



Thermoplastic Elastomers

Special Interest Group

September 2015

TPE SIG MEMBERS AND INDUSTRY COLLEAGUES

2015 has been a great year to improve your technical skills and enhance your network in the thermoplastic elastomers industry.

This year ANTEC® 2016 conference is in Indianapolis May 23-25. The TPE SIG technical session will be held on Monday, May 23 starting at 1:30 PM . Six papers are scheduled for presentation. Special thanks to Mukul Kaushik the organizer of the technical session. Details of the session are in this newsletter.

Please make sure you plan to attend our session on TPE's which will be very interesting and educational. Later in the year, the Akron SPE Section and TPE SIG are, for the 12th time, organizing TPE TOPCON 2016. This is a very good opportunity to learn about new developments in the area of Thermoplastic Elastomers. Special thanks to Bill Blasius and Mark Berard for organizing the technical program for this event. Details of this conference are also in this newsletter.

The TPE SIG is again providing funding for Plastivan to visit schools in the Detroit area. This helps the young students understand basic science principles and opens new horizons. You can get additional information about this very educational program at www.4spe.org/plastivan.

As you can see we are very active and believe that our TPE SIG group can help our members learn about new developments and progress made in TPE's.

Hope that you will mark your calendars and attend ANTEC 2016 in Indianapolis and TOPCON 2016 in Akron.

Iani Manas
TPE SIG Chair, 2015-2016

4spe.org



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TPE TopCon 2016 Update



The 12th Thermoplastic Elastomers Topical Conference will be held September 20-22, 2016 at the Akron/Fairlawn Hilton in Akron, Ohio. This is the same location that this conference has been held for many years. This year's theme is "Stretching Performance with TPEs" and we have an outstanding program covering innovative developments in our industry. The conference will cover the latest in materials, additives and processing so you won't want to miss it. There will be exciting sessions on bio-renewable

materials, 3D printing, and wearable technology – all hot topics in the TPE world and the plastics industry in general!

We kick off the program with Bob Eller giving a global industry and market overview which, as always, will be very informative. Our lunch-time keynote speakers will also cover interesting topics:

- Deborah Douglas will be talking on what to expect during mergers & acquisitions. She is the founder and Managing Director of the Douglas Group. The Douglas Group specializes in mergers and acquisitions. The title of her talk is "M&A for Thermoplastic Elastomers".

- Matthew Fiedler will be speaking on transitioning from rocket scientist at NASA to 3D designer and entrepreneur. That is the transition that he has gone through in his career. Currently the founder and owner of the 3D printer company "re:3D® Inc."

If you are new to the TPE industry, or just want to brush up on your skills, you will want to come early to attend the all new TPE Primer sessions on Tuesday, September 20. This portion of the program will cover the basics of all the major classes of TPEs. The whole program has something interesting and exciting for everyone in our industry, from the "newcomer" to the "old hand". So be sure to mark your calendar for TPE TOPCON 2016, September 20-22!

Check out the advance program attached to this newsletter.

Bill Blasius & Mark Berard
TPE TOPCON Technical Program Co-Chairs



The plastics industry needs more young people to be part of the plastics industry labor market!

Bring the PlastiVan™ program to your area.

The average age of the people working in the plastics industry is 56 years. This obviously means that there will be many who will be retiring in the coming years with not enough younger people to replace them. The students coming out of our high schools at this time know very little if anything about the career opportunities in the plastics industry. Actually many come out of high school with a negative opinion of plastics and manufacturing in general.

There is a way you and your company or organization can change this. Help sponsor a PlastiVan™ visit to your local high school or junior high or middle school. This mobile chemistry program will emphasize the positive aspect of plastics and also introduce the young students to the career possibilities they can look forward to. More information on the PlastiVan™ program is available by clicking the link below.

<http://www.4spe.org/Leadership/Content.aspx?ItemNumber=6500>



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Minutes Summary: TPE SIG BOD: February 11, 2016

Proceedings:

1. Iani Manas opened the meeting at 10:03 AM EST.
2. Minutes from December 10, 2015 were approved.
3. Mukul Kaushik presented an update regarding **ANTEC 2016**.
 - a. Over 400 papers to be presented at the conference, approximately one-half of these papers have been reviewed to date.
 - b. Six papers (including one keynote and one tutorial) will be presented in the TPE SIG's technical session on Monday afternoon beginning at 1:30 PM EDT.
 - i. Mark Berard will present the ½-hour tutorial ("Fundamentals of Styrenic Block Copolymer TPEs") at the end of the technical session.
 - c. Current plans are for the TPE SIG Board to meet after the session is over at a time and place TBD
4. Kathy Schacht provided an update from the **SPE** organization.
 - a. Scott Marko will become more involved in the planning of TOPCON 2016
 - b. Kathy will remain as the TPE SIG liaison to SPE
5. Bill Blasius presented an update from the **TOPCON 2016 Planning Committee**.
 - a. Twenty-six papers scheduled for presentation
 - i. There are three "focus segments" planned for TOPCON 2016:
 1. renewables,
 2. wearables,
 3. 3D printing
 - b. A TPE "boot camp" hosted by Stephane Morin will be held on Tuesday, September 20th in the afternoon prior to the evening's TOPCON 2016 "welcome" reception
 - i. Approximately 20-minute presentations regarding TPE attributes and characteristics
 1. Mark Berard (Dexco Polymers) to present on styrenic TPEs and PVC.
 2. Jeff Munro (Dow Chemical) to present on olefinic TPEs.
 3. Sarah Westerdale (BASF) to present on TPUs.
 4. Stephane Morin (Alliance Polymers and Service) to present a wrap-up on choosing the right TPE.
 - ii. Contact Bill Blasius if you would like to volunteer for one remaining open presentation.



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- c. BOD discussion regarding naming of the TPE “boot camp” (“TPE 101” or “TPE workshop” also suggested).
- d. Bill Blasius will reserve dates in third week of September for TOPCON 2018 on the SPE master events calendar
- e. Per Bob Wegelin, conference fees and sponsorship opportunities are planned as follows:
 - i. Individual conference registration (\$395).
 - 1. Registration for the TPE “boot camp” will be separate from the rest of the conference (probably \$75 per attendee).
 - ii. Tabletop display (\$1000).
 - 1. Includes one “free” conference admission.
 - iii. Gold sponsorship (\$3000).
 - iv. Premium sponsorship (\$2600).
 - v. TPE “boot camp” sponsor (\$500-700).
 - vi. Sponsors are needed for receptions (Tuesday and Wednesday evenings), lunches, and coffee breaks (sponsorship fees TBD).
- f. Bob Wegelin asked Iani Manas to request TOPCON 2016 “seed money” (\$4000) from Kathy Schacht at SPE HQ (funds needed by the end of February).
 - i. SPE Akron Section will also contribute \$4000 in “seed money”.
 - ii. As in past, “seed money” should be returned to the TPE SIG’s bank account after accounting work for the conference has been completed.
- 6. Armando Sardanopoli mentioned that newsletter will be issued in 2 to 3 weeks.
- 7. Richard Faulkner provided an update from the **Website Committee**.
 - a. Volunteer(s) requested to join the website committee
 - i. Committee members are: Richard Faulkner, Reza Sadeghi.
- 8. Reza Sadeghi provided an update from the **Awards Committee**.
 - a. Bob Wegelin informed the SIG BOD that Reza Sadeghi was planning (as of 2/5/16) to contact an “awards place” for awards to be presented to past members Joe Pfeiffer and Joe Kutka.
 - b. Iani Manas requested an award plaque/trophy for recent ex-BOD member Malar Shetty also.
- 9. Tom Bell presented an update regarding the **Nominations Committee**.
 - a. Bill Blasius nominated Brad Guilani (Otis Elevator Co.) to serve on the SPE TPE SIG BOD.
 - b. Tom Bell motioned to “initiate a search for a new board member” (seconded by Mark Berard and Iani Manas).
 - c. Tom Bell reminded the SIG BOD that if a BOD member has another candidate(s) for BOD membership in mind, now



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is the time to present the candidate(s) to the nominations committee.

10. Iani Manas asked for any **New Business**.

- a. SIG BOD discussion regarding SPE Leadership Lane Digest post by Wim De Vos sent to SPE leadership on December 11th, 2015 (re: the future of SIG's @ SPE) and related message sent on January 30th, 2016 regarding proposed SPE governance reorganization.
 - i. Bob Abell commented that there is no position representing SIGs in the newly-proposed SPE governance reorganization chart of positions/offices.
 - ii. Bob Abell proposes that the "Vice President – Divisions" office be expanded to include SIGs ("Vice President – Divisions and SIGs") as SIGs are important and valuable to SPE.
 1. Bob Abell communicated this idea to SPE leadership and TPE SIG BOD members on February 2nd (email).
 - iii. Tom Bell volunteered to write a formal letter stating the case for the continued existence of SIGs (specifically the TPE SIG) and their importance to the SPE organization. Highlights of the TPE SIG's activities and contribution to the well-being of the SPE organization will be the letter's specific areas of focus.
 1. Letter to be circulated to TPE SIG BOD members for review, comments, and additional contributions.
 - b. Funds were approved for two visit of the Plastivan at a cost of \$3000
11. The next TPE SIG BOD meeting will be held on Thursday, April 21st at 10:00 AM EDT.
- a. If SIG BOD member ANTEC 2016 attendance is planned to be low, BOD elections for the 2016-17 service year may be held at this meeting.

Minutes prepared by TPE SIG Secretary, Steve Brenno

Support From Our Industry

Thanks to the Namacorc® LLC for allowing Reza Sedeghi to serve on the TPE SIG Board of Directors

Namacorc® is the largest producers of wine bottle closures or corks. The technology for these closures come from the in-house knowledge related to extruding foamed PE products. Namacorc LLC is a global producer of wine bottle closures with facilities in the USA, South America, Europe and China. They are currently serving over 5000 wineries or 15% of the global still wine market. Along with making wine bottle closures, Namacorc is also a specialist in the chemistry and analysis of wines. They also supply the technology to analyze wines for various chemical content. The chemical content that is important for maintaining consistent product quality and insuring the long term quality of the wine.



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September 2015



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The TPE SIG is always looking for new Board members to help with planning and execution of various SIG activities such as ANTEC® sessions, the TPE TOPCON, scholarship programs, and PlastiVan™ visits. The TPE SIG Board meets face-to-face at ANTEC® every year, at the TPE TOPCON every other year, and by teleconference every six to eight weeks in between. As an incoming member, we ask for a three-year commitment from you and your employer. In return, we provide good networking opportunities and a word of appreciation for your company in one of our newsletters. If you are interested in joining us, please contact Tom Bell at +1 281-990-0909 or tomebell@aol.com.

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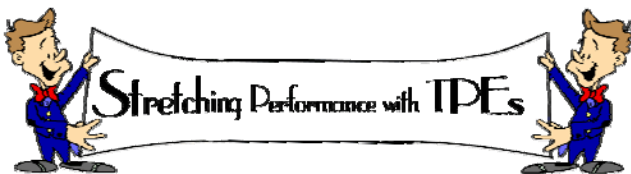
Thermoplastic Elastomers
12th Topical Conference™



SOCIETY OF
PLASTICS ENGINEERS

TOPCON 2016
September 20 - 22, 2016

Advance Program
and
Registration



Expanding Markets, Materials & Applications

Presented by the
Society of Plastics Engineers,
Thermoplastic Elastomers SIG
and The Akron Section SPE
at the Hilton Akron-Fairlawn
3180 West Market Street
Akron, Ohio 44333

Co-Chairs:

William Blasius (S.I.G.)

wgblasius@gmail.com

Viv Malpass (Akron Section)

vivian.malpass@tek-mark.com

774-545-0990

330-342-1120

Registration and Fee Information

Please register on line at www.4SPE.org using the E-Touches service. If not feasible, please submit this form with all exhibitor and sponsor representatives identified in the next column.

Personal Registration: Submit this form or copy for EACH person registering. Mailed advance registration must include full payment and be postmarked by September 10, 2016. Circle status and cost.

| Status | Advance | On-Site |
|---------------------|----------|-----------|
| TPE Tutorial | \$75.00 | \$75.00 |
| Conference | | |
| Member | \$395.00 | \$445.00 |
| Nonmember | 445.00 | 495.00 |
| Joining Member* | 490.00 | 530.00 |
| Student or Emeritus | 65.00 | 70.00 |
| Joining Student* | 90.00 | 95.00 |
| Press | | No Charge |

**Includes first year SPE dues worth \$144 (\$31 for students)*

- ☐ Please charge my credit card (right)
☐ My check is included for \$ _____

Display Table or Sponsorship Reservations:

These MUST include full payment and be postmarked or received online by August 8, 2016. Identify EACH representative in the format shown here, using copies of this form or equivalent. Sponsors are appreciated and will be well recognized. For information about advertising and promotion we can provide, contact Kevin Malpass.

(kevin.malpass@diebold.com or 330-490-4743)

| | |
|---|----------------|
| 1 Gold Sponsor | \$3,000 |
| (with 3 free full conference registrations) | |
| 1 Premier Sponsor | \$2,600 |
| (with 2 free full conference registrations) | |
| 2 Lunch Sponsors (2 registrants each) | \$2,100 |
| Tuesday Mixer (2 registrants) | \$1,800 |
| Wednesday Reception (2 registrants) | \$2,100 |
| 4 Coffee Breaks (1 registrant each) | \$750 |
| Exhibitor's Display Table - | \$1,000 |
| One 4x8 draped table with access to electrical outlet | |
| Each registrant (maximum 3) | \$200 |

See Websites for Updates
akronspe.org or 4spe.org

Full-fee registrations include admission to all sessions, display exhibit areas, two lunches with keynote speakers and proceedings in USB flash drive format. Registrations are offered to full-time students and emeritus members at deep discounts. Journalists with proper press credentials are invited to visit all areas and functions.

To encourage nonmembers to join, SPE and the Akron Section offer a combination of TOPCON registration with SPE dues for one full year plus membership application handling fees. Those fees and dues for the first year are worth \$144.

Make checks payable to **'TPE TOPCON 2016'**

Mail checks and forms to:

Society of Plastics Engineers TOPCON 2016

Kathy Schacht

6 Berkshire Boulevard, Suite 306

Bethel, CT 06801 USA

VISA, MC, AmEx Credit Cards Accepted

Card # (Circle the brand above) Exp.

Signature Security Code (from back)

**Credit Card users may register at 4SPE.org
or fax to 203-775-8490.**

**For more information, contact Kathy Schacht
at 203-740-5430 or kschacht@4spe.org**

Registration Identification

Name as it is to appear on badge

Company

Work Address

City

State

Zip

Work Phone

Work Fax

e-mail

Society of Plastics Engineers
Akron Section
250 S. Forge Street
Akron, OH 44325-0301



The TPE Primer

| | |
|------------------------------|--|
| Tuesday, September 20 | 1:00 to 4:00 p.m. |
| Stephane Morin, Host | <i>Alliance Polymers & Service</i> |
| Commodity TPEs | |
| Polyolefin Elastomers | |
| Dr. Jeff Munro | <i>Dow Chemical</i> |
| Styrenic Copolymers | |
| Dr. Mark Berard | <i>TSRC-Global</i> |
| PVC Alloys | |
| TBD | |
| Engineering TPEs | |
| Polyurethanes | |
| Sarah Westerdale | <i>BASF</i> |
| Polyester Copolymers | |
| TBD | |
| Polyamide Copolymers | |
| TBD | |
| Specialty TPEs | |
| Fluoropolymers | |
| TBD | |
| IPNs | |
| TBD | |
| Shape Memory | |
| TBD | |
| Wrap Up | |
| TPE Selection | |
| Stephane Morin | <i>Alliance Polymers & Service</i> |

Hotel Reservation

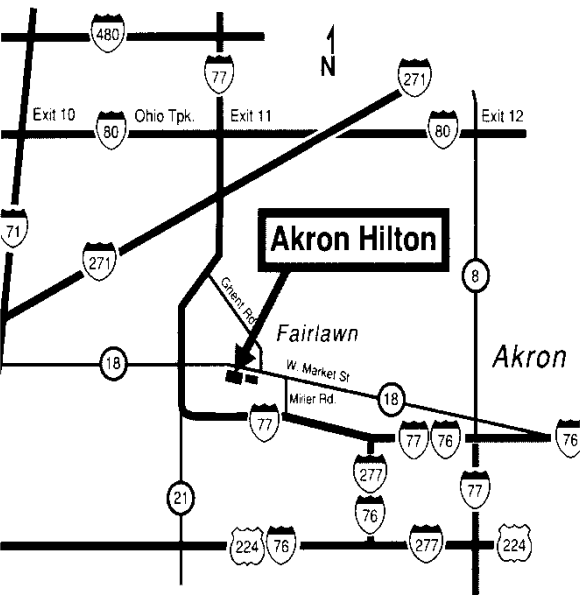
Hotel reservations can be made online via our SPE Registration site, or by contacting the Akron Hilton (phone 800-525-2419, 330-867-5000 / fax 330-867-1648). Special rates are available until August 29 using the password “Sept 16”. Refer to the SPE TOPCON if contacting the hotel.

The Hilton is between the Cleveland Hopkins Airport and the Akron-Canton Airport, about a one-half hour drive from each. From Hopkins, exit I71 to OH18; from Cleveland, exit I77 to Ghent Road; from Akron or Akron-Canton Airport, exit onto Miller Road.

SPE can accept cancellation of attendance and exhibitor registration and make a full refund only until September 1, 2016; no refund can be made after that date. The hotel also will make a full refund for a room cancellation received by August 29; after that date you will forfeit one day’s room fee.

Schedule

| | |
|--------------------------------|-----------------------|
| Tuesday, September 20 | |
| On-site Registration | 3:00 pm to 6:00 pm ?? |
| Set Up Displays | Noon |
| TPE Primer | 1:00 pm to 4:00 pm |
| Displays Open | 5:00 pm to 7:00 pm |
| Welcome Mixer | 5:00 pm to 7:00 pm |
| Wednesday, September 21 | |
| Speaker’s Meeting | 7:30 am to 7:45 am |
| On-site Registration | 7:30 am to 2:00 pm |
| Welcome Remarks | 7:45 am |
| Displays Open | 8:00 am to 7:30 pm |
| Tech Sessions – am | 8:00 am to 11:50 am |
| Lunch | 11:50 am to 1:15 pm |
| Tech Sessions – pm | 1:15 to 5:30 pm |
| President’s Reception | 5:30 to 7:30 pm |
| SIG Board Meeting | 6:30 pm |
| Thursday, September 22 | |
| Speaker’s Meeting | 7:30 am to 7:45 am |
| On-site Registration | 7:45 am to Noon |
| Displays Open | 8:00 am to 5:00 pm |
| Tech Sessions – am | 8:00 am to 11:50 am |
| Lunch | 11:50 am to 1:15 pm |
| Tech Sessions – pm | 1:15 pm to 4:30 pm |
| Adjourn TOPCON | 5:00 pm |



TopCon Technical Program

TopCon Conference: Wednesday - Thursday

Keynote Address - Lunch

Wednesday

Deborah Douglas, The Douglas Group
“M&A for Thermoplastic Elastomers”

Thursday

Matthew Fiedler, re:3D
“Rocket Science to 3D Entrepreneur: An Account of Transitions”

Industry Update

Global TPEs: New Technology, Regional Market Shifts and Commoditization

Robert Eller *Robert Eller Associates LLC*

Bio-Renewable Materials

Full Cost Accounting of Biobased and Petroleum

Feedstocks

Libby Bernick *TruCost PLC*

UV-Absorbent Lignin-Based Multi-Arm Star

Thermoplastic Elastomers

Dr. Chuanbing Tang *University of S. Carolina*

Sustainable Thermoplastic Elastomers from Terpene-Derived Monomers

Dr. Marc Hillmyer *University of Minnesota*

Thermoplastic Elastomers from Multifunctional

Biomonomers

Dr. Eric Cochran *Iowa State University*

Additives for Performance

Selection and Application of Antimicrobial Additives in Thermoplastic Compounds

Lise Moloney *Sciessent*

Unique Thermoplastic Elastomer (TPE) Formulations

Enabled by Boron Nitride

Dr. Chandra Raman *Momentive*

The Use of Pure Monomer Hydrocarbon Resins to Enhance Adhesion and Flow Properties in TPE

Compounds

Timothy Blayney *Eastman*

An Investigation into Mixed Morphology Clay

Nanocomposites in TPU with Maleated Olefin Modifiers

Dr. P.J. Yoon *BYK USA*

Scale Up and Processing

Market Applications for TPE Multishot Molding and the Tooling Technologies to Enable Success

John Berg *MGS Mfg.*

Fundamentals of Twin-Screw Compounding: Scale Up - The Bump in the Road Between Development and Commercialization

Dr. Paul Andersen *Coperion*

A 3-Dimensional Single Stage Compounder for Elastomers, TPO and Nanoscale Particulate

Keith Luker *Randcastle*

The Use of Next Generation Design of Experiments

Software for Discovery and Scale Up

Nina Visconti *Quantisweb*

Manufacturing Polypropylene (PP)/Waste EPDM

Thermoplastic Elastomers using Ultrasonically Aided Extrusion

Dr. Avraam Isayev *University of Akron*

3D Printing

3D Printing: Emerging and Evolving Applications

Sarah Goehrke *3Dprint.com*

Thermoplastic Polyurethanes for Fused Deposition

Modeling

Dr. Jake McDonough *Fenner*

Additive Manufacturing of Soft and Composite Parts from Thermoplastic Elastomers

Dr. Edmond Richer *Southern Methodist University*

Wearable Technology

Thermoplastic Elastomer Compounds for Consumer

Electronics and Wearables

Dr. Allen Donn *Kraiburg TPE*

Design and Operational Challenges of Wearable Drug Delivery Systems

Dr. Hossam Metwally *Ansys, Inc.*

Field Assisted Alignment of Nanoparticles in Cast Films for Functional Flexible Film Manufacturing for Flexible

Electronics

Dr. Mukerrem Cakmak *University of Akron*

Co-extruded Multilayer Shape Memory Materials: Smart Layered Systems

Dr. Eric Baer *Case Western University*

Application of Engineering Plastics in Wearable Technologies

Eric Teoh *DSM*

Material Modifications and Developments

Soft, Processable SEBS Polymers for Compounds

Parashar Davé *TSRC Global*

Bonding Solutions for Styrenic TPE Medical Tubing

Dr. Kevin Cai *Teknor Apex*

Elucidating and Controlling the Morphologies of Charged Thermoplastic Elastomers

Dr. Rich Spontak *N. Carolina State University*

Small Angle X-Ray Scattering to Measure the Effects of Different Strain During Tensile Testing of TPU

Alex Sokolowski *BASF*