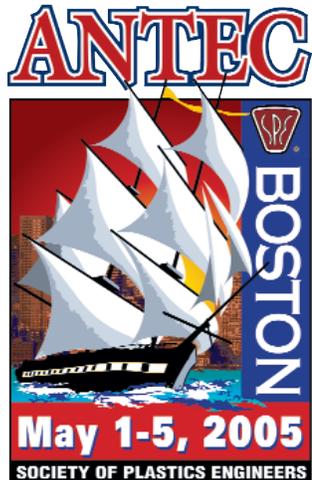


Automotive Plastics News

Today, Tomorrow - Together

June 2005 Volume 34, Issue 4



A REVOLUTION IN PLASTICS

The Automotive Division was an active participant in the successful ANTEC 2005, held May 1-5 at Hynes Convention Center in Boston.

The Automotive Division held two sessions on Tuesday. Dr. Norm Kakarala of Delphi, the Division ANTEC chair organized these sessions with help from Dr. Suresh Shah - Delphi, Dr. Jay Raison - Delphi (moderator - morning session), Mr. Tom Pickett - General Motors (moderator -

afternoon session) and Mr. Mike Shoemaker-Dow Chemical. Suresh, Jay, Tom and Mike also presented technical papers in the sessions. In all the thirteen papers covered a range of topics regarding advances in materials, testing and process as well as new applications.

SPE International presents a number of International Awards at ANTEC, including the International Award, the Engineering/Technology (Fred Conley) Award, the Research Award, the Consumer Product Award, and the Industrial Product Award. The Automotive Division and the Detroit Section jointly sponsor the Education Award. The Education Award, which honors outstanding achievement in plastics education, is awarded posthumously to Dominick V. Rosato - a 60-year veteran of the plastics industry as a technical writer, engineer, and innovator.

Rosato served the plastics industry for 60 years as an industry-wide technical writer, engineer, and innovator. Beginning as a young Army Air Force mechanical engineer

at the government's World War II Wright Air Development Center plastics lab, Nick had a rewarding career in plastics R&D during WWII, the start of the Cold War, and the early Space Age of the 1940s and 1950s. His second career in international sales and marketing, and as a major trade journal editor and spokesperson, occurred in the Plastics Age of the 1960s. In the 1970s and 1980s, Nick took on a third career when he became a major global plastics seminar business founder.

Throughout his life, Nick remained a very active writer, industrial teacher, and consultant. He is very likely the most published applied plastics engineer in history. He was one of SPE's first six Fellows in 1984 and was inducted into the Plastics Hall of Fame in 2003. His "classroom" was the plastic industry.

(Continued Page 6)



Accepting the Education Award was Mrs. Dominick Rosato, pictured with Automotive Division members Norm Kakarala (left), Bonnie Bennyhoff, and Tom Pickett.

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Treasurer's Report

Brian Grosser

Total cash for the SPE Automotive Division is \$50,913

We are on plan to meet or exceed all budget goals for 2005.

We continue to receive sponsorships for the ACCE and SPE Awards Night Gala, and will surpass 2004 levels.

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Automotive Division Meeting Schedule and Special Events Calendar

Automotive Division Golf Outing Dunham Hills Golf Club	July 25, 2005
Automotive Composites Conference - MSU Education Center, Troy, MI	September 21-24, 2005
Automotive TPO Global Conference 2005 - Best Western Sterling Inn, Sterling Heights, MI	October 9-12, 2005
Innovation Awards Program Burton Manor, Livonia, MI	November 16, 2005
ANTEC 2006 Charlotte Convention Center Charlotte, NC	May 7-11, 2006

Automotive Division Board of Directors meetings are open to all SPE members.
Call Norm Kakarala at (248) 655.8483 for more information.

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Chairman's Message

Norm Kakarala

I am honored and privileged to serve this year as the Chair of the SPE Automotive Division. Our mission is to deliver improved value to our division members and to experience personal growth as active SPE volunteers. My passion has been technical programming and I want to initiate an annual technical meeting on automotive plastics. Our experiences with the composites and TPO conferences would serve us well in launching the new plastics meeting in April 2006. Nippani Rao and Tom Pickett have agreed to organize and co-chair the meeting by seeking sponsorships from automotive plastics material suppliers and converters. We will share the details as they become available.

First I want to congratulate Monica Prokopyshen for the outstanding programs during her term as the Chair. Monica started with the theme of continuous improvement on our existing programs but crossed many milestones and raised the standards on our events. I hope our team would further enhance the improvements on our programs.

Our new SPE President Len Czuba has selected the idea of communication as the theme for this year and elaborated using the words "Connect, Collaborate, Compete". At SPE, we organize events for our members to "Connect" and "Collaborate" with other members leading them to be better able to successfully "Compete". The challenge is how do we improve and expand on this theme of the 3 "C's"?

We have a unique advantage at our division; most of our board members have been very active volunteers for SPE for long time. Most amazingly, over 10 past chairs of our division are still currently very active supporting the division programs. That is the level of passion and commitment our board has for the SPE activities. No wonder our division is recognized as Outstanding Division by exceeding the expectations year after year.

I want to congratulate our long standing members and the past chairs of the Automotive Division Nippani Rao and Bonnie Bennyhoff for receiving well deserved outstanding recognition as SPE Honored Service Members at 2005 ANTEC in Boston, MA.

