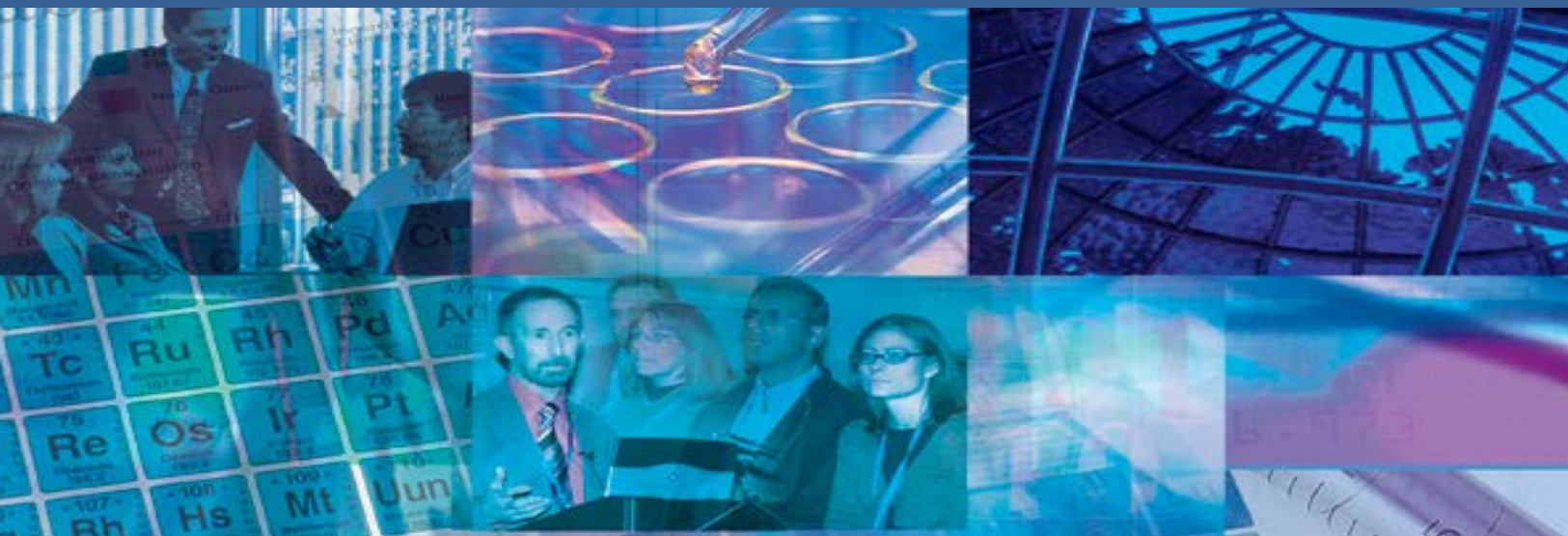


193rd Technical Meeting

May 8-10, 2018

Hyatt Regency Indianapolis;
Indianapolis, IN



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October 9 - 11, 2018

2018 International Elastomer Conference

International Rubber Expo, 194th Technical Meeting
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Kentucky International Convention Center • Louisville, KY USA

Special Events

Table Top Exhibits

Tuesday, May 8; in Regency Ballroom AB, Second Level during Technical Meeting breaks, lunchtime and Welcome Reception – Speak to some of the best companies in our industry, learn what they have to offer.

Keynote Address

Tuesday, May 8; 11:00 a.m. – 12:00 p.m.; Regency Ballroom CD, Second Level
Ron Kennedy – Managing Director, Center for Tire Research (CentiRe)
Keynote Topic: Simulation of Tire and Tire/Vehicle Performance – What’s in it for Materials Folks?

25-Year Club Luncheon

Tuesday, May 8; 12:00 p.m. – 1:30 p.m.; Network, Second Level
Seating is limited - \$60 per person; Reservations are required. Come celebrate individuals who have been active in the rubber industry for 25 consecutive years or more. All are invited.

Welcome Reception & Table Top Exhibits

Tuesday, May 8; 5:00 p.m. – 7:00 p.m.; Regency Ballroom AB, Second Level
All registered attendees are invited to attend. Enjoy some networking time with fellow attendees and learn about some of the best companies in our industry at the table top exhibits.

5K Walk/Run – Presented by H.M. Royal, Inc.

Wednesday, May 9; 6:30 a.m. Check-in at Hyatt Regency Indianapolis Lobby
Runners, walkers, spouses and guests are invited to participate.

