degrees Held (indicate degree, year, & issuing school):

Applicant's Citizenship: _____ Number of Dependents: _____

Name & Contact Information for Academic Advisor on Research Project: _____

Briefly Describe Proposed Composites Research Topic & its Relevance to the Automotive / Ground
Transportation Industry: _____

Please enclose this form (filled out) along with a letter of recommendation from the Academic Advisor who will oversee your research and a 2-page overview of your proposed research topic. In your overview, please discuss the relevance of your research topic to polymer composites (may include such topics as composite resins or reinforcements, nanotechnology, bio composites, natural fiber reinforcements, other reinforcements or additives, composites processing or finishing, composites prototyping or analysis, or transportation applications for polymer composites). Also indicate how this research could have impact on the automotive or ground-transportation markets. If you have done previous work in this area, please indicate your research results (including where this work has been published). All 3 documents (this form, reference, and research proposal) should be e-mailed to: ACCEpapers@gmail.com or mailed to SPE ACCE Scholarship Committee, 1800 Crooks Road, Troy, Michigan 48084 U.S.A., phone: +1.248.244.8990. Paperwork must be received by SPE no later than June 30, 2007 to be considered for the 2007-2008 academic year:

SPE's Plastics Environmental Division Announces 2007 Environmental Award Winners

The Plastics Environmental Division is pleased to announce the winners of the 2007 Plastics Recycling and Sustainability Awards which were presented during SPE's Global Plastics & Environmental Conference (GPEC®) recently held March 6-7th at the Florida Hotel & Conference Center in Orlando.

Through these awards, SPE's Plastics Environmental Division recognizes corporations and other institutions that have demonstrated environmental leadership and excellence through significant achievements in a variety of environmentally responsible categories. The 2007 winners include:

- New Technologies in Processes:** GE Plastics of Mt. Vernon, IN, for their Valox iQ* and Xenox iQ* Resins, which are synthesized from used plastic PET beverage bottles, helping conserve oil and lowering emissions through more efficient manufacturing.
- New Technologies in Materials:** Cereplast, Inc. of Hawthorne, CA, for their proprietary bio-based resins, which are used as substitutes for petroleum-based plastics offering price stability and competitive costs compared to traditional resins.
- New Technologies in Renewables:** InterfaceFABRIC of Grand Rapids, MI, for their Biobased Fabric Composting Project, in which the company's bio-based Terratex® fabrics were transformed into a compost material that is suitable as a high quality soil amendment that can be sold to local landscape companies.
- Design for Sustainability:** Battelle Memorial Institute and Ohio Soybean Council of Columbus, OH, and Advanced Image Resources, LLC of Alpharetta, GA, for their biobased resins and toners that provide users with seamless, environmentally friendly printing and copying alternatives.
- Emerging Technologies:** Cargill, Inc. of Wayzata, MN, for their Bio-based Polyols- BiOH™, which are used in major urethane applications, including flexible foams, and offer unique advantages over petroleum-based foams.
- Enabling Technologies in Processes & Procedures:** Argonne National Laboratory of Argonne, IL, along with the USCAR Vehicle Recycling Partnership, and the Plastics Division of the American Chemical Council, teamed together to develop End-of-Life Vehicle (ELV) Recycle Technologies that enable the optimum recycling of plastics and other materials from ELV's.
- Plastics Recycling:** Los Angeles Fiber Company of Vernon, CA, for their recycling and recovery of Post Consumer Carpets (PCC) in which their production process, logistics system and sales programs all work together to divert 100 million pounds per year of post consumer carpet from our nation's landfills.
- Plastics Recycling:** Advanced Environmental Recycling Technologies (AERT), Inc. of Springdale, AR, for their composite building materials from recycled polyethylene and wood, which can be used as an alternative to traditional wood products for exterior applications such as decking, trim, fencing, and door and window components.
- Dan Eberhardt Memorial Environmental Stewardship:** Carpet America Recovery Effort (CARE) of Dalton, GA is a non-profit organization promoting post-consumer carpet recycling, in which the recovery, reuse, and recycling of discarded post-consumer carpet is made possible before it finds its way into America's landfills. This effort to date has diverted about 500,000 million pounds of post consumer carpet from our landfills.



