

Polymer Valley News

The Newsletter of the Akron Section of the Society of Plastics Engineers
Our 57th Year of Education and Service to the Plastics Industry

Newsletter Contents

Meeting Announcement	1
Speaker Biography	2
Meeting Location Map	3
President's Letter - Vinyltec	4
Membership Report	4
Advertiser Index	5
Technical Questions on Plastics	5
Web Site info	6
Akron SPE Past Presidents	9
2016 Scholarship information	10
Highlights from September	13
Join the Board	14
Goals for Akron Section	15
August Board Meeting Minutes	16
2015-2016 Program	19
Akron Section Board Members	19
SPE Educational Foundation	20
Who Can Help You at SPE	21
Member Benefits Guide	23
Insertion Order form – 2015/16	25
SPE Membership Application	26

Technical Meeting

Monday, October 12, 2015
5:30 p.m.

SIPA of Italy

Hilton Inn

3180 West Market Street
Akron, Ohio 44333



Xtreme and Extreme Sincro,
SIPA's Revolutionary Preform
Manufacturing Technology & Design
Antonio Orru, Key Account Director

This innovative technology based on a Rotary Injection Compression Molding System allows the manufacturing of light PET preform with outstanding characteristics in terms of Quality, Light Weight, Length to Thickness/Stretch Ratio and Top Load Performances.

Xtreme becomes Extreme Sincro when integrated with a SIPA Sincro Bloc (Blow/Fill and Cap), making it a very compact and efficient system that makes the preforms, blow the bottles also filling and capping them all in the same platform.

Coming Up:

- October 13-15 – Vinyltec
- November 9 – Beaumont Technologies

See page 3 for
Mr. Orru's biography

Costs, Schedules, Reservations

Member and/or guest	\$25
Retired	\$20
Student	\$5
New Member - first meeting	Free

Social / Networking / Bar 5:30 p.m.
Dinner 6:00 p.m.
Program after dinner - 6:45 p.m.

Reservations must be in by noon on
Friday, Oct. 9 and can be made to
Gary Taylor at
akronspe1@gmail.com
or 330-419-4380

Please be sure to include the
company affiliation of each attendee
including dietary restrictions.



Speaker Biography

Antonio Orru is an accomplished, senior-level Sales Manager with a broad scope of experience, encompassing sales, marketing, revenue enhancement, and identifying and capturing new business opportunities in the Packaging Industry. His expertise also includes creating and implementing strategic sales goals and business development. During his career, Antonio has demonstrated his international management expertise, with notable achievements in complex product launches and aggressive market penetration, as well as fluency in four languages.

He initially joined SIPA North America in 2012 as Sales Manager and was instrumental in achieving sales growth and new market developments in the Beverage Industry in addition to consolidating the SIPA presence in the Plastic Converting Companies Market. In this role, he provided leadership and direction for the sales process. He consistently captured new business opportunities and built solid alliances to generate future sales. January 2015 he was promoted Key Account Director.

Prior to his role at SIPA North America, Antonio was Director of Sales of Lanfranchi North America, Regional and National Sales Manager at Aetna Group USA, where he successfully expanded the customers and sales. He also met or exceeded corporate sales budgets year-over-year.

His education includes a Sales and International Marketing Certificate; a Bachelor of Political Science and International Affairs and Diploma of Bookkeeper and Finance.

Since July 2006 he has been living in Atlanta, GA with his wife Alessandra.



ADDitives for
RECYCLING

struktol®



↓ ↓ ↓ ↓

Struktol Intelligent ADDitive Solutions

Useful in a variety of different polymers from polyolefins to engineered plastics to modify viscosity, mask/neutralize odors, compatibilize dissimilar materials & act as lubricants for better processing & mold release in reclaim/ recycled & recycle content plastics.



www.4struktol.com • plastics@struktol.com



Directions to Akron Hilton, 3180 West Market Street, Akron, Ohio 44333

From Cleveland Hopkins Airport

Take 480 East to I-77 South. Exit at #138 to Fairlawn. Turn right on Ghent Rd. Follow south for two miles. The Hilton is at the intersection of West Market Street (Rt. 18) and Ghent Road. Turn Right on West Market Street. Hotel is located on the left.

Driving South on I-77

Exit at #138 to Fairlawn. Turn right on Ghent Rd. Follow south for two miles. The Hilton is at the intersection of West Market Street (Rt. 18) and Ghent Road. Turn Right on West Market Street. Hotel is located on the left.

Driving North on I-77 (From Akron/Canton Airport)

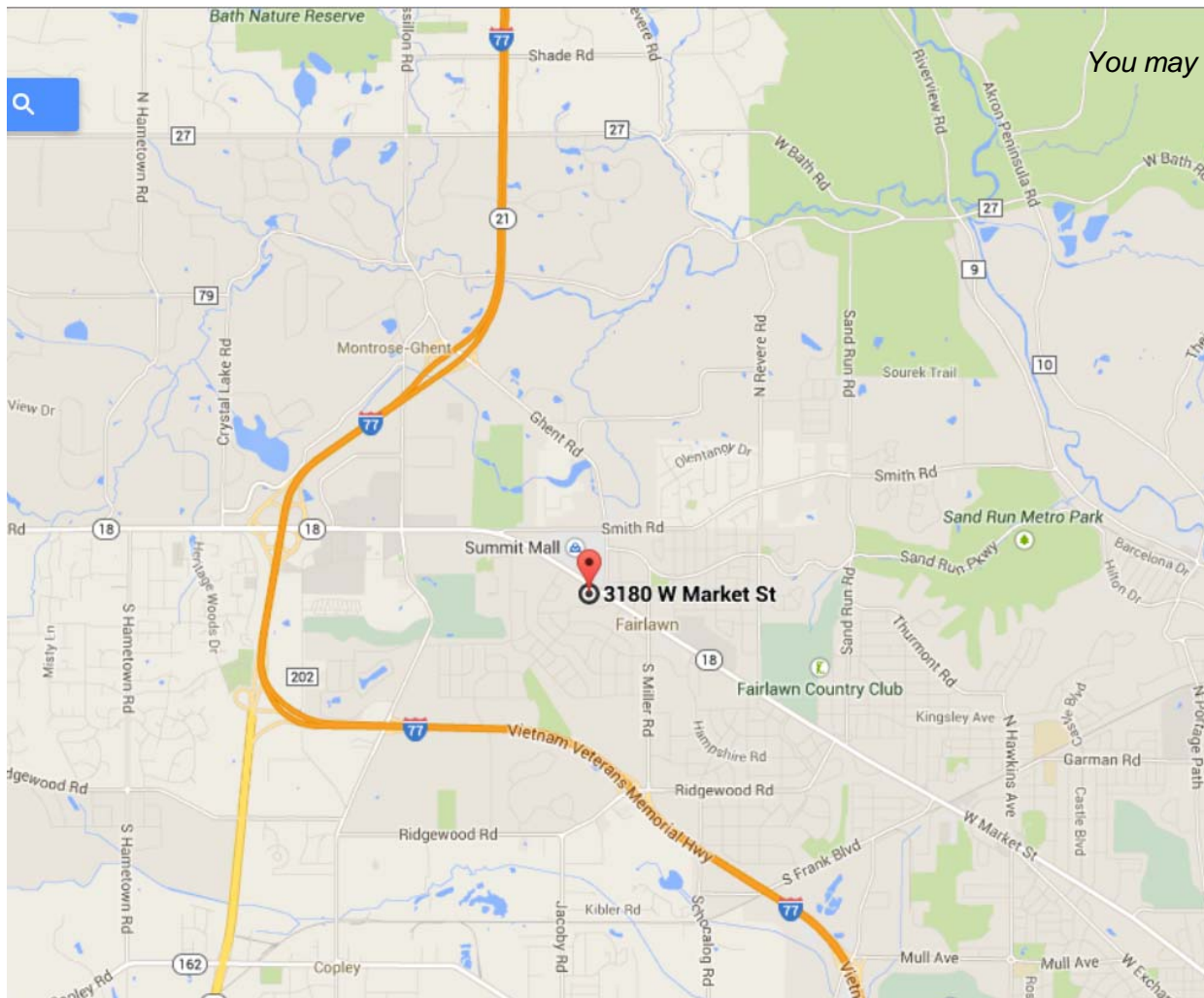
Exit at #133 – Ridgewood/Miller Rd. Go straight through the exit for approximately 2 miles. Turn left on Market Street (2 blocks). The Hotel is located on the left

