AUTOMOTIVE PLASTICS News

A PUBLICATION OF THE AUTOMOTIVE DIVISION OF THE SOCIETY OF PLASTICS ENGINEERS

September 2008 - Volume 38, Issue 1

The Automotive Division of the Society of Plastics Engineers will honor **Frank Macher**, currently chief-executive officer and managing partner of FMAC & Associates, LLC of Ann Arbor, Mich., with its prestigious Lifetime Achievement Award at the 38th-annual SPE Automotive Innovation Awards Gala, November 20, 2008. Macher, a recognized expert in strategic and business planning, advanced technologies, product development, and manufacturing processes and operations, was selected to be this year's award recipient due to his long and distinguished career in the automotive industry managing businesses with strong plastic-component operations. He has more than 45 years' experience in the automotive industry - 30 of it with Ford Motor Co., primarily in manufacturing.

The Lifetime Achievement Award recognizes the technical achievements of automotive industry executives whose work - in research, design, and/or engineering, etc. - has led to significant integration of polymeric materials on vehicles. First given in 2000, past winners include:

- **J.T. Battenberg III**, former chairman and chief-executive officer of Delphi;
- **Bernard Robertson**, then executive vice-president of DaimlerChrysler;
- **Robert Schaad**, chairman of Husky;
- **Tom Moore**, retired vice-president, Liberty and Technical Affairs at DaimlerChrysler;
- **Mr. Shigeki Suzuki**, general manager - Materials Division at Toyota Motor Company;
- **Barbara A. Sanders**, then director - Advanced Development & Engineering Processes at Delphi Thermal Systems; and
- **Josh Madden**, retired General Motors Corp. and Volkswagen of America.

AUTOMOTIVE INNOVATION AWARDS COMPETITION & GALA

HONORING THE BEST IN AUTOMOTIVE PLASTICS

Prior to founding his current company, Macher was chief-executive officer (CEO) and president of Collins & Aikman Corp. (C&A), a $4-billion USD supplier of automotive interiors. Having taken responsibility after the company declared bankruptcy, Macher was recognized by Automotive News magazine in 2006 as their "Supplier All-Star" of the year for his ability to keep C&A operating despite its cash challenges.

Frank Macher, chief-executive officer and managing partner of FMAC & Associates, LLC

Before joining C&A, Macher was CEO and chairman of the board of Federal Mogul Corp., a $6-billion USD publicly traded company in the automotive powertrain and aftermarket sectors. While at Federal Mogul, Macher restructured the company in an asbestos-related Chapter 11 bankruptcy, which allowed for a massive operational turnaround for the company with $600-million USD in cost savings. This move also

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Treasurer's Report

John Fialka

The SPE Automotive Division bank account balance is in good standing with $135K in checking and $27K in savings for a total balance of $161K. The final financial results for the 2007 Innovation Awards Program are: income $205, expenses $163K, net proceeds $42K.

The SPE Automotive Division continues to support educational out reach programs like the Plastivan and has donated $18K this year. In addition the Division has donated $2,000 in Scholarships funds. The Board has appointed an audit team to review the 2008-2009 budget and review 2007-2008 books.

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Automotive Division Meeting Schedule and Special-Events Calendar

Automotive Composites Conference & Exhibition (ACCE) - MSU Management Education Center Troy, MI	September 16-18, 2008
Division Board of Directors Meeting ACC, Troy, MI	September 22, 2008 5:00 pm
SPE Automotive TPO Global Conference - Best Western Sterling Inn, Sterling Heights, MI	October 5th - 8th, 2008
Innovation Awards Program Burton Manor, Livonia, MI	November 20, 2008
Division Board of Directors Meeting ACC, Troy, MI	December 8, 2008 5:00 pm
Division Board of Directors Meeting ACC, Troy, MI	February 2, 2009 5:00 pm
Division Board of Directors Meeting ACC, Troy, MI	April 6, 2009 5:00 pm

Automotive Division Board of Directors meetings are open to all SPE members, and are usually held at the **American Chemistry Council (ACC)** in Troy, MI. Call Tom Pickett at (586) 492.2454 for more information.

www.speautomotive.com

QTI running at the Detroit Technical Center.

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Chairman's Message

Tom Pickett

Welcome to the Society of Plastics Engineers Automotive Division. I am excited for the privilege to lead the Automotive Division! On July 21, 2008, our Automotive Board of Directors (BOD) met to set our goals and strategy for the upcoming year. We have an exciting year planned! I hope each of you take advantage of the Automotive Division's events this upcoming year and learn about the latest in automotive plastics technology and network with fellow members.

As the incoming Chair, I am delighted to welcome back many of the dedicated volunteers and also welcome new volunteers. We have a talented and dedicated group on the Executive Committee. Maria Ciliberti is the Chair Elect. In addition, Maria is the chair of the 2008 Innovation Awards Gala that will take place on Thursday, November 20, 2008 at the Burton Manor in Livonia, Michigan. Maria and her committee have already been working hard on planning the gala. Nippani Rao will return as the division Councilor and John Fialka will return as Treasurer. I welcome two new members to the Executive Committee: Tom Miller as Vice Chair position and Jay Raisoni as Secretary.

We also have great leadership filling the Committee Chair positions and Automotive Division BOD. We are fortunate to have several Chairs returning from last year. They are Teri Chouinard, Newsletter Sponsorship; Peggy Malnati, Communications & Auto Composites Conference; Jackie Rehkopf, Inter Society; Kevin Pageau, Newsletter; Fred Deans, Golf Outing; Monica Prokopyshen, Education; and Ed Garnham, House. In addition, I thank Norm Kakarala for taking over as Technical Program Chair, ANTEC Chair and Co-chair of the AutoEPCON. Helping Norm out as Co-chair of AutoEPCON is Nippani Rao. I also like to welcome Johanne Wilson as our new Membership Chair. New additions to the BOD include Mike Whitens and Don Lasell.

In my 24 years as an SPE member, I realized the importance of dedicated volunteers to make all these events possible. Whether it is planning a technical conference, golf outing or an awards gala, it involves hard work and planning by dedicated volunteers. We in the SPE Automotive Division are fortunate to have a strong dedicated group of volunteers. The current Executive Committee Officers, BOD and Chairs are listed on the back cover with their contact information.

The current Executive Committee Officers, BOD and Chairs have the challenge of achieving the following goals for the upcoming year:

◆ Continued improvement of Automotive Division's key events: Innovation Awards, Automotive Composites Conference and AutoEPCON. Increase sponsorship. Provide high quality technical programs that will increase membership participation and networking opportunities.
◆ Sponsor or co-sponsor at least two half day sessions at ANTEC. Offer high quality technical sessions at ANTEC on automotive plastics technology.
◆ Provide regular communications to our members on the SPE Automotive Division's events and the latest in automotive plastics technology.
◆ Grow SPE Automotive Division Membership. Offer programs that reach out to prospective members and inform them of the advantages of being a SPE member. Establish recruiting programs to attract new members.
◆ Grow Educational Outreach Programs to promote plastics at local civic groups, government groups, high schools, middle schools, elementary schools, vocational schools and other public groups.
◆ Provide scholarships to students studying plastics and support ANTEC student travel funds.
◆ Recruit new volunteers for the various Automotive Division activities.

Last but not least, I congratulate last year's Automotive Division's Chairman, Brian Grosser, for his many accomplishments and successful year. Congratulations to Brian and his team for being awarded the SPE Pinnacle Award Gold Level, the highest recognition that SPE National awards to a division. In addition, I congratulate last year's Detroit Section President Cindy Hammer for her many accomplishments and successful year. Congratulations to the Detroit Section for also receiving the SPE Pinnacle Award Gold Level. I wish this year's Detroit Section President, Jim Keeler, a great year.

I encourage all of you to come out and take advantage of the many educational and networking events that we have planned throughout the year. If you like to become involved in the Automotive Division, I invite you to our next Automotive Board of Directors Meeting on Monday, September 22, 2008 5:00PM at the American Chemistry Council (ACC) 1800 Crooks Road Troy, MI 48084. I look forward to seeing you at the great events we have planned for the year!

Innovation Awards Program - Frank Macher

Continued from page 1

increased revenues, consolidated operations, and expanded the company's manufacturing operations into low-cost manufacturing regions such as China and Eastern Europe.

Previous to his term at Federal Mogul, Macher held the position of president and CEO at ITT Automotive, a $6-billion USD subsidiary of ITT Industries. There, he led the divestitures of the TEVES brake and control business for $1.9-billion USD and the Rotating Electrical Group for $1.7-billion USD. These divestitures provided ITT with a major cash infusion that allowed the company to successfully grow its core fluids, connectors, and defense businesses, creating substantial shareholder value.

