



10TH ANNUAL

AUTO EPCON

MAY 5, 2015

**ENGINEERING PLASTICS
IN HIGH GEAR**

SOCIETY OF PLASTICS ENGINEERS
Detroit Section and Automotive Division

CO-SPONSORED BY



TRENDS & TOPICS

Volume 59 ▲ Number 6

DETROIT SECTION - SOCIETY OF PLASTICS ENGINEERS - "THE CHARTER CHAPTER"

April 2015

Auto Epcon Agenda

7:00 **Registration & Continental Breakfast**

8:15 **Welcome:** Dr. Gary Kogowski, Ravago Holdings Americas, Conference Chair

8:30 **Opening remarks:** Kathy Minnich, Ford Motor Company, Conference Executive Chair

8:45 **KEYNOTE: The Role of Plastics in Automotive Interiors**

Dr. Rose Ryntz, IAC Advanced Development and Material, Vice President

9:15 **Technical Program:** Sandra McClelland, Solvay Specialty Polymers, Conference Technical Chair

	Salon ABC	Salon D	Dennison Salon
	I. Materials	II. Light Weighting	III. CFC Standards Roadmap
	Dillon Frost Moderator	Eve Vitale Moderator	
9:35 - 10:00	Hostaform® SlideX™ POM: A tribologically modified acetal for superior wear and friction resistance	Strategies for Light-Weighting Plastics	Potential Development of Materials Characterizations
	Leslie Rubcich, Platform Development Manager, Celanese	Paul A. Hardy, Product Manager, Engineered Plastics, A. Schulman, Inc.	Dave Warren, Oak Ridge National Labs, and Anand Raghunathan Consultant to Department of Energy
10:00 - 10:25	Polyamide 6,6 advancement to address the need for acidic environment in exhaust gas	Advanced Weight Reduction with New Developed Polyamides	
	Dr. Vikram Gopal, Global Technical and Marketing Director, INVISTA Engineering Polymers	Bernd Henkelmann, Application Development Manager Automotive, EMS-GRIVORY America	
10:25 - 10:50	Break		
10:50 - 11:15	Next Generation and Re-engineered EcoLonR Glass Fiber Reinforced Products	Systematic Approach for developing Thermal Management System using High Performance Engineering Polymers (HPEP)	Workshop continued
	Dr. Deen Chundury, Vice President, R&D, Wellman Engineering Resins	Brad Hakes, Product Manager, MPC Inc.	
11:15 - 11:40	The Development of a Radar Enclosure Compound	Metal to Plastic Transformation	
	Ned Bryant, Senior Product Development Engineer, RTP Company	Mike Kole, President, Pinnacle Sales	

12:00 -

Lunch

1:00

12:30 -
1:00

KEYNOTE: Innovation in the Automotive Value Chain for Cost and Weight Savings

Jeff Helms, Global Automotive Manager, Celanese Engineered Materials

	Salon ABC	Salon D	Dennison Salon
	IV. Materials	V. Testing	VI. Secondary Processes
	Christopher Lafayette Moderator	Eve Vitale Moderator	Dward Kue Moderator
1:15 - 1:45	AvaSpire® PAEK: A Performance and Economically Differentiated Ultra Polymer	Mechanical Testing and Characterization of a Thermoplastic Copolyester based elastomer (DSM Arnitel EM400)	Powertrain AIMs at MuCell for Appearance, Structural Performance and Long Term Durability
	Brian Baleno, Global Automotive Business Manager, Solvay Specialty Polymers	J. Bergstrom, Ph.D., Principal Engineer, Veryst Engineering, LLC	Scott Schlicker, Powertrain Market Segment Manager, BASF Corporation
1:45 - 2:15	Direct Coating / Direct Skinning Technology	Investigation into characterization and modeling of fiber reinforced resin components	Two-Shot Molding With Thermoplastic Elastomers (TPEs): A Great Combination Offering Design Flexibility Without Additional Processing Steps
	Jessee McCanna, Principal Engineer, Bayer Material Science	Umesh Gandhi, Ph.D, Toyota Research Institute North America (TRINA), USA	Brandon Bubak, Global Sales and Marketing Director, RTP Company
2:15 - 2:45	High performance additives solutions for polyamides compounds	A Deep Analysis of Fibers Debonding in a Fiber Reinforced Plastic	Efficient Assembly and Joining: Reversible Bonded Joints, Technical and Business Case Study
	Emilie Meddah, Technical Marketing Manager, Clariant International Limited	Kurt Danielson, e-Xstream Engineering	Mike Day, American Chemistry Council consultant

2:45 -
3:00

Break

3:00 -
3:30

KEYNOTE: Regulations Driving Market Demand

Suzanne Cole, CEO, Miller Cole LLC

3:30 - 4:00	Biocomposites and Bioblends based on Engineering Thermoplastics for Automotive Applications	Creep Behavior of Polymer Blends and Long Term Prediction	Expanding the Capabilities of Thermoplastic Through the Use of Electron Beam Crosslinking and Branching
	Mihaela Mihai, Automotive & Surface Transportation, National Research Council Canada (NRC-CNRC)	Ying Shi, R & D Engineer, A. Schulman, Inc.	Dan Yasenchak, Technology and Development Manager, E-BEAM Services, Inc.
4:00 - 4:30	The Impact of Wear and Friction on Thermoplastic Compounds at High Pressure and Velocity Levels	Analysis of Plastics for Interior Noise Potential- "Stick / Slip"	RocTool The next Evolution in Injection Molding Technology
	Ron, Dugas Jr., Business Development Specialist, RTP Company	Gary Lawrence, Detroit Branch Sales Manager, Techno Polymer America	Mathieu Boulanger, President, North America, RocTool

4:30 -
6:00

Networking Reception: Sponsored by SPE Detroit Section & Automotive Division

Keynote Speakers

The Role of Plastics in Automotive Interiors

Dr. Rose Ryntz

IAC Advanced Development and Material, Vice President



Plastics have often been used in automotive interiors to provide design freedom and enhance craftsmanship. With the recent push to light weighting plastics are playing a larger role in interior design. Combined with new processing technologies, plastics can afford all

of the advantages of low temperature impact resistance, improved haptics, and enhanced recyclability. This talk will focus on the enhanced customer requirements in the automotive interior and discuss some of the new technological advances that will allow the plastics industry to achieve them.

Dr. Ryntz obtained a Ph.D. degree in polymer/organic chemistry from the University of Detroit in 1983 and a MBA from Michigan State University in 2002. She was employed at various companies (Dow Chemical, DuPont, Ford Motor, Akzo Nobel, and Visteon) prior to her current role as Vice President of Advanced Development and Material Engineering at International Automotive Components, IAC Group North America.

She has been a prolific lecturer both domestically and internationally, being an invited lecturer at many symposia. Dr. Ryntz has published extensively, with over 100 publications, 30 patents, and four books.

Dr. Ryntz has been the recipient of many prestigious awards, including International Biographical Center Who's Who in the World, Best Paper and Best Speaker awards through the Federation of Societies for Coatings Technology (FSCT) and Society of Plastic Engineers (SPE), the FSCT Women in Coatings Management Achievement Award, George B. Heckel Award and Matiello Award presented by the FSCT, the American Chemical Society (ACS) Roy Tess Award, the Women Automotive Association International Professional Achievement Award, the Outstanding Leadership Award sponsored by the Engineering Society of Detroit (ESD), the Society of Plastics Engineers Detroit Section Outstanding Member Award, the Elias Singer Best Paper Award sponsored by the University of Southern Mississippi, the Gold Award

sponsored by the ESD, a Roon Award sponsored by the FSCT, and the Henry Ford Technology award presented by the Ford Motor Company for outstanding technical contributions to the Company.

She has served as President of the FSCT from 2005 – 2007 and was elected as a Fellow to the Society of Plastics Engineers in 2006. She has also served on the board of directors of the Detroit Section of the SPE.