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New Textile Composites with Thermo-Regulating Properties for Automotive Interior Applications

B. Pause, Textile Testing & Innovation, LLC.

Abstract

Energy can be saved and the thermal comfort inside the passenger compartment can be enhanced by the application of textile composites with thermo-regulating properties. The thermo-regulating properties are provided by the application of phase change material (PCM) - a highly productive thermal storage mean. In order to create the textile composites with thermo-regulating properties the PCM is contained in a polymeric film that is laminated to a textile carrier. A study has indicated that the application of the developed composites is especially beneficial in car seats, headliners and instrument panels.

In the paper, specific solutions for the application of the textile composites in car seats, headliners and instrument panels will be introduced and test results, received in rigorous field tests, will be discussed.

Introduction

On hot summer days, the temperature inside the passenger compartment of an automobile can rise substantially, especially when the car is parked outside and is exposed to direct sun irradiation. In order to stabilize the interior temperature while driving the car, many models are equipped with air-conditioning systems; however, providing a sufficient cooling capacity requires a lot of energy.

Energy can be saved and the thermal comfort inside the passenger compartment can be enhanced substantially by the use of new textile composites with unique thermo-regulating properties. The thermo-regulating properties are provided by the application of phase change material (PCM) - a highly productive thermal storage mean.

Phase Change Material (PCM)

Phase change material (PCM) possesses the ability to change its physical state within a certain temperature range. When the melting temperature is obtained in a heating process, the phase change from the solid to the liquid state occurs. During this melting process, the

PCM absorbs and stores a large amount of latent heat. The temperature of the PCM and its surroundings remains nearly constant throughout the entire process. In the reverse cooling process, the latent heat stored in the PCM is released into the environment in a certain temperature range, and a reverse phase change from the liquid state to the solid state takes place. During this crystallization process, the temperature of the PCM and its surroundings remain nearly constant. When the phase change is complete, a continued heating / cooling process leads to a further temperature increase / decrease. The absorption or release of high amounts of latent heat without a temperature change is responsible for the appeal of the PCM as a suitable heat storage mean.

In order to compare the amount of latent heat absorbed by a PCM during the actual phase change with the amount of sensible heat absorbed in an ordinary heating process, the ice-water phase change process will be used for comparison. When ice melts, it absorbs an amount of latent heat of about 335 J/g. When the water is further heated, it absorbs an amount of sensible heat of only 4 J/g while its temperature rises by one degree Celsius. Thus, water needs to be heated from about 1 °C up to about 84°C in order to absorb the same amount of heat which is absorbed during the melting process of ice.

In addition to ice (water), more than 500 natural and synthetic PCMs, such as paraffins and salt hydrates are known. These materials differ from one another in their phase change temperature ranges and their latent heat storage capacities.

Suitable Locations for the PCM Application in the Passenger Compartment

In order to determine where the PCM should be located inside the passenger compartment to thermally control the automotive interior, a preliminary study of the temperature development in different locations of the passenger compartment has been carried out. As a result of the study, the following locations were selected for the PCM application:

- headliner;
- instrument panel;
- seats.

PCM Application in the Headliner

In the headliner application, a non-combustible salt hydrate-PCM is used via embedding in a one millimeter thick polymeric film. A textile composite has been created in which the PCM-film is arranged between the décor fabric at the bottom of the headliner and its intermediate foam layer. The PCM starts to absorb latent heat when its temperature rises above 30 °C. The PCM integrated in the headliner possesses a latent heat storage capacity of about 240 kJ. This amount of latent heat absorption of the new PCM-treated headliner is equivalent to the heat absorption of a common headliner whose temperature rises by about 100 °C.

In a closed passenger compartment, hot air, which builds up mainly by exposure to sunlight through the windows, moves to the top and heats up the headliner. As a result, the headliner's temperature rises continuously. If PCM is applied to the headliner, it will absorb the heat without a further rise in its temperature until the PCM's melting point is reached. Based on the latent heat absorption by the PCM, the normal rise in the headliner's temperature is delayed significantly.