The majority of Macher's long and distinguished career was spent at Ford Motor Co., where he held many key executive positions, including vice-president, Automotive Components Group, an $11-billion USD operation and the predecessor to Visteon. During his tenure at the Automotive Components Group, Macher expanded the company's electronics operations on a global basis. He also established five joint ventures in China, including Yan Fang, now a $2-billion USD entity partnered with Shanghai Automotive Industrial Corporation.

In addition, Macher developed a joint venture with Halla Climate Control, which now is a $2-billion USD developer of low-cost heating/ventilation/air conditioning (HVAC) systems for the automotive industry. Halla, a 50/50 joint-venture with Korea's Mando Corp., has become a wholly owned subsidiary of Visteon Corp. Macher also held the position of vice-president-Ford North Pacific, where he was a member of the board of directors of Mazda Corp. During that time, Macher led negotiations for a 10% equity position in Kia Motors of South Korea. Among other key positions Macher held during his three decades at Ford was director-Corporate Quality, chief engineer-Interiors, and general manager of two divisions.

During the early days of Macher's career, he was involved in many automotive plastics innovations, including the first:

- ◆ Polyethylene fender liner on the Lincoln Town Car (early 1970s);
- ◆ Two-shot, rear tail lens molding process (developed with Farrell Corp. and fellow Ford employee, Larry Westin) around 1972;
- ◆ All-plastic, one-piece instrument panel on the 1975 model year (MY) Cougar passenger car;
- ◆ Electron-beam (E-Beam) cured paint for plastic instrument panels around 1975 (with Ford employee, Norm Brennan);
- ◆ Blow-molded polyethylene fuel tank on the 1979 MY Mustang sports car; and
- ◆ Tubular cross-car beam designs (working in conjunction with Ford's William Caldwell) that provided stiffness, structure, and reduced noise/vibration/harshness (NVH) for modular instrument panel systems, which could now be plugged into the vehicle as a single assembly for just-in-time (JIT) sequencing operations.

Macher is a former board member for Decoma International, Federal Mogul, and Collins & Aikman. He has also served on the Massachusetts Institute of Technology (MIT) Leaders for Manufacturing Board, Stanford Industrial Manufacturing Advisors, and Kettering University Board of Trustees. He is currently a board member of Tenneco Corp., where he also serves on the Audit Committee. Macher has lectured in the MBA programs at Harvard University, Dartmouth College, and currently guest-lectures annually at Georgetown University. He holds a BS degree in Mechanical Engineering from Kettering University, and an MBA from Michigan State University.

This year's SPE Automotive Innovation Awards gala will be

held at Burton Manor (www.Burtonmanor.net) in Livonia, Mich. Frank Macher will receive his Lifetime Achievement Award during the main program, which runs from 7:00-9:00 p.m. Macher will be presented to the media during a short press conference at 4:00 p.m. that will then segue into the VIP Cocktail Reception, generously sponsored by Ticona Engineering Polymers.

During the reception, Executive Award winners will be fêted by peers, media, and major sponsors. At 5:30 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 are always a highlight of the show. Dinner will begin at 6:30 p.m. and the program itself begins at 7:00 p.m. For those who wish to extend merrymaking and networking activities, the ever-popular Afterglow - also sponsored by Ticona Engineering Polymers - will run from 9:00-11:00 p.m.

Program Sponsor 2008 Innovation Awards Program

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2007 SPE Automotive Division Grand Award Winner

"Most Innovative Use of Plastics"

Backlighting using Color-Converting Plastic on the 2007 MY General Motors Chevrolet® Tahoe

The Grand Award Winning Team: Irv Karwick, Michael Fye, Ray Lippman, Elias Boueri, Brian Grosser (SPE), Gail Sylvester, and Tim Kenworthy

SPE Automotive Composites Conference & Exhibition Returns for 8th Season with Robust Technical Program

World's Largest Automotive Composites Forum Provides Excellent Networking, Opportunity to Learn about Latest Technologies

If it's September, then it's time for the SPE Automotive Composites Conference & Exhibition once again. That means that shortly over 400 transportation OEMs, tier suppliers, materials and additive/reinforcement suppliers, government and private researchers, and members of the academic community will converge for the eighth time on the MSU Management Education Center in Troy, Mich.

That also means that members of the ACCE planning committee - primarily members of the SPE Composites & Automotive Division boards plus industry experts - are working hard to put the finishing touches on the event's technical program and exhibition area so they will be ready to welcome attendees starting at 6:30 am on Tuesday, September 16th.

The 3-day event has become the world's leading forum for automotive composites, last year drawing attendees from 14 countries on 4 continents. It has also attracted critical claim within the industry for the quality of its presentations, the pertinence of its exhibits, and the ease with which networking can be accomplished with key global players.

Ten Sessions Cover a Broad Range of Technology & Applications

Despite the very-difficult North American automotive market, we are pleased to be able to offer an excellent event again this year. The 3-day program now includes: 62 presentations, 9 keynotes, a panel discussions, 2 cocktail receptions, and an expanded exhibit area. The most up-to-date schedule may be found at **www.speautomotive.com/comp.htm** .

This year's session schedule is:

Tuesday, September 16, 2008
- ◆ Advances in Thermoplastic Composites
- ◆ Structural Composites
- ◆ Virtual Prototyping & Testing of Composites
- ◆ New Composite Materials & Processes

Wednesday, September 17, 2008
- ◆ Advances in Thermoset Composites
- ◆ Virtual Prototyping & Testing of Composites
- ◆ Nanocomposites
- ◆ Composites in Trucks
- ◆ Enabling Technologies
- ◆ Bonding, Joining, & Finishing Composites

Thursday, September 18, 2008
- ◆ Bio- & Natural-Fiber Composites
- ◆ Bonding, Joining, & Finishing Composites
- ◆ Advances in Thermoplastic Composites
- ◆ Enabling Technologies
- ◆ Virtual Prototyping & Testing of Composites

Mini-abstracts for these presentations will be posted soon.

Nine Keynote Speakers Discuss Composites Opportunities within Automotive & Outside

One of the special features of the SPE Automotive Composites Conference & Exhibition is the breadth of technology it covers: both thermoset and thermoplastic composites, reinforced with natural fibers, conventional glass fiber, high-performance carbon or aramid fibers or fabrics, new nano technologies, or hybrid systems, embedded in matrices of petroleum or bio-based resins, and converted using a wide range of processing technologies.

The resulting components are used in nearly all areas of the vehicle - interior, exterior, underhood, powertrain, chassis, and aftermarket - and they find their way onto vehicles in nearly all price ranges: from low-cost/high-volume to very-high performance/low-volume platforms.

Given the diversity of technologies represented, we work hard to line up an equally diverse group of keynote speakers each year to highlight the evolving world of transportation composites. Frequently, composites users in other industries are invited to help highlight how these materials solve engineering, design, and manufacturing challenges in applications that have some applicability to passenger vehicles. This year, reports on high-end racing bikes, Formula 1 race cars, and extreme sports are hoped to encourage automakers to consider composite options in next-generation vehicles.

Confirmed 2008 keynote speakers and their topics include:

- Joseph Carpenter U.S. Department of Energy Challenges to Automotive Composites Tue., Sept. 16, 8:15-9:15 am;
- David Warren Oak Ridge National Laboratory Future Lower Cost Carbon Fiber for Autos: International Scale-up & What is Needed Tue., Sept. 16, 12:15-1:15 pm
- Gary Savage Honda Racing F1 Team Composite Materials Technology in Formula 1 Motor Racing Tue., Sept. 16, 1:15-2:15 pm
- David Dyke Meridian Automotive Systems / Automotive Composites Alliance ACMA/ACA Study on Composites for Hybrid Electric Vehicles Wed., Sept. 17, 8:15-9:00 am
- Jan-Anders Månson Ecole Polytechnique Fédérale de Lausanne (EPFL) Composites in Extreme Sports Wed., Sept. 17, 1:30-2:30 pm -SPE Educator of the Year Award Winner
- James Colegrove Trek Bikes Carbon Fiber Composites in Bicycles: A Revolution Wed., Sept. 17, 4:30-5:30 pm
- Barbara A. Sanders Delphi Corp. History of Automotive Composites Thur., Sept. 18, 8:00-9:00 am
- Matt Tsien General Motors Corp. Driving Innovative Solutions for Tomorrow Thur., Sept. 18, 1:30-2:15 pm
- Toru Yamanaka Toray Industries Inc. CFRP: What is Needed Next for Mass Production in the Automobile? Thur., Sept. 18, 2:15-3:00 pm

Additionally, a Government-Industry panel discussion will be held on the show's first afternoon to discuss the future of automotive composites. And two networking events - the first (Tuesday evening) sponsored by Quadrant Plastic Composites and the second (Wednesday evening) sponsored by Ashland, Inc. - will round out this year's program.

