Spring Technical Meeting
April 26 – April 28, 2022
Marriott Cleveland East
Warrensville Heights, OH
Thank You To Our Valued Platinum & Gold Level Sponsors!

Technical Meeting Policies

- You can download presentation slides from this meeting from your Rubber Division, ACS account after May 3rd. Presentation recordings will be available online the day after the presentations are given.

- You are required to wear your badge for entrance to the technical sessions and other events.

- 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.
# Schedule of Events

All events take place on the first floor.

## Monday, April 25

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 a.m. – 5 p.m.</td>
<td>Course: Rubber Explained</td>
<td>Medina Room</td>
</tr>
<tr>
<td>12 p.m. – 5 p.m.</td>
<td>Registration</td>
<td></td>
</tr>
</tbody>
</table>

## Tuesday, April 26

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 a.m. – 5:30 p.m.</td>
<td>Registration</td>
<td></td>
</tr>
<tr>
<td>9 a.m. – 10 a.m.</td>
<td>Keynote Address</td>
<td>Ballroom I, II &amp; III</td>
</tr>
<tr>
<td></td>
<td>Fuzhong Zhang – Professor, Washington University</td>
<td></td>
</tr>
<tr>
<td>10 a.m. – 7 p.m.</td>
<td>Table Top Exhibits</td>
<td>Atrium</td>
</tr>
<tr>
<td>10:15 a.m. – 5:15 p.m.</td>
<td>Technical Meeting</td>
<td>Ballroom I, II &amp; III</td>
</tr>
<tr>
<td>12 p.m. – 1 p.m.</td>
<td>25-Year Club Luncheon</td>
<td>Ballroom IV, V &amp; VI</td>
</tr>
<tr>
<td>1 p.m. – 5 p.m.</td>
<td>Course: Processing &amp; Testing of Rubber</td>
<td>Medina Room</td>
</tr>
<tr>
<td>5:30 p.m. – 7 p.m.</td>
<td>Welcome Reception</td>
<td>Atrium</td>
</tr>
</tbody>
</table>

## Wednesday, April 27

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30 a.m.</td>
<td>Check-in</td>
<td>Hotel Lobby</td>
</tr>
<tr>
<td>7:30 a.m. – 5 p.m.</td>
<td>Registration</td>
<td>Ballroom I, II &amp; III</td>
</tr>
<tr>
<td>8 a.m. – 5:45 p.m.</td>
<td>Technical Meeting</td>
<td>Atrium</td>
</tr>
<tr>
<td>9:30 a.m. – 6 p.m.</td>
<td>Table Top Exhibits</td>
<td>Ballroom IV, V &amp; VI</td>
</tr>
<tr>
<td>12 p.m. – 1:30 p.m.</td>
<td>Science &amp; Technology Awards Banquet</td>
<td>Ballroom IV, V &amp; VI</td>
</tr>
</tbody>
</table>

## Thursday, April 28

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 a.m. – 4 p.m.</td>
<td>Registration</td>
<td>Ballroom I, II &amp; III</td>
</tr>
<tr>
<td>8 a.m. – 4:30 p.m.</td>
<td>Technical Meeting</td>
<td></td>
</tr>
</tbody>
</table>
Tuesday, April 26

9:00 a.m. **Keynote Speaker:** Fuzhong Zhang - Professor, Washington University

**Keynote Address:** Using Synthetic Biology to Produce High-Performance Biopolymers

---

**Structure & Physics of Elastomers**

*Co-chairs: Krishnan Iyer, ExxonMobil and Chris Robertson, Polymer Technology Services LLC*

10:15 a.m. Tire Compounding with Graphene - **Brendan Rodgers**, Akron Polymer Solutions

10:45 a.m. Co-vulcanization of Trans-polyoctenamer Rubber (TOR) - **Alexander Paasche**, Evonik Operations GmbH

11:15 a.m. Epoxidation of DCPD Rosin and its Effect on Compound Properties - **Rohit Ameta**, Apollo Tyres Ltd.

