



THERMOPLASTIC ELASTOMERS

Special Interest Group



July 2018

DEAR FELLOW MEMBERS OF THE TPE INDUSTRY

Greetings and welcome to the Thermoplastic Elastomers Special Interest Group (TPE-SIG) summer newsletter. We had a successful and very well attended TPE session at ANTEC® 2018 with Keynote address on latest trends in TPES. I would like to thanks Brad Guilani, Technical Program Chair for organizing this session. We are getting ready for much awaited TPE Top-Con in Akron during September 18-20. I would like to thank Bill Blasius, TPE Top-Con Co-Chair, for his vision and service that he has provided to organize this successful event for past several years. Our TPE SIG has been a non-profit organization and committed to help students, young engineers and TPE professionals in advancement of TPE knowledge. We welcome all who have a background in, or a link to TPEs and wish to share their experience and knowledge, or simply wish to stay in touch with colleagues and the advances in the field. To more effectively serve our members, I am asking for your feedback regarding our newsletter content, ANTEC® session, TOPCON conference topics, formats, special topics, themes and how can we make it more valuable for our members. Please submit online member survey using below link or through our TPE SIG webpage which will take less than 4 minutes of your time. Your participation in this survey will immensely help to improve our SIG.

<https://www.surveymonkey.com/r/VSK96RL>

Our call for paper for upcoming ANTEC® 2019 conferences is included in this newsletter. Our next ANTEC® meeting will be held on March 18-21, 2019 in Detroit, MI. I encourage all of you to submit your technical papers prior to the paper submission deadline date of December 15, 2018. If you wish to make suggestions for invited speakers for future meetings, contact one of the BOD members who will forward your suggestion to the Program Committee. Contact us also, if you wish to host one of the Section's meetings at your institution or PlastiVan™ activity at your local school.

I also encourage more and more students to apply for awards and participate in TPE-SIG activities. There are many reasons to be part of this SIG and many opportunities for you to participate to contribute to our continued success.

Mukul Kaushik, PhD
Chair, TPE SIG 2017-2019



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CORNER OF THE NEWSLETTER EDITOR

Greetings and welcome to the Thermoplastic Elastomer Specialty Interest Group (TPE SIG) newsletter. I hope you are ready for a wonderful summer and TPE TOPCON conference after a well rest and wonderful time spent with families and friends.

You will start to hear from me about upcoming events, TPE industry news, and educational activities. I am curious to know your ideas on the newsletter content and any suggestions for us to serve you better. I will look forward to interact with you through this wonderful opportunity.

The table of contents summarizes the content of Jul 2018 edition. Moreover, please find some time for the member survey using link below:

<https://www.surveymonkey.com/r/VSK96RL>

We would like to receive your feedback on future events and activities.

Honored to work with you and serve as Newsletter Editor,

Zehra Sevinc, PhD, CM
TPE SIG Newsletter Editor



SUGGESTIONS FOR THE NEWSLETTER?

Would you like to submit an article for the next newsletter?

Please contact:
Zehra.sevinc@bd.com



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ALL ABOUT TECHNOLOGY – SNAPSHOT FROM ANTEC 2018

ANTEC®, produced by the SPE (Society of Plastics Engineers), is the largest, most respected and well known technical conference in the plastics industry. This year it was strategically co-located with NPE 2018 at Orange County Convention Center in Florida. There were 3 papers presented within W10 – Thermoplastic Elastomers session and moderated by Mukul Kaushik. The TPE session, although short, was very well attended. For the ones who might have missed these presentations, I would like to provide the highlights from the following presentations.

The Thermoplastic Elastomers session of ANTEC began with a keynote speech from Robert Eller, titled “SHIFTING MARKETPLACE DYNAMICS AND POSITIONING OF TPES FOR FUTURE PROFITABILITY, DIVERSIFICATION AND GROWTH.” The keynote speech was heavily attended with standing room only. Our keynote speaker Robert Eller from Robert Eller Associates LLC discussed about the key inter-TPE competitions and how they are changing, movements in TPE marketplace and supply chain, impact of new TPE/fabrication couples on the marketplace and strategies for competing in new TPE sectors including sensing, smart applications, and vehicle electrification.

After the keynote speech, two technical papers were presented, one regarding elastic recovery and actuation in polyolefin TPE’s, and another regarding the use of micronized recycled rubber in thermoplastic olefins. Barbara DeButts from Virginia Tech spoke about polyolefin elastomers (POEs) and presented a systematic study of thermal processing effects on the ability of ethylene-octene random copolymers to store and dissipate applied strain energy. Specific examples were provided correlating the crystallinity to the elastic modulus and hysteresis behavior. The elastic recovery of the PO bilayers within the actuators were provided with details of this application. Haikun Xu from Entech, Inc. discussed about the use of recycled rubbers in thermoplastic polyolefins. The topic interested many who are working on the sustainability. This presentation demonstrated a technical study to understand the size effects of micronized rubber powders in TPE compounds, compatibility with various plastic processes and potential applications.

Please obtain a copy of the SPE proceedings to review many inspiring topics presented by industry leaders in the plastics field.

COMMENTS ON ANTEC 2018? Format, content, theme, TPE SIGs contributions?

Please contact:
brad.guilani@otis.com

THERMOPLASTIC ELASTOMERS CONFERENCE 2018

September 18-20 | Akron, OH



READY FOR TPE TOPCON?

TOPCON will be held in Akron, OH with on-site registration on Sep 18 2018. This event is sponsored by TPE SIG group together with The Akron Section of Society of Plastics Engineers and expected bring industry leaders and professionals from plastics industry together. A half day Primer will precede the TPE TOPCON conference. Attendance to the Primer will be requiring a separate registration from the TPE conference. Attendees can register for the Primer only or separately for both the Primer and the main TPE Conference.

The primer is taught by industry experts provide a great opportunity for new comers as well as long time users of TPE in broadening and enhancing the fundamental knowledge about TPEs. More specifically, it will provide an overview of various types of TPE materials, structure - property relationship, processing and applications. The Primer program will cover Styrene Block Copolymer TPEs (SBCs), Olefinic TPEs (TPOs, TPVs,

m-POEs), Engineering TPEs (TPUs, COPEs and COPAs) and some Specialty TPEs (TPSiV, ETPE, Ionomers). Technical program include many topics such as medical grade elastomers, TPE materials development, processing, wearable technologies and marketing perspectives. The program is enriched with participation of guest luncheon speakers, exhibits, a Poster Session by The University of Akron students and receptions on the Tuesday and Wednesday evenings.

We invite all our members and non-members to participate in this event. You may expect further updates from me as a Newsletter Editor summarizing the outcome of TOPCON and synapses in the upcoming newsletter edition.

SPONSORSHIP and EXHIBITION opportunities are still available. DON'T MISS OUT ON THIS GREAT OPPORTUNITY to promote your company, business and work at this prestigious event!

COMMENTS ON TOPCON CONFERENCE TOPICS, FORMATS, SPECIAL TOPICS, THEMES?

Please contact: William.blasius@rogerscorporation.com

WANT TO PROMOTE OR SPONSOR ANY EVENTS AT TOPCON? INTERESTED IN EXHIBITION?

Please contact: robert.wegelin@att.net

The TPE Primer

Schedule

Tuesday, September 18

On-site Registration and Light Lunch 12:00 pm to 1:00 pm

1:00 pm to 4:45 pm

William Blasius, Host

Family Tree of TPEs

Viv Malpass *Tek-Mark Int.*

Polyolefin Elastomers

Jeff Munro *Dow Chemical*

TPVs

Styrenics

Parashar Davé *TSRC Global*

Polyurethanes

Polyesters

Paul Moruzi *DSM*

Polyamides

Jake McDonough *Arkema*

Ionomers

Thomas Kennedy *Chemical Innovative Solutions*

Material Selection Design Cases (3)

William Blasius

Wrap Up

TOPCON Schedule

Tuesday, September 18

On-site Registration 4:00 pm to 6:00 pm
Set Up Displays 12:00 pm
Displays Open 5:00 pm to 7:00 pm
Welcome Mixer 5:00 pm to 7:00 pm

Wednesday, September 19

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 12:00 pm
Lunch 12:00 pm to 1:00 pm
Tech Sessions – pm 1:00 pm to 5:00 pm
Reception 5:30 pm to 7:30 pm
SIG Board Meeting 6:30 pm

Thursday, September 20

Speaker's Meeting 7:30 am to 7:45 am
On-site Registration 7:45 am to 12:00 pm
Displays Open 8:00 am to 5:00 pm
Tech Sessions – am 8:00 am to 12:00 pm
Lunch 12:00 pm to 1:00 pm
Tech Sessions – pm 1:00 pm to 5:00 pm
Adjourn TOPCON 5:00 pm

TOPCON Technical Program

Moderators

Jeff Munro, Dow – Automotive
Prakash Sanjeevaiah, Star - Processing
Hoan Tran, Kuraray - Medical

Wednesday, September 19

Marketing Perspective

Paths Forward for TPEs
Robert Eller *Robert Eller Associates LLC*

Enabling Wearable Technology

Boron Nitride Based Thermally Conductive Elastomers for Thermal Management

Chandrashekar Raman *Momentive*

Soft Touch Thermoplastic Elastomers

You-Hao (Tim) Yang *Polymer Dynamix*

Next Generation Stretchable Materials

Ken Araujo *Namics*

Medical Grade Elastomers

Tecobax™ - A New Class of Non-softening Thermoplastic Polyurethanes for Medical Applications

Walid Qaqish *Lubrizol*

New Hydrogenated Styrenic Block Copolymers for Medical Applications

Bing Yang *Kraton*

Automotive and Transportation

How Low VOC and FOG TPEs Help Achieve Vehicle Interior Air Quality Requirements

Liang Xu *PolyOne*

Evolution of Process Oils in TPE and

New High MW Clear Oils

Mark Proudfoot *Renkert Oil*

Sarlink Advantages in Sealing System Designs

Darnell Worley *Teknor Apex*

Elastomer Testing Technology

Methods for Impact Testing of Thermoplastic Elastomers and Elastomers

Sean Teller *Veryst Engineering*

Secondary Processing

A Study of Crosslinking by Electron Beaming of

Polymeric Composition for Welding Cables

Dan Marginean *Electron Beam Technologies*

Now You See It, Now You Don't – The Magic of

Dry Ice Mold Cleaning in TPE Molding

Steve Wilson *Cold Jet*

Thursday, September 20

Compounding and Primary Processing

Supercritical Fluid Injection into Twin Screw Extruders- Applications and Tips for TPEs

Charlie Martin *Leistritz*

Fundamentals of Twin-Screw Extrusion

TPE Compounding: Common Pitfalls and

How to Avoid Them

Paul Andersen *Coperion Corp.*

Comparison of the Kneader and the Twin Screw

Extruder in the Compounding of TPV Materials

Kenneth Russell *Optimized Compounds, LLC*

Injection Molding Reinvented

Rick Fitzpatrick *Extrudetofill*

Performance Enhancing Additives

GENIOPLAST® PELLETS – Solutions for

Plastic Compounds

Daniel Calimante *Wacker*

The Benefits of Micronized Rubber Powders as Novel Fillers for Thermoplastic Elastomer Compounding:

Value Enhancement, Lower Cost and Sustainability

Haikun Xu *Entech*

Substitution of Benzotriazole UV Absorbers in Plastics

James Botkin *Botkin Chemie*

The Use of Pure Monomer Hydrocarbon

Resins to Enhance Adhesion and Flow

Properties in TPE Compounds

Timothy Blayney *Eastman*

TPE Material Developments

SEPTON BIO-series, a Bio Based Hydrogenated

Farnesene Styrenic Copolymers Exhibiting

Excellent Wet Grip Performance

Hoan Tran *Kuraray*

Crosslinked SBC – The Big Opportunities

for North America

Şerif Erdoğan *Elastron*

Waterproof TPU Roof Underlayment

with Nail-sealing Capability

Mark Kujawski *BASF*

High Temperature Thermoplastic

Copolyester for Rubber Replacement

Paul Maruzi *DSM*

Recent TPU Innovations in Extrusion Applications

Nabarun Roy *BASF*

Keynote Address – Wednesday Lunch

Qaizar Hassonjee, Hass Tech Associates
“Market Back Innovation using Smart Textiles”

Keynote Address – Thursday Lunch

Christine Hockman, Great Lakes Biomimicry
“Biomimicry”



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ANTEC® 2019
Detroit, MI • March 18-21, 2019

CALL FOR PAPERS

Please save the date for ANTEC 2019 which is scheduled to occur between Mar 18 and Mar 21, 2019. You can find more information through www.4spe.org/connections/events.

Pay attention to the deadline for full manuscript submission by Oct 19, 2018 for technical presentations.

The Thermoplastic Elastomers (TPEs) Special Interest Group welcomes papers for the coming ANTEC® 2019 conference.

Suggested Topics include (but not limited to):

- New chemistries, emerging applications and trends in TPEs
- Additives and modifiers for performance enhancement of TPEs
- TPE bonding and over-molding
- TPE blends, alloys and composites (nano and macro)
- Flame retardant and high temperature TPEs
- Bio derived and sustainable TPEs
- Foamed TPEs
- Smart TPEs: Stimuli-responsive/phase change/shape memory
- Energy management using TPEs
- Elastomeric adhesives
- Thermoplastic vulcanizates
- New test methods to characterize elastomeric properties and performance
- Modelling, simulation, and life prediction of TPEs

Paper Deadline: October 19, 2018, 11:59 p.m. EST

Authors must submit a Paper (saved as editable .pdf) and abstract by the above deadline. Papers will be reviewed by the Technical Program Committee and authors notified of status or required revisions in mid-November, 2018. Please visit the SPE ANTEC 2019 website for more information.

QUESTIONS? CONTACT US:

Brad Guilani

2019 Technical Program Chair
Thermoplastic Elastomers SIG
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ANTEC® 2019 Technical Program Co-Chair
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Mark Spalding

ANTEC® 2019 Technical Program Co-Chair
email: maspalding@dow.com

Visit the [Thermoplastic Elastomers SIG Webpage](#)



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TPE SIG BOARD MEMBERS

We have two new board members to our TPE SIG. Below is an introduction about their background and contribution in plastics industry. Let us welcome them to our community.

Zehra Sevinc is a Staff Engineer at BD Center of Excellence. Prior to joining BD, she worked as a Principal Engineer, and then as a Senior Principal Engineer (Manager) at Baxter Healthcare in the Materials Science group, serving close to 11 years. She has directed over 60 research studies, supported regulatory submissions, managed diversified projects, led the development of Non-DEHP PVC formulations for disposable products, supported full product development cycle from lab formulations to product launches.



Zehra obtained a BSc in ChE from Middle East Technical University, and, then a Ph.D. in Polymer Engineering from The University of Akron. Her research focused on synthesizing Polyamide-6, 6 nanocomposites in-situ utilizing interfacial polycondensation. She earned various company awards for contributions in critical projects. Her specialties include PVC formulation, rubber processing, bonding, shelf life, material characterization, and application focused material selection. She published 12 peer-reviewed articles, one encyclopedia section, and two patent applications. Her research interests include nanotechnology, polymer nanocomposites, PVC, rubber and TPE formulations, polymer processing-structure-property relationship, biopolymers and polymers for medical devices.

Mark Kujawski is a Sr. Scientist at BASF in the Performance Materials Division. He has worked in Product Development since 2012 and has specialized in formulating, manufacturing, processing, and testing of Thermoplastic Polyurethanes (TPU). Mark has over 15 years of experience working with polymers, elastomers, and composites.



Mark obtained a PhD in Materials Science and Engineering from the University of Maryland. His research there focused on artificial muscles, micro-robotics, and electrically conductive elastomers for sensing and actuation. Mark also has a Bachelor's and a Master's degree in Mechanical Engineering from Central Michigan University where he focused on molecular dynamic simulations and polymer melt rheology. He was an Academic Fellow at the Defense Advanced Research Projects Agency (DARPA) and had an Internship at the Air Force Research Labs (AFRL).

Current Members of the board with many years of excellent service is detailed below. Please feel free to connect with questions on their area of responsibilities.



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2018-2019 SPE TPE SIG BOARD OF DIRECTORS

<p>W. Robert Abell Membership Chair Abell Consultants LLC 2414 Dacia Drive Wilmington, DE 19810 Phone: 302-475-2317 abellconsultants@comcast.net</p>	<p>Thomas E. Bell Nominations Chair LinkedIn Liason S & T Group LLC 1930 Wendy Hill Way Houston, TX 77058 Phone: 281-990-0909 Mobile: 832-423-8199 thomas.edward.bell@gmail.com</p>	<p>Robert C. Wegelin Treasurer AES (Retired) 13206 Kaufman Ave. NW Hartsville, OH 44632 Phone: 330-414-1498 robert.wegelin@att.net</p>	<p>Bill Blasius 2018 TOPCON Technical Program co-Chair Rogers Corporation 1 Technology Drive Rogers CT 06263 Office 860-779-5753 Mobile 520-788-2757 Mobile 774-545-0990 William.blasius@ rogerscorporation.com</p>
<p>Steve Brenno RTP Company 580 East Front Street Winona, MN 55987 Phone: 507-474-5360 sbrenno@rtppcompany.com</p>	<p>Prakash Sanjeevaiah, Ph.D. Secretary Star Thermoplastic Alloys and Rubber Inc 2121 W 21st Street Broadview, IL 60155 prakash@Starthermoplastics.com</p>	<p>Mark Kujawski BASF 1609 Biddle Ave Wyandotte, MI 48192 734-324-6600 Mkujawsk@gmail.com</p>	<p>Brad Guilani ANTEC 2018-2019 TPC/ Website Chair Otis Elevator Company 5 Farm Springs Road Farmington, CT 06032 Phone: 860-676-5120 brad.guilani@otis.com</p>
<p>Mukul Kaushik Chair Hollingsworth and Vose 219 Townsend road Groton, MA-01472 Phone: 601-307-7599 Mukul.Kaushik@eagles.usm.edu</p>	<p>Iani Manas Polymer Products Engineering and Design LLC Orange, OH 44022 Mobile: 216-357-1975 ianimanas@gmail.com</p>	<p>Stephane Morin Alliance Polymers & Services 30735 Cypress Road #400 Romulus, MI 48174 Phone: 734-710-6703 Mobile: 734-716-8514 morin@apstpe.com</p>	<p>Jeff C. Munro, Ph.D. Dow Chemical 230 Abner Jackson Pkwy HDD/1B220 Lake Jackson, TX 77566 Phone: 979-238-0576 jcmunro@dow.com</p>
<p>Zehra Sevinc Newsletter Editor BD 75 N. Fairway Dr., Vernon Hills, IL 60061 Mobile: 815-321-3100 ZEHRA.SEVINC@bd.com</p>	<p>Reza Sadeghi Awards Chair Nomacorc LLC 400 Vintage Park Drive Zebulon, NC 27597 Phone: 919-460-2213 Mobile: 919-985-1528 Fax: 919-269-3200 OSUSadeghi@gmail.com</p>	<p>Armando Sardanopoli S-SEC LLC 23326 Lowrie Grosse Ile, MI 48138 Phone: 734-895-5875 sardanopoli-sec@live.com</p>	<p>Kathy Schacht Governance Liaison Society of Plastics Engineers 6 Berkshire Blvd., Suite 306 Bethel, CT 06801-1065 Phone: 203-775-0471 Mobile: 203-241-0693 kschacht@4spe.org</p>
<p>Edwin Tam Scholarship Chair Teknor Apex Company 505 Central Avenue Pawtucket, RI 02861 Mobile: 339-222-8076 Fax: 401-724-8520 etam@teknorapex.com</p>	<p>Hoan Tran Kuraray America, Inc. 2625 Bay Area Blvd. # 600 Houston, TX 77058 Email: hoan.tran@kuraray.com Office: 713-495-7347 Mobile: 281-224-3205 Fax: 713-495-7322</p>		

WANT TO JOIN TPE BOARD OR BECOME A MEMBER?

Please contact:
abellconsultants@comcast.net



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EDUCATIONAL ACTIVITIES

Plastivan activity will continue to visit schools and companies at North America, Detroit area. It educates young students and essentially people of all ages about the plastics chemistry, history, converting processes, sustainability, product applications, etc. This understanding would pave the way to a career in future in Plastics industry.

You can find more detailed information from the main web page, www.4spe.org, under Connections and SPE Foundation. Or directly visit <https://www.4spe.org/i4a/pages/index.cfm?pageid=3312>.

Updates from scholarship committee will be upcoming in the next newsletter edition.



WANT TO APPLY FOR SCHOLARSHIP?

Please contact: etam@teknorapex.com

WANT TO HOST SECTION'S MEETINGS AND PLASTIVAN ACTIVITY?

Please contact: sardanopoli-sec@live.com



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NEW OUTLOOK OF TPE SIG WEBSITE

As you may be aware, there had been recent updates in the SPE website and the outlook. Do you find it difficult to find the information in the web? If that's the case, please continue to read as you may find this information useful.

I would like to provide you the link to TPE SIG's website so you can continue to follow the activities from our group. You missed a newsletter edition? No Worries. They are all available in our weblink.

Please visit us at SPE's main web page, www.4spe.org, under Connections, and then Chapters, and Special Interest Groups. Or directly visit <https://www.4spe.org/i4a/pages/index.cfm?pageID=3386>.

Special Interest Groups

[Additive Manufacturing & 3D Printing](#)



[Alloys & Blends](#)



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[Thermoplastic Elastomers](#)



ANY SUGGESTIONS ON OUR WEBSITE?

Please contact:
brad.guilani@otis.com



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COMPANY INTRODUCTION

A thank you to BD for allowing our committee member Zehra Sevinc to devote time needed for TPE SIG's committee. Zehra is a new board member who will contribute to the success of our group via communicating important news with our members through newsletter.



ABOUT BD

- Founded in 1897, BD is one of the largest global medical technology companies in the world and is advancing the world of health by improving medical discovery, diagnostics and the delivery of care.
- The company supports the heroes on the frontlines of health care by developing innovative technology, services and solutions that help advance both clinical therapy for patients and clinical processes for health care providers.
- BD is a leader in areas that are critical to the future of the medical technology industry, including medication management, infection prevention, disease management, vascular access management and cellular therapy.
 - BD created the first syringe manufacturing facility in the U.S. (1906) and was first to develop the insulin syringe (1924), Vacutainer blood collection tubes (1949) and single-use IV catheter (1957).
- Headquartered in Franklin Lakes, NJ (U.S.), BD employs more than 65,000 people across six continents. The company partners with organizations around the world to address some of the most challenging global health issues, including maternal and newborn health care, infectious diseases and antimicrobial resistance.
- In 2017, the company welcomed C. R. Bard and its products into the BD family, uniquely positioning itself with unmatched breadth, depth and capabilities to be an indispensable partner to hospitals and health systems.