SPE is organized into sections with geographical boundaries and divisions representing different technologies and business segments. As Detroit is the

"Motor City", half of the Automotive Division members are also members of the Detroit Section. Surprisingly the total membership of our division and the Detroit Section are about equal. Sometimes the local plastics professionals get confused of the identities of the division and the section. Hence our goal is to coordinate and collaborate our SPE activities with the section's activities for improved execution of the events.

I want to thank Suzanne Cole for agreeing to continue as the Chair of the 2005 SPE Innovations Awards Program. Suzanne has done a superb job last year initiating and executing many novel ideas into the awards program and raised the bar of expectations of this truly gala event. Please look for more details of the awards program in this issue.

The Fifth Annual SPE Automotive Composites Conference & Exhibition will be held at MSU Management Center in Troy, MI from September 12 through 14th. The event is co-sponsored by the Automotive and Composites Divisions of SPE. Fred Dean and his team have perfected the organization and execution of this very successful conference on automotive composites.

I am looking forward to working with everyone. If you would like to contact me, you can email me at norm.kakarala@delphi.com, or by phone at (248) 655-8483.



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35th Anniversary Innovation Awards Gala

This year, the SPE Automotive Division will be celebrating its 35th Anniversary of the Innovation Awards Gala program, which promises to be a spectacular event. The event theme is **"License To Thrill"**; it will feature several vehicles, which appeared in the James Bond films, in addition to several prototype vehicles. The Innovation Awards Gala honors the **"Most Innovative Use of Plastics"** in automotive applications and recognizes outstanding leadership among automotive industry executives. This annual event typically draws over 700 OEM engineers, automotive and plastics industry executives, and media.

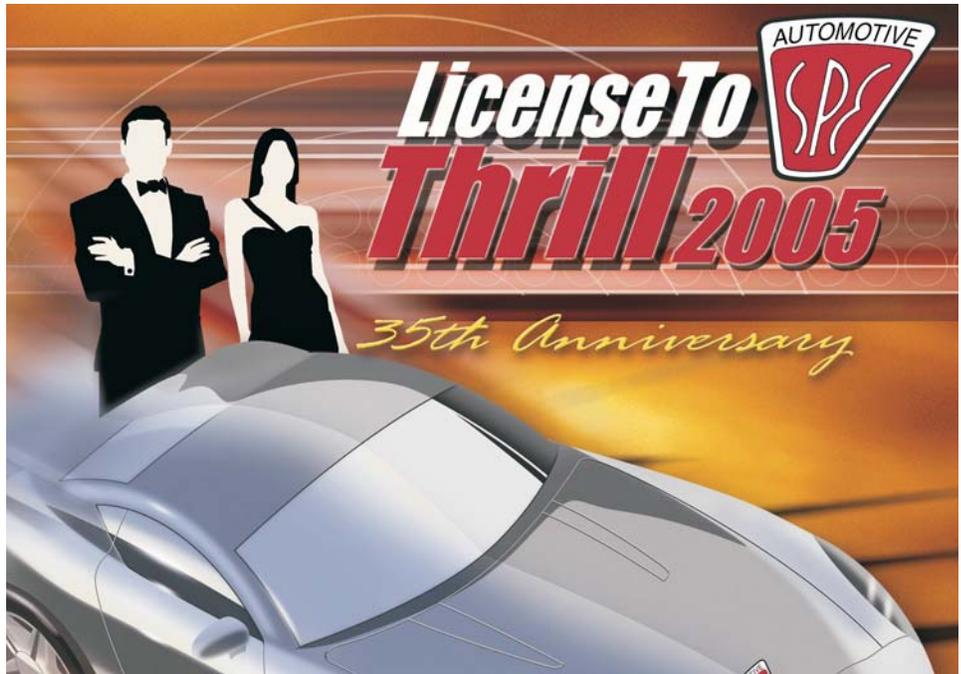
"The Innovation Awards Gala always starts with a theme, around which we build our recognition program," said Suzanne Cole, 2005 Innovation Awards Program Chair. "This year our theme is 'License to Thrill.' We're planning a spectacular gala for this year's event, which is our 35th-anniversary celebration.

"We will incorporate thrilling and sophisticated cues from the James Bond series for our black-tie event. This is a great way to showcase a host of thrilling and innovative plastics applications on some really exciting vehicles. In fact, for the first time ever at the Innovation Awards Gala, we'll be featuring motorcycles, along with prototype and production passenger vehicles. We'll even have some cars and motorcycles that have been featured in Bond films."

This year's black-tie event will be held on Wednesday, November 16th. Doors will open at 4:30 p.m. to allow time to view displays of this year's nominated parts and accommodate out-of-town attendees. A VIP cocktail reception for sponsors will be held earlier in the evening at 5:00 p.m. Dinner and the program will begin at 6:30 p.m. The program is scheduled to conclude by 9:00p.m.

The event will once again be held at Burton Manor Banquet and Conference Center. Excellent music, unique art, exquisite martini bars, wine from premium vineyards, thrilling cars, outrageous motorcycles and plenty of dazzle will abound.

The overall program will incorporate elements from the James Bond feature films. In particular, this year's VIP Cocktail reception will include an extensive Martini bar and magnificent ice sculpture. Once you select your martini, you and your guests can stroll past the artwork that will be on display, and have the opportunity to bid on your favorites.



New Category for Nominations Announced

We anticipate many outstanding nominations for the program. We have added a new category this year, SAFETY. As you recall, we added the Performance & Customization category last year. Now is the time to begin the nominations process and think about what you and your colleagues can submit for this year's highly competitive program.