Time to Register for the Conference

As returning attendees will attest, the first morning's registration line for the SPE Automotive Composites Conference & Exhibition can be very long. Please help us help you by pre-registering for the conference and letting us know how many days you plan to attend this year. The registration form can be found at **www.speautomotive.com/comp.htm** . SPE members receive $100 USD discount over the regular price for the 3-day event, which also includes 3 breakfasts, 3 lunches, 2 cocktail receptions, and 5 coffee breaks. Non-members receive a free 1-year membership in SPE with paid registration. And SPE members whose membership is up for renewal may sign back up for another year of membership through the show and save $18 USD off their normal dues.

Please check back often at our website to find the latest updates on this year's event.

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SPE AUTOMOTIVE TPO GLOBAL CONFERENCE

OCTOBER 5TH THRU OCTOBER 8TH, 2008

Best Western Sterling Inn • Sterling Heights, MI

DETROIT TPO CONFERENCE 2008

Be part of the 10th Anniversary SPE Automotive Global Convergence.

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TPOs have become an essential part of the automotive industry's quest for versatile, economical, light weight materials that meet the increasing challenges of the automotive industry.

Last year's conference attracted over 410 professionals sharing leading edge polymer and application technologies. This year, the 10th annual conference is expected to be even larger and includes a thermoforming session reflecting it's increasing roll in the transportation industry.

✔Automotive Applications Developments

- **Robert Eller** — Robert Eller Associates (330) 670-9566, bobeller@robertellerassoc.com
- **Thomas Pickett** — General Motors (586) 492-2454, tomjpickett@yahoo.com

✔Process Developments

- **Patti Tibbenham** — Ford Motor Company (313) 322-7158, ptibbenh@ford.com

✔Thermoforming

- **Ed Bearse** — Advanced Plastic Consultants (989) 588-0494, ebearse@advancedplasticconsultants.com
- **Bruce Denison** — Solvay Engineered Polymers (248) 391-9503, bruce.denison@solvay.com

✔Surface Enhancements

- **Duane Lewis** — ExxonMobil (248) 350-6539, duane.r.lewis@exxonmobile.com
- **Reza Sadeghi** — A. Schulman (330) 630-7108, reza_sadeghi@us.aschulman.com

✔Material Developments

- **Dave Okonski** — General Motors (586) 986-2767, david.a.okonski@gm.com
- **Michael Dammann** — Basell Polyolefins (517) 282-0462, michael.dammann@basell.com

✔Panel Discussion

- **Ron Price** — Global Polymers Solutions (248) 563-6343, rprice525@aol.com

www.auto-tpo.com

✔Conference Co-Chairs

- **Bill Windscheif** — Flint Hills Resources (248) 375-5055, william.windscheif@fhr.com
- **Paula Fasulo** — General Motors (586) 986-1249, paula.d.fasulo@gm.com

✔Communications

- **Lisa Wujkowski** — Dow Automotive (989) 636-9956, llwujkowski@dow.com

✔Computer Support

- **Sanjay Patel** — Flint Hills Resources (734) 451-2072, sanjay.patel@fhr.com

✔Technical Program Chairman

- **Norm Kakarala** — Delphi Corporation (248) 655-8483, norm.kakarala@delphi.com

✔Hotels & Exhibitors/Budget & Finance

- **Tom Powers** — Consultant, Delta Polymers (248) 877-0689, tpowers@ejourney.com

✔Conference Registration

- **Pat Levine** — SPE Conference Liason (248) 244-8993, p.levine@yahoo.com

✔Reservations

- **Best Western Sterling Inn** — Sterling Heights 1-800-953-1400 or (586) 979-1400 Special Rate of $109.00 (Register under TPO Conference)

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For Information and Registration call Pat at (248) 244-8993, p.levine@yahoo.com

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Deadline for 2008 SPE Automotive Division Part Nomination Forms is Fast Approaching

Don't Miss 38th Running of the Oldest & Largest Parts Competition in the Auto & Plastics Industries

Deadline for Nominations is September 16, 2008

The annual parts competition, which is the heart and soul of the Innovation Awards program, is underway and the review committee is starting to accept and review part nominations for Year's Most Innovative Use of Plastics in ground transportation applications.

The deadline for receiving nominations is mid-September, a fast approaching deadline given how fiercely competitive this event is. The nomination form, along with a flier on the parts competition and a list of competition rules will be found at **www.speautomotive.com/inno.htm** .

"Teams always figure they will fill out the paperwork last minute and submit it for the competition," notes Kevin Pageau, SPE Automotive Innovation Awards Competition Chair. "But they forget just how competitive this program is and the level of detail that's required to make a really good nomination that's likely to wow the judges and blow away the competition."

Adds Maria Ciliberti, SPE Automotive Innovation Awards Program Chair, "In the rush to put their nominations together last minute, many tier integrators and materials suppliers forget that they MUST receive OEM approval for their nomination before submitting the part into the competition. It's really sad to see an excellent part have to be pulled last minute because the nominator forgot that detail and never received OE clearance. Don't let that happen to your part this year."

The first round of judging - a 2-day program featuring SPE Automotive Division's board of directors and other industry professionals - will take place at Ticona Engineering Polymers' Auburn Hills office in late September and will winnow a large field of nominations down to 3 to 4 in each of the competition's 10 categories.

Monica Prokopyshen, who runs the second, Blue Ribbon judging panel notes, "Another challenge we frequently see is that teams put their presentations together just as quickly as their nominations. They don't practice giving their pitch - perhaps thinking we aren't serious about the 5-minute time limit on presentations - so when they have to present before the judges, they can't get all the information across in the time allotted. We really find that teams who make the effort to put their nominations and presentations together early and to practice, fare the best when facing the judges."

During the competition phase of the event, 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." Current categories include:

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

Information on Previous Category and Grand Award Winners Available on Automotive Division Website

For those wondering just what it takes to write a winning nomination, we invite you to browse through previous competition winners. Last year's Category and Grand Award Winners are still posted on the Innovation Awards page on our website at **www.speautomotive.com/inno.htm** and you will find modules on winners from 1999 through 2007 available for review in our Resource Center page at **www.speautomotive.com/rc.htm**.

It is a resource not only for OEMs and tier suppliers considering new applications in plastics, and media looking for stories to publish, but also should be considered a resource for this year's nominating teams to review when considering if any other OEM-tier team has previously nominated a similar part in the competition.

For more information on this year's conference, please check back on our website often.

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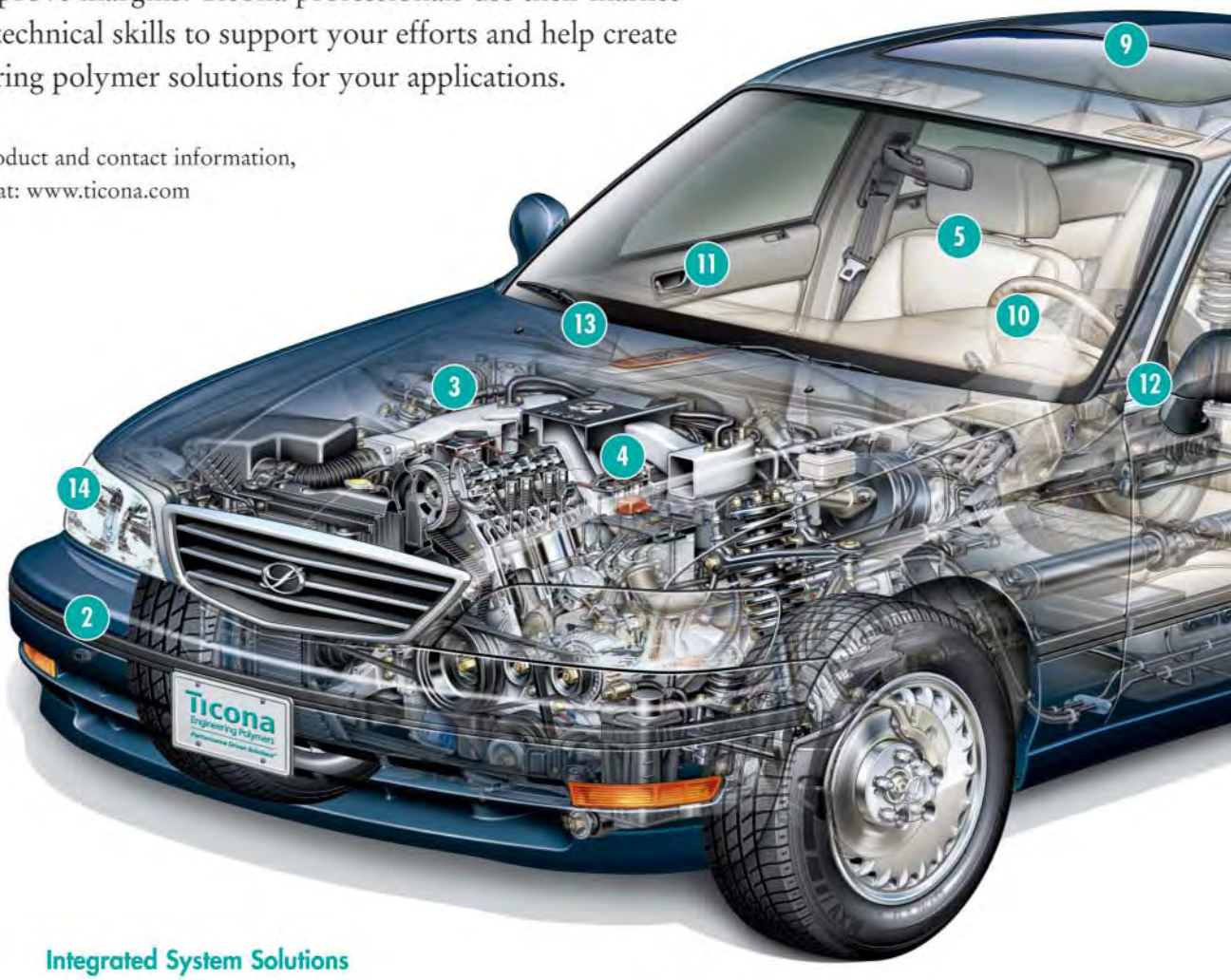