Innovation in the Automotive Value Chain for Cost and Weight Savings

Jeff Helms

Global Automotive Manager, Celanese Engineered Materials



Innovation in the automotive business typically resists revolutionary technical change in favor of a more evolutionary model. Among the reasons for this is the complexity of the automotive ecosystem ranging from the OEM to Tier to molder to aftermarket and increasing regulatory requirements

that also have the effect of increasing the perceived risk associated with any revolutionary technology whether it be a material innovation or a new design application. In some cases, since new technology tends to come from a point source in the value chain, there is a perceived risk of being single sourced and therefore, subject to predatory behavior by the technology owner. Constructive partnerships which focus on developing the right technology, accelerate development cycles and foster collaboration throughout the automotive value chain can help to overcome the perception of risk in technology development and foster a higher technology commercialization rate. This talk will briefly describe the model used by Celanese to deliver cost and weight savings to automotive manufacturers.

Dr. Helms received his Bachelor of Science degree in Chemistry in 1984 and his Ph. D. in Chemistry in 1988 at the University of North Carolina at Chapel Hill. In addition, Dr. Helms received his MBA from Michigan State University through the Executive MBA program in 2000.

Dr. Helms has been employed by Celanese Corporation in the Engineered Materials business since November 2008 where he is the Global Automotive Manager. In this role, Dr. Helms is responsible for driving and coordinating the growth of Celanese product lines at

the OEM level for Celanese priority global OEMs.

Prior to November 2008, Dr. Helms had been employed by Ford Motor Company since October 1988. He held several positions in the Ford Research Laboratory including Plastics Technical Specialist, Plastics Research Team Leader and Manager of the Materials Research and Advanced Engineering. Over this time, he led or managed projects including lightweight materials, corrosion, coating technologies, fuel cell systems, materials characterization, biomaterials and manufacturing technologies. Following his tenure in the Ford Research organization, Dr. Helms held the position of Manager, Team Value Management, Ford North American Product Creation, Manager of the Paint Material Development and Release activity in the Ford Global Paint Engineering organization and Chief Engineer of Materials Engineering, Testing and Standards in the Ford Product Development organization.

Dr. Helms is a member of the Society of Plastics Engineers, the Society of Automotive Engineers and the American Chemical Society.

Regulations Driving Market Demand

Suzanne Cole

CEO, Miller Cole LLC



Federal regulations are driving profound changes that are underway with propulsion technology, under the hood components and the lightweighting of conventional passenger cars and light duty trucks. A plethora of new innovative technologies and materials aim to substantially boost fuel economy and reduce mobile greenhouse gas emissions. As we move to the midterm evaluation of MY 2022-2025 standards, technology development and consumer response is being closely scrutinized. This presentation examines the opportunities and challenges confronting the light-duty sector, on going research and research gaps with an eye towards informing the upcoming midterm review and the potential opportunities for plastics in the future of vehicle construction.

Suzanne Cole is CEO of Miller Cole LLC, a management consulting firm in Washington, D.C. specializing in legislative and regulatory affairs, advocacy and government funding for corporate technology R&D and manufacturing. Suzanne is an expert in the development of successful integrated (product, regulatory, legislative) market strategies for industry. She has counseled corporate, nonprofit and international clients on transportation, automotive safety, chemicals, energy,

environmental and public policy matters including state and federal regulatory and legislative issues.

Governor Engler appointed her to the Michigan Broadband Development Authority; and she served on the Resource Conservation and Recovery Act Revisions and Superfund Committees in Congress as well as the Presidents Export Council. She has testified before congress on automotive safety and environmental issues. She authored and contributed to several articles on automotive safety, vehicle emissions and diesel technology and authored a white paper for the University of Michigan Transportation Research Institute on Vehicle Recycling and End of Life Vehicles.

Formerly, Suzanne was Vice President Global Government Affairs for the Ocean Group, PLC in London, England, She led the global government and regulatory affairs effort, including U.S. Federal government relations, effectively established a global government interface capability and served as the corporate representative to proactively shape and influence key policy actions critical to Ocean's strategic objectives. As Executive Director and General Manager of Federal Programs for National Environmental Testing (Division of Ocean Group) in Boston, she oversaw all Federal Programs; interacting with the Joint Staff of the Joint Chiefs of Staff on BRAC programs, EPA, FDA and others.

Suzanne was appointed to the University of Michigan International Council for Automotive Medicine Advisory Board of Directors in 2014 and works with fellow board members to improve vehicle safety, reduce injuries and fatalities world-wide.

She has a B.S. from Michigan State University; MBA, UM Ross Business School and a Masters in Chemical Engineering from Wayne State University.

Suzanne Chaired the SPE Automotive Innovation Awards Program and Gala for three years and chaired 5 consecutive Global Automotive Safety Conferences for the Society of Plastics Engineers and Society of Automotive Engineers.. She is an honored service member of the Society of Plastics Engineers.

Presentations

Materials

Hostaform® SlideX™ POM: A tribologically modified acetal for superior wear and friction resistance

Leslie Rubcich, Platform Development Manager,
Celanese International
Leslie.Rubcich@Celanese.com

Celanese has developed a low-friction and low-wear grade acetal copolymer that significantly reduces noise, wear and friction in the sliding motion while retaining the strength and stiffness of the base resin. The tribologically modified polymer will enable parts with a very low coefficient of friction and wear rate, resulting in the reduction of energy loss, heat generation and noise in demanding systems and eliminate the need for external lubricants such as oil or grease when designing for superior part durability.

Polyamide 6,6 advancement to address the need for acidic environment in exhaust gases

Dr. Vikram Gopal, Global Technical and Marketing Manager, Sumit Mathur, Tom Chu, Invista Engineering Polymers, vikram.gopal@invista.com

As the automotive industry marches toward more efficient engines, there is an increasing trend of vehicles with exhaust gas recirculation. This leads to a requirement of improved heat and acid resistance for materials being considered for applications such as turbo ducts and EGR valves. This talk will present recent advances in polyamide 6,6 to address the need of the auto industry.

Next Generation and Re-engineered EcoLon® Glass Fiber Reinforced Products

Dr. Deen Chundury, Vice President R&D, Wellman Engineering Resins, deen.chundury@wellmaner.com

The development and commercialization of glass fiber reinforced polyamide compound product line using 100% post-consumer recycled (PCR) feed-streams with an objective to bring up their

performance properties in par with the virgin-based counter-parts. We present the superior stiffness retention over the wide-range of elevated temperature along with the long term heat aging data. The paper also highlights the ecological and environmental benefits (e.g. greenhouse gas emissions, reduced plastic landfill) of our cost-effective EcoLon® products.

The Development of a Radar Enclosure Compound

Ned Bryant, Senior Development Product Engineer, RTP Company, nbryant@rtpcompany.com

The Continuous Use Temperature (CUT) is used in the automotive industry as a means of characterizing the long-term thermal aging performance of a given material. However it has limitations in regards to the part design process. The Absolute Real Operating (ARO) value after heat aging offers further insight into material performance. This presentation will speak to the concept of the ARO value while offering material performance comparisons.

Lightweighting

Strategies for Light-Weighting Plastics

Paul A. Hardy, Product Manager, A. Schulman, Inc, Paul.Hardy@aschulman.com

Lightweighting plastics has become a necessity for automotive manufactures to meet mandated mileage tariffs. This presentation will explore the options of product selection, filler selection, alloy technology, part design, polymer structure modification and other technology. and review the technology tied to each of these approaches as well as some advantages and disadvantages of each. Case studies with documented weight savings will be discussed.