SPE's Innovation Awards Gala is the largest competition of its kind in the world. Dozens of teams made up of OEMs, tier suppliers, 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 2005 Most Innovative Use of Plastics. This year's competition will feature awards for best innovation in the following categories:

- ◆ Body Exterior,
- ◆ Body Interior,
- ◆ Chassis/Hardware,
- ◆ Environmental,
- ◆ Materials,
- ◆ Performance/Customization (Automotive Aftermarket),
- ◆ Powertrain,
- ◆ Process/Assembly/Enabling Technologies,
- ◆ Plus the new Safety category.

In addition the Hall of Fame Award is presented to most innovative part or application that has been in continuous commercial production for 15 or more years.

The nominations deadline is Friday September 16, 2005. Please make note of this date in your calendar, the deadline will not be extended this year. For additional information on how to nominate an application, visit the SPE Automotive Division website at www.speautomotive.com

Sponsorship Opportunities

Sponsorship opportunities for this year's anniversary event are narrowing quickly. Program sponsorships are sold out. We still have special sponsorship opportunities for the VIP cocktail reception and the student ushers program, along with the traditional Gold (\$10K), Silver (\$8K) and Bronze (\$4K) levels of general sponsorship. Please contact Pat Levine if you need additional information.

We look forward to another record setting event, which will incorporate elegance, intrigue and one of the year's best

networking opportunities. Excellent music, exquisite martini bars, wine from premium vineyards, thrilling cars, outrageous motorcycles and plenty of dazzle will abound. A professional photographer will be on hand to capture special photos of you and your guests as you stroll through the vehicle exhibit and cocktail receptions. A photographer will be fully dedicated to the VIP cocktail reception to capture photos of you and your VIP guests.

Plan now to attend the most spectacular event of the year. We fully anticipate a sold-out event so plan accordingly so you won't be disappointed. If you have any questions please contact Suzanne Cole, 2005 Innovation Awards Chair at 810-750-3863. For sponsorship or ticket sales please contact Pat Levine at 248-244-8920.

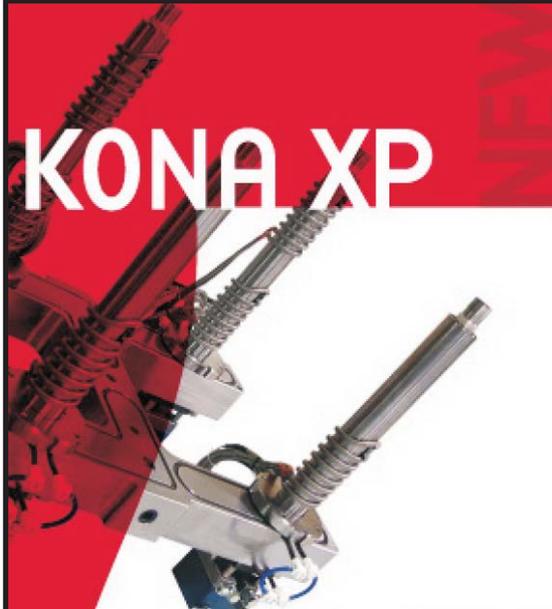


(L to R) Automotive Division Awards Program Chairperson Suzanne Cole, **Jim Padilla** of Ford (2004 SPE Automotive Division Executive Leadership Award Winner), **Tom Moore** - retired DaimlerChrysler (2004 SPE Automotive Division Lifetime Leadership Award Winner), and **Monica Prokopyshen** SPE Automotive Division Chairperson at the VIP reception. Past executive honorees at the SPE Automotive Division Awards Program include **J.T. Battenberg III**, Chairman, CEO and President of Delphi Corporation (2001), **Bernard Robertson**, Senior VP - DaimlerChrysler (2002), & **Robert Schad**, President and CEO of the Husky Corporation (2003). The 2005 SPE Automotive Division Leadership Awards will be presented at the 35th Anniversary Innovation Awards Program on November 16th.



The Grand Award Winning Team for the "Door Trim with Integrated Acoustic Chamber and Subwoofer" on the 2005 Mustang. Team members include Stacey Swank, Tom Comey, Banyuagu Pefora, Brian McLaughlin, Ben Coon, Bob McQueen, Shawn Jefferson, Robert Stafford, Phillip Sandow, and Pat Dennis.

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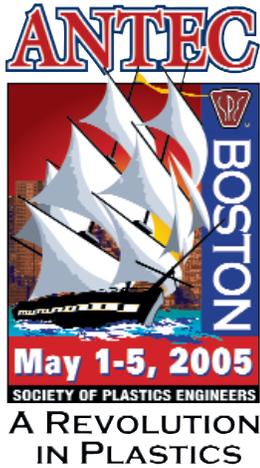
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(Continued from Page 1)



Nick authored over 30 applied plastic handbooks during his 45-year writing career, which are part of the industry's permanent written record. It's conservative to say that his handbooks have sold over 75,000 copies (175,000 copies when contributed chapters and series editing are included), which have influenced over a half million plus plastics professionals. He created more than 75 performance plastic products in his 21-year development career, including "firsts" in Military E/E radar enclosures, aircraft fuselages, refrigerated truck interiors, space rocket nose cones, and under-water vehicles. He founded, designed, managed and taught the 21 module global University of Massachusetts-Lowell Plastics Seminars and corporate in-plant programs. And he dedicated time and effort to over 20 plastics and related industry societies, with teaching efforts at eight universities.