Integrated System Solutions

1 **Door/Lock/Window**
Celcon, Celstran, Celanex

2 **Front End Modules**
Celstran, Celanex, Impet

3 **Electrical**
Celanex, Fortron, Vectra, Celcon

4 **Power Distribution**
Celstran, Celanex, Vectra, Fortron

5 **Cockpit Environment**
Celanex, Vandar, Riteflex, Celcon

6 **Underbody Skid Plates**
Celanex, Celstran

7 **Advanced Fuel Delivery**
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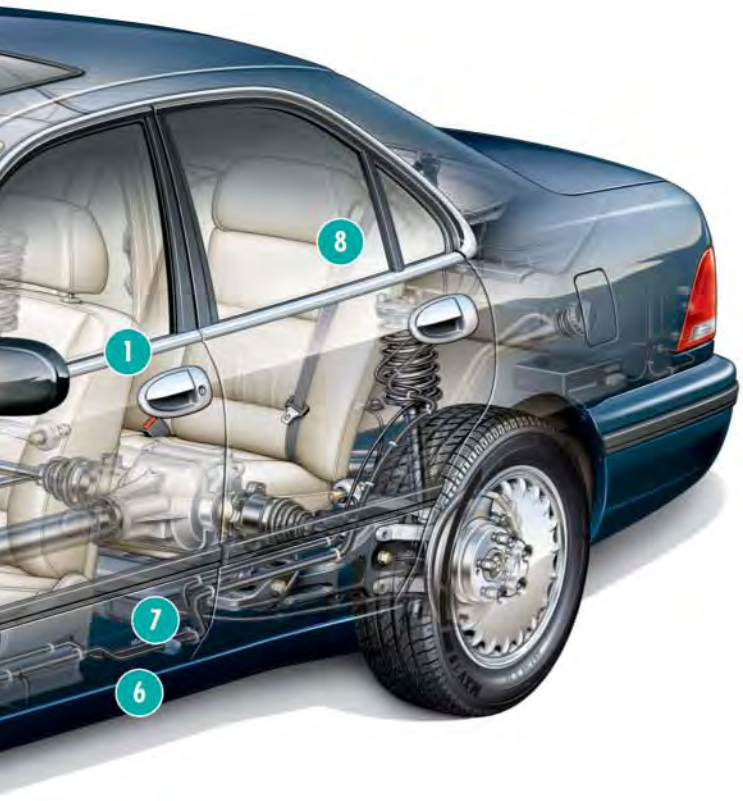

9 Multi-functional Roof
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10 Instrument Panels
Celstran

11 Speaker Grilles, Knobs, Handles and Levers
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12 Mirror Housings
Celcon, Celanex, Celstran

13 Wiper Plenums
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14 Lighting Housings
Celanex, Vectra, Fortron

Celanex® Thermoplastic Polyester
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- Toughness
- Rigidity
- Exceptional dimensional stability
- Superior electrical properties

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- Inherent lubricity
- Chemical resistance
- Broad temperature use range

Celstran® and Compel® Long Fiber Reinforced Thermoplastic
- High stiffness
- Exceptional toughness
- Long-term dimensional stability
- Wide temperature use range

Fortron® Polyphenylene Sulfide
- High continuous use temperature
- Resistance to auto fuels and fluids

Impet® Thermoplastic Polyester
- Outstanding physical properties
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- Toughness
- Rigidity
- Dimensional stability
- Wide temperature use range

Riteflex® Thermoplastic Polyester Elastomer
- Excellent toughness and fatigue resistance
- Outstanding chemical resistance
- Good low temperature impact
- Wide temperature use range

Vandar® Thermoplastic Alloys
- Excellent chemical resistance, ductility and stiffness
- High impact strength at low temperatures

Vectra® Liquid Crystal Polyester
- Superior thermal characteristics and dimensional stability
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- Low mold shrinkage
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ANTEC 2009

The SPE Annual Technical Conference (ANTEC) will take place at McCormick Place West Chicago, IL from June 22 - 24, 2009. It will co-locate with the 2009 NPE.

Do you have a paper that you would like to present to the world's largest international gathering of engineers, scientists, and business professionals in plastics? It is an opportunity to receive feedback and discussion on your paper from leaders in the plastics industry.

Submit your abstract in the Automotive Division Session. The Automotive Division Session of ANTEC is well attended each year by leaders in the Automotive Industry. This year Chair of the Automotive Division is Dr. Norm Kakarala. Also, helping on the ANTEC Automotive Session is Tom Pickett, Dr. Jay Raisoni, Dr. Suresh Shah, and Michael Shoemaker.

To be considered for a paper, authors must submit an abstract by September 1, 2008 by 5:00PM. The deadline is firm so if you think you might like to present a paper, please make sure you get your abstract submitted by this date. The deadline for the published paper is November 14, 2008 by 5:00PM.

ANTEC™@NPE2009
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Call for Papers

To submit your abstract to the Automotive Session, please go to the following website:

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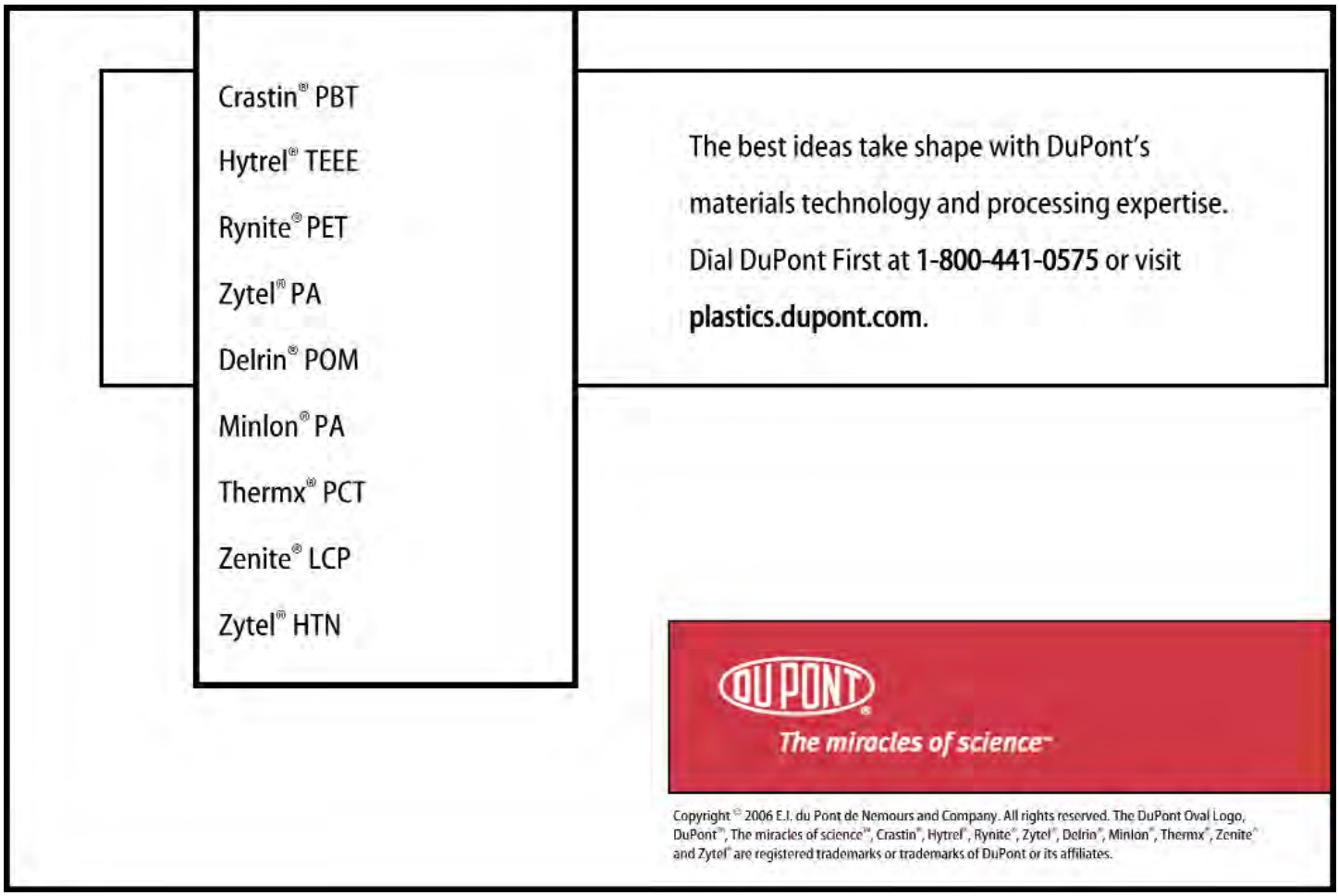