Science & Technology Awards Banquet

Wednesday, May 9; 12:00 p.m. – 2:00 p.m.; Regency Ballroom AB, Second Level
Show your support of our 2018 Science & Technology Award winners as they are honored at this banquet.
\$60 per ticket if not already included in your registration type.

Business & Awards Meeting

Thursday, May 10; 11:00 a.m. – 12:00 p.m.; Regency Ballroom EF, Second Level
Please join us at the semi-annual Business & Awards Meeting of Rubber Division, ACS.

Technical Meeting Policies

- Videotaping or photographing any portion of a technical presentation is strictly prohibited. Violators of this policy will be asked to leave and will not be allowed back into the meeting.
- You can download presentations from this meeting from your Rubber Division, ACS account after May 14.
- You are required to wear your badge for entrance to the technical sessions and welcome reception.

Schedule of Events

Day/Time	Event	Location
Monday, May 7		
8:00 a.m. – 9:00 a.m.	Steering Committee Breakfast*	Fat Rooster Diner, Lobby Level
9:00 a.m. – 12:00 p.m.	Steering Committee Meeting*	Concept ABC, Second Level
12:00 p.m. – 5:00 p.m.	Registration	Regency Ballroom Foyer, Second Level
1:30 p.m. – 3:00 p.m.	Membership Committee Meeting	Concept ABC, Second Level
2:00 p.m. – 5:00 p.m.	Program Planning Committee Meeting	Regency Ballroom EF, Second Level
Tuesday, May 8		
7:30 a.m. – 4:30 p.m.	Registration	Regency Ballroom Foyer, Second Level
8:00 a.m. – 5:00 p.m.	Technical Session	Regency Ballroom CD, Second Level
9:00 a.m. – 11:00 a.m.	Strategic Partnership Committee Meeting	Concept ABC, Second Level
9:30 a.m. – 9:45 a.m.	Table Top Exhibits during Tech Meeting Break	Regency Ballroom AB, Second Level
11:00 a.m. – 12:00 p.m.	Keynote Address Ron Kennedy, Managing Director – Center for Tire Research (CenTiRe)	Regency Ballroom CD, Second Level
12:00 p.m. – 1:15 p.m.	Table Top Exhibits during Lunch Break	Regency Ballroom AB, Second Level
12:00 p.m. – 1:30 p.m.	25-Year Club Luncheon	Network, Second Level
1:30 p.m. – 3:00 p.m.	Exhibits & Meeting Sites Committee Meeting	Regency EF, Second Level
3:00 p.m. – 4:00 p.m.	Area Directors Caucus*	Regency EF, Second Level
3:00 p.m. – 4:00 p.m.	S&T Committee Meeting*	Concept ABC, Second Level
3:15 p.m. – 3:30 p.m.	Table Top Exhibits during Tech Meeting Break	Regency Ballroom AB, Second Level
5:00 p.m. – 7:00 p.m.	Welcome Reception & Table Top Exhibits	Regency Ballroom AB, Second Level
Wednesday, May 9		
Check-in 6:30 a.m.	5K Walk/Run - Presented by H.M. Royal, Inc.	Meet in Hyatt Regency Indianapolis Lobby
7:00 a.m. – 4:30 p.m.	Registration	Regency Ballroom Foyer, Second Level
8:00 a.m. – 11:15 a.m.	Technical Session	Regency Ballroom CD, Second Level
10:00 a.m. – 11:00 a.m.	Finance & Budget Committee Meeting*	Network, Second Level
12:00 p.m. – 2:00 p.m.	Science & Technology Awards Banquet	Regency Ballroom AB, Second Level
2:15 p.m. – 6:00 p.m.	Technical Session – S&T Presentations	Regency Ballroom CD, Second Level
3:30 p.m. – 4:30 p.m.	Area Directors Meeting*	Network, Second Level
Thursday, May 10		
7:00 a.m. – 4:00 p.m.	Registration	Regency Ballroom Foyer, Second Level
7:45 a.m. – 5:15 p.m.	Technical Session	Regency Ballroom CD, Second Level
9:00 a.m. – 10:45 a.m.	Executive Committee Meeting	Regency Ballroom EF, Second Level
11:00 a.m. – 12:00 p.m.	Business & Awards Meeting	Regency Ballroom EF, Second Level

* Closed Meeting

Rubber Division, ACS members are welcome to attend all open committee meetings.