Dominick V. Rosato is the first ever posthumous recipient of an SPE International Award. He left a great legacy to the plastics industry, both in his writings and his teaching. His energy and obvious love of the plastics industry are missed by all who knew him.



Bonnie Bennyhoff (Membership Chair), Norm Kakarla (Automotive Division Chair), and Nippani Rao (Division Councilor) accept the Pride and Outstanding Division Awards from outgoing SPE President Karen Winkler.

Two long time members of the Automotive Division were also recognized as Honored Service Members - Nippani Rao of Daimler Chrysler Corporation and Bonnie Bennyhoff of Advanced Elastomer Systems. The Honored Service Members have demonstrated long-term, outstanding service to SPE and its objectives. At ANTEC 17 candidates were sponsored by the Board of Directors of at least one SPE Section or Division. Only 217 members, counting the 2005 inductees, have been elected to this prestigious status since it was established in 1992.



Bonnie Bennyhoff (above) and Nippani Rao (right) accept their Honored Service Award from outgoing SPE President Karen Winkler.



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The Automotive and Composites Divisions of the Society of Plastics Engineers (SPE) International invite you to attend the 5th-Annual SPE Automotive Composites Conference and Exposition, **September 12-14, 2005**. The conference will feature technical paper sessions, VIP panel discussions, keynote speakers, & exhibits highlighting advances in materials, processes, and applications for both thermoset and thermoplastic composites. Sessions currently planned include:

- VIP Panel Discussion on Material Solutions for Low-Volume Vehicles & Future of Composites
- New Composite Materials, Processes, & Applications
- Enabling Technologies
- Advanced & Hybrid Reinforcement Technologies
- Natural-Fiber Composites
- Structural Composite Applications
- Advances in Long-Fiber Reinforced Thermoplastics
- Nanocomposites

Paper Submissions

Individuals or organizations interested in presenting at the conference should submit **Abstracts no later than April 29th** and **Papers no later than June 30th** to allow time for peer review. E-mail to Jackie Rehkopf, jrehkopf@ford.com or Brian Grosser, bkgrosser@sbcglobal.net. Approved papers will be distributed on a CD to conference attendees.

Exhibition/Sponsorship

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Development of Thermoset Mold-Flow Analysis for Thermoset Fuel Cell Stack Plates

Jeffrey Zemsky
Plug Power, Inc.
968 Albany-Shaker Road
Latham, NY 12110

Paul J. Gramman Ph.D,
The Madison Group
505 S. Rosa Rd., Suite 124
Madison, WI 53719

Abstract

Highly filled, thermoset compression-molded fuel cell stack plates are key elements in the design of a high-performance, low-cost fuel cell stack. Much analysis, research and testing have been performed to meet performance and manufacturability criteria for these plates, which contain complex geometry and must meet exacting tolerances in some areas. A current deficiency in the development process is the inability to predict mold filling for the stack plates in a process with highly filled thermoset composites and compression molding. Mold-filling analysis can be used to optimize plate design, mold design and the manufacturing process, thereby saving time and improving quality.

This paper will discuss a strategy to develop mold-filling analysis with the goal of cultivating a predictive tool for use in the manufacture of fuel cell stack plates and highly filled thermoset composites. A series of molding trials was performed and the results were used to calibrate a model, resulting in a model that correlated well to the real-world case.

Introduction

Proton Exchange Membrane (PEM) fuel cell stacks are comprised of multiple plates sandwiched with gaskets and proton-exchange membranes. Figure 1 shows an example stack. These plates must meet several requirements for operation in the fuel cell environment.

Figure 4: Barone-Caulk flow model. Plates must be:

- Electrically conductive;
- Thermally conductive;
- Chemically stable;
- Dimensionally accurate in terms of flow-field geometry;
- Flat and parallel on surfaces;
- Low in cost;
- And able to be mass-produced.

Many strides have been made in fuel cell plate design, material and manufacturing in order to create plates that meet these conditions. The material used in this case was

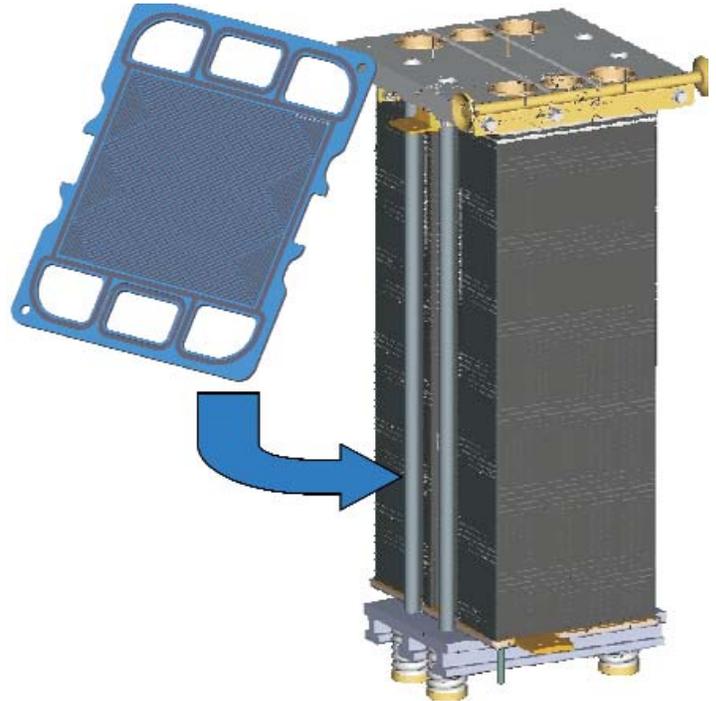
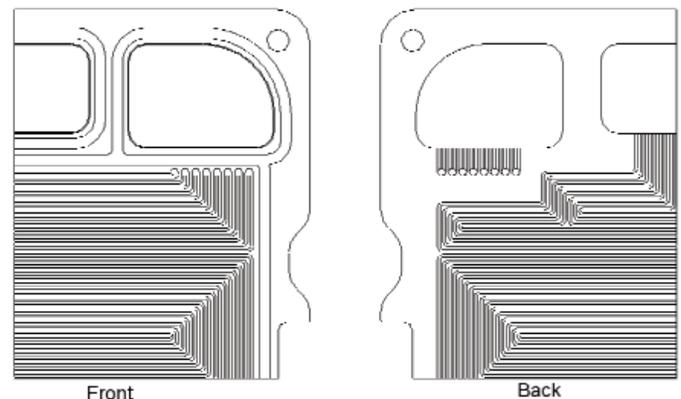