Outdoor Weathering Benefits of Mold-in-Color Acrylic for Automotive Exterior Trim Applications

H. Reid Banyay(1) and Audrey Gensous(2)
Altuglas International Division of Arkema

Traditional trim parts manufactured from painted metal had previously been replaced by painted or coated plastic for weight savings and design flexibility. Unfortunately, these systems have many problems such as manufacturing environmental concerns and they often display poor weathering performance. The use of weatherable mold- in-color acrylic plastic eliminates VOC emissions associated with painting and allows easy recycling of manufacturing scrap and post consumer parts. Additionally, acrylic plastics provide many application benefits such as improved appearance, high surface hardness, and superior weathering performance. This paper will compare the initial properties and weathering performance of mold-in color acrylic vs. painted or coated non-weatherable plastics. Actual parts from the field are measured for change in appearance and the associated change in surface chemistry via infrared spectroscopy.

Background: For over 50 years acrylic plastics based on poly (methyl methacrylate) or PMMA have been used for automotive taillight applications due to its high clarity and superior weathering characteristics. Clear plastics such as styrenics and polycarbonate contain an aromatic structure that will interact with UV wavelengths. They yellow and lose optical properties upon outdoor exposure to sunlight due to degradation of the polymeric structure. PMMA does not contain aromatic structures and does not interact with the UV or the visible wavelengths in sunlight. PMMA chemistry remains unchanged after outdoor exposure and PMMA molded parts retain their initial color and gloss characteristics. As this report will demonstrate, inherent macromolecular properties translate to superior weathering performance advantages for PMMA vs. other plastics in colored opaque applications. The inherent clarity of PMMA leads to rich looking colors with a depth of color along with high gloss and a high distinction of image (DOI).

Weathering Performance

This paper will provide an in depth understanding of the initial appearance and weathering performance of mold-in color acrylic vs. painted or coated non-weatherable plastics. Actual parts from 5-year old automobiles were obtained and compared to new replacement parts for visual appearance. Next the parts were measured to quantify appearance change. Gloss and color measurements were obtained whenever specimen geometry permitted these measurements to be made. Part size limitation prevented DOI measurements from being obtained. Finally the parts analyzed via FTIR for possible changes in chemical composition (UV degradation) due to outdoor exposure.

Figure 1:
Image of ASA Mirror Housing & Polyamide Attachment Sail

ASA plastics are comprised of acrylonitrile- styrene-acrylate. The acrylate is an acrylic based elastomer system for weathering improvement vs. ABS plastic. The ASA matrix remains styrene acrylonitrile copolymer that undergoes chemical degradation upon exposure to outdoor sunlight. Dark colored ASA parts are often designed in a grey tone instead of black to mask the whitening that occurs during outdoor use (see figure 1). Likewise, when designing trim parts with ASA that are not coated after molding, the parts should be kept low gloss or textured to hide the loss of gloss that occurs during use.

Figure 2 displays Fourier Transform Infrared (FTIR) spectra of an ASA plastic side view mirror housing shell that has undergone chemical degradation after 5 years of usage. The red spectra display the formation of hydroxyl functionality (3100 - 3600 cm-1) and broadening of the carbonyl region (1600 - 1800 cm-1). Even though the part was designed with a low gloss textured surface and a gray color, changes in appearance are still observed when compared to a new mirror shell. Due to the curved shape of the side view mirror (see figure 1), meaningful gloss and color measurements could not be obtained.

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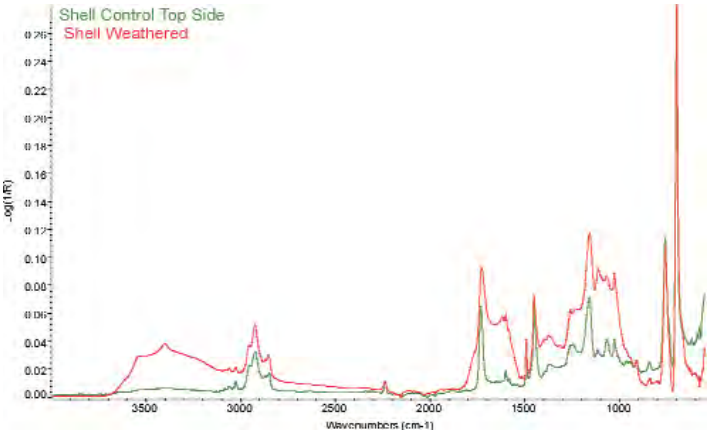

Figure 2:
FTIR of New and 5-Year-Old ASA Mirror Housing

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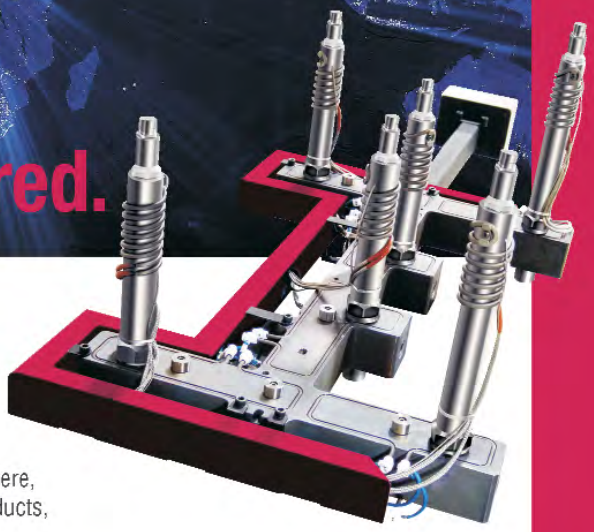

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Outdoor Weathering Benefits of Mold-in-Color Acrylic

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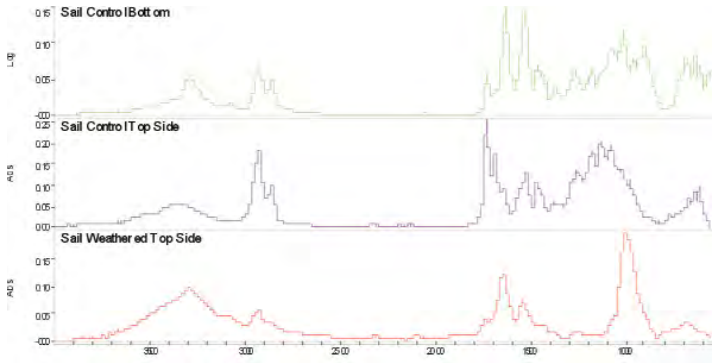

Figure 3:
FTIR of 5 Year Old & New Polyurethane Coated Glass Reinforced Nylon 66
Top Green = Silica + polyamide
Middle Blue = Polyurethane coating
Bottom Red = Silica only

Glass reinforced nylon is used for automotive structural components due to its high mechanical and thermal performance characteristics. Nylon does require a coating to enhance its poor weathering resistance. The ASA side view mirror shell displayed on figure 1 utilizes nylon for the sail or attachment portion of the mirror. The coating on this sail attachment section is polyurethane. After 5 years, the gloss has deteriorated to almost zero as shown in figure 8.

FTIR of the urethane-coated polyamide 66 part reveals an interesting result as displayed in figure 3. The polyurethane coating (middle blue spectra in figure 3) is no longer intact after 5 years of outdoor use. Furthermore, the polyamide as analyzed from the backside of the new sample (green top portion of the spectra in figure 3) has also undergone severe chemical damage at the surface from the sunlight. The part has deteriorated so much that the silica glass dominates the resulting surface spectra of the 5-year-old weathered part (bottom red spectra in figure 3).