Tuesday, May 8 – Regency Ballroom CD, Second Level

Prof. Garth L. Wilkes Colloquium – From Structure to Properties

Co-Chairs: Christopher G. Robertson, Endurica LLC; J. Calvin Moreland, Michelin

- 8:00 a.m. Understanding the Structure-Morphology-Property Relations in Segmented Polyurethanes: 35 Years of Collaboration with Garth L. Wilkes – **Iskender Yilgor**, Koc University, Turkey
- 8:30 a.m. Novel Isocyanate Free-based Amphiphilic Gel and their Anti-fouling and Fouling Release Properties – **Anthony B. Brennan**, University of Florida
- 9:00 a.m. Structure-property-processing Relationships of Hydrogen bond containing Polyacrylates: From Bio-inspired Block Copolymers to 3D Printed Networks – **Joseph Dennis**, IBM
- 9:30 a.m. **Break & Table Top Exhibits in Regency Ballroom AB**
- 9:45 a.m. The Effects of Normal Force and Rate on Kinetic Coefficient of Friction of Elastomeric Materials – **David A. Dillard**, Virginia Tech
- 10:15 a.m. Structure/Property Relationships in Electronic Polymers – **Paul Armistead**, Office of Naval Research

11:00 a.m. – 12:00 p.m. KEYNOTE ADDRESS (Open To All Attendees):



Topic: Simulation of tire and tire/vehicle performance – what's in it for materials folks?

Ron Kennedy is currently the Managing Director of the Center for Tire Research (CentiRe), an industry/university consortium involving Virginia Tech, the University of Akron, and tire and tire-related companies. In his position, he provides administrative oversight, communication with industry members and faculty, and promotion of the Center. He also has the great opportunity to work with graduate students as they pursue their tire related studies. Before joining CentiRe four years ago, Ron worked for 37 years in the tire industry at Firestone, Bridgestone/Firestone, and Hankook Tire performing tire finite element methods development and software programming, simulation systems development, advanced tire design, and tire factory uniformity studies. His work has covered the range of tire performance areas, manufacturing, and design. Ron received his BS and MS degrees in Engineering Mechanics from the University of Wisconsin, and his PhD in Mechanical Engineering from the University of Akron.

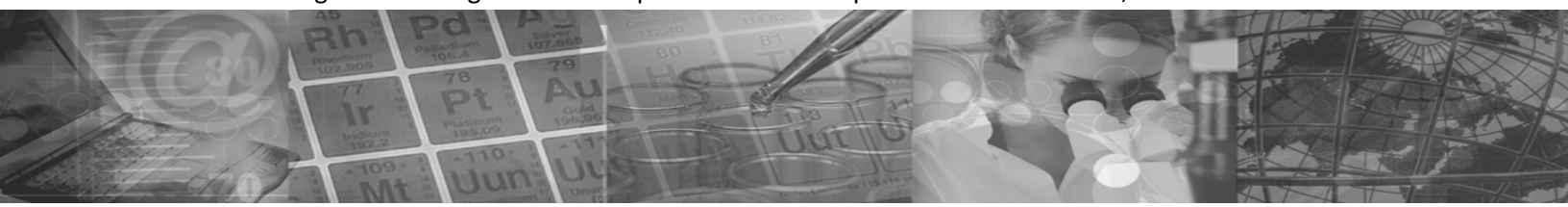
12:00 p.m. Lunch Break & Table Top Exhibits

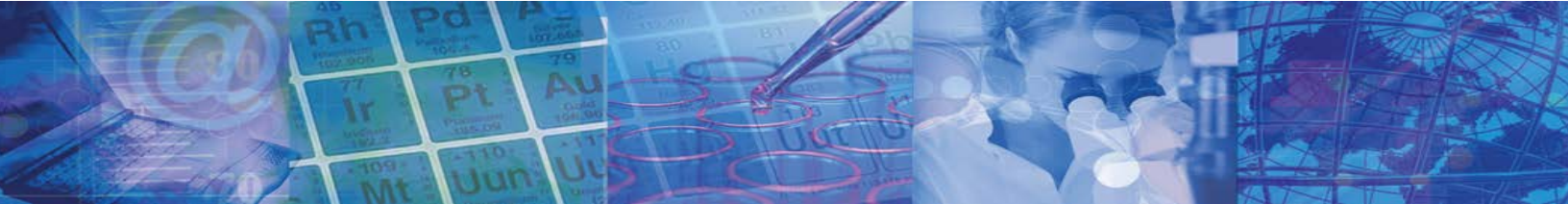
- 1:15 p.m. Development of Attenuate, a Sound and Vibration Absorbing Material – **Joan T. Muellerleile**, Independent Consultant
- 1:45 p.m. Perspective on Polymer Science in the Tire Industry – **Christopher G. Robertson**, Endurica, LLC