The thermal control feature of the PCM keeps the temperature inside the passenger compartment at a comfortable level without the need for an external energy supply. This is especially beneficial when the car is parked outside and exposed to direct sun irradiation. During the parking period, the passenger compartment in which PCM is applied to the headliner does not overheat. As a result, a lower cooling capacity is needed at the beginning of the driving process, which especially helps to save energy.

Calculations were made for a midsize car with an interior volume of about 2.5m³ and a headliner area of about 1.5m². Furthermore, an air-conditioning unit with an approximate air flow of 250 kg/h and an initial air temperature of about 9 °C were considered. Based on these assumptions, energy savings of about 25 % have been calculated. The heat stored in the PCM might be released through the roof into the environment during driving periods of the car or as a result of the overnight cooling.

The temperature development in the headliners with and without PCM during a 60-minute parking period and a following 60-minutes driving period is shown in Figure 1.

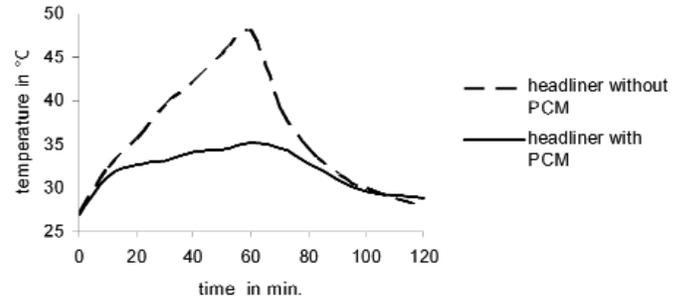


Figure 1

Temperature development at the bottom of the headliner

A side benefit of the newly developed headliner with PCM is the improvement in the headliner's noise absorption. Figure 2 shows test results received for headliners with and without the PCM-film application.

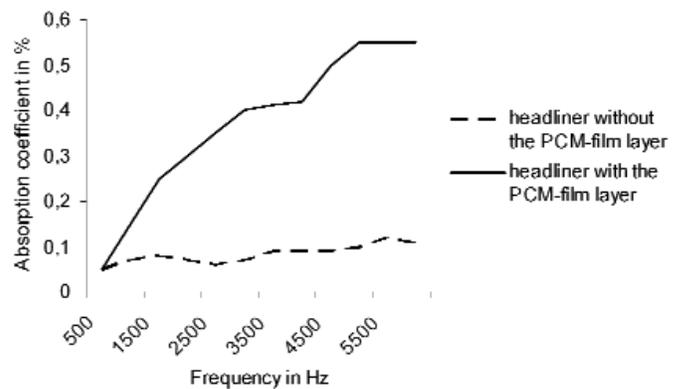


Figure 2

Noise absorption of the headliner

PCM Application in the Instrument Panel

In its instrument panel application, the PCM is embedded in a polymeric film which is attached to the back side of the PVC-cover material. The selected non-combustible salt hydrate-PCM absorbs latent heat when its temperature rises above 35 °C. Due to the high demand for the latent heat absorption, a much larger amount of PCM is used in the instrument panel in comparison to the headliner. The latent heat storage capacity of the PCM applied to the instrument panel totals about 600 kJ.

Applied to the instrument panel, the PCM absorbs heat that penetrates mainly through the windshield into the passenger compartment. During the latent heat absorption of the PCM, the temperature of the instrument panel remains nearly constant at a comparatively low level. Because of the constant low temperature of the instrument panel, it releases less

heat into the passenger compartment, which leads to improved thermal comfort, reduces the cooling requirements for the passenger compartment, and, therefore, results in energy savings.

Additional energy savings of about 15% are estimated for the PCM application in the instrument panel. By using PCM in the headliner and the instrument panel, overall energy savings of up to 40% are obtained. Furthermore, due to a reduction in its temperature fluctuations, the aging process of the instrument panel's cover material is delayed substantially.

PCM Application in the Seat

In the seat application, the PCM is embedded in polymeric film patches that are arranged on top of the seat's foam cushion. The applied PCM absorbs latent heat when its temperature rises above 30 °C. It possesses a latent heat storage capacity of about 100 kJ.