12 p.m. 25-Year Club Luncheon

1 p.m. Transformation of Lignin from Semi-Reinforcing to Reinforcing Fillers - **Amit Das**, Leibniz Institute of Polymer Research Dresden

1:30 p.m. A Comprehensive Re-evaluation of the Conductivity of Carbon Black Reinforced Rubber Compounds - **James Kollar**, Birla Carbon

2 p.m. Modeling Vibration Isolators in the Automotive Industry - **Shashikant Sharma**, Hutchinson

2:30 p.m. The Influence of Natural Rubber Viscosity and Processing Temperature on Performance of the Elastomer Compounds - **Abbas Ghanbari**, Airboss of America

3 p.m. Break & Table Top Exhibits


3:45 p.m. Aging of Fluoroelastomer at High Pressure and High Temperature in Hydraulic Fluid - **Kapil Surve**, University of Houston

4:15 p.m. Aircraft Tire Compounding Using Graphene to Improved Properties - **Brendan Rodgers**, Akron Polymer Solutions

4:45 p.m. Insights into Mechanical, Thermal, and Electrical Properties of EPDM and PDMS Blends for Insulator Applications - **Sriram Ramdass**, Sri Ramkarthic Polymers

5:30 p.m. Welcome Reception
Wednesday, April 27

**Recycling & Reprocessing of Rubber**  
Chair: **Cindy Barrera**, Ford Motor Co.  

- **8 a.m.** Development and Characterization of Novel Super TPVs for Automotive Applications - **Kinsuk Naskar**, Rubber Technology Centre, IIT Kharagpur  
- **8:30 a.m.** Soybean Oil as Pre-Treatment of Micronized Recycled Rubber for Non-Tire SBR Formulations - **Olena Shafranska**, North Dakota State University  
- **9 a.m.** Giving Another Opportunity to Trash: A Complete Study of Recyclability in Carboxylated Nitrile Rubber - **Saul Utrera Barrios**, Institute of Polymer Science and Technology (ICTP-CSIC)  
- **9:30 a.m.** Properties of Ultrasonically Devulcanized and Revulcanized Used Tire Rubber and their Blends with Natural Rubber - **Avraam I. Isayev**, University of Akron  
- **10 a.m.** Break & Table Top Exhibits

**Friction of Rubber, Seals & Dynamic Sealing**  

- **10:15 a.m.** Bulk-structured Materials for Enhanced Tire Traction - **Constantine Khripin**, Michelin North America  
- **10:45 a.m.** Use of Micro Structures on Rubber Surfaces to Grip Low Coefficient Materials - **Ralph Hulseman**, Hoowaki LLC  
- **11:15 a.m.** Optimization of a commercial Oil and Gas Packer/ Blow Out preventer formulation with the use of NC7000™ Multi wall Carbon Nanotubes and HSE Aspects - **Alicia Rul**, Nanocyl  
- **12 p.m.** Science & Technology Awards Banquet

**Science & Technology Awards Symposium**  
Chair: **Dr. Maria D. Ellul**, ExxonMobil Chemical Co. (Retired)  

- **1:45 p.m.** Charles Goodyear Medal – **Dr. Timothy Rhyne** and **Steven Cron**  
- **2:30 p.m.** Melvin Mooney Award for Distinguished Technology - **Dr. Anil Bhowmick**  
- **3 p.m.** Sparks-Thomas Award - **Dr. Baochun Guo**  
- **3:30 p.m.** Break & Table Top Exhibits
Thursday, April 28

**Recycling & Reprocessing of Rubber**
Chair: **Cindy Barrera**, Ford Motor Co.

- **8 a.m.** Recycling and Reprocessing of Rubber - **Ajmal Mahmood**, Volter Cables

- **8:30 a.m.** Rubber Material for Insulated Shoes for 30Kv using Recycled Carbon Fiber - **Kyung Man Choi**, Korea Institute of Footwear & Leather Technology

- **9 a.m.** Comparative Investigation of Natural Rubber Reclaim vs. Real Devulcanizate – **Wilma Dierkes**, University of Twente, Dept. of Sustainable Elastomer Systems.

**Nanoscale Characterization of Rubbery Materials & Composites**
Co-chairs: **Yusheng Chen**, Flexsys and **Seth Young**, Birla Carbon

- **9:30 a.m.** Strain Amplitude Jumps in Oscillatory Shear Rheology to Characterize the Particle Networking Behavior of Nano-Filled Rubber Compounds - **Chris Robertson**, Polymer Technology Services LLC

- **10 a.m.** Break

- **10:15 a.m.** Influences and Analyses on Heterogeneity of Crosslink Density in Polymer Blends - **Ulrich Giese**, German Institute of Rubber Technology and Leibniz University of Hannover

- **10:45 a.m.** Fabrication and Characterization of Self-healing Elastomers - **Jinrong Wu**, Sichuan University

- **11:15 a.m.** The Effect of Carbon Black Crystallinity on Dispersion in Rubber Compounds - **Sadhan C. Jana**, University of Akron