Figure 1: Fuel cell stack and fuel cell plate

a highly filled thermoset engineered by Bulk Molding Compounds, Inc. (BMCI) to meet the needs of the fuel cell industry. Compression molding is used for these parts because it offers several advantages for manufacturing. However, one shortcoming has been the lack of an analytical tool to predict molding performance.

Mold-flow tools have been used in industry to simulate and predict molding behavior of thermoplastic and thermoset materials, especially in injection-molding processes. These existing analytical models did not meet the needs of the highly filled thermosets and compression molding cycle used in making these fuel cell plates.



Flow field cross section

Figure 2: Plate geometry used in analysis (simplified quarter plate model shown)

During a recent project, Plug Power desired to better understand the flow characteristics of the material during molding and how it affected finished parts. Figure 2 shows a simplified model of the plate used for this testing. With BMCI's assistance, a short-shot analysis was performed using a production tool to better understand how the tool filled.

Figure 3 shows a graph of the percentage-fill steps used in the short-shot analysis. Photos were taken of each step to compare to any future analyses and to understand what effect design changes would have on the mold flow and moldability of the parts. In order to do this, The Madison Group was contacted to see if their compression molding thermoset analysis tool, Cadpress®, could be used to simulate the molded fuel cell plate.

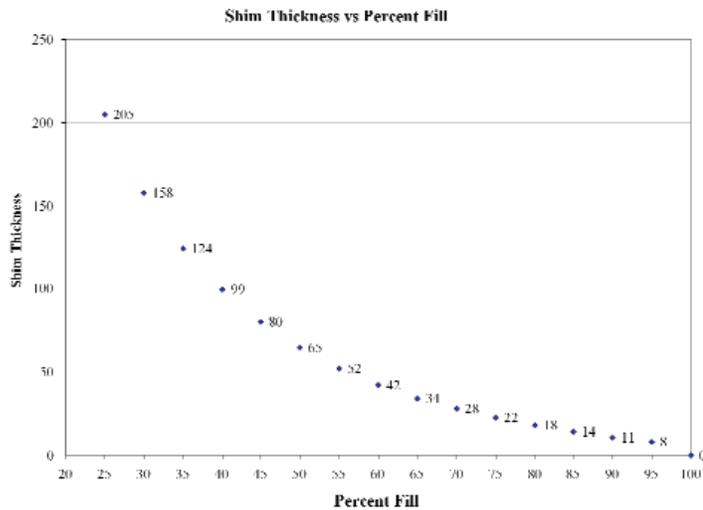


Figure 3: Short shot study data points

BMCI provided the material data for simulation and Plug Power provided a simplified quarter-symmetry model of the part to The Madison Group to develop the mold-filling analysis. Figure 2 shows the model used for analysis. The Madison Group also used the short-shot data to help quantify the model to be used for the analysis. This information was used to build a model that would match the unique flow characteristics seen in this environment.

Simulation of Thermoset Compounds

Unlike thermoplastic materials that solidify at the cold mold surface during mold filling, thermoset materials create a viscous layer at the hot mold surface. This produces a slip boundary condition for the compound resulting in a "plug" flow phenomenon, illustrated in Figure 4. To capture this behavior during molding simulation, the Barone-Caulk flow model [1] with a hydrodynamic friction layer at the mold surface is used in the finite-element formulation.

- Assumptions
- narrow gap ($h \ll L$)
 - incompressible fluid
 - GNF constitutive equation
 - neglect inertia and body forces

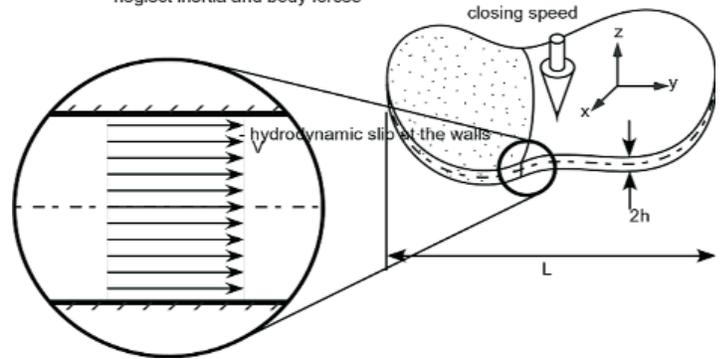


Figure 4: Barone-Caulk flow model.