Advanced Weight Reduction with New Developed Polyamides

Bernd Henkelmann, Application Development Manager Automotive, EMS-GRIVORY America bernd.henkelmann@us.emsgrivory.com

Based on more than 20 years of continuous development, new materials are offered for weight

reduction opportunities in automotive metal replacement applications. Enhanced properties across flow direction and easy flow characteristics of Grivory GVX allow for wall thickness reduction, without loss of performance. Local stress peaks can be reinforced with EMS-TAPE-TECHNOLOGY.

Systematic Approach for developing Thermal Management System using High Performance Engineering Polymers (HPEP)

Brad Hakes – MPC Inc. K.C. Desai, Solvay Specialty Polymers, BHakes@mpc-inc.com

The latest trend in auto industry is multiple cooling circuits to regulate the temperature of several components. It demands the replacement of a traditional thermostat with a thermal module for higher engine efficiency. Systematic approach is a must to achieve these goals. High Performance Engineering Polymers are leading candidates for these applications offering light weight and cost optimization

Metal to Plastic Transformation

Mike Kole, President, Pinnacle Sales, LLC
mkole@pinnaclesales-llc.com

Over the past 30-years, numerous items have been transformed from Metal to Plastic. There were certain targeted applications that could not move to plastic due to factors like; Fuel Resistance, Tight Tolerances, Vibration, and Mechanical strength. In the last decade, Pinnacle Sales has successfully introduced applications moving from Metal to Plastic in Fuel, Air Management, and Brake Systems. This presentation will discuss the road map to these achievements, and the end result of what is now millions of components.

CFC Standards Road Map

Potential Development of Materials Characterizations

Dave Warren, Oak Ridge National Labs and Anand Raghunathan, Consultant to DOE

The American Chemistry Council, together with the Oak Ridge National Lab, will host a half day workshop on the potential development of materials characterizations for high volume carbon-fiber-reinforced composite materials. The half day overview and breakout discussions will be a continuation of an October 2014 workshop at Oak Ridge National Laboratory, which brought together key representatives from DOE, vehicle OEMs, select tier one suppliers, and the plastics and composites community.

Materials

AvaSpire® PAEK: Introducing a New Differentiated Ultra Polymer

Brian Baleno, Global Automotive Business Manager, Jamal El-Hibri, Principal Research Scientist, Solvay Specialty Polymers, Brian.Baleno@solvay.com

Auto suppliers are using powertrain technologies that require high temperature polymers to comply with upcoming CAFE requirements. This paper introduces AvaSpire® PAEK, which provides unique performance attributes including modulus and toughness performance at temperature. We will highlight the benefits of PAEK compared to PEEK and PPS and reveal several applications where PAEK can be considered.

Direct Coating / Direct Skinning Technology

Jessee McCanna – Principal Engineer, Bayer MaterialScience LLC, jessee.mccanna@bayer.com

A Direct Coating/Direct Skinning (DCDS) technology combines standard injection molding with reaction injection molding in a single mold, utilizing a PC-based substrate with a polyurethane coating or aliphatic (or aromatic) self-skinning foam. The integration of the two processes can reduce the overall part cost, compared to current manufacturing methods, while increasing quality, performance, design freedom, and product differentiation.

High Performance Additives Solutions for Polyamides Compounds

Emilie Meddah, Technical Marketing Manager, Clariant International Limited, Muttenz, CH
Emilie.Meddah@Clariant.com

Metal replacement is a big challenge to overcome for plastic in heat resistance but also in durability. Polyamides in Automotive are extensively used in under-the-hood applications. High performance additives can provide the necessary protection and even improve processability to reduce cycle time, which could be translated either into energy saving or productivity improvement.

Presentations

Biocomposites and Bioblends based on Engineering Thermoplastics for Automotive Applications

Mihaela Mihai, Ph.D. , Research Officer, National Research Council of Canada, Boucherville, Quebec, Canada, Mihaela.Mihai@cnrc-nrc.gc.ca

Engineering polymers in bioblends and biocomposites designated for automotive applications have lower-cost, lower-weight, and similar performance comparing with the current engineering thermoplastics used in automotive parts. Polyamide (PA6) and acrylonitrile-butadiene-styrene (ABS) were formulated using different types and concentrations of cellulose, polylactic acid (PLA) as a bio-sourced polymer, and in a combination of cellulose and PLA. These are characterized in terms of morphology, mechanical properties, and heat deflection temperature.

The Impact of Wear and Friction on Thermoplastic Compounds at High Pressure and Velocity Levels

Ron Dugas Jr., Business Development Specialist, RTP Company, rdugas@rtpcompany.com

RTP Company discusses findings on the behavior of melt process-able thermoplastics at high pressure and velocity, and how they can be compounded to address these variables for automotive components. In addition, compounding for improved thermal conductivity, as well as excellent resistance to chemicals, high temperatures, long term creep and fatigue, is reviewed.

Testing

Mechanical Testing and Characterization of a Thermoplastic Copolyester based Elastomer (DSM Arnitel EM400)

J. Bergstrom, S. Brown, G. Freeburn - Veryst Engineering, LLC J. Harding – DSM Engineering Plastics, JBergstrom@veryst.com

Thermoplastic elastomers are widely used in the automotive industry for their combination of strength, processing characteristics, and performance. Many modeling challenges exist as this class of materials display properties of rubber and plastic. In the current work, Veryst will

showcase its testing and modeling methodology for these complex materials.

Investigation into characterization and modeling of fiber reinforced resin components

U. Gandhi, Ph.D., Toyota Research Institute North America (TRINA), USA
umesh.gandhi@tema.toyota.com

Fibers can be added to improve the strength, stiffness and impact performance of injection or compression molded resin components. The material properties of such components strongly depend on the orientation, length and concentration of the added fibers. In this presentation the current status of characterization and CAE modeling of such fiber reinforced resin components will be reviewed with many examples. Key challenges and current approach to address them will also be discussed.

A Deep Analysis of Fibers Debonding in a Fiber Reinforced Plastic

Kurt Danielson, Project Engineer, Sylvain Calmels e-Xstream Engineering
Kurt.danielson@e-xstream.com

To predict accurately the performance of fiber reinforced polymer (FRP) parts requires an advanced material model taking into account the effects of the manufacturing process on local materials stiffness and strength. A 3-dimensional representative volume element of the FRP microstructure is studied and includes the matrix material, fiber material, fiber sizing and cohesion. A study of this analysis can better inform the development of new FRP materials and better part-level FRP analysis techniques is presented.

Creep Behavior of Polymer Blends and Long Term Prediction

Ying Shi, R&D Engineer, A. Schulman Inc
ying_shi@us.aschulman.com

Creep behavior of polymers and polymer composites as structure materials used in load bearing applications is of considerable interest to the design engineers. This paper presents short-term and long term creep behaviors of three polymer blend systems: unreinforced compatibilized blend, glass fiber reinforced blend, and miscible blend. The benefits of creep behaviors to plastic parts designers, builders, and operators were revealed.

Analysis of Plastics for Interior Noise Potential- "Stick /Slip"

Gary Lawrence, Detroit Branch Sales manager,
Techno Polymer America, glawrence@techpo.com

The discussion involves a method for determining the noise potential of engineered plastics in automotive interiors. It includes an explanation of the "stick/slip " noise phenomenon and a discussion of a device / methodology developed to quantitatively evaluate.

Secondary Processes

Powertrain AIMs at MuCell for Appearance, Structural Performance and Long Term Durability

Scott Schlicker, Powertrain Market Segment Manager,
BASF Corporation, Scott.Schlicker@basf.com

This presentation will explore the potential of using MuCell(R) microcellular foam injection molding process for the production of thermoplastic air intake manifolds (AIMs). The technical requirements for AIMs will be discussed and how MuCell affects the properties of thermoplastics. The advantages of MuCell for AIMs will be explored and results of a recent study that explores the suitability for MuCell for AIMs in terms of appearance, structural performance and long term durability will be presented.