Polycarbonate, another plastic used in automotive applications, has poor weathering characteristics. When used in exterior applications, it must be coated to provide protection from the sunlight. Polycarbonate can be coated or painted to provide a glossy dark colored appearance for applications such as side pillars. Figure 4 displays the appearance of a new polysiloxane coated polycarbonate pillar vs. one that has been in service for 5 years.

Figure 4
New Coated Polycarbonate (top) and 5-Year-Old Coated Polycarbonate (bottom)

The polysiloxane-coated polycarbonate displays severe color change after 5 years of outdoor use as shown in figure 4. The measured color change of the 5-year-old sample vs. a new control sample expressed as delta E is 22.0 CIELab units or 42.0 CMC units. Figure 9 compares the CIELab delta E color change of all the surface technologies evaluated. The dramatic loss of 60-degree gloss (from 77 to 54) also occurs after 5 years as displayed on figure 8.

Similar to the polyurethane -coated nylon situation, FTIR spectra reveals that most of the polysiloxane coating is absent after 5 years of outdoor use. Figure 5 compares the 5 year weathered sample vs. the polycarbonate (uncoated) backside of the new control sample. Carbonyl broadening (1600 - 1800 cm-1) and the formation of hydroxyl units (3100 - 3600 cm-1) indicate chemical change / degradation of the polycarbonate and the inability of the polysiloxane coating (spectra not displayed) to protect the part during outdoor use. Absent from the weathered part spectra is the distinct siloxane shoulder signature from 1020-1100 cm-1 and a center at 1262 cm-1.

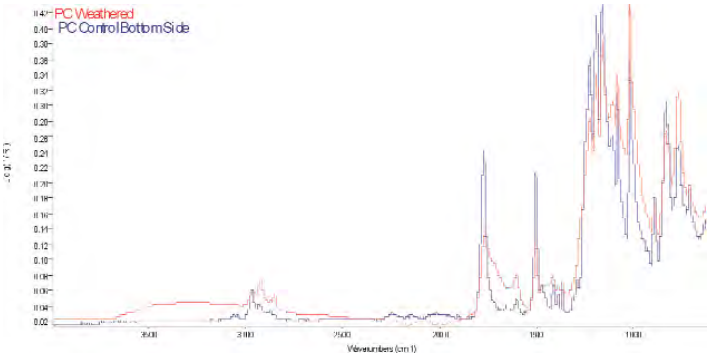

Figure 5
FTIR of 5 Year Old and New Polycarbonate

PMMA Acrylic has excellent weatherability that allows it to be assembled immediately after molding without an additional coating step. This provides PMMA with a tremendous performance advantages, manufacturing cost savings and environmental improvements vs. other technologies. Figure 6 displays a rear deck assembly from a police cruiser that had been in use for 6 years (Bensalem Township, PA USA). The low gloss license plate attachment or middle section of the assembly left of the light lens is not PMMA. The high gloss right side in figure 6 is the PMMA part from the police cruiser. Please note the jet-black color and high gloss that remains after 6 years of outdoor use.

The measured color change of the weathered Plexiglas® acrylic PMMA part vs. the new control is negligible, only 2.5

Continued Page 18

Outdoor Weathering Benefits of Mold-in-Color Acrylic

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Figure 6
Image of Entire 6 Year Old Police Car Rear Deck Assembly

CIELab or 3.5 CMC delta E units (figure 9). The gloss change of the PMMA sample is also small as displayed on figure 8. The 6-year-old PMMA retains excellent appearance with the ability to have appearance comparable of a new part with the minimal car cleaning.

Figure 7 displays the FTIR spectra of the 6-year-old PMMA part vs. the new control part. Unlike the previous examples with other plastics, the PMMA spectra overlap very well to indicate no change to the acrylic surface chemistry and no evidence of UV degradation. The PMMA part from the field has the same FTIR spectra as the new control sample. The inherent UV stability of the PMMA is the reason it maintains its initial high gloss and deep jet-black appearance after years of outdoor exposure.

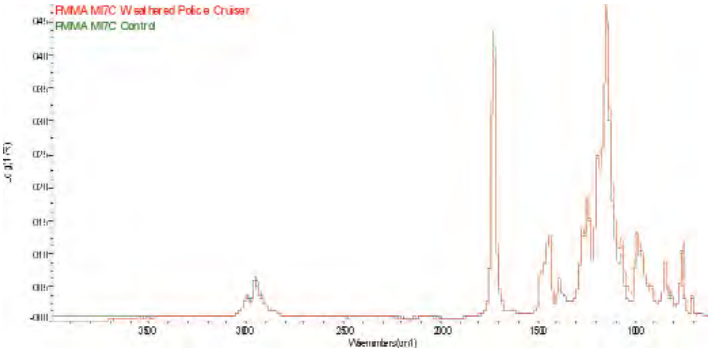

Figure 7
FTIR of New & 6-Year-Old PMMA Rear Deck Assembly Parts

Weathering Performance Summary

The figures below summarize the change in appearance that occurs from 5 years of actual outdoor usage. Figure 8 displays the high gloss retention of the mold-in-color PMMA part vs. the severe loss of gloss for both polyurethane-coated polyamide and polysiloxane coated polycarbonate parts. With the use of PMMA, high gloss trim parts can be specified without the concern of the appearance change associated with other plastics.

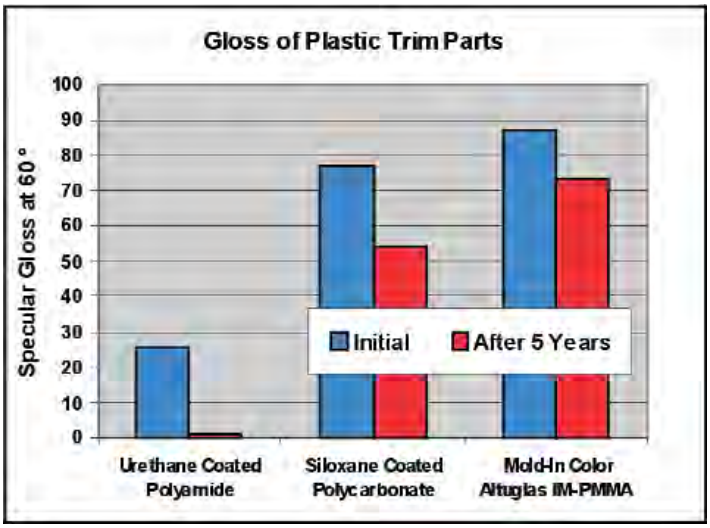

Figure 8
Gloss Retention for various Plastic Technologies

Figure 9 displays color retention for the various plastic technologies. The PMMA displays very little color change as indicated by the low CIELab delta E value vs. large delta E and a high degree of color change for the other plastic technologies.

Other Advantages of Mold-in-Color Acrylic

Surface Hardness Advantage: In addition to superior weathering characteristics, mold-in-color acrylic resin has additional performance advantages vs. other plastic technologies used for automotive trim applications. PMMA has a hard surface that provides resistance to mar and scratching without coating. Contact Altuglas International for comparative hardness values of PMMA vs. other coated plastics.

Manufacturing and Environmental Economic Advantages: Utilizing mold-in-color PMMA technology eliminates the need for a protective or aesthetic topcoat layer. The simplified approach of mold-in-color reduces the amount of

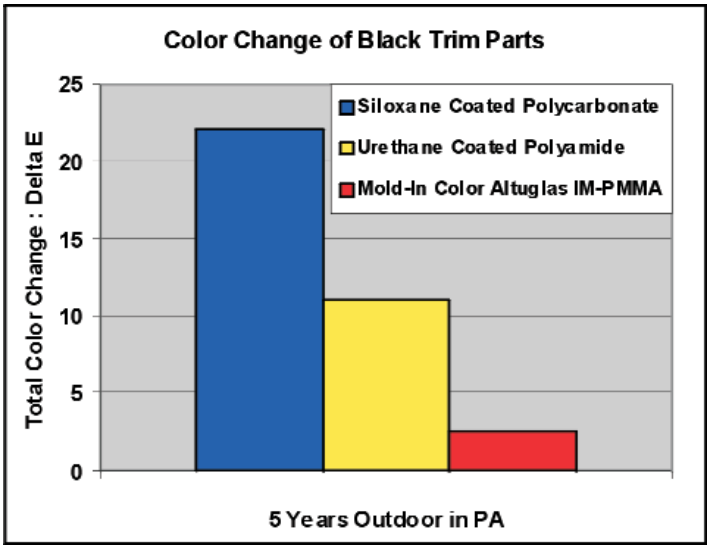

Figure 9
Color Retention for Various Plastic Technologies

equipment and capital expenses required for manufacturing automotive trim parts. By eliminating the coating step, the floor space required for the coating equipment is eliminated. Also eliminated are the secondary processes associated with the coating step such as solvent handling equipment. Mold-in-color PMMA eliminates solvent emissions and the regulatory and safety concerns associated with solvents. Ongoing material costs are lower with a mold-in-color PMMA approach vs. using coatings.