Comparison of Simulation to Short Shots

Typically, the hydrodynamic friction is constant (isotropic) across the mold surface [2]. However, short shots of the flow plate showed that this was not the case. During compression molding, the compound was flowing preferentially in one direction due to the geometry of the flow fields.

To capture this effect, the finite-element program was modified to account for an anisotropic hydrodynamic friction. This modification allows for the use of a different friction factor in different directions to be specified at locations throughout the mold. Figures 6-10 show the predicted flow along with the short shot. Since the flow field is nearly symmetrical in the "y" and "x" directions, only one-quarter of the plate was modeled. This initial charge or "puck" is circular in geometry and placed at the center of the mold. Full charge volume was used for the short shot with shims used to stop the mold at specific mold heights.

Continued Page 10



Figure 5: Charge placement on part.

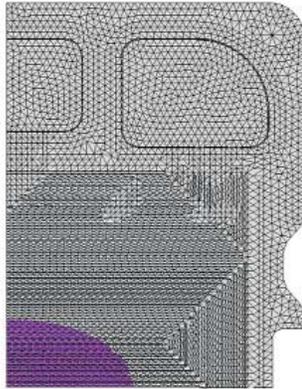


Figure 6: Initial mold filling with short shot and simulation. Note: due to symmetry one quarter of plate was modeled.

Figure 7 quickly shows the preferential flow in the horizontal direction. Here, more material is flowing along the flow fields than across them. The simulation captures this effect quite accurately. After the compound hits the sidewall of the flow plate, a race tracking-type flow occurs. The compound accelerates up the wall causing two knit lines to occur at the top edge. This simulation predicts these two knit lines, although it over-predicts flow in the two thin manifold regions.

Knowing that the knit lines were predicted and realizing that there was an over-prediction of flow in the manifold region gave analysts confidence to move forward to improve flow. This entailed modifying plate geometry and charge location to produce a plate without knit lines.

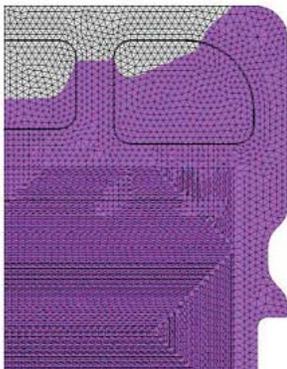
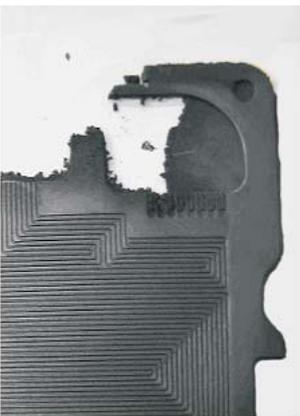
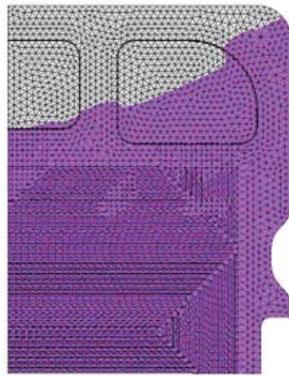
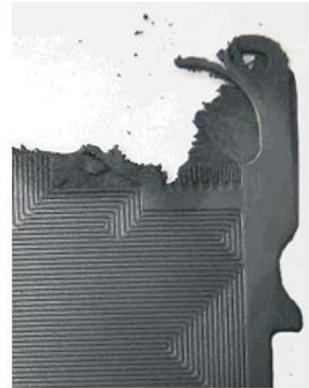
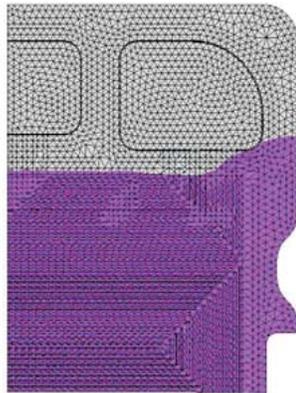


Figure 7 to 10: Mold filling during short shot and simulation.



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Summary and Next Steps

The initial results from the mold-flow analysis showed good correlation to the real-world data. This shows that for a given molding condition with known data, the analysis model will give results that closely correlate the actual behavior. However, a series of steps should now be taken to both confirm and improve the analysis as a predictive tool that can be used for fuel-cell plate design.

- 1 Exercise the code for the current geometry with different preform locations and shapes. Perform short-shot studies to see if the analysis-predicted results match actual results.
2. Exercise the code for other geometries to see if similar results are generated.
3. Gather more short-shot study data for other thermoset compression-molded fuel-cell plates and materials. This would be used to develop a more generalized model that can accurately predict mold flow over a wide range of geometry and molding parameters.

In summary, it was shown that the analytical tool used in this study with the customizations done by The Madison Group was able to accurately predict the mold flow for a fuel cell plate molded with a conductive thermoset material. With the steps listed above, companies involved in design of molded fuel-cell plates will have another analytical tool available to help improve quality and reduce time-to-market for these parts.

References

- [1] Baraone, M.R. and D.A.Caulk, J. Appl. Mech, 361-371 (1986).
- [2] Davis, B.A., P.J. Gramann, T.A., Osswald, and A.C. Rios, Compression Molding, Hanser, Munich, 2003.