Two-Shot Molding With Thermoplastic Elastomers (TPEs): A Great Combination Offering Design Flexibility Without Additional Processing Steps

Brandon Bubak, Global Sales and Marketing Director,
RTP Company
bbubak@rtpcompany.com

Two-shot molding TPEs to engineering plastic substrates such as Nylon, PC, ABS, PMMA, and PBT provides design flexibility and eliminates post-molding assembly for a wide variety of applications: under-the-hood, passenger entry, chassis, cockpit controls, and functional sealing. Learn about TPE technologies that exhibit excellent bonding, even with challenging substrates, while maintaining properties critical to success in the application.

Efficient Assembly and Joining: Reversible Bonded Joints Using Nano-Ferromagnetic Particles, Technical and Business Case Study

Michael R. Day American Chemistry Council
Technical Consultant, daymichael@att.net

Michigan State University (MSU/cvrc) and Center for Automotive Research (CAR) Sponsored by the American Chemistry Council

CAR and MSU/CVRC have partnered to investigate an innovative joining technique along with its cost benefit analysis. The MSU/CVRC research explores reversible bonding using nano-ferromagnetic particles in thermoplastic adhesives. CAR's business case study deals with a cost benefit analysis model for the joining technology benchmarked by the conventional steel joining.

Expanding the Capabilities of Thermoplastic Through the Use of Electron Beam Crosslinking and Branching

Dan Yasenachak, Tehcnology and Development
Manager, E-BEAM Services, Inc.
dyasenachak@e-beamservicesohio.com

Expanding the capabilities of thermoplastics, electron beam modified polymers are growing in use in automotive applications. Learn how e-beam crosslinking transforms lower cost thermoplastics to thermosets, providing property improvements such as high temperature performance, and how e-beam branching increases the melt strength of resins, substantially expanding their melt processability.

RocTool The next Evolution in Injection Molding Technology

Mathieu Boulanger, President North America,
RocTool, Matt.BOULANGER@roctool.com

Technology enables many new possibilities for high quality class-A surface of automotive applications without secondary operation. The presentation will cover: RocTool process -High heat molding, Multiple texture possibilities, Laser texturing tool surfaces, Surface functionalities, Challenges for scratch resistance, Design guidelines.





President's Message

Dr. Sassan Tarahomi, IAC Group

President

My fellow SPE Detroit Section Members and Colleagues,

Recently I attended ANTEC and NPE which was held at Orange County Convention Center in Orlando Florida on March 23 – 27. It is a great pleasure to announce that the SPE Detroit Section, received the Pinnacle Gold and The Communication award on Sunday March 22 luncheon prior to start of the ANTEC. I like to congratulate all of you and especially the Detroit Section board and committee members who have worked so hard to make this possible. Thank you!

Back to NPE, Attendance was great! I heard over 70,000 people visited the coveted National Plastics Expo and various related events. However, I don't think even 2,000 people attended the ANTEC. I do recall the 2014 ANTEC in Las Vegas with even less attendees. Why?

In my humble opinion, there are several factors involved. But before we take a deep dive into reasons on why ANTEC is not successful, we must recognize that our once flourishing 60,000 plus SPE national membership organization in the 70's and 80's is reduced to 16,000 international members today. Why?

I do have a good explanation, **INTERNET!** Yes, I do see the internet as the single most contributing factor in this process. Internet today is the preferred method to transfer information. Those of us born in the 90's "generation X" and later years are graduating from college now. Many in this group don't even remember that ANTEC was a great gathering of Plastics gurus and it meant carrying 3 volumes of 1000 plus pages each of printed proceedings for 3 days. Eliminating printed material is the right thing to do. I do recall last year our section voted to only have electronic edition of our newsletter and eliminated hard copy.

Internet has changed our lives and continues to transform our fundamental method of **Volunteerism, Communication, Knowledge, and Growth** of our society. We must embrace this change or become obsolete. Fortunately, SPE international has recognized this and making great changes to insure our beloved SPE is successful for many years to come. I encourage you to welcome these changes and work with the SPE headquarter staff to be part of it.

This is my last official Detroit Section's president message to you and I like to

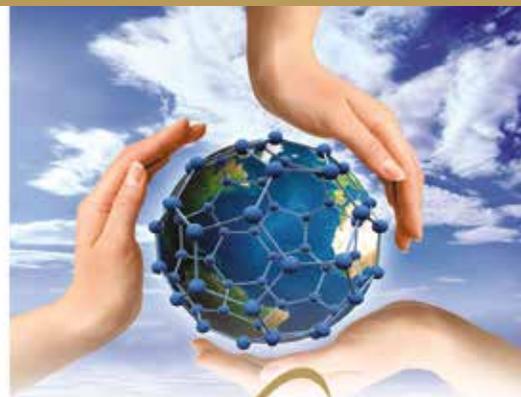
report that our Section is doing great and vibrant as ever. We now have over 250 student members from five student chapters from local colleges sponsored by our section which translates to about 25% of our section membership. This was part of what I call planting the seed of activity. Thank you all for recruiting these new members and let's work even harder to keep them after graduation. I also like to recognize the effort of my good friend Mr. Wayne Hertlein who completed the task of compiling all Detroit Section Executive board members since its inception. Very shortly this list will be posted on the Detroit Section website to document and officially recognize the efforts of many great leaders who started and contributed to this great organization.

Our incoming Detroit Section president Dr. Adrian Merrington will take office as of July 1, 2015. I ask all of you to provide him your support and encouragement and work together to resolve the daily challenges. Remember, we are the SPE Detroit Section members who started this organization. I really enjoyed and honored to be your President for the 2014 -2015 and working with all of you it was truly a great ride.

Thank you for this great opportunity and I look forward to many more years of service to the SPE Detroit Section and the SPE International.

Sassan Tarahomi
President, SPE Detroit Section

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 *Coming Events*

May 5, 2015
AutoEPCON
Troy Marriott
http://spedetroit.org/?page_id=71

May 11, 2015
Hi-Tech Mold & Eng.
Rochester Hills

June 23, 2015
Detroit Section Golf Outing
Bay Point Golf Club
West Bloomfield



Councilor's Report

Sandra McClelland
Solvay Specialty Polymers

Each year we have a new slate of officers elected at Council. This year the officers of the Executive Committee are:

- President - Dick Cameron
- President Elect - Scott Owens
- Treasurer - Jaime Gomez
- Senior VP - Olivier Crave
- Secretary - Monika Verheij
- VP - Brian Landes

Brian is a member of the Detroit Section and we welcome him and the others to the Executive Council.

The Executive Committee and Staff continue to look at the way SPE International is organized. They had a break out session to discuss 3 questions:

- What is the role of governance?
- How many people are required to fulfill that role?
- What should be the structure?

They plan to continue to investigate if there are changes that would make the governance of the Society better. If you have any suggestions or ideas, please contact me.

There was a training session for The Chain. There are many ways to participate in this. Take a look and see if there is something of interest for you.