The June 2007 edition of Plastic Technology magazine reported that up to U$2.50 could be saved per vehicle or U$ 3 million per program with the use of a mold-in-color plastic vs. the coating of parts. Faster manufacturing results whenever a plastic trim part is ready for assembly right after molding vs. the delays associated with secondary coating steps.

Mold-in-color PMMA parts, runners, and sprues can be readily recycled whereas coated parts of other plastics must be classified as waste. Acrylic plastics are easily recycled with virgin PMMA and melt processed with excellent thermal stability. Additionally, PMMA is often recycled with other compatible plastics for interior applications. In addition to the in house manufacturing recycling advantages, post consumer recycling with PMMA parts is easier than parts from other plastics that are coated.

Design Flexibility: With the use of mold-in-color PMMA, high gloss parts can be specified and manufactured. Acrylic resin products materials are available with various combinations of enhanced impact performance, higher heat resistance, better melt flow, and increased surface hardness.

Board of Directors Meeting Minutes

Jay Raisoni

Incoming 2009 chairman Tom Pickett conducted the board meeting on Monday, July 21st 5:30 -8 pm at ACC, Troy. It was preceded by networking and dinner at 5 PM.

Members Present: Mark Lapain, Norm Kakarala, Nippani Rao, Jim Keeler (President - Detroit Section) John Fialka, Josh Madden, Al Murray, Teri Chouinard, Jay Raisoni, Fred Deans, Jackie Rehkopf, Kevin Pageau, Ed Garnham, Dave Reed, Suresh Shah, Tom Miller, Scott Owens (Liaison to SPE National Executive Committee), Johanne Wilson, Don Lasell (on phone), David Arndt.

Minutes:

- Tom Miller was nominated and elected for Vice-Chair position.
- Nippani Rao is going to check with UV re UV's ability to attend the board meetings from India and to continue as a board member.
- Denise Carlson has not attended enough board meetings in the past as required of a Board member and therefore does not continue as a Board member.
- Director emeritus Gordie Miesel and membership chair Marcie Kurcz have resigned from the board.
- Board vacancies for 2009 and 2011 were filled.
  Directors to 2009 : Don Lasell, Mike Whitens
  Directors to 2011 : Kevin Pageau, Norm Kakarala, Suresh Shah, Jackie Rehkopf, Johanne Wilson, Mark Lapain
- Johanne Wilson was nominated to the Board and to be the membership chair.
- John Fialka gave the treasurer's report which is attached herewith. The divisional financial health is sound. Per Al Murray's suggestion, a committee consisting of Nippani Rao, Suresh Shah, and Brian Grosser is formed for a financial audit as a safeguard.
- Norm Kakarala gave an overview of the technical programs as well as deadlines for the ANTEC 2009. Next year ANTEC is to be held in conjunction with SPI NPE June 22-26, 2009, at McCormick Place in Chicago, Illinois USA.
- Mark Lapain substituted for Maria Ciliberti and reviewed the planning status of IAG (Innovation Awards Gala) set for November 20th at Burton Manor.
- Peggy Malnati's detailed report regarding communications for SPE AD major events including EPCON, ANTEC, ACCE (Composites Conference), Annual Golf event and maintaining the AD web site is available at the link for a week: The web site is much improved and costs less than before.
- Nippani Rao, Councilor is going to check with SPE National how members could control "opt out" from e-blasts. Teri Chouniard, following Al Murray's suggestion is to check with Peggy Malnati re advertising on the AD web site.
- Jackie Rehkof gave intersociety efforts with ASM, SME, and SAMPE; her report shows limited interest and few common intersociety offerings.
- Kevin Pageau reviewed contents, key requirements per National and finances of the newsletter and is attached. It is self supporting through ad income; averages 24-32 pages with color photos.
- Fred Deans is organizing the Golf event for September 8th at Fieldstone golf Club in Auburn Hills. Teri is helping with sponsorship for the event.
- There was a round table discussion; Board members also discussed with Scott Owens on how SPE National and the division can work better together.
- Next Board meeting is scheduled for September 22nd at 5 pm at the American Chemistry Council in Troy, MI. Tom Pickett will send out a reminder.

Automotive TPO Global Conference Showcases Best, Most Innovative in Automotive Polyolefins

Oldest & Largest Automotive Polyolefins Conference Returns for 10th-Anniversary with New Features, Special Talks

The SPE Detroit Section is finalizing the schedule for its 10th-annual SPE Automotive TPO Global Conference, which will be held October 5-8, 2008 in Sterling Heights, Mich., a suburb of Detroit. The event is the largest automotive polyolefins conference in the world, and olefins have been the fastest-growing segment of the global plastics industry for a decade owing to their excellent cost/performance ratio. The organizing committee has been hard at work adding new features and special presentations to make this year's 10th-anniversary conference the best yet.

Show is Often the Preferred Platform to Launch New TPO Technologies

Says conference co-chair, Bill Windscheif of Flint Hill Resources, "Because the SPE Automotive TPO Global Conference is the largest event of its kind in the world, many materials suppliers and machinery OEMs use it as a platform for introducing new TPO technologies to the market. For instance, this year we have a lot of presentations on new soft-touch materials for two-shot molding, which is a lighter, more efficient, and more cost-effective way to create interior trim parts in one step and without waste."

Adds conference co-chair, Paula Fasulo of General Motors Corp., "We also have a half-day session and special display area dedicated to cut-sheet thermoforming. This process has been used in other industries for many years, but is not well understood or widely used in automotive. There are new thermoforming processes that operate at higher production speeds, plus new thermoformable TPO materials with lower temperature impact strength and good surface finishes that make it practical to consider for the production volumes and performance requirements typical in the auto industry. This materials/process combination can produce large parts in simple geometries and thinner walls very cost-effectively, which is why we felt it important to bring to the attention of automotive engineers."

Conference Explores Paradigm Shift in Worldwide Automotive Plastics Usage

One of the special things about this year's show is that it will explore the unique set of conditions that are causing a rapid and radical change in the way automakers are designing and building passenger vehicles and the materials specified for them.

The North American automotive industry is in the midst of an unprecedented transformation in the types of vehicles it produces. Senior Automotive Analyst, John Wolkonowicz of Global Insight (Waltham, Mass.) speaking about this said "I have never seen such a change in consumer taste and seen a change happen as fast as we've seen in the last couple of months." At the same time, a series of other trends are converging to create a paradigm shift in the way vehicles are made and the materials that are used to produce them.

Key among the trends influencing these changes are:

- The rapid rise in crude-oil prices, which is not only impacting driving patterns and vehicle selection criteria but also transportation costs for all products;
- The sharp increase in the cost of natural gas, which is causing monomer prices to spike, leading to nearly universal cost increases in resin prices;
- Significant increases in the price of steel, which has more than doubled since last September, adding $500 USD to the cost of an average vehicle just since January 2008;
- Shortages of certain metals and plastics in the developed world as supply flows to rapidly developing markets in China and India, pushing up prices globally;
- Passage of higher corporate average fuel economy (CAFE) standards in the U.S., which - coupled with high fuel prices and consumer demand for better fuel economy - is necessitating that automakers shift their fleet mix away from large, luxury vehicles toward smaller, more fuel-efficient vehicles and accelerate development of lighter vehicles with alternative powertrains such as hybrids, plug-in electric and fuel-cell powered vehicles; and
- Advancements in resin and machine technology that allow processors to compound at the press, pushing compounders out of the supply chain, which in turn is causing compounders to respond by developing more efficient masterbatches and new specialty products.

"Many are calling the rapid convergence of these trends 'the perfect storm,'" says Robert Eller of Robert Eller Associates LLC and a member of the Automotive TPO Conference planning committee. "We can no longer look to the business cycles that went before for an idea of what the future will hold. Moving forward, things will be fundamentally different - not only how automakers produce vehicles, the kinds of vehicles they build, and the materials they use, but also the shape of the automotive supply chain and the path to market.

Our conference will examine some of the forces driving change in automotive TPOs and should have high value for anyone specifying rigid or flexible parts in thermoplastic polyolefins, as well as those producing or compounding or molding these materials. In fact, this conference is an excellent place to begin finding your role in the new TPO supply chain."