New Trends in Carbon Materials

Co-Chairs: C. Jeffrey Lin, Eastman Chemical Corporation

- 2:15 p.m. Graphenes: View of Function & Rubber Application – **Jiayi Li**, Cabot Corporation
- 2:45 p.m. Facile and Sustainable Functionalization Method for Preparing sp² Carbon Allotropes with Different Solubility Parameters – **Maurizio Galimberti**, Polytechnic, Milano, Italy
- 3:15 p.m. **Break & Table Top Exhibits in Regency Ballroom AB**
- 3:30 p.m. Playing with Chemistry on sp² Carbon Allotropes: Domino Reactions for Tailor Made Functionalization – **Vincenzina Barbera**, Politecnico de Milano, Italy
- 4:00 p.m. Recovered Carbon Black - Is It for Real – **William Cole**, Delta-Energy Group, LLC
- 4:30 p.m. Studying the Structural Evolution of Carbon Black Filler Networks Subjected to High Shear using Combined Experimental Techniques – **Lewis Tunnicliffe**, Birla Carbon





Wednesday, May 9 – Regency Ballroom CD, Second Level

Rubber Mechanics – Fatigue and Testing

Chair: William V. Mars, Endurica, LLC

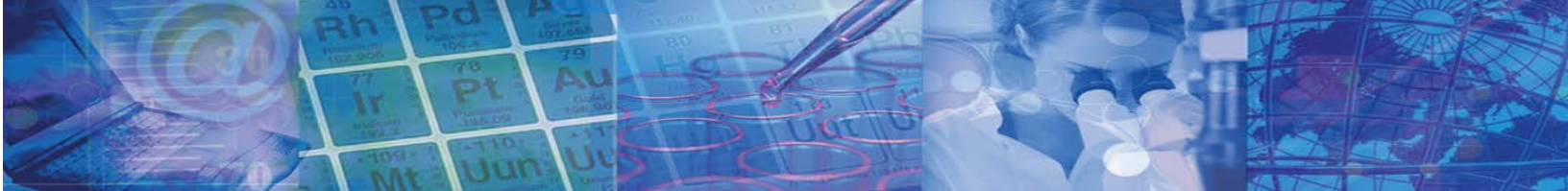
- 8:00 a.m. Optimization of the Specimen Shape Factor for Dynamic Mechanical Analysis Tests to Measure the Viscoelastic Properties of Elastomers – **Roja Esmaeeli**, The University of Akron
- 8:30 a.m. Influence of the Temperature on Fatigue of Filled Natural Rubber – **Jean-Benoit Le Cam**, University of Rennes, France
- 9:00 a.m. Finite Element Modeling and Critical Plane Analysis of a Cut and Chip Experiment for Rubber – **Christopher G. Robertson**, Endurica, LLC
- 9:30 a.m. Finitely Scoped, High Reliability Fatigue Crack Growth Measurements – **Joshua R. Goossens**, Tenneco
- 10:00 a.m. Break
- 10:15 a.m. Residual Fatigue Life Calculations for Elastomers in Digital Twin Applications – **William V. Mars**, Endurica, LLC
- 10:45 a.m. Characterization of Elastomers using Dynamic Mechanical Methods – **Troy Nickel**, TA Instruments
- 12:00 p.m. **Science & Technology Awards Banquet**

SCIENCE & TECHNOLOGY AWARD WINNERS PRESENTATIONS

Chair: Dr. Maria D. Ellul, ExxonMobil Chemical Co. (retired)

- 2:15 p.m. Charles Goodyear Medal – **Dr. Eric Baer**, Novel Elastomeric Systems Having Diverse Applications
- 3:15 p.m. Melvin Mooney Award for Distinguished Technology – **Dr. Joseph Padovan**, 2018 Career Synoptic
- 3:45 p.m. Sparks-Thomas Award – **Dr. Megan Robertson**, Sustainable Thermoplastic Elastomers Derived from Vegetable Oil-Based Feedstocks
- 4:15 p.m. Break
- 4:30 p.m. George Stafford Whitby Award for Distinguished Teaching and Research – **Dr. Joey Mead**, Nanomanufacturing: Enabling New Applications Through Tailored Nanostructures
- 5:00 p.m. Chemistry of Thermoplastic Elastomers Award – **Dr. Steven Smith**, Development of Elastomeric Materials for Science and Product Applications
- 5:30 p.m. Fernley H. Banbury Award – **Reinhold Kipscholl**, Self Heat-up and Resulting Mechanical Behavior of Rubber Parts





Thursday, May 10 – Regency Ballroom CD, Second Level

Advances in Synthesis of Elastomers, Liquid Rubbers and Related Materials

Co-Chairs: Roderic Quirk, University of Akron; Rudolf Faust, University of Massachusetts Lowell; Taejun Yoo, Total Cray Valley; Sergio Corona-Galvan, Repsol