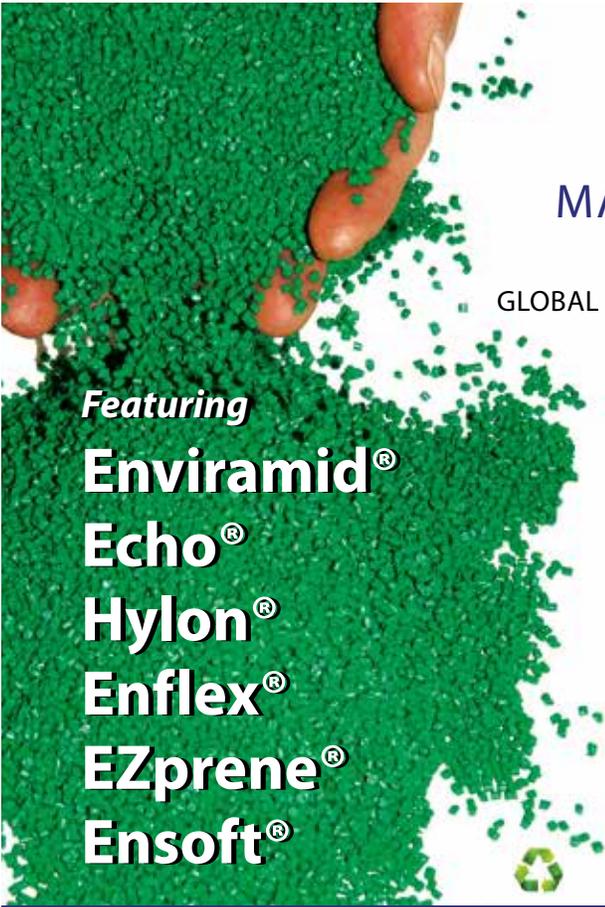


Education

Sandra McClelland
Solvay Specialty Polymers

The Detroit Section would like to welcome our newest student chapter - University of Michigan - Ann Arbor. This student chapter was approved at the latest SPE International meeting in Orlando Florida. Tom Miller and Dr. Gary Kogowski have volunteered to work with this student chapter.

If you would like to volunteer time to work with any of our student chapters, please contact me at sandra.mcclelland@solvay.com.



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Would you like the Plastivan to visit the school in your area?

Please contact Tom Miller at thomas.miller@basf.com.

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SPE Detroit Section PlastiVan / Essay Contest / Scholarship Update

Tom Miller

BASF Performance Materials

April 2015

PlastiVan – SPE Detroit Section

SPE Detroit Section PlastiVan Visits 2014-2015



Budget \$60,000

Month	Visit	Location	Budget	Instructor	Inv #
September					
26 & 27th	Delta College Science Fair	Saginaw	\$3,600	Robin Thomas	113756
October					
16th	Freeland Junior High School	Freeland	\$1,350	Robin Thomas	114545
17th	Bullock Creek Middle School	Midland	\$1,350	Robin Thomas	113756
23rd	John Glen High School	Bay City	\$1,350	Robin Thomas	113756
23rd	Nouvel Catholic High School	Saginaw	\$1,350	Robin Thomas	113756
November					
4th	Clare Middle School	Clare	\$1,350	Margie Weiner	114545
5th	Beaverton Middle School	Beaverton	\$1,350	Margie Weiner	114545
6th & 7th	Jefferson Middle School	Midland	\$2,700	Margie Weiner	114545
17th & 18th	Northeast Middle School	Midland	\$2,700	Egan/Weiner	125478
19th	Meridian Junior High School	Sanford	\$1,350		
19th & 20th	South Lyon High School	South Lyon	\$2,700		
December					
8th	Armada High School	Armada	\$1,350	Margie Weiner	126287
9th	Wilkinson Middle School	Madison Heights	\$1,350	Margie Weiner	126287
10th & 11th	South Lyon East High School	South Lyon	\$2,700	Robin Thomas	126287
10th & 11th	Beer Middle School	Warren	\$2,700	Margie Weiner	126287
11th & 12th	Iroquois Middle School	Macomb	\$2,700	Robin Thomas	126287
January					
21st	Warren Mott High School	Warren	\$1,350		138388
26th	Salem High School	Plymouth	\$1,350		138388
27th	Salem High School	Plymouth	\$1,350		138388
29th	Western Middle School	Midland	\$1,350	Elizabeth Egan	138388
30th	Heritage High School	Saginaw	\$1,350	Elizabeth Egan	138388
February					
2nd	Plymouth High School	Plymouth	\$1,350		
3rd	Plymouth High School	Plymouth	\$1,350		
4th	Canton High School	Canton	\$1,350		
26th & 27th	Larson Middle School	Troy	\$2,700	Elizabeth Egan	
March					
25th	AAUW Explorathon	Birmingham	\$1,350	Elizabeth Egan	
April					
16th & 17th	Smith Middle School	Troy	\$2,700	Elizabeth Egan	

**No updates for
Mar/Apr/May
Visits**

Remaining budget of \$7,800 (~6 visits)

Olivia Carandino
Iroquois Middle School
48301 Romeo Plank Rd
Macomb, MI 48044

January 14, 2015

Tom Miller
Automotive OEM Manager
BASF Engineering Plastics NAFTA
1609 Biddle Avenue
Wyandotte, MI 48192

Dear Mr. Tom Miller:

I would like to express my appreciation for you and your company sponsoring Ms. Egan and her PlastiVan presentation. It was a huge learning experience for not only me but the entire class. I found it to be very informative and did further research online myself to find out even more.

I found Ms. Egan's presentation to be educating on many different levels. I specifically found myself captivated by how easily she was able to mix a few things together to create a plastic mushroom. And how you can melt plastic and mold it into another shape. I learned how to make string by mixing together chemicals.

Basically I learned new things that I found to be very interesting. It prompted me to go online and do more research on my own. I would recommend this opportunity to other middle school students. Who knows they might even find this to be a career option. Thank you again for allowing Ms. Egan to come and present at our school.

Sincerely,
Olivia Carandino
Olivia Carandino

Evan DeCook
Iroquois Middle School
48301 Romeo Plank Rd
Macomb, MI 48044

January 14, 2015

Tom Miller
Automotive OEM Manager
BASF Engineering Plastics NAFTA
1609 Biddle Avenue
Wyandotte, MI 48198

Dear Mr. Tom Miller,

Thank you Tom Miller and everyone at your company for sponsoring Ms. Egan and her awesome presentation. I am very grateful that she came in and taught us a lot of new things about plastic and the uses of plastic. It was very cool when we stuck the stick through the balloon and when we used chemicals to make our own hair gel. Also, it was cool when someone in our class molded the moldable plastic into a dinosaur.

I would like to thank you for giving us the opportunity to learn a lot of new things about plastic.

Sincerely,
Evan DeCook

Keegan Strnad
Iroquois Middle School
48301 Romeo Plank Rd
Macomb, Michigan 48044

Wednesday, January 14, 2015

Tom Miller
Automotive OEM Manager
BASF Biddle Avenue
Wyandotte, MI, 48192

Dear Mr. Tom Miller:

Thank you Mr. Tom Miller and your company BASF Biddle Avenue for sponsoring Ms. Egan and her Plastivan presentation in being able to come to Iroquois. We are greatfull for coming and it made me look at science in a different way.

Some things I enjoyed are making all the different things and looking at the cool things Ms. Egan showed us.

In conclusion I would like to thank you for coming to our school and hope you come again

Sincerely,
Keegan Strnad

19th Annual “Wonders of Plastics” Essay Contest 2015





2015 Contest Results



North Contest

1st Place – Shane Hogan **\$500**

St. Brigid Middle School 8th Grade
“Bioplastics: An Industry in the Making”

2nd Place – Cailin King **\$250**

Freeland High School Senior
“Plastics: A Win for Democracy”

3rd Place – Gage Armstrong **\$100**

Freeland High School Senior
“Saving My Senior Year”

South Contest

1st Place – Luke Wiseman

South Lyon East High School
“Plastics: Propelling our World in to a Better Future”

2nd Place – Madison Swiatowski

South Lyon High School
“The Creativity Behind Recycled Plastics”

3rd Place – Hannah Withrow

Wilkenson Middle School
“Plastic Packaging: Miracle or Tragedy?”

All participants received runner-up certificates and \$5 gift card



BIOPLASTICS: AN INDUSTRY IN THE MAKING

This is presently the third essay that I have written for the SPE “Wonders of Plastics” Essay Contest. In years previous, I discussed the topic of plastics and the environment as well as how plastics compare to other materials, such as paper, glass, metal, etc., in terms of resource-efficiency and in being eco-friendly. This year, I would like to continue that theme by looking towards the future. I would like to look at ways we can further develop plastics to make them even more useful than they have ever been before. Specifically, I’m here to talk about bioplastics. I believe bioplastics have the potential to be the future of the plastic industry.