Keynote, Plenary Talks Help Put New Technical Information in Perspective

The three-day conference features sessions on TPO materials, processes, and finishing and each session begins with a plenary talk to help attendees put the rest of that session's presentations into perspective. For instance, Marty Levin of ExxonMobil and representing the Automotive Group of the American Chemistry Council's Plastics Division will give a talk on Revisioning Automotive Plastics in the ACC's Plastics in Automotive Markets: Vision & Technology Roadmap to lead off the Materials Development session. Eric Short of LyondellBasell Advanced Polyolefins USA will discuss TPO Thermoforming Materials and Applications for the Transportation Industries before presentations in the Cut-Sheet Thermoforming session begin.

Jim Moore of Polycon Industries (a division of Decoma) will start the Process Development session with a talk on Trends in Process Developments. And Dr. Rose Ryntz of International Automotive Components will speak on Material and Process Choices for Improved Haptics before the session on Surface Enhancements gets underway. Additionally, a Tuesday OEM-Industry Panel Discussion and a Monday keynote address by Manfred Klepacz of LyondellBasell on The Impact of New Middle East TPO Capacity on the North American Market.

The latest presentation schedule for this year's conference is available for downloading at either **http://auto-tpo.com/** or **www.speautomotive.com/tpo.htm**. For more information or to register for the event, please see the websites, or contact us at +1.248.244.8993, or write SPE Detroit Section, 1800 Crooks Road, Suite A, Troy, MI 48084.

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

www.4spe.org

Membership Matters

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

Nicolae Abrudean		Jim Haseley	Multi Base Dow Corning	Stephen Purvines	Kurz-Kasch, Inc.
Syamal Kumar Adhikari	Mahindra and Mahindra Ltd	William Howard	Milwaukee Wire Products	Jack Quartuccio	Autoliv ASP AWC Division
Gregory Anderson	BASF	Wim Hulpiau	Aspel Molding de Mexico	Yogitha Ramineni	
Roy A. Ash	L&L Products	Steven E. Hurt	The TSM Company Inc	Markus Rauchhaus	Bielomatik Inc
Amit Asthana		Kristen Jacques	Faurecia Interior Systems	Jason A. Reese	Dow Automotive
Krystil E. Barrett	Azdel Inc	Kathleen Jarvis	Neutrex Inc	Robert D. Roberts	NOVA Chemicals Inc
Ali Benben		Jojo Kan		Thomas J. Robinson	Nissha USA Inc
Romylos I. Bethanis	Eldorado Industrias Plasticas	Anil Kaul	Tata Autocomp Systems Ltd	Todd M. Schnell	
Mark A Bissell		Ali Kerr	Shepherd Chemical	Venkata R. Seetha	
Michael P Brooks		Greg Kerslake	Martogg & Co	Raul A. Setien	Wells Manufacturing L P
Charles Buehler		Kyungmin Lee	University of Toronto	Seyedeh Mahboobeh	Sharifi-Kalahroodi
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Jon Car	TFE	Jean-François Luye	PROMOLD	Angela Slayton	TRW Automotive
Steven V. Carter	Accel Color Corporation	James V. Madden	Ingenia Polymers	Jared Sponzilli	Navistar, Inc
Young Ho Choi	Georgia Tech	Pat McCabe	Alcoa	Rick Spring	Clariant Corporation
Tom Coffman		George M. Menovcik	Bielomatik	Nathan M. Stewart	
Dennis J. Courtney		John Morel		Ata Taghizadeh	Ecole Polytechnique Montreal
Howard H. Cradle	North Carolina A&T State Univ	Jean-Francois Morizur	SABIC-IP	Christian Taylor	Ampacet
Dean A. Droelle	Adecco Engineeirng	Mark Murphy	PRD Inc	Thomas Todd	Alcoa Inc
Jerry M. Eng	Cytec Industries Inc	Robert Nadin	Sunoco Chemicals	John Turnbow	Alabama Power Company
Rob R. Esling		Nate Newth	U of M - Dearborn	Scott E. Turner	L&L Products
Larry W Essenburg	Ess Tec Inc	David W Plocinski	Tri-Par Die & Mold Corp	Daniel Urban	
Mary J. Finkel		John W. Pohill	Microheat Inc	Tom Walczak	
Tohru Haruna	Ashai Denka Co	Andre Preissler	Engplasticos	David R. Weisinger	ExxonMobil Chemical

Help for Unemployed SPE Members

New Resources Posted on Automotive Division Website

It's no secret that the North American automotive industry has been hard hit over the past few years, with sharply declining sales, rapidly rising fuel prices and raw material costs, numerous jobs going offshore, and a tightening of consumer spending. The plastics industry too has had challenges. As a result, many of our members are now without jobs, or are working in lower paying jobs with fewer benefits than they had even a few years ago.

If you do become unemployed, we wanted you to know about some resources that may be able to help you find your next job.

SPE Help for Unemployed SPE Members

SPE has developed a series of resources for unemployed members that includes:

- Waiver of dues for up to 2 years while you seek employment.
- Continuation of all SPE benefits during that time.
- Free resume posting and job searching at SPE Career Solutions (www.4spe.org/membercenter/careers/).
- Job-seeking advice -- including tips on how to write a resume, negotiate an offer, etc. -- are available at SPE Career Solutions.
- Placement of 3 free position-wanted ads in Plastics Engineering magazine (to learn more about this option, contact our advertising department).
- Networking opportunities through attending events sponsored by geographic Sections and technical Divisions.

To let SPE know about your change in employment status, please contact Customer Relations at +1.203.740.5403. From there, you can be transferred to other departments. Please also check SPE's main website at www.4spe.org for other helpful information and links to additional resources.

Engineering Society of Detroit to Hold Fall Engineering & Technology Job Fair

So successful was their spring job fair this year that the Engineering Society of Detroit (ESD) - the largest engineering club in the U.S. - will hold a second, Fall ESD Engineering & Technology Job Fair on Monday, October 27, 2008 at the Rock Financial Showplace in Novi, Mich. For more information on attending this event, please see the group's website at **http://www.esd.org** .

For more information about attending or exhibiting at the Job Fair, visit **www.esd.org** or call Leslie Smith at 248-353-0735, ext. 152, or lsmith@esd.org.

Additional Resources for Unemployed SPE Members in the Detroit Area

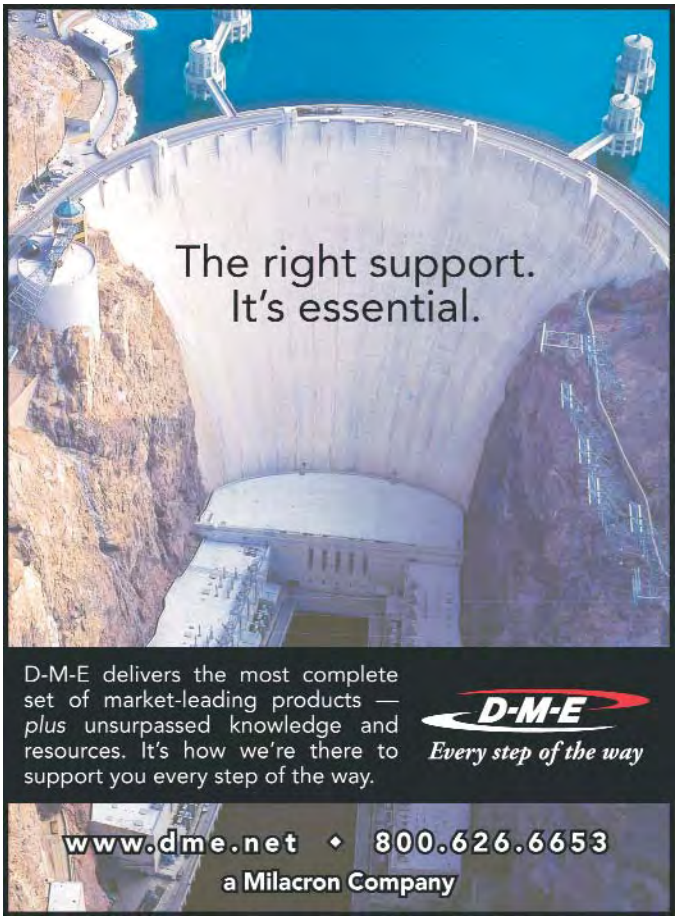
For members in the Metro-Detroit area (or those willing to move here), another resource that you may wish to review is a job bank on Automation Alley's website at **http://www.automationalley.com**

Automation Alley is a 501(c) 6 non-profit organization that drives growth and economic development through a collaborative culture that focuses on workforce and business development initiatives.

Don't Forget Networking Opportunities at Your Local SPE Division & Section Meetings

Another great way to network and have fun with fellow automotive plastics professionals while looking for a job is to attend your local SPE meetings and conferences. For details on upcoming events and board meetings sponsored by the Automotive Division, please see our website at www.speautomotive.com/ec.htm . For information on other geographical sections or industry-based divisions, please see www.4spe.org.

We wish you the best of luck and are here to help if we can. For more information, contact us at media@speautomotive.com .



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