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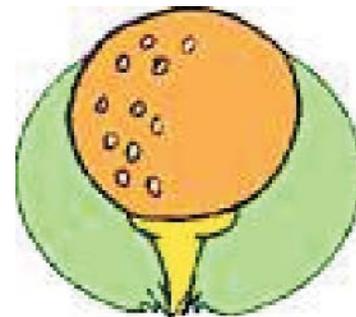
Automotive Division Golf Outing

Dunham Hills Golf Club

Hartland, MI (248) 887-9170

Monday, July 25, 2005

Registration/Lunch	11:30
Shot-gun Start	1:00
Cocktails/Prizes	6:00



Join us for a fun afternoon of lunch, golf, refreshments and networking. This outing is a great opportunity to meet people, entertain customers, or just get out. We are limited to 36 foursomes, so register early!

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For additional information call Jim Staargaard at (248) 351-8445

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Inter-Society Outreach

Mark Lapain

SPE

SPE Detroit Section Golf Outing
June 13, 2005, Twin Oaks Golf Club, Oakland, MI

SPE Automotive Division Golf Outing
July 25, 2005, Dunham Hills Golf Club

TPE 2005
September 12-14, 2005, Akron, Ohio, USA

Thermoforming Conference 2005
September 24-27, 2005, Midwest Express Convention Center, Milwaukee, WI

Color & Appearance Conference 2005
September 26-27, 2005, New Orleans, Louisiana, USA

Vinyltec 2005
October 4-5, 2005, Philadelphia, Pennsylvania USA

Automotive TPO Global Conference 2005
October 10-12, 2005, Sterling Heights, MI

SAE

SAE Commercial Vehicle Engineering Congress & Exhibition
November 1-3, 2005, Donald E. Stephens Convention Center, Rosemont (Chicago), IL

2006 SAE World Congress
April 3-7, 2006, Cobo Center, Detroit, MI

SAMPE

SAMPE 2005 Fall Technical Conference
October 31-November 3, 2005, Washington State Convention Center & Seattle Renaissance, Seattle, WA

2005 SAMPE Japan (JISSE-9)
November 29 - December 2, 2005

SME

The SME Summit 2005
August 3-4, 2005, Olympia Resort & Conference Center, Oconomowoc, WI

Midwest 2005 Exposition & Conference
September 13-15, 2005, Novi Expo Center, Novi, MI

Coating 2005
September 19-22, 2005, Indiana Convention Center, Indianapolis, IN

North American Hydroforming Conference & Exhibition
September 26-28, 2005, Sheraton Detroit Novi, Novi, MI

ACMA

ACMA ACA Annual Golf Tournament
September 20, 2005, Bay Pointe Golf Club, West Bloomfield, MI

COMPOSITES 2005
September 28 - 30, 2005, Greater Columbus Convention Center, Columbus, OH

Miscellaneous

Nanocomposites 2005
August 22-24, 2005, San Francisco, CA

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Membership Matters

Bonnie Bennyhoff

SPE membership has grown steadily month to month since July 2004. Overall membership is up roughly 1.7% over this time last year while the automotive division boasts an 8% increase. Are you part of this positive trend? The leadership team at SPE is dedicated to making it easier and more beneficial for you to belong read on.

Simple. Personalized. Easy.

Member services have been enhanced to allow you real-time and immediate access to your personal membership account. Once logged-in to www.4spe.org, members can now view their current SPE profile, make necessary edits, pay dues and access member-only services. Members will no longer have to type their information into the online renewal form, making the renewal process easier than ever! Information about this new service will be included with early bird renewal notices.

Did You Know?

Members who opt to renew by their early bird deadline will save \$5 on membership dues? In addition, any member who chooses to use the new online renewal service will receive one of SPE's best-selling archived online presentations - a \$50 value - absolutely free! Early Bird

Renewal invoices were mailed late March to members with June 30, 2005 paid through dates. Members with paid through dates between July 2005 and December 2005 will receive early bird renewal notices 90 days before their membership expires.

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- Members-only e-newsletters and online resources (many free to SPE members). It's like getting two memberships for the price of one!

DON'T DELAY. JOIN/RENEW TODAY!

Contact any board member for more information or an invitation to attend our next meeting and experience for yourself the value SPE can provide to you!