Bioplastics, such as thermoplastic starch, polylactic acid (PLA), and poly-3-hydroxybutyrate (PHB), derive from forms of biomass, such as vegetable fats and oils as well as various starches. This deviates from the more common petroleum-based plastics that require much more in the way of fossil fuels. Also, one might imagine, most bioplastics are designed to be biodegradable (meaning it can be decomposed). These two factors give bioplastics a significant advantage over petroleum-based plastics, as they are made with *renewable* resources and make being environmentally friendly a much easier task. However, this isn’t quite that simple of a quandary. The biodegradability of bioplastics does not mean that you could just toss a thermoplastic starch cup in the backyard and expect it to decompose. These plastics generally have to be broken down in commercial composting facilities that meet the proper conditions to allow them to decompose in a reasonable amount of time. They certainly will decompose more quickly than petroleum-based plastics, but not with the sort of haste we need to clean up our landfills.

Additionally, with the bioplastics industry being so young, they are not a commonly seen item. This causes problems in recycling facilities, for though the uninformed eye would not differentiate between bio and petroleum-based plastics, the chemical composition is so different that they can contaminate any batch of conventional plastic meant to be recycled. These sort of issues are a step back when it comes to integrating bioplastics into the industry.

BIOPLASTICS: AN INDUSTRY IN THE MAKING

Another snag in the rise of bioplastics has to do directly with what goes into making them. The plants used in bioplastics and the fields that are used to grow them could, and some say should, be utilized for growing food rather than making plastics. This presents an interesting question that brings together multiple themes: should we be putting more of our time and effort into problems like world hunger instead of scientific advancements like this one? However, this topic is beyond the scope of this essay, but the issue remains. However, the general consensus seems to be that the vision for bioplastics is for them to be made out of leftover waste products, which would allow us to more fully utilize our resources.

Despite these cons, I stand by my thesis in saying that bioplastics have the potential to take over the industry. It is commonly known that petroleum is a finite resource. Petroleum geologists suggest that our oil will run out within a few decades. Before that happens, it is likely we will stop using petroleum for fuel and manufacturing altogether—possibly even within the next 40 to 50 years. What then? What will happen to the plastics industry when its main feedstock has been drained? This is the basis for my speculations. Conventional plastics may be the more popular choice now, but necessity is the mother of invention, and I think a need for an alternate to petroleum-based products will spur on this new generation of plastic engineering.

However, as it stands, that need is not imminent. The bioplastic industry is infinitesimal. Bioplastics make up about 331,000 tons of the 200 million tons of plastic manufactured each year. That adds up to less than one percent. So, for obvious reasons, I don't expect any radical changes in the near future, but I believe that we are lucky to have innovators looking out for our long term benefit. And despite its size, the bioplastic industry must have something special about it to be such a picked-through topic. So, despite its small size as well as how detached the threat of a petroleum shortage may seem, I think that this is still a topic to be kept in mind. Bioplastics just might be the plastic of the future—or maybe some new technology will arise. Whatever the case, I feel that I have said enough and that it is time to wrap up this essay. As always, thank you for your time.

BIOPLASTICS: AN INDUSTRY IN THE MAKING

Bibliography

Botkin, Daniel B. "A Scientist's Guide to Energy Independence: Oil." *How Much Petroleum Is There, and How Long Will It Last?* FT Press, 30 Mar. 2010. Web. 01 Feb. 2015.

"Discover Petroleum Info Bank." *Discover Petroleum Info Bank*. Energy Institute, n.d. Web. 31 Jan. 2015.

Green Tech. "Plastics from Plants vs. Petroleum." *Plastics from Plants vs. Petroleum*. Energy Digital, 19 Apr. 2012. Web. 01 Feb. 2015.

Kong, Ing. "Thermoplastic Starch." *Thermoplastic Starch*. By Robert Shanks. Melbourne: In-Tech (Rijeka, Croatia), 2012. 95-116. Print.

Lamb, Robert. "What Is Corn Plastic?" *HowStuffWorks*. HowStuffWorks.com, n.d. Web. 01 Feb. 2015.

"Types of Bioplastic." *InnovativeIndustry.net*. InnovativeIndustry.net, 19 Sept. 2010. Web. 1 Feb. 2015

Bioplastics, European. "What Are Bioplastics?" *What Are Bioplastics? (2015): 1-4*. European Bioplastics. European Bioplastics, Jan. 2015. Web. 29 Jan. 2015.



This Certificate is to Acknowledge that

Luke Wiseman

Was selected as the 2015 essay contest

Winner with his essay

“Plastics: Propelling our World in to a Better Future”

Sponsored by the SPE Detroit Section

Tom Miller
Contest Chairperson



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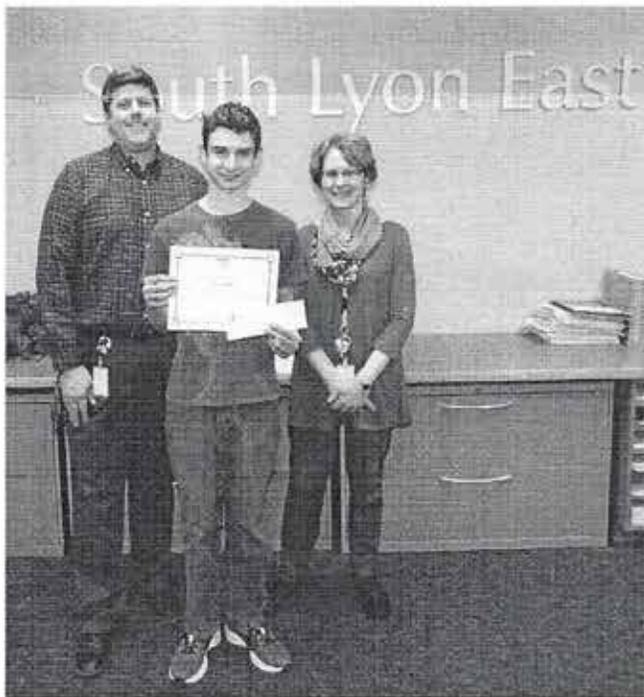
David Phillips, Ph.D., Principal
Ms. Linda Chudy-Bowman, Assistant Principal

March 19, 2015

Dear Tom,

Thank you for making a difference in the lives of young people. The chemistry students at South Lyon East High School have yearly enjoyed the PlastiVar presentations and I hope to involve our technology and art classes in the future.

We are proud to have one of our seniors earn 1st place in the 2015 "Wonders of Plastics" Essay Contest and thank you for the opportunity to participate. We made the presentation to him today and he was all smiles. I am including a picture in this correspondence.



Sincerely,

Nicki A Workman

Nicki A Workman

Career Development Facilitator

South Lyon East High School

workmann@slcs.us

ENTRY FORM

Title: Plastics: Propelling our world into a Better Future

By: Luke Wiseman

type or print

about the author(s)

Name(s) Luke Wiseman

age 17

age _____

Grade in School 12th

Address(es) 58846 Mulberry Lane South Lyon

Michigan

Phone Number(s) 248-277-8109

E-mail(s) luckyluke97@comcast.net

about the school

School South Lyon East High School

Address 52200 10 Mile Road

City/State/Zip South Lyon/Michigan/48178

Phone/Fax 248-573-8200

Teacher Mr. Schmitz

Class AP Chemistry

SPE Detroit Section North

Todd Hogan – Contest Chair
The Dow Chemical Company
433 Building
Midland, MI 48667
Tel: 989-636-5303
Email: tahogan@dow.com

SPE Detroit Section South

Tom Miller – Contest Chair
BASF Corporation
1609 Biddle Avenue
Wyandotte, MI 48192
Tel: 810-225-1720
Email: Thomas.Miller@BASF.com

Entry must be received by January 31, 2015!