Driving North or South on I-71

Take Route 18 – Medina Exit #218. Drive east on route 18 approximately 10 miles. The Hilton will be located on the right side opposite the Summit Mall

Ohio Turnpike

Take the Cleveland/Akron I-77 Exit #173 off the Ohio Turnpike. Take I-77 south to exit #138 to Fairlawn. Turn right on Ghent Rd. Follow south for two miles. The Hilton is at the intersection of West Market Street (Rt. 18) and Ghent Road. Turn Right on West Market Street. Hotel is located on the left.



You may zoom in

VINYLTEC 2015:
Enabling Technologies For The Future Of The PVC Industry
Hilton Akron-Fairlawn
October 13 - 15

Akron Section and the Vinyl Division are proud to present Vinyltec 2015 – “Enabling Technologies For The Future Of The PVC Industry”. Vinyltec 2015 is being held at the Akron Fairlawn Hilton on Oct 14 and 15. This conference will feature the newest developments in PVC compounding materials, processing and equipment. In addition, keynote speakers will provide updates on current market developments, the state of hydrocarbon production in NE Ohio, and recycling and regulatory updates.

An optional workshop on Tuesday, Oct 13, features several renowned industry experts that cover PVC Compounding Technology and Materials. This is an ideal opportunity for new technicians to learn from the best in their fields about what is required to produce good PVC compounds. This workshop is also valuable for anyone hoping to brush up on his or her skills. There will be an open discussion with the experts at the end of the program.

Vinyltec is a great opportunity for the Akron section to remind Vinyl engineers that PVC research and production started right here in North East Ohio and that many great Akron companies, like B.F. Goodrich, Goodyear, Firestone and others were key to creating the vibrant Vinyl industry we know today.

Come on out and take advantage of this great opportunity in our own back yard. More information and registration is available at www.4SPE.org. Hope to see you there.

Robert Weiler
Akron/Vinyl Liaison

Membership report – August 2015

Akron Section has 304 active members.
Seven new members added in August.

Steven Bassetti	Jessica Patz
Michelman	A. Schulman, Inc.
Cincinnati, OH	Akron, OH

Alyssa Gilbert	Catlin Porter
Seaman Corporation	Dover Chemical
Hinckley, OH	Dover, OH

Sahil Gupta	John Regula
Parker Hannifin	Dover Chemical
Ravenna, OH	Dover, OH

Tom McQuaide
A. Schulman, Inc.
Akron, OH

		<ul style="list-style-type: none"> • Volumetric, Gravimetric, Belt & Screw Feeders
	<ul style="list-style-type: none"> • Bulk Bag Systems • Mechanical Conveyors • Scale Systems 	
	<ul style="list-style-type: none"> • Explosion Mitigation & Prevention Equipment for Combustible Dust 	
	<ul style="list-style-type: none"> • Densephase Pneumatic Conveying 	
		<ul style="list-style-type: none"> • Delumpers • Shredders • Size Reduction
www.davidindustrialsales.com Richfield: (330) 659-3157 Perrysburg: (419) 874-1359		

Advertiser Index

Arkema - Vinyltec Platinum Sponsor	7
Akron Polymer Training Center	15
BYK - Vinyltec Silver Sponsor	9
ChemCeed LLC	9
David Industrial Sales	4
Dover Chemical	14
Dow - Vinyltec Gold Sponsor	18
Eastman - Vinyltec Silver Sponsor	9
Harwick Standard	6
Kaneka – Vinyltec Silver Sponsor	9
Omya – Vinyltec Diamond Sponsor	8
PMC - Vinyltec Gold Sponsor	5
Polysort	14
Struktol – Vinyltec Silver Sponsor	2

Picture your ad here

And also on our updated www.akronspe.org

Technical Assistance

- **For technical polymer questions please use the SPE International forum “The Chain”**

- **For local questions please contact the officers at akronspeweb@gmail.com**

Providing innovative solutions
for the global PVC and CPVC
processing industry

pmcvinyladditives.com





HARWICK STANDARD

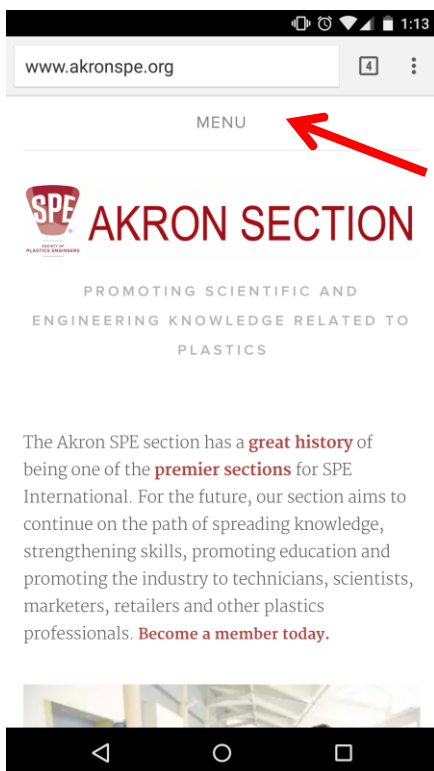
*Serving the rubber, plastic &
adhesive markets since 1932*

harwick.com
800-899-4412

Member NACD
Registered to ISO 9001

The Akron SPE section has a new website with new features!

You can now use the website on your phone to add the monthly meeting directly to your Apple or Google calendar. Just go to akronspe.org, click MENU and then EVENTS. Select the event you would like to add to your calendar and click the appropriate link.



FROM FENCE TO FILM

WE ADD VALUE TO
YOUR PRODUCTS

Proud to sponsor
VINYLTEC 2015

DURASTRENGTH[®]
BY ARKEMA

Acrylic Impact Modifiers

VIKOFLEX[®]
BY ARKEMA

Epoxides for Vinyls

CLEARSTRENGTH[®]
BY ARKEMA

MBS Impact Modifiers

PLASTISTRENGTH[®]
BY ARKEMA

Acrylic Processing Aids

BIOSTRENGTH[®]
BY ARKEMA

Biopolymer Impact Modifiers



Visit our web sites: www.additives-arkema.com, www.arkemaepoxides.com

Arkema Coating Resins is a business unit of Arkema Inc.

Durastrength[®], Biostrength[®], Plastistrength[®], Clearstrength[®], Vikoflex[®] are registered trademarks of Arkema Inc.

www.arkemacoatingresins.com

ARKEMA
INNOVATIVE CHEMISTRY



Omya is more ...

Excellence in Specialty Chemical Distribution



DISTRIBUTION

- Global distribution network
- Local presence and knowledge
- Financially strong
- Long-term commitment



PRINCIPALS

- Sustainable
- Innovative
- International
- Broad product portfolio



SERVICE

- Technical support
- Marketing support
- Extended customer access
- Joint development projects



LOGISTICS

- Optimized supply chain
- Flexibility
- Local warehousing

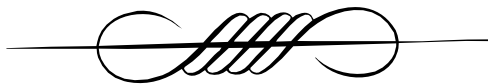


MARKETS

- Building Materials
- Polymers
- Life Sciences
- Paper

Akron Section SPE Past Presidents

*57 years of
excellence*



1959-1960	Donald F. Siddall	1987-1988	Judith A. Fallon
1960-1961	Milan Krajcik	1988-1989	William E. Tosko
1961-1962	Foster J. Young	1989-1990	Robert C. Wegelin
1962-1963	Dickson L. Stoker, III	1990-1991	Geraldine R. Stromquist
1963-1964	Edward L. Hillier	1991-1992	Spencer Kreiser
1964-1965	John R. Russell	1992-1993	Robert C. Wegelin
1965-1966	John R. Russell	1993-1994	Anthony F. Dean, Jr.
1966-1967	Clyde H. Jones	1994-1995	Wayne Decamp
1967-1968	Alan Corry, Jr.	1995-1996	Melanie Stewart
1968-1969	Bernard M. Saffian	1996-1997	Kevin Hershfield
1969-1970	Harold R. Schick	1997-1998	David Schultz
1970-1971	Robert G. Hills	1998-1999	John Raab
1971-1972	John J. Satterfield	1999-2000	Gary Taylor
1972-1973	Alexis M. Gross	2000-2001	Kevin Malpass
1973-1974	Francis J. Maurer	2001-2002	Kenneth L. Sharp
1974-1975	Leverett A. Anderson, Jr.	2002-2003	Joseph E. Pfeiffer
1975-1976	Robert M. Hershey	2003-2004	Robert C. Wegelin
1976-1977	Richard L. Fleshman	2004-2005	Joseph Mattingly
1977-1978	David Curtis	2005-2006	Lloyd A. Goettler
1978-1979	John A. Zelek, Jr.	2006-2007	John Woodside
1979-1980	Gerald W. Whitnoble	2007-2008	Vivian Malpass
1980-1981	Kathleen N. Bechter	2008-2009	Joseph Mattingly
1981-1982	Victor E. Giuffrida	2009-2010	David A. Katz
1982-1983	James Steiner	2010-2011	Lloyd A. Goettler
1983-1984	Robert G. Hills	2011-2012	David Schultz
1984-1985	Anthony F. Dean, Jr.	2012-2013	Kevin Malpass
1985-1986	Gene Buser	2013-2014	Dan Jones
1986-1987	Harry J. Barth	2014-2015	Vivian Malpass
		2015-2016	Keith Pelfrey

More Vinyltec 2015 Sponsors



2015 Award Recipients

Rubbermaid Scholarship

Matthew McGarry
Shawnee State University

Ken Sharp Memorial Scholarship

Connor O'Brien
Virginia Polytechnic Institute and State
University

Goodyear Scholarship

Joshua Dambik
The University of Akron

Jim Steiner Memorial Scholarship

Johnathon Mileski
The Ohio State University

SPE – Special Merit Scholarships

Dan Truax
Case Western

**Scholarships
Available**

Goodyear Tire & Rubber
Company

Rubbermaid

Kenneth L Sharp Memorial
Scholarship

Jim Steiner Memorial
Scholarship

SPE - Akron Section
Special Merit Awards

The Society of
Plastics
Engineers
Akron Section

Educational
Foundation



2016
Scholarship
Program
Information

Please visit <http://www.akronspe.org/education.htm> for more information and to download the application form.

Background

The purpose of the Akron Section of the Society of Plastics Engineers Scholarship Program is to promote knowledge in polymer science, engineering, and technology. Started in 1988, it has awarded over \$300,000 to area students. Preference is given to students enrolling in two- and four-year programs with a focus on plastics and polymers.

Scholarships up to \$3000 per year will be awarded and can be used for tuition, books, laboratory fees, and other educational costs necessary to earn a certificate or associate or baccalaureate degree in preparation for a career in polymers.

Selection Criteria

1. Scholastic Achievement
2. Interest in a plastics career
3. Extracurricular activities
4. Financial need
5. Two letters of reference from instructors or supervisors. (to be included with application)
6. Residence within area covered by Akron SPE.

First-time Applicants

Interested students from local high schools, technical, and vocational schools, and area colleges are encouraged to fill out the attached SPE Scholarship Application form, including the essay, references, and current transcript. Students are encouraged to discuss their interests in plastics

All scholarships are awarded for one year with option for renewal. The awards are for full-time students only. Co-op students are also eligible.

Scholarship applications
should be sent to:

**Akron SPE
Attn: Kevin Cavicchi
250 S. Forge St.
Akron, OH 44325-0301**

- OR -

kac58@uakron.edu

Deadline is March 18, 2016.

Renewal Applicants

Renewal Instructions:

1. Maintain a minimum **2.5/4.0** grade point average or equivalent.
2. Submit grade reports and course selections demonstrating polymer-related curriculum prior to start of next semester.
3. Apply for renewal scholarship using SPE application form. (References and essay are not required for renewal.)

Names of scholarship recipients will be distributed to donor companies for possible internship or cooperative programs.

The number of scholarships awarded per year will be variable depending on the number of qualifying applicants.

Please visit <http://www.akronspe.org/education.htm> for more information and to download the application form.



2016 Scholarship Application & Renewal Akron Section - Education Foundation

1. Applicant Name: _____
2. Your Home Address: _____
City: _____ Zip: _____ Home Phone: _____
3. Your Address at School: _____
City: _____ Zip: _____ School Phone: _____
Your Email address: _____
4. Current School: _____
Course of Study: _____
Cumulative GPA: _____
5. School/College to be attended: _____
Proposed Course of Study/Major: _____
Expected Degree: _____ Expected Graduation Year: _____

New Applicants Only, please continue:

6. Please briefly describe how you intend to finance your education: _____

7. Current and Past School Activities: (attach separate sheet or resume if necessary – 1 page only please)____

8. On a separate sheet of paper, type a short discourse (no more than two pages) describing your enthusiasm and interest in pursuing a career in plastics, as well as how your intended field of study will help you achieve your career goals.
9. Have **two** (and only 2) academic references (instructors or supervisors) provide the committee with a letter documenting their insights on your scholastic achievements and potential for future success in the fields of plastics and polymers. Attach these references to this application.

All applications must include a current transcript.

All Applicants return application by March 18th, 2016 to the following address:

**Akron SPE
Attn: Kevin Cavicchi
250 S. Forge St
Akron, OH 44325-0301**

For questions, please contact Kevin Cavicchi, phone: 330-972-8368, or email kac58@uakron.edu

Highlights from September Meeting

For more pics - <https://akron-spe-web.squarespace.com/photos-new/#/20152016-meetings/>



**The Akron Section is in
need of New Board Member.**

**Please consider becoming a
Board Member
to help support your Section.**

**Contact anyone currently
on the board (see page 19)**

**if you are interested.
Thank You!**

Our Specialties Are Your Solutions!

High Performance Additives for Plastics

Antioxidants:

**Doverphos® liquid phosphites
FDA Approved Doverphos® LGP-11
Doverphos® HiPure 4**

**Doverphos® solid phosphites
Doverphos® S-9228
Dovernox® 10 & 76**

**Lubricity Additives:
Doverlube® Ca & Zn stearates**

**Flame Retardants:
Chlorez®, Paroil®, Doverguard®**

DOVER Chemical Corporation
A Subsidiary of ICC Industries Inc.

330-343-7711 • 800-321-8805 • Fax: 330-364-9626 • www.doverchem.com
Customer Service: 800-753-6837 • customerservice@doverchem.com

Heath Colvin, Midwest Regional Sales Manager

Phone: 330-243-6158; Fax 330-365-3929

Email: heath.colvin@doverchem.com

If prospects can't find your website on Google, will it generate leads?

Polysort -- serving plastics companies for 18 years



- **Search Engine Optimization**
- **Website design**
- **Internet marketing**

Contact us today for a FREE web site audit.

Tel. 330.665.5918 ext. 2104

E-mail John Inama at johni@polysort.com


POLYSORT
The power of many.

Goals for Akron Section SPE for 2015/2016

- Work closely with the Cleveland Section to promote attendance at Joint Section meetings and develop a diversified Program for 2015-16
- Increase involvement with U Akron Student Chapter to attend Section Meetings and functions and achieve better use of our website, Linked In and Face Book
- Give better recognition to new members
- Increase Section membership by at least 1% by better promotion of Section value
- Work closely with the Vinyl Plastics Division to run a very successful Vinyltec TOPCON in October 2015
- Continue and expand on joint Society meetings and activities, such as ACCESS, ACS and others
- Continue our recruitment efforts to add new Board members

The Akron Polymer Training Center (APTC)
at The University of Akron provides short courses
for the plastics, rubber, medical, corrosion,
and adhesives and coatings industries.



APTC plastics courses include:

- Understanding Plastic Material Properties in Analyzing and Preventing Product Failures
- Making Properties and Profits: Twin Screw Extrusion Seminar
- Complete Injection Molding
- Polymer Compounding, Formulating and Testing of Plastics, Rubber, Adhesives and Coatings
- Rubber and Plastics Failure Analysis – Physical and Chemical Analysis Techniques
- Plastic Material Selection and Testing
- Plastic Part Failure Analysis
- Chemistry and Technology of Polymeric Materials used in Medical Devices
- Validating Medical Molding Processes and Parts
- Color Theory and Applications

**The
University
of Akron**

Visit uakron.edu/aptc for a complete list of APTC courses.

Customized training programs are also available. Contact APTC at 330-972-8303 or lbettinger@uakron.edu

Minutes of Board Meeting – August 31, 2015

Call to Order: 5:30 PM

Present: Keith Pelfrey, Viv Malpass, Bob Weiler, David Schultz, Tony Dean, Bob Wegelin, Kevin Cavicchi and Nicole Brostowitz

Absent: Dan Jones, Tom McQuaide, Kevin Malpass and Gary Taylor

New BOD Members- Student Chapter- SPE Liasion- Marcos Pantoja, Sahil Gupta- Parker
Welcome by New President- Keith Pelfrey to all returning BOD and new Members and to Student Chapter – PESO representatives VP PESO-Camillo and Treasurer –Daniel Diaz

Agenda for Monday Aug 31 BOD meeting at 5.30pm at the U Akron Poly Eng Bldg :

*Kevin Cavicchi---please provide parking passes for Aug 31
Kevin reports he is in the process of determining details for 2015-16 Year

Minutes of June 8th BOD meeting---Dave Schultz. Reviewed, voted and Approved by BOD

Section Goals—2015-16 Keith Pelfrey
Keith informed BOD should review past Goals and will discuss- October BOD

Committee Reports:

Technical Program Review 2015-6--Keith Pelfrey- New 2015-16 Bob Weiler

Keith reviewed briefly current program and informed Bob Weiler and Keith along with Cleve Section has developed a “germ” to start next years planning- Bob passed out document for all to review and comment. BOD has asked for Student Chapter input, as well Keith reports he is set with October bio and information to be sent to Jenny Digiantonio, Tony Dean and Nicole Brostowitz.

Membership--Bob Weiler

Keith informed that we added 7 new members for Aug 2015- total 304.

Treasurer--Gary Taylor

Gary forwarded report to current BOD.

Councilor--Kevin Malpass

Kevin has informed that Dan Jones will represent Akron Section at Oct 2015 Council Meeting in Pittsburgh- Thanks Dan Jones.

Student Chapter--Kevin Cavicchi

Kevin informed that Prof K. Min is now Student Chapter Advisor and that there were several students present this meeting to offer help and learn about Akron Section SPE- Very good start- look forward to input and involvement of students a very key part of this years Goal. Need K. Min contact information.

Public Interest/Website-- Tom McQuaide/Tony Dean

Tony informed all information has been disseminated for new year to all publications- SPE and public and he and Tom were working on developing new PR Article highlighting Akron Section as a premier organization.

Minutes of Board Meeting – August 31 (cont.)

Website Improvement/utilization--Tony Dean/ Nicole Brostowitz

Tony informed that his current portion of website has been up-dated. Nicole reports she is making progress on the new look social media site and has asked for BOD to aid in helping to fill in the blanks- BOD to review Nicole's e-mail and provide input.

Nicole has requested up-date on Plastivan-Intl is placing a renewed interest and has expanded their out reach D. Schultz to check Cleveland Section as well local ESC- Dr Missi Zender Sakach.

Newsletter--Utilization/Advertisers--Tony Dean

Tony reports a couple of new advertisers- Harwick Standard-Thank you to Secretary-- David Schultz and Struktol as well we now stand at 5 totaling \$900.00, BOD to suggest others.

Awards—Planning-Dan Jones

No report- Keith did mention Dan was working on this will review progress- October BOD.

Pinnacle/Communications/Timing 2016-17 ---Dan Jones

No report- Dan Jones has aided BOD in this area past 3-4 years anticipate Dan has some pointed suggestions as the awards process appears to be in transition.

SPE/Section Award Planning 2016-7---Dan Jones/All

Keith has asked BOD to review Awards and make suggestions for this and potentially next year- Organization-Akron new business to be reviewed for potential Business Award for 2016.

Education Committee--Improvement Actions for 2015-6--Kevin Cavicchi/Tom McQuaide

Kevin informed that no new news except all current processes that are set to start for new year are in progress including updated Scholarship information, and updated brochure.

Plan to reach out in other areas such as noted from last year suggestions: Contacts with Boards of Education, PTA, websites, local papers.

Need to secure another Electronic picture frame for upcoming Conference- BOD.

Kevin Cavicchi informed he attended most recent IPEC Meeting at National ACS Meeting and wondered what Akron Section has done for support with IPEC in past- suggested review and update- Viv and D. Schultz to meet with Kevin for future suggestions.

Education Foundation-- Funding from Section/Fund Raising Event for 2015-6--Bob Wegelin

Bob Wegelin reports all on track with Foundation- he has reviewed Intl request for Scholarship information and will fill in, Broker has asked for review with current situations in stock market- Bob plans to gather Foundation Committee for update and review.

Vinyltec 2015, Oct 13-15--Status--VM/Bob Weiler/Dave Schultz/ Bob Wegelin

Viv reports Vinyltec is on track to be an excellent meeting Sponsors set per Kevin Malpass and Table Tops at 20 currently, have 75 attendees looking for others to sign up soon- have confirmed Vinyl Div has TPC Meeting Sept 1 and that Vinyltec Committee to have last meeting Sept 2. We have asked to be considered for future Vinyltec meeting in Akron 4-5 years.

Vinyltec meeting in Akron 4-5 years.

D. Schultz to obtain PR Loop from International SPE- Chain- Leadership and Technical aspects.

Minutes of Board Meeting – August 31 (cont.)

TPE TOPCON- September 2016--Status--VM/ Bob Wegelin

Viv reports that this Conference will soon be confirmed for Sept 20-22, Bob Weiler informed that is same time for Vinyltec 2016 set for New Jersey- it has been moved back based on K Show set for later in October.

House- Bob Wegelin, Gary Taylor

Bob reports that all is set at Hilton for Sept Meeting.

New Business:

ACCESS funding request

Keith has been asked for funding for up-coming ACCESS events namely Nov –Awards Banquet- Akron Section to determine what type of funding that would be most appropriate for Akron- Society of Plastics Engineers- support banquet or scholarship- Need to determine what amount and D. Schultz representative will make known that there is interest at next BOD Meeting for ACCESS- Sept 20.

Mistake on the pocket calendar

February meeting set for Feb 8th not 6th as noted on Calendar- no plans to send any corrections as it will be so noted during early 2106 Meeting notice in newsletter and on web.

Adjournment

Meeting was adjourned at 7:00 p.m.

The next meeting of the Akron SPE Board of Directors will be October 5, 2015 at PEAC – Univ. of Akron starting at 5:30 p.m. Kevin Cavicchi--Plans to have location and parking passes approved



DOW PLASTICS ADDITIVES ENABLES YOUR SUCCESS

Providing technical expertise and support you can count on with the brands you know and trust.

PARALOID™
Impact Modifiers & Processing Aids
ACRYLIGARD™
Acrylic Capstock Resins
SURECEL™
Foam Cell Promoters

Put our capabilities to work for you today.

DOW PLASTICS ADDITIVES | www.dow.com/additives



Programs for 2015 / 2016

Sept. 14 **University of Akron**
Biomimicry - Leveraging 3.8 Billion
Years of Innovation
-- *Hilton Fairlawn – Akron**

Oct. 12 **SIPA of Italy**
Xtreme and Extreme Sincro, SIPA's
Revolutionary Preform Manufacturing
Technology & Design
-- *Hilton Fairlawn – Akron**

Oct. 13-15 **Vinyltec TOPCON**
-- *Hilton Fairlawn – Akron**

Nov. 9 **Beaumont Technologies**
True Melt Flow of Polymers
-- *Hilton Fairlawn – Cleveland**

Dec. 7 **Holiday Celebration**
SPE – History and Plans for the Future
-- *Taverne of Richfield – Joint**

Jan. 11 **NASA**
To Mars and Back – Extreme Eng.
-- *Hilton Fairlawn – Joint with ACESS**

Feb. 8 **RTP**
VLF – Very Long Fiber – Metal to
Plastic Replacement
-- *Hilton Fairlawn – Cleveland**

Mar. 14 **Case Western Reserve Univ., Tour**
Solar Power -- *Cleveland**

Apr. 11 **Industry / Teacher Collaboration**
SPE / University of Akron
What do Polymer Engineers Do? How
Do We Get the Word Out to Students
-- *Hilton Fairlawn – Akron**

May 9 **Akron Section Awards Night**
-- *Hilton Fairlawn – Akron*

*Meetings are joint with Cleveland
Section with host section denoted by **

Akron Section Board of Directors

Keith Pelfrey 330-255-6557 T
GOJO Industries 330-255-6114 F
President/Chair, Technical Program PelfreyK@GOJO.com

Robert Weiler 330-283-9024 T
Amfine Chemical Corp. rweiler@amfine.com
President/Chair-elect, Membership,
Technical Program

Dave Schultz 330-798-6535 T
Harwick Standard Dist. Corp. 330-798-9328 F
Secretary schultzd@harwickstandard.com

Gary Taylor 330-419-4380 T
Retired taylorgandc@gmail.com
Treasurer, House

Kevin Malpass 330-490-4743 T
Diebold, Inc. 330-490-4788 F
Councilor kevin.malpass@diebold.com

Vivian Malpass 330-342-1120 T
Tek-Mark International 330-342-1134 F
Past-President, vivian.malpass@tek-mark.com
VINYLTEC 2015, TOPCON 2016

Dan Jones 330-338-8029 T
Prior Past-President, daniel.h.jones@sbcglobal.net
Director, Awards

Marcos Pantoja 831-970-0604 T
Student - U Akron Polymer Eng. mp87@zips.uakron.edu
Director, Student Chapter SPE Liaison

Younjin Min 330-972-5167 T
Student - U Akron Polymer Eng. 330-258-2339 F
Director, Student Chapter Advisor ymin@uakron.edu

Bob Wegelin 330-414-1498 T
Retired robert.wegelin@att.net
Director, Education Foundation, House

Tony Dean 330-929-9916 T
Retired – Director, Public Interest, francis@neo.rr.com
Advertising

Kevin Cavicchi 330-972-8368 T
U Akron Polymer Engineering 330-258-2339 F
Education kac58@uakron.edu

Nicole Brostowitz 330-202-4466 T
Seaman Corp. nbrostowitz@seamancorp.com
Director, Internet Communications

Tom McQuaide 330-630-7113 T
A. Schulman 330-630-3349 F
Director, Education Thomas_McQuaide@aschulman.com

Sahil Gupta 330-296-1421 T
Parker Hannifin Corp. 330-296-8433 F
Director sahil.gupta@parker.com

Joe Mattingly 330-962-5299 T
Goodyear Tire & Rubber Co. 330-896-7379 F
Director joe@mattingly.us



Akron Section Society of Plastics Engineers Educational Foundation



1-16

The Akron Society of Plastics Engineers Educational Foundation operates exclusively for the benefit of and to carry out the purposes of the Akron Section of the Society of Plastics Engineers, which is to promote scientific and engineering knowledge relating to plastics by making educational scholarship grants to deserving students in the field of plastics engineering and related subjects. The Organization is supported primarily by contributions from the Akron Society of Plastics Engineers, the Society's individual members and corporations like yours affiliated with the polymer industry.

Since the inception in 1988, the Akron Society of Plastics Engineers Educational Foundation has grown to its current position through the hard work of many volunteers and the generosity of the local business community. Over the twenty-seven years that the foundation has been in existence, it has provided scholarships to over 250 young men and women totaling in excess of \$320,000 to assist them in furthering their careers in the polymer industry.

Our goal is to continue to grow the assets of the Foundation in order to increase the number of scholarships awarded, as well as the size of the awards, and to do so in perpetuity. In doing this, we hope to be able to contribute to the supply of well-trained individuals to support the growth of the polymer industry in the Northeast Ohio area today and well into the future.

When the Foundation began its fund raising activities in 1988, we offered those companies who contributed \$30,000 a scholarship in their name. To date we have five named scholarships, Newell/Rubbermaid, Goodyear, Ken Sharp Memorial and Jim Steiner Memorial scholarships. We are asking your company to help with the growth of well-trained individuals in the local polymer industry. Please print this page, fill out the information and mail it to Bob Wegelin, 13206 Kaufman Ave. NW Hartville, OH 44632.

Akron SPE Scholarship Donation Commitment

- ☐ \$30,000 lump sum. _____
☐ \$10,000/yr. next 3yrs. _____
☐ \$5,000/yr. next 6 yrs. _____
☐ Other: _____

Company name: _____
Contact person: _____
Ph. # or email: _____

Our named scholarship donors are recognized at the annual Awards Night of the Akron Society of Plastics Engineers. We invite you to present your tax deductible donation at our Awards Night, which is scheduled on May 9, 2016.

We are looking forward to your support of this very worthwhile cause by your fine company. Please contact me at (330) 414-1498 with any questions. Thank you for your consideration.

Sincerely,
Bob Wegelin, Foundation Chair
Akron Section Society of Plastics Engineers, Educational Foundation





Who Can Help You Society of Plastics Engineers

6 Berkshire Blvd., Ste 306, Bethel, CT 06801

Phone: +1 203.775.0471

www.4spe.org

Academic Outreach	Marjorie Weiner	+1 978.618.5496	mweiner@4spe.org
Annual Awards	Kathy Schacht	+1 203.740.5430	kschacht@4spe.org
ANTEC Booth Sales	Chuck Herrholtz	+1 770.576.4974	cherrholtz@naylor.com
ANTEC Conference Management	Barbara Spain	+1 203.740.5418	bspain@4spe.org
ANTEC Paper Submission	Barbara Spain	+1 203.740.5418	bspain@4spe.org
ANTEC Conference Sponsorship	Barbara Spain	+1 203.740.5418	bspain@4spe.org
The Chain	Liz Martland	+1 203.740.5425	lmartland@4spe.org
Change of address	Customer Relations	+1 203.740.5403	customerrelations@4spe.org
Communications	Sarah Sullinger	+1 203.740.5425	ssullinger@4spe.org
Communications Excellence Award	Kathy Schacht	+1 203.740.5430	kschacht@4spe.org
Conference Sponsorship (TopCons)	Sue Wojnicki	+1 203.740.5420	swojnicki@4spe.org
Dues Renewals and New Members	Customer Relations	+1 203.740.5403	membership@4spe.org
Employment Advertising	+1 888.491.8833 At prompt please press 4. The extension is 1063		customerservice+64639@support.boxwoodtech.com
Fellow & Honored Service Nominations	Kathy Schacht	+1 203.740.5430	kschacht@4spe.org
Governance Liaison	Kathy Schacht	+1 203.740.5430	kschacht@4spe.org
Managing Director	Russell Broome	+1 203.740.5471	rbroome@4spe.org
Membership Processing/Questions	Customer Relations	+1 203.740.5403	membership@4spe.org
Membership Programs/Retention	Bonnie Kaczowski	+1 203.740.5428	bakaczowski@4spe.org
Mobile App – SPE Events	Scott Marko	+1 203.740.5442	smarko@4spe.org
Pinnacle Award	Kathy Schacht	+1 203.740.5430	kschacht@4spe.org
<i>Plastics Engineering</i> magazine advertising	Roland Espinosa	+1 201.748.6819	respinosa@wiley.com

Sections, Divisions & Special Interest Group Administration	Kathy Schacht	+1 203.740.5430	kschacht@4spe.org
SPE Foundation / Scholarships & Grants	Gene Havel	+1 203.740.5457	ghavel@4spe.org
SPE Industry Resource Guide		+1 800.816.6710	spe@multiview.com
Student Chapters	Scott Marko	+1 203.740.5442	smarko@4spe.org
Topical Conference Planning	Sue Wojnicki	+1 203.740.5420	swojnicki@4spe.org
Topical Conference Registration	Sue Wojnicki	+1 203.740.5420	swojnicki@4spe.org
Webinars (non.registration)	Barbara Spain	+1 203.740.5418	bspain@4spe.org
Event Registrations	Customer Relations	+1 203.740.5403	customerrelations@4spe.org
Website Administration	Pedro Matos	+1 203.740.5438	pmatatos@4spe.org

SPE MEMBER BENEFITS GUIDE



FREE TO MEMBERS

SAVINGS TO MEMBERS

BENEFIT		DESCRIPTION	WEBSITE LINK
NETWORKING	Business Networking Resources	Connect to industry experts	www.4spe.org/cc
	Local Section Affiliation	Network with members locally in over 75 countries	www.4spe.org/communities/sections
	Online Membership Directory	Unlimited access provides the link to fellow members	www.4spe.org/membercenter
	Technical Affiliation	24 Divisions represent major industry specialties	www.4spe.org/communities/divisions
MEDIA	Newsletters	News & events about specific local & technical affiliations	www.4spe.org/communities/newsletters
	Plastics Engineering (PE)	The official monthly publication of SPE	www.4spe.org/pub
	SPE Online	Your 24/7 source for Society information	www.4spe.org
	Tech Focus	Monthly electronic newsletter offering society & industry news	www.4spe.org/membercenter
TECHNICAL	Online Technical Library	Searchable database of technical articles & conference papers	www.4spe.org/membercenter
	Message Forums	Online question & answer forum	www.askpip.com
	Special Interest Groups	Emerging areas not currently covered by technical Divisions	www.4spe.org/communities/divisions/#sig
	SPE Journals	Read abstracts from our three technical journals	www.4spe.org/pub/journal
CAREER	American Management Association	Through a partner alliance, access AMA's educational resources	www.4spe.org/membercenter
	Awards	Outstanding contributions recognized	www.4spe.org/awards
	Leadership Development	The opportunity to improve professionally & personally	www.4spe.org/communities/leadership
	Online Career Development	Career enrichment, job openings & resume database	www.4spe.org/membercenter
	Professional Recognition	Distinguished grades of membership recognize accomplishments	www.4spe.org/membercenter
	Scholarships & Grants	Awarded by The SPE Foundation	www.4spe.org/foundation
	Student Benefits	Over 100 Student Chapters in nine countries	www.4spe.org/membercenter
Unemployment Services	Benefits for the unemployed member	www.4spe.org/membercenter	
BENEFIT		DESCRIPTION	WEBSITE LINK
TRAINING	ANTEC	Largest annual technical conference in the industry	www.antec.ws
	Career Coaching	For-a-fee services for career enhancement	www.4careersolutions.org
	e-Learning Center	Online self-paced courses, live & archived presentations	www.4spe.org/elearning
	In-plant Training	Seminar instruction at member's company	www.4spe.org/training/seminars
	Seminars	Expert instruction on current plastics topics	www.4spe.org/training/seminars
	Technical Journals	Subscribe to peer-reviewed articles. Available online and in print	www.4spe.org/pub
	Topical Conferences	Targeted at specific technical & management disciplines	www.4spe.org/conf
	Training Products	Developed by SPE & other leading providers. Some Spanish titles	www.4spe.org/training/products
OTHER	Career Transition Services	Outplacement program offered to member's company	www.4careersolutions.org
	Group Health Insurance	Health, disability & life insurance at attractive group rates	www.4spe.org/membercenter
	Online Job Posting	A source for companies to find qualified staff	www.4careersolutions.org
	SPE BookStore	Discounts on 250+ reference books & training products	www.4spe.org/training/products
SPE/MBNA Credit Card	SPE Platinum Plus Mastercard® (US & Canada only)	www.4spe.org/membercenter	



WEBSITE LINKS SUBJECT TO CHANGE - CHECK WWW.4SPE.ORG FOR FULL BENEFITS

WHY JOIN ?

It has never been more important to be a member of your professional society than now, in the current climate of change and volatility in the plastics industry. Now, more than ever, the information you access and the personal networks you create can and will directly impact your future and your career.

Active membership in SPE:

- **keeps you current**
- **keeps you informed**
- **keeps you connected**

The question really isn't "why join?" but

WHY NOT?



Akron Section Society of Plastics Engineers

Tony Dean, Advertising Manager
330-929-9916

Website, E-Blast & Newsletter Advertising

Insertion Order 2015-16

Polymer Valley News: Akron Section SPE Newsletter
Delivered via email, stored at <http://www.akronspe.org/newsletter.htm>

Please check ad size wanted. One column is 3-7/8" wide.

This is the 57th year of the Akron SPE Section and rates are for entire season, September 2015 – Summer 2016. **Payable in Advance. Please let me know if you need an invoice.**

Ad format must be electronic (but we can scan your original artwork). File size should be limited based on the size of the ad ordered. Oversized ads will be charged an additional fee. Acceptable formats are .bmp, .pcx, .jpg, .tif, .gif, or MS PowerPoint or Word (if you have any issues with format, please email us and we can provide assistance). **Color is Free! Color helps your ad stand out!** All ads included in newsletter, email blast and web site.

Email artwork and this Insertion Order (completed) as an attachment to francis@neo.rr.com

If you don't include your email address, we have no way of sending you each issue!

(please X)	Ad Size	Dimensions	Price for year
	Business Card	One column by 2" high	\$100
	Double	One column, 2 to 4" high	\$150
	Triple	One column, 4 to 6" high	\$200
	Half Page	One column, 10" high	\$250
	Half Page	Page width (7.5"), 5" high	\$250
	Hotlink to company website	N/A	No Charge

The cost on a per issue basis will be calculated by dividing the "Year" price by 10

Contact Person	Billin	g Information:
Company:		
Name:		
Address:		
Phone #:		
Fax #:		
Email address:		

Mail checks, payable to AKRON SECTION SPE, to:

Akron Section SPE
c/o Tony Dean
Akron SPE
250 S. Forge Street
Akron, OH 44325-0301



Society of Plastics Engineers

6 Berkshire Blvd., Suite 306
Bethel, CT 06801-1065 USA

Membership Application

PH: 203-775-0471 • Fax: 203-775-8490
www.4spe.org • membership@4spe.org

Contact Information *Please print clearly*

First Name (Given Name) _____		Middle Name _____
Last Name (Family Name) _____		
Company Name/University Name (if applicable) _____		
Mailing Address is: <input type="checkbox"/> Home <input type="checkbox"/> Business Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female (for demographic use only)		
Address Line 1 _____		
Address Line 2 _____		
Address Line 3 _____		
City _____		State/Province _____
Country _____	Zip/Postal Code _____	Phone _____
Preferred Email (This will be your member login and is required for usage of online member services) _____		
Alternate Email _____		
Date of Birth (Required for Young Professional membership) _____		
Graduation Date (Required for Student membership) _____		Job Title _____

Membership Types *Check one*

- ☐ **Student: \$31** (Graduation date is required above)
☐ **Young Professional: \$99** (Professionals under the age of 35. Date of birth is required above)
☐ **Professional: ~~\$144.00~~ \$129** (Includes \$15 new member initiation fee)

Choose 2 *free* Technical Division and/or Geographic Section Member Groups. →

1. _____ 2. _____

Additional groups may be added for \$10 each. Add Special Interest Groups at no charge.

1. _____ 2. _____

3. _____ 4. _____

Dues include a 1-year subscription to *Plastics Engineering* magazine-\$38 value (non-deductible).
SPE membership is valid for 12 months from the date your membership is processed.

Payment Information *Payment must accompany application. No purchase orders accepted.*

☐ Check Enclosed Amount _____

Charge: ☐ Visa ☐ Mastercard ☐ American Express Expiration Date: _____

Account Number: _____

Amount Authorized: _____ CSC#: _____ Last 3 digits from the back of MC/Visa.
4 digits from the front of AMEX.

Cardholder's Name (as it appears on card): _____

Signature of Cardholder: _____

Payment by Wire Transfer Instructions

You **must** include account number +ABA number + bank fees.
Please include the Member ID# and Name so we may apply payment to the correct person.

USD: WELLS FARGO: 108 Federal Road, Danbury, CT 06811 USA
ACCT #2681786097 ABA #121000248 SWIFT CODE #WFBUS6S

The SPE Online Member Directory is included with membership. Your information is automatically included unless you indicate otherwise.

- ☐ Exclude my email address from the Online Membership Directory
☐ Exclude all my information from the Online Membership Directory
☐ Exclude my address from 3rd party mailings

By signing below, I agree to be governed by the Bylaws of the Society and to promote the objectives of the Society. I certify that statements made in the application are correct and I authorize SPE and its affiliates to use my phone, fax, address and email to contact me.

Signature _____ Date _____

Technical Division Member Groups - Connect with a global community of professionals in your area of technical interest.

- | | |
|---|--|
| <input type="checkbox"/> Additives & Color Europe - D45 | <input type="checkbox"/> Injection Molding - D23 |
| <input type="checkbox"/> Applied Rheology - D47 | <input type="checkbox"/> Medical Plastics - D36 |
| <input type="checkbox"/> Automotive - D31 | <input type="checkbox"/> Mold Making & Mold Design - D35 |
| <input type="checkbox"/> Blow Molding - D30 | <input type="checkbox"/> Plastics Environmental - D40 |
| <input type="checkbox"/> Color & Appearance - D21 | <input type="checkbox"/> Polymer Analysis - D33 |
| <input type="checkbox"/> Composites - D39 | <input type="checkbox"/> Polymer Modifiers & Additives - D38 |
| <input type="checkbox"/> Decorating & Assembly - D34 | <input type="checkbox"/> Product Design & Development - D41 |
| <input type="checkbox"/> Electrical & Electronic - D24 | <input type="checkbox"/> Rotational Molding - D42 |
| <input type="checkbox"/> Engineering Properties Structure - D26 | <input type="checkbox"/> Thermoforming - D25 |
| <input type="checkbox"/> European Medical Polymers - D46 | <input type="checkbox"/> Thermoplastic Materials & Foams - D29 |
| <input type="checkbox"/> European Thermoforming - D43 | <input type="checkbox"/> Thermoset - D28 |
| <input type="checkbox"/> Extrusion - D22 | <input type="checkbox"/> Vinyl Plastics - D27 |
| <input type="checkbox"/> Flexible Packaging - D44 | |

Geographic Section Member Groups - Network with local industry colleagues.

- | | |
|--|---|
| <input type="checkbox"/> Alabama/Georgia-Southern | <input type="checkbox"/> Ohio-Akron |
| <input type="checkbox"/> Asean* | <input type="checkbox"/> Ohio-Cleveland |
| <input type="checkbox"/> Australia-New Zealand | <input type="checkbox"/> Ohio-Miami Valley |
| <input type="checkbox"/> Benelux | <input type="checkbox"/> Ohio-Toledo |
| <input type="checkbox"/> Brazil | <input type="checkbox"/> Oklahoma |
| <input type="checkbox"/> California-Golden Gate | <input type="checkbox"/> Ontario |
| <input type="checkbox"/> California-Southern California | <input type="checkbox"/> Oregon-Columbia River |
| <input type="checkbox"/> Caribbean | <input type="checkbox"/> Pennsylvania-Lehigh Valley |
| <input type="checkbox"/> Carolinas | <input type="checkbox"/> Pennsylvania-Northwestern Pennsylvania |
| <input type="checkbox"/> Central Europe | <input type="checkbox"/> Pennsylvania-Philadelphia |
| <input type="checkbox"/> China | <input type="checkbox"/> Pennsylvania-Pittsburgh |
| <input type="checkbox"/> Colorado-Rocky Mountain | <input type="checkbox"/> Pennsylvania-Susquehanna |
| <input type="checkbox"/> Connecticut | <input type="checkbox"/> Portugal |
| <input type="checkbox"/> Eastern New England | <input type="checkbox"/> Quebec |
| <input type="checkbox"/> France | <input type="checkbox"/> Spain |
| <input type="checkbox"/> Hong Kong | <input type="checkbox"/> Taiwan |
| <input type="checkbox"/> Illinois-Chicago | <input type="checkbox"/> Tennessee-Smoky Mountain |
| <input type="checkbox"/> India | <input type="checkbox"/> Tennessee Valley |
| <input type="checkbox"/> Indiana-Central Indiana | <input type="checkbox"/> Texas-Central Texas |
| <input type="checkbox"/> Israel | <input type="checkbox"/> Texas-Lower Rio Grande Valley |
| <input type="checkbox"/> Italy | <input type="checkbox"/> Texas-North Texas |
| <input type="checkbox"/> Japan | <input type="checkbox"/> Texas-South Texas |
| <input type="checkbox"/> Kansas City | <input type="checkbox"/> Tri-State |
| <input type="checkbox"/> Korea | <input type="checkbox"/> Turkey |
| <input type="checkbox"/> Louisiana-Gulf South Central | <input type="checkbox"/> United Kingdom & Ireland |
| <input type="checkbox"/> Mexico-Centro | <input type="checkbox"/> Upper Midwest |
| <input type="checkbox"/> Michigan-Detroit | <input type="checkbox"/> Utah-Great Salt Lake |
| <input type="checkbox"/> Michigan-Western Michigan | <input type="checkbox"/> Virginia |
| <input type="checkbox"/> Middle East | <input type="checkbox"/> Washington-Pacific Northwest |
| <input type="checkbox"/> Nebraska | <input type="checkbox"/> West Virginia-Southeastern Ohio |
| <input type="checkbox"/> New Jersey-Palisades | <input type="checkbox"/> Western New England |
| <input type="checkbox"/> New York | <input type="checkbox"/> Wisconsin-Milwaukee |
| <input type="checkbox"/> North Carolina-Piedmont Coastal | |

*Asean: Indonesia, Malaysia, Phillipines, Singapore, Thailand, Cambodia, Laos & Vietnam

Special Interest Groups - Explore emerging science, technologies and practices shaping the plastics industry. Choose as many as you would like, at no charge.

- | | |
|--|---|
| <input type="checkbox"/> Advanced Manufacturing / 3D - 033 | <input type="checkbox"/> Plastics Educators - 018 |
| <input type="checkbox"/> Bioplastics - 028 | <input type="checkbox"/> Plastic in Building and Construction - 027 |
| <input type="checkbox"/> Failure Analysis & Prevention - 002 | <input type="checkbox"/> Quality/Continuous Improvement - 005 |
| <input type="checkbox"/> Joining of Plastics & Composites - 012 | <input type="checkbox"/> Radiation Processing of Polymers - 019 |
| <input type="checkbox"/> Marketing & Management - 029 | <input type="checkbox"/> Reaction Injection Molding - 032 |
| <input type="checkbox"/> Non-Halogen Flame Retardant Tech. - 030 | <input type="checkbox"/> Thermoplastic Elastomers - 006 |
| <input type="checkbox"/> Plastic Pipe & Fittings - 021 | |

Recommended by (optional) _____ ID# _____