By the PCM application to a car seat, the thermal seating comfort is improved significantly, especially on hot summer days. The PCM absorbs surplus heat stored in the seat cover and heat released from the driver's body as soon as the driver starts occupying the seat. The heat transfer away from the seat's surface and the heat absorption by the PCM arranged inside the seat leads to an instant drop in the microclimate temperature until a comfortable level is reached and is maintained. Figure 3 shows the temperature development in the microclimate for seats with and without PCM-treatment.

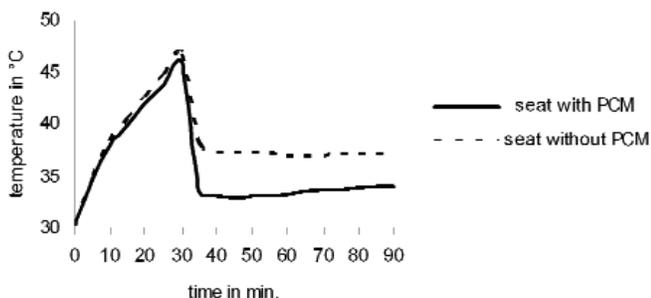


Figure 3

Temperature development in the seat's microclimate.

In the 30-minutes parking period at the beginning of the test, the cover of the empty seat absorbs a substantial amount of heat which leads to a rise in the microclimates temperature. When the driver starts sitting in the seat the heat from the cover material is normally transferred to the driver's body which initially

leads to a decrease of the microclimate temperature. Afterwards, the microclimate temperature remains at an uncomfortably high level of about 38°C. If PCM is used inside the seat, the heat absorbed by the cover material is transferred to it as soon as the driver starts sitting in the seat. The weight of the driver's body compresses the seat's cover layer which leads to a sufficient heat transfer to the PCM and away from the body. The heat transfer to the PCM results in a substantial drop in the microclimate temperature. The microclimate temperature remains then at a comfortable level of about 33 °C.

By keeping the microclimate temperature in the comfort range, the driver's body perspires less than usual under such circumstances leading to an improvement in the overall seating comfort. Test results of the development in the microclimate's moisture content are summarized in Figure 4.

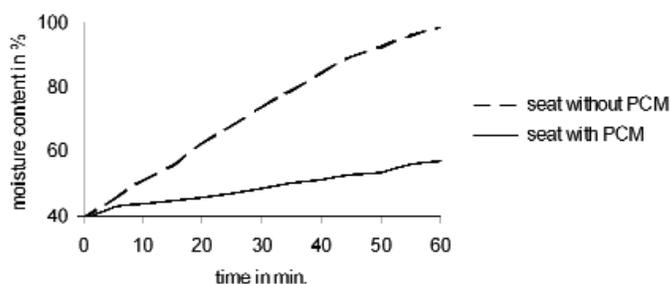


Figure 4

Development of the moisture content in the seat's microclimate.

Summary

The investigations have shown that PCM offers substantial benefits in applications involving the thermal management of an automotive interior. The PCM application in the headliner and the instrument panel provides a suitable mean to thermally control the automotive interior without the need for an external energy supply. Based on the thermal control feature of the PCM, the necessary cooling capacity of currently used air-conditioning equipment can be reduced, which leads to substantial energy savings.

In addition, the PCM application increases the thermal comfort inside the passenger compartment, and could delay the aging process of the cover material of the instrument panel. Applied to the seats, the PCM improves their thermal comfort substantially, especially on hot summer days. The PCM-film application in the discussed components is durable, maintenance free and does not require the use of any external energy supply.

Meeting Minutes - Automotive Division Board Meeting - February 5, 2007

by Tom Pickett, Division Secretary

Attendance:

Mark Lapain, Tom Pickett, Brian Grosser, Kevin Pageau, , Josh Madden, Nippani Rao, Ed Garnham, John Fialka, Leah Karibian, Bonnie Bennyhoff, Suresh Shah, Jay Raisonni, Marcie Kurcz, Jackie Rehkopf, Teri Chouinard, Ron Price, Peggy Malnati

Meeting Called to Order. Chairman Mark Lapain called meeting to order at 5:44 PM. Meeting minutes recorded by Secretary Tom Pickett.