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

John Marx		Teresa Kazaglis	A. Schulman Inc	Seth Summerlin	Ticona
Andrew L. Gilbert	BorgWarner Copr	John D. Cowperthwait		Gary Phillips	
Roger Gabbard	Toyota Motor Manufacturing	Les R. Sullivan	Meridian Automotive Systems	Rainer Kunau	Canadian Consulate General
Euclide Ceccchin	Omega Tool Limited	Maria E. Ciliberti	Ticona	Mitsuru Doteguchi	Teijin Kasei America Inc
Anand D. Kasbekar	Research Engineers Inc	Domenico Romanino	Cytec Industries Inc	Andrew Heilmann	GM
C Martin Angell		Roman Yaremko	Rhodia Engineering Plastics	Steven J. Billmeier	
Jeff Bevan	Sika	John a. Duston	Uniform Color Company	Adam Smith	
Sarah R Kaspers	Ciba Specialty Chem	Jason L. Scultety	Ballard Power Systems	Jordan E. Kiesser	PACCAR Technical Center
Dan Batdorf	Schill Corporation	Carlos G. Ortiz	DuPont Dow Elastomers LLC	Tom Malloy	Geotech
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Brian E Burkhart		Edward M. Callahan	ADAC Plastics Inc	Andreas Dobmaier	TI Automotive
Derek J. Buckmaster	GE Advanced Materials	Kyehwan Lee	University of Texas Pan American	Michael H. Sullivan	Rosti Technical Plastics
Matt Johnson		Michael Fill	DuPont Canada Company	Curtis E. Thielker	
Ronald G. Robertson		Ian R. Vaughan		Xiaorong Wang	Bridgestone/Firestone Research
John M. Walker		Gregory Grudzinski	Society of Plastics Engineers	Brian H. Wobrock	DSM Engineering Plastics
Philip Allgood	MEI	David D. Lipka	Honda R&D Americas	Kamran Rab	
Jong-Sin Moon	LG Chem Ltd	James Howes	North American Machine & Engineering Co	Bryan D. Stratton	
David Lapierre		Lance Kaczorowski	International Truck	Yasuhiro Yamamoto	Toyota Motor Manufacturing
Trevor Nickerson	PCF/Jamestown Plastics Inc	Evaldas Cizinauskas	SMI Autotrans	Ted Combs	PolyOne Distribution
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Kenneth J. MacLeod	Haartz Corporation	Benjamin Englander	Rosco Inc	Joseph W. Pietryka	Joe Pietryka Incorporated
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Michael D. Vida	Polymer Technologies	George Ng	Woodbridge Foam	Hung Duong	Seitz Corporation
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Dean R. Oswald	Polywheels Manufacturing Ltd			Patrick Cavanaugh	Industrial Resin Recycling Inc
				Curtis M. Ferguson	

Councilor's Corner

Nippani Rao

The following summarizes the highlights of the Councilor's meeting, April 30, May 1, 2005 at Boston, Mass. (ANTEC)

The Council Meeting 1 was chaired by Karen Winkler and the highlights are:

SPE formed a Technical Advisory Board to keep track of upcoming new technologies and also a similar one covering Europe. Membership is continuing to grow with our AIM program. Six new SIG's are formed during 2004-2005 period. Over 7000 attended our conferences and topical conferences are continuing to grow. SPE awards over \$200,000 in scholarships each year.

Susan Oderwald reported on the status of SPE. Membership is over 20,000 and exceeded the goal. All loans have been paid off. Tara Munson left SPE. One staff member retired and this position was filled. SPE is Developing a board of trustees for the Foundation to develop plans to raise money.

Vicki Flaris reported on the financial status of SPE. Preliminary results of ANTEC show the income of about \$900,000 and expenses about \$700,000. Seminars at ANTEC were soft and books, training products are on track.

Rebates

The Council discussed the disposition of rebates extensively and accepted the proposal drafted by a special committee chaired by Bill O'Connel. Most changes to the rebates will take effect in 2007 with one exception that rebates in 2006, while based on prior system, will be paid quarterly.

Budgeting total rebate dollars. If Council budgets rebates at \$350,000 and the actual calculation comes to \$315,000, each group would receive 111% of their calculated rebate. Likewise if rebates are budgeted at \$350,000 and the actual calculation comes to \$390,000, every group would receive 90% of their rebate. Rebates will be paid quarterly in the same year they are budgeted.

Other key changes are: Paying rebates only for dues paying members, dropping the rebates for the seldom-collected initiation fee, tiering the Division rebates like the Section rebates and having the performance criteria for rebates.

Performance criteria is not new. The current system requires a Board of Directors and the submission of required financial statements. The three items that are new are: No rebates for sections and divisions whose council seat has been declared vacant by council (Non attendance for 3 consecutive council meetings). Requiring communication with members. Having a plan.

Various committee chairs reported on the activities and the progress.

The Council approved the charter of Flexible Packaging Division. Two new SIGs were presented to the Council: Nanotechnology and Micromolding. A student chapter was established at the University of Mississippi.

There was some discussion on the HSM requirements in general and international service requirements in particular. HSM committee will review the requirements and report at the next council meeting.

In addition to the recognition plaques to retiring councilors, two additional awards were given out. The Michael Cappelletti Excellence Award was given to Bill O'Connel and James Toner Service award was given to Tobi Gabauer.

Outgoing President Karen Winkler thanked her executive Committee for their hard work.

A number of presentations were made towards SPE foundation and Scholarships. Detroit Section made \$2000 towards Essay contest, \$2500 towards Fred Schwab and \$5000 towards Robert Daily scholarship. Automotive Division also contributes \$2500 towards Fred Schwab scholarship.

Len Czuba, the incoming president chaired the Council Meeting 11

Len presented the 2005-2006 operating plan. Introduced his executive committee. New executive committee Vice-Presidents are Russel Broom, Hector Dilan, Lance Neward and William Smith. Paul Anderson is the new treasurer and John Symankiewicz, the new secretary. The appointed committee chairs were announced and approved by the Council.

Paul Anderson reviewed the financial calendar for 2005-2006. The 2006 budget will be sent to the Councilors in August and voted on by the Council on September 24th. Financial updates will be posted on the SPE website.

Council Committee of the whole Meeting (COW) was chaired by Barbara Arnold-Ferret on April 30. A number of topics were discussed such as HSM criteria, Rebates electronic PE magazine, financial solvency of SPE etc.

The next Council meeting will be held in Milwaukee, Wisconsin on September 24, 2005.

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