- **11:45 a.m.** Lunch Break
Winter Performance in Passenger Tires
Co-chairs: Ken Bates, Polymer Solutions Group and Carin Helfer, The Ohio State University
12:45 p.m. Functionalized Low-Tg sSBR for Winter Tires - Steven Teertstra, ARLANXEO
1:15 p.m. An Overview of Global Winter Tire Testing Methods - Eric Pierce, Smithers MSE
1:45 p.m. Trends in Winter Tire Materials and Construction Features - Lori Knous, Smithers MSE

Contributed Talks in Rubber Technology
Co-chairs: Leandro Forciniti, Becton Dickinson and Ed Terrill, Akron Rubber Development Laboratory
2:15 p.m. Assembling Valuable Data for Accelerated Formulation via Modeling and Optimization - Marlene Cardin, ProSensus
2:45 p.m. Break
3 p.m. Resorcinol/Cobalt Free Bonding Agent - Paul Fithian, BruggemannChemical U. S. Inc.
3:30 p.m. To Enhance Adhesion Property of Soy Protein Adhesive by Base-Solvents Modified Guayule Resin - Sarocha Pradyawong, University of Arizona
4 p.m. Modification of Coumarone Indene and its Effect in Compound Properties - Antara Mondal, Apollo Tyres Ltd.

The International Elastomer Conference is the premier place where educators, customers, manufacturers and suppliers of materials, equipment, tools and services come together. This event is the one place, one time of year, where you find the best of our industry all under one roof. It is an event where connections are made, knowledge is shared, new products, new technology and new ideas are introduced, business is conducted, developed and gained, fun is had, encouragement and empowerment happen, and the future is embraced.

Visit rubberiec.org for all details about this conference!
EXECUTIVE COMMITTEE
Chair – James D. Eddy
Chair-elect – Anthony Mariniello, ChemSpec Ltd.
Assistant Treasurer – Ron Campbell, Greene Tweed
Secretary – Russ Vogelsong, Lion Elastomers
Director of Bylaws & Procedures – Terry DeLapa
Directors’ Representative – Andy Anderson, Eutsler Technical Products, Inc.
Directors’ Representative-elect – Irene Yurovskaya, YIGlobal
Councilor – John M. Long, JM Long Rubber Consultants, LLC
Alternate Councilor – Jeffrey (Chenchy) Lin
Member-at-Large – Leonard Thomas, Consultant
Past Chair – William Stahl, Rainbow Master Mixing, LLC
Executive Director & CEO – Lakisha Miller-Barclay, CAE, Rubber Division, ACS

AREA DIRECTORS
Blue Ridge Rubber Group – Richard Spontak, North Carolina University
Brazil Rubber Group - ABTB – Andre Mautone, Microjuntas
Canadian Society for Chemistry – Richard Pazur, National Defense of Canada
Chicago Rubber Group – Rick Webb, SKF Sealing Solutions NA
Detroit Rubber Group – David Clark, Freudenberg-NOK Sealing Solutions
Energy Polymer Group – Sean Djuricic, Akron Rubber Development Laboratory
Fort Wayne Rubber Group – Daryl D. Meyer, ARLANXEO USA LLC
Indian Rubber Institute – Mehul Patel, Attuned Polymers Laboratories
Los Angeles Rubber Group – Renee Horvatich, Akrochem Corporation
Mexico Rubber Group – Jose Gazano, Consultant
Michigan Rubber Group – Tim Dickerson, ChemRep
MidAtlantic Rubber Group – Joe Martin, Solvay Specialty Polymers
New England Rubber Group – Tara Castine, FulFlex, A Garflex Company
Ohio Rubber Group – Mike McDonnell, Zeon Chemicals
Ontario Rubber Group – Andrew Biska, Azelis Canada, Inc.
Quebec Rubber Group – Philippe Julien, Azelis Canada, Inc.
Southern Rubber Group – Travis Wesley, PHT International, Inc.

COMMITTEE CHAIRS
Education – Erick Sharp, ACE Products & Consulting
Exhibits – Robert Carroll III, R.E. Carroll, Inc.
Marketing – Scott Legleu, R.D. Abbott Co., Inc.
Membership – Russ Vogelsong, Lion Elastomers
Partnership – Kimberly Dempsey-Miller, RecycleDelphia
Program Planning – Lewis Tunnicliffe, Birla Carbon
Young Professionals – Kylie Knipp, Akron Rubber Development Laboratory
Visit rubber.org/training to view our full schedule of learning opportunities!

Webinars are free for Rubber Division, ACS Members and all Rubber Division, ACS courses are