Opening Comments. Mark Lapain reviewed the chair's objectives with the board. He indicated that we were successful in key events such as the Composites Conference and the Innovation Awards. The next big conference is Engineering Plastics Conference (EPCON) that is on track to be as good as last year.

Auto EPCON. Tom Pickett informed the Board that the EPCON Planning Committee is actively working on the conference. The EPCON conference on Design & Development of Engineering Plastics for automotive will take place April 24, 2007 at the Best Western Sterling Inn Sterling Heights, MI. The conference co-chairs are Tom Pickett and Nippani Rao. The chairs for the sub committees are: Sponsorship – Ron Price; Communications – Tom Pickett, Technical Program – Norm Kakarala; Industry Panel – Terry Cressy, Ron Price; Exhibitors – Ron Price; House – Craig Bellissimo. Helping on the different committees are Mark Lapain, Sandra McClelland, Craig Bellissimo, Suresh Shah, Jay Raisonni, Tom Miller, Jim Kolb, Pat Levine, Al Murray, Craig Dlugos, Maria Gilberti, Tim Dummer, Mike Shoemaker, UV, and Mike Hickman. The Sponsorship committee is actively seeking sponsors for the event. A Call for Presenter flyer was handed out at the TPO Conference and advertised at the Automotive Awards Night. Terry Cressy is seeking the plenary, key note, and industry panel speakers.

ANTEC Update. Tom Pickett informed the Board that ANTEC is scheduled for May 6th to the 10th in Cincinnati. Norm Kakarala is the moderator for the ANTEC Automotive session on Tuesday afternoon May 8th. Norm Kakarala, Jay Raisonni, Suresh Shah, Mike Shoemaker, and Kalyan Sehanobish were on the ANTEC Paper Review Committee that helped Tom Pickett review and select the papers for the session. There will be an Automotive Business Meeting on May 8th at 5:00PM following the Automotive session at ANTEC.

Innovations Awards. Brian Grosser will chair the 2007 event. Peggy updated the board on the art work. Brian and his team look forward to another successful event.

Communication. Peggy Malnati updated the Board on the communications work she has done for the Composites and Innovations events. Peggy handed out some nice flyers that she created for the Automotive Composite Conference & Exhibit scheduled for September 11 – 13, 2007.

2007 Composite Conference Update. Peggy Malnati updated the Board. Peggy has created a new generic logo for the conference. She has swap advertising deals to announce the conference. The conference will be in September 11 – 13, 2007. There is a lot of interest in composites. Peggy showed some upcoming ads. Peggy will have button and banners for presenters. The Call for Papers is sent out.

Treasurers Report. John Fialka updated the board on SPE Automotive Division bank account balance. Checking \$57K, Savings \$26K, Total \$83K. Auto Innovations Awards Income \$210K, Expenses \$150K, Total \$60K.

Councilor's Report. Nippani presented an update from the January 27, 2007 Councilor meeting in Charleston, SC. Nippani updated the elected officers. Suresh Shah received an award for his work at SPE India. Automotive Division and Composite Division presented \$5,961.91 proceeds from the ACCE conference. The Thermoforming Division presented \$32,024 proceeds to SPE from their conference. Vicki Flaris, SPE President Elect reviewed the proposed 2007-08 operating plan. The International Committee will now be called the Global Committee.

The European Coordination Committee will be called SPE Europe. Strategic themes will be member value, communications, and global growth. SPE is \$20,000 in the black. The details to be posted on the SPE website. The SPE Foundation had revenues of \$425,391 which is a record. Considering a new Building and Construction division. Chartered a new Division know as Additives and Color Europe. A redesign of website is being considered. Next council meeting on May 6, 2007 in Cincinnati.

Newsletter. Kevin Pageau indicated there are 1000 extra copies of the newsletter. The next newsletter will be in April. The newsletter is breaking even.

Automotive Division Website. Mark Lapain and Peggy Malnati said have 2 options: Option 1 is to modify the existing website or option 2 is develop a new website. Quotes have been received. There will be a meeting to review quotes and decide on best direction.