Plastics: Propelling our world into a better future

In recent years, the plastics industry has received negative attention because of accusations of pollution and contamination of the environment. While it is true that plastics are created from petroleum, which is an industry that can harm the environment through spills and other unfortunate events, the fact is that the benefits plastics of all types beget unto our society far outweigh any potential negative side effects. With regard to emissions alone, a main criticism of the plastics industry, the mere fact that plastics are a lightweight, efficient packaging source drastically reduces emissions on the roadway and in other forms of package distribution. In addition, the use of plastics in the medical and aeronautic fields aids people across the world to receive aid and proper medical treatment. Despite all the drawbacks the plastics industry has, the tools which it has to offer have already demonstrated their usefulness to be far beyond any detrimental side effects.

Perhaps one of the most prominent uses of plastics in the 21st century is in the field of product packaging. In today's market, consumers often aim for the most flashy products and the most well marketed goods. Since plastic is a cheap, lightweight material that has the capability to be transparent for easy viewing, it is by far the most common package material in use in the market today. Detractors of the plastics industry argue that this rampant use of plastic to transport goods increases emissions, and leads to environmental damage. However, the reality could not be further from the truth; the use of plastics as a package source if anything is an environmentally friendly source of packaging. Plastic's lightweight and flexible nature makes it a great material to transport large amounts of products while using only a small amount of plastic. According to Marine Debris Solutions, "merely two pounds of plastic can deliver 1,000 ounces roughly eight gallons of a beverage, whereas three pounds of aluminum, eight pounds of steel or 27 pounds of glass would be needed to deliver the same amount." This trait of plastic allows it to reduce the number of trucks and shipping barges needed to transport goods, which in turn reduces greenhouse gas emissions and allows plastic to actually help reduce environmental damage. The study "Impact of Plastics Packaging on Life Cycle Energy Consumption & Greenhouse Gas Emissions in the United States and Canada" demonstrated that plastics "reduce greenhouse gas emissions by 56 percent and energy use by 26 percent compared to alternatives." In short, the use of plastic in the packaging industry has not damaged the environment, but rather helped to reduce environmental damage where other materials would be far more detrimental to our planet.

Another criticism of plastics is that it does not biodegrade easily, which leads to it resisting decomposition and taking a long time to break down where other materials would degrade much faster and reduce the amount of garbage in landfills and other areas. However, this potentially negative trait also has some positive side effects, such as the impact of plastics in the medical field. Where other materials, such as metal or glass, would be too heavy or hazardous to use inside the human body, plastics flourish, allowing many victims of heart problems to get access to pacemakers and allowing people all across the world to get the help they need. In short, without the presence of plastics in our world and the aid that only it can provide, many medical patients across the globe would not survive or would be much worse off in life.

Ironically, although plastics are created from non-renewable resources (petroleum), they are essential in the functioning of wind power, a staple in the renewable resource industry. Without the flexible yet durable components that only plastics can provide to wind turbines, the wind power industry would simply cease to exist. No other material could provide the turbine blades needed for the functioning of these devices. In addition, plastics are a necessary component of the solar power

Plastics: Propelling our world into a better future

industry, allowing massive solar panels to collect free, renewable energy from the sun. Another useful trait of plastics that helps it contribute to renewable resources is the fact that plastic, unlike many other materials, is very easy to recycle, and as a result over forty percent of the plastic made is recycled every year, as opposed to only 20 percent of glass products. While plastic may not biodegrade easily, it can also be recycled easily, which reduces the amount of refuse in landfills and in the oceans around the globe. Additionally, the use of plastics in conjunction with nonrenewable resources such as petroleum in the transportation fields allows cars and planes with plastic components to cut down on weight and thus lower fuel consumption and emissions.

Overall, the use of plastics in our world today is one that will undoubtedly continue to be in dispute and controversy. As with any material, there will always be downsides and drawbacks that inhibit its use. However, given the benefits that the plastics industry has already given to mankind, I am confident that the use of plastics will not only continue, but will become even more pervasive with time; the aid that the many types of plastics already provide us with in the fields of aeronautics, transportation, renewable energy and medical technology stand as proof of this. As the human race moves forward, trying to solve a multitude of problems that offer no easy solutions, we may find some of our problems can be solved within the molecular matrix of plastics, and the endless possibilities that it offers our planet, whether it be combating the rising tide of emissions or paving the way for life on some far-flung planet.

References:

<http://blog.esko.com/packaging-materials/plastic-packaging-2/advantages-and-disadvantages-plastic-packaging/>

http://www.futurenergia.org/ww/en/pub/futurenergia/energy_world/benefits.htm

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1502062/>

<http://www.marinedebrissolutions.com/Main-Menu/Plastic-Makers-Take-Action/Innovative-Plastic-Packaging-.html>



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SPE Detroit Section Plant Tour Hi-Tech Mold & Eng., Inc.

Date: Monday, May 11, 2015

Time: 5:00 – 8:00 PM

Location: Hi-Tech Mold & Eng., Inc
1744 Northfield Drive, Plant #1
Rochester Hills , Michigan 48083
Phone (248) 844-9159

Agenda:

5:00 PM Arrival and Networking
5:30 PM Pizza / Sandwich
6:00 PM Hi-Tech Presentation
6:30 PM Facilities Review
8:00 PM Program Ends

Cost: Free to students, University faculties and SPE members, non members \$10

Direction Map:



Please RSVP with Ms. Karen Rhodes-Parker at Karen@spedetroit.com or call at 248-244-8993 Ext. 3

JUNE
23



SPE DETROIT

Annual Golf Outing

June 23, 2015

Bay Pointe Golf Club

4001 Haggerty Rd. West Bloomfield, MI

When: June 23rd, 2015

Time: 11am - Shot Gun Start!

Format: Four person scramble, best ball.

Cost: \$110/person, \$525/Foursome includes Hole Sponsor, Optional Hole Sponsor Only \$100.

Includes: 18 Holes & Cart, Door Prize, Lunch (Wrap, Chips, Pop), & Dinner (Full Service sit down), Contest and Prizes!

Reserve Your Spot: Contact Karen Rhodes-Parker - email: karen@spedetroit.com Phone: 248-244-8993



2015 SPE Detroit Section Scholarship Application



2015 SPE Detroit Section Scholarship



- Now accepting applications
- Application sent to all 2014 applicants and advisors
- Posted on the Detroit Section website
- Deadline is August 7th, 2015
- Streamlined application process

This page can be deleted from the final submission package

The purpose of the Society of Plastics Engineers Scholarship is to provide funding for college scholarships to students demonstrating a high level of career interest in the Plastics Industry.

Eligibility Criteria:

1. Students enrolled at either a four-year college/university or two-year community college degree program (minimum requirements of six credit hours per semester) pursuing a career directly related to plastics (i.e. Plastics Engineering, Polymer Engineering/Science, Packaging Engineering, Material Engineering/Science, Composite Materials and Structures, Chemical Engineering, Chemistry or Mechanical Engineering).
2. Active SPE student member including active membership in your schools SPE Student Chapter if applicable.
3. Applicant has not received or anticipates receiving any other scholarship from the SPE during the current award year.
4. Applicants must maintain a minimum cumulative grade point average (GPA) of 2.8 (4.0 scale) from the prior school year.
5. Applicants must demonstrate a high degree of intent to pursue a career in the Plastics Industry.

Colleges/Universities:

College for Creative Studies	Mid-Michigan Community College
Delta College	Oakland Community College
Eastern Michigan University	Oakland University
Ferris State University	Saginaw Valley State University
Focus Hope University	Schoolcraft College
Kettering University	St. Clair County Community College
Lawrence Tech University	University of Detroit Mercy
Macomb Community College	University of Michigan
Michigan State University	Wayne State University
Michigan Technological University	Western Michigan University
Other schools inside/outside of Michigan that meet eligibility requirements	

Application Procedure:

To be considered for a SPE Detroit Section Scholarship, applicants must submit a complete application package (**electronic copy preferred**) by August 7th, 2015 as outlined in the application checklist. Application and all checklist documents must be sent together via hard copy or eMail to the 2015 Scholarship Committee Chairperson (Tom Miller).

This page can be deleted from the final submission package



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Awards:

Scholarship awards will range from \$500 to \$4,000 annually at the discretion of the SPE Detroit Section Scholarship Committee. SPE Student Chapter officer participation can increase the amount of funds awarded. Scholarships are valid for 1-year and recipients must submit a new application each year to be considered for future scholarship awards. All scholarships will be reimbursed once registered transcripts have been received from the university/college showing that all requirements have been fulfilled.

All Society of Plastics Engineers Detroit Section scholarships are rewarded without regard to race, sex, religion, age or national origin. The Society of Plastics Engineers Detroit Section will not award scholarships to applicants whom they deem are not qualified and reserve the right to not award scholarships in any given year as it so chooses.

Please don't hesitate to contact me if you have questions or need additional information.

Tom Miller – SPE Detroit Section Scholarship Committee Chairperson
BASF Performance Materials
1609 Biddle Avenue
Wyandotte, MI 48192
Thomas.Miller@basf.com
586-291-5289

This page can be deleted from the final submission package



This should be page 1 of your final submission package

2015 Society of Plastics Engineers Detroit Section Application Form

Name:	John Doe	SPE CST ID / Membership #:	123456
Home Address:	30001 Van Dyke Ave. Warren, MI 48093	School Address:	1989 Bulldog Drive Big Rapids, MI 48116
Phone #:	248-225-1720	eMail:	bulldogs@ferris.edu

Click in the boxes to complete

Education Information:

- School you attended last year & major: Michigan State University - Packaging
- What was your GPA last semester (4.00 scale): 3.45
- What is your cumulative GPA (4.00 scale): 3.60
- School you will attend in the Fall of 2015 & major: Ferris State University – Plastics Eng Tech
- Highlight the class that applies to you for the Fall of 2015:
Graduate 5th Year Senior Senior Junior **Sophomore** Freshman
- Highlight your living arrangements for the Fall of 2015:
On Campus Off Campus With Parents
- Does your school have an active SPE Student Chapter: **Yes** No
- If your school has an active SPE Student Chapter, confirm your membership status, list any offices held and provide contact information for your Student Faculty Advisor:
 - I have been an active member for 2 years and was the Vice President during the 2014-2015 school year. My SPE student membership # is 123456.
 - Bob Swords – bswords@ferris.edu 231-591-2000

Use highlight feature from your Windows toolbar 

Application Statement:

The information provided in my application is, to the best of my knowledge, complete and accurate. I understand that false statements on this application will disqualify me from a scholarship award.

By submitting this application to the SPE Detroit Section for consideration, I give permission for any college or school to release all information necessary to process my application to the Society of Plastics Engineers Detroit Section Scholarship Committee.

Electronic Signature	<i>Jonathan Doe</i>	Date	August 1 st , 2015
----------------------	---------------------	------	-------------------------------

Click in the boxes to complete

This should be page 1 of your final submission package

This page can be deleted from the final submission package

Application Checklist:

Please submit a **complete** application package (all checklist documents must be sent together via eMail or hard copy) by **August 7th, 2015** to:

Tom Miller – SPE Detroit Section Scholarship Committee Chairperson
BASF Performance Materials
1609 Biddle Avenue
Wyandotte, MI 48192
Thomas.Miller@basf.com
586-291-5289

Preference is to have a complete electronic package (pdf or other) sent by eMail. Otherwise, send ALL hardcopy documents together by 8/7/15 deadline.

- Completed SPE Detroit Section Application Form*
- Headshot photo (.jpg format) that may be used in SPE Detroit Section publications*
- Copy of resume showing work experience, school and community activities & honors*
- Unofficial copy of transcripts from all colleges and universities attended*
- A 500 word essay (1 page maximum) on your career aspirations in the Plastics Industry*
- Two letters of recommendation: can be from a school official (professor, advisor, administrator, etc...), previous/current employer or non-relative.*

This page can be deleted from the final submission package

This should be page 2 of your final submission package – 1 page essay

2015 SPE Detroit Section Scholarship Application



Application Essay:

No more than 500 words and 1-page maximum

Delete for your 1 page essay

My Career Aspirations in the Plastics Industry

Introduction

Paragraph 2

Paragraph 3

Conclusion

Feel free to personalize title of your essay

Space between paragraphs

This should be page 2 of your final submission package – 1 page essay



2015 Society of Plastics Engineers Detroit Section Application Form

Name:	<input type="text"/>	SPE CST ID / Membership #:	
Home Address:	<input type="text"/>	School Address:	<input type="text"/>
Phone #:	<input type="text"/>	eMail:	<input type="text"/>

Education Information:

- School you attended last year & major:
- What was your GPA last semester (4.00 scale):
- What is your cumulative GPA (4.00 scale):
- School you will attend in the Fall of 2015 & major:
- Highlight the class that applies to you for the Fall of 2015:
 Graduate 5th Year Senior Senior Junior Sophomore Freshman
- Highlight your living arrangements for the Fall of 2015:
 On Campus Off Campus With Parents
- Does your school have an active SPE Student Chapter: Yes No
- If your school has an active SPE Student Chapter, confirm your membership status, list any offices held and provide contact information for your Student Faculty Advisor:
 ○

Application Statement:

The information provided in my application is, to the best of my knowledge, complete and accurate. I understand that false statements on this application will disqualify me from a scholarship award.

By submitting this application to the SPE Detroit Section for consideration, I give permission for any college or school to release all information necessary to process my application to the Society of Plastics Engineers Detroit Section Scholarship Committee.

Electronic Signature	<input type="text"/>	Date	<input type="text"/>
-----------------------------	----------------------	-------------	----------------------

Application Checklist:

Please submit a **complete** application package (all checklist documents must be sent together via eMail or hard copy) by **August 7th, 2015** to:

Tom Miller – SPE Detroit Section Scholarship Committee Chairperson
BASF Performance Materials
1609 Biddle Avenue
Wyandotte, MI 48192
Thomas.Miller@basf.com
586-291-5289

- Completed SPE Detroit Section Application Form***
- Headshot photo (.jpg format) that may be used in SPE Detroit Section publications***
- Copy of resume showing work experience, school and community activities & honors***
- Unofficial copy of transcripts from all colleges and universities attended***
- A 500 word essay (1 page maximum) on your career aspirations in the Plastics Industry***
- Two letters of recommendation: can be from a school official (professor, advisor, administrator, etc...), previous/current employer or non-relative.***



Application Essay:

No more than 500 words and 1-page maximum

My Career Aspirations in the Plastics Industry

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The SPE Detroit Section is proud to announce the addition of the University of Michigan to our list of student chapters that includes Ferris State University, Kettering University and Michigan State University. THANKS to Christopher Orr, Chemical Engineering student (2016) for taking the lead to establish a student chapter on the Ann Arbor campus. Contact Christopher at orrcm@umich.edu if you want to get involved and become a member. Gary Kogowski and Tom Miller will serve as SPE Detroit Section advisors to the chapter.



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It's on the Web

A lot of information is out there in cyberspace. All you have to do is reel it in. Here are some of the SPE things that could be very useful and helpful.



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The **SPE Events** app on your smartphone will give you the schedule, abstracts, and speakers' bios for the May 5 AutoEPCON in Detroit. You can create your own schedule, and the topics and speakers are cross-linked. More info on website.



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If you have any questions, comments, or suggestions about e-communications, please contact Irv Poston, 248-646-9574, ieposton@juno.com.



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