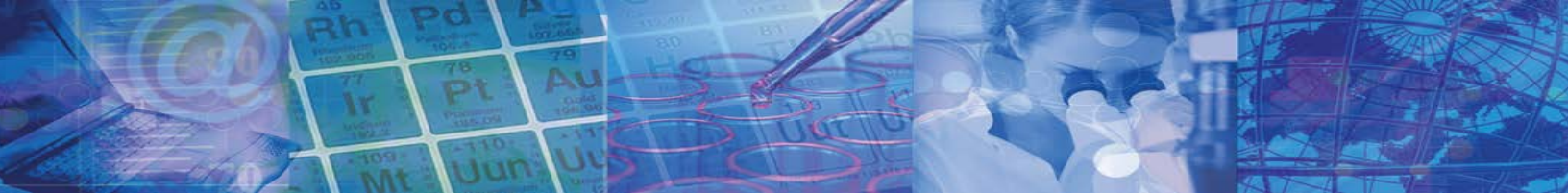
- 7:45 a.m. Solution SBR - Historical Perspective and Advances – **Roderic P. Quirk**, The University of Akron
- 8:15 a.m. Functionalization of Styrene-Butadiene Rubber by Radical Processes and by Mild Catalytic Means – **Sergio Corona-Galvan**, Repsol
- 8:45 a.m. Molecular Engineering with Anionic Polymerization – **Lian Hutchings**, Durham University, United Kingdom
- 9:15 a.m. Oligomeric Diene Resin Technology – **Herbert S. Chao**, Total Cray Valley
- 9:45 a.m. Break
- 10:00 a.m. Anionic Synthesis of Trans- β -farnesene and its Molecular Dynamics – **Taejun Yoo**, Total Cray Valley
- 10:30 a.m. Controlled/Living Cationic Polymerization and Polyisobutylene-Based Elastic Functional Materials – **Yixian Wu**, Beijing University, China
- 11:00 a.m. Academic-Industry Collaborative Innovation - on New Polymerization Catalyst-Initiation System – **Jack Emert**, Chempat Consulting
- 11:30 a.m. Synthesis and Biostability of Poly(ethylene-butylene) Based Thermoplastic Polyurethanes – **Rudolf Faust**, University of Massachusetts Lowell
- 12:00 p.m. Lunch Break

Engineering with Rubber

Chair: Abraham Pannikottu, American Engineering Group (AEG)

- 1:00 p.m. EPDM Formulation Development and Optimization for Dense Profile Application – **Greg Li**, Dow Elastomers
- 1:30 p.m. Carbon Black Reinforcement of Rubber for Anti-vibration Applications – **Lewis Tunnicliffe**, Birla Company
- 2:00 p.m. Graphene and Cellulose as the Next Generation of Reinforcing Fillers in Automotive Rubber Applications – **Cindy Barrera**, Ford Motor Company
- 2:30 p.m. Very High Molecular Weight EPDM for Demanding (automotive) Applications – **Niels van der Aar**, Arlanxeo
- 3:00 p.m. Break





Contributed

Chair: C. Jeffrey Lin, Eastman Chemical Corporation

- 3:15 p.m. Evaluation of Reclaimed Silicone Polymer in HCR Silicone Compounds – **Erick Sharp**, ACE Products & Consulting, LLC
- 3:45 p.m. Polyoctenamere as Processing Additive in the Rubber Industry – **Peter Hannen**, Evonik Resource Efficiency GmbH, Germany
- 4:15 p.m. Water Activated Dry Film Rubber Assembly Lubricant – **Thomas McGuckin**, International Products Corporation
- 4:45 p.m. Characterization of Rubber Polymers and Compounds using a Rubber Process Analyzer (RPA) – **Alina K. Latshaw**, TA Instruments

Interested in more training opportunities?

Visit rubber.org/upcoming-training for details about these upcoming courses!

Failure Analysis of Rubber & Plastics by Physical and Chemical Analysis - May 11; Akron, OH

Essentials of Rubber Technology - May 14; Akron, OH

Silicone Rubber Chemistry and Technology - May 14; Akron, OH

Compound Mixing and Consistency - May 15; Akron, OH

Establishing a Rubber Molding Process - May 15; Akron, OH

Applied Rubber Technology - May 16 & 17; Akron, OH

We will also be featuring an Educational Symposium during our International Elastomer Conference October 9-11 in Louisville, KY. Visit rubberiec.org for details.

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