Inter-Society. Jackie Rehkopf indicated possibilities to work with ASM, SME and SAMPE. Possibly a joint conference.

Membership. Marcie Kurcz indicated membership declined by 3%. Total membership on December 1, 2006 was 1719. The membership for February 1, 2007 was 1672. Discussion on how to let people know when membership has expired.

Education. No report. The Board talked about Plastivan. The Plasivan schedule is complete.

Open Issues and Conclusion. Mark asked the board any feedback from ACC contract. The Board was sorry to learn that Travis Meister passed away in December.

Meeting Adjourned - Mark Lapain thanked everyone for coming to the Board Meeting. Meeting adjourned at 7:05pm.

Next Meeting. April 9, 2007 5:30PM at the APC in Troy.



Visit the SPE International Website for up-to-date information on training, seminars, and other career enhancing information.

www.4spe.org



The SPE Annual Technical Conference (ANTEC) will take place in Cincinnati, Ohio at the Duke Energy center from May 6 - 10, 2007. It is the world's largest international gathering of engineers, scientists, and business professionals in plastics. SPE announced plans to collocate the Plastics News' Plastics Encounter trade show with ANTEC.

The ANTEC Automotive session will take place on Tuesday afternoon May 8th. There will be seven technical presentations. The session moderator is Norm Kakarala. The session is well attended each year by leaders in the Automotive Industry.

This year the ANTEC Chair for the Automotive Division is Tom Pickett of General Motors. Helping Tom review the papers for the ANTEC Automotive Session were Norm Kakarala, Jay Raisoni, Suresh Shah, Mike Shoemaker, and Kalyan Sehanobish. The Automotive Business meeting will take place May 8th at 5:00PM directly following the Automotive session technical presentations.

For more information about ANTEC, visit the SPE website: www.4spe.org.

Membership Matters

Marcie Kurcz

To join SPE, visit www.4SPE.org, or complete the membership application on the following page.

Below we welcome some of our newest members of the SPE Automotive Division:

Robert Roossien	GHSP	Gerald Stevenson	CGI	Jason Runft	
Christopher Miller	GDC Inc	Tao He	DuPont	Heide Echelberger	
Len Koren	International Mold and Production LLC	Peter Glenister	Asahi Kasei Plastics	Grzejorz Sikora	
Rusty Mansel	Henkel	Mark Laingen		Antonio Spagnoli	
Kim Lee	Wix Filtration Corp	Ebrahim Abdali	Sina Ghete Sabz	Elliott Juniper	
Steve Koch	Freudenberg-NOK	Drew Veeneman	Nicholas Plastics Incorporated	Joshua Fritsch	
Pierre Glaesener	Husky Injection Molding	John Rice	Florida Production Engineering	Amanda Sullivan	Kettering University
Yoshitaka Ryo	New Japan Chemical Co	Dennis Que		Stacy Thayer	
Angie Wu	South China Mould Mfg	Jonathan Bordner		Nicole Van Dongen	
Jason Polly	Nissan	David Kitts	Nova Chemicals	Joseph Walker	
Dia Aluthaim	Sabic	Senthil Kumar Shanmugam		Andrew Westrick	
Kerry Kline		Gianmaria Malvestiti	Bayer Material Science	Joseph Patuto	
Harlan Wilk	PolyInsight LLC	Steven Sheets	Sumitomo Electric Wiring	Paul Mills	UV Robotics LLC
Todd Shail	Mohawk Industries	Efrain Machado	Ciba Especialidades Quimicas	Joseph Varone	Wittmann Inc
Allen Arnold		Jonathan Garrett		Faroq Maraga	
Harry Lytle	Weidmann Plastics Technology	George Novotnak	Thiele Kaolin Company	John Lisinski	Tekpro Group Inc
Jeffrey Townley		Sergio Sanchez		Brad Chamberlin	
Ernest Anderson	Advanced Elastomers Systems	Jean-Pierre Karam		David Alvord	
Gregory Swanson		Douglas Edyvean		Cody Rankins	
Franca Savio		Jan Malik	Clariant International Ltd.	Adam Miller	
Matthew Williams	Haartz Corporation	Riyanto Chandra		Anthony Botting	
Christopher Moultrup	Elpis LLC	Victoria Chua		Yohanes Chitra	
Warren Cooper	Elpis LLC	Erin Abbott		Trudie Duart	
Daniel Mason	3M	Kevin Langworthy		Vijay Gupta	Tata AutoComp Systems Ltd
Dereck Jaggars	Bayer MaterialScience	Brittany Murty		Arnold Pokolemo	
Mike Hooker	Emerald Graphics	Danielle Bojanzyk		Peter Bebbler	Tekpro Group Inc
Lisa Heilig	Blue Water Automotive	Max Nemeth		Imagin Abdulahad	DuPont
Kathleen Brush	TI Automotive Systems	Megan Boyak		John Luca	Hope Global
Michael Williamson	A Schulman	Daren Bumgardner		Larry Langell	Ferris State University
Frank Hoefflin	Sika Corporation	Sarah Oachciarz		Robert Cunningham	Lanxess Polymers LLC
Chris Schaefer	Delphi	Brienne Conner		Todd Hipsky	Performance
		Micheal Rigney		Taliya Trongsalitkul	



Society of Plastics Engineers Membership Application

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 www.4spe.org

European Member Bureau
 Eric Sasselaan 51, BE-2020 Antwerpen, BELGIUM
 Tel: 32 (0)3 541 7755 Fax: 32 (0)3 541 8425 www.speeurope.org

Applicant Information

Name:
 first last mi

Company Name and Business Address (or College):
 company/college:
 job title:
 address:
 address:
 city: state:
 zip: country:

Phone/Fax Format: USA & Canada: (xxx) xxx-xxxx All Others: +xx(xxx) x xxx xxxx

Work Phone: **Fax:**

Email: *used for society business only*

Home Address:
 address:
 city: state:
 zip: country:

Home Phone:

Preferred Mailing Address: Home Business

Gender: Male Female

Birth Date: (mm/dd/yyyy)

Demographics

Job Function (choose only one)

<input type="checkbox"/> Consulting	<input type="checkbox"/> Purchasing
<input type="checkbox"/> Design	<input type="checkbox"/> Quality Control
<input type="checkbox"/> Education (Faculty)	<input type="checkbox"/> R & D
<input type="checkbox"/> Engineer	<input type="checkbox"/> Retired
<input type="checkbox"/> General Management	<input type="checkbox"/> Self-Employed
<input type="checkbox"/> Manufacturing	<input type="checkbox"/> Student
<input type="checkbox"/> Marketing/Sales	<input type="checkbox"/> Tech Support
<input type="checkbox"/> Other	

Materials (choose all that apply)

<input type="checkbox"/> Composites	<input type="checkbox"/> Polyolefins
<input type="checkbox"/> Film	<input type="checkbox"/> Polystyrene
<input type="checkbox"/> General Interest	<input type="checkbox"/> TPEs
<input type="checkbox"/> Nylon	<input type="checkbox"/> Thermoset
<input type="checkbox"/> PET	<input type="checkbox"/> Vinyls
<input type="checkbox"/> Foam/Thermoplastics	<input type="checkbox"/> No Interest

Process (choose all that apply)

<input type="checkbox"/> Blow Molding	<input type="checkbox"/> Injection Molding
<input type="checkbox"/> Compression	<input type="checkbox"/> Mold Making
<input type="checkbox"/> Compounding	<input type="checkbox"/> Product Design
<input type="checkbox"/> Engineering Properties	<input type="checkbox"/> Rotational Molding
<input type="checkbox"/> Extrusion	<input type="checkbox"/> Thermoforming
<input type="checkbox"/> Fabrication	<input type="checkbox"/> General Interest
<input type="checkbox"/> Foam	<input type="checkbox"/> No Interest

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	1yr.	2 yrs.													
US	\$6.00	\$12.00													
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<input type="checkbox"/> US (\$125.00)	<input type="checkbox"/> US (\$217.00)	<input type="checkbox"/> US (\$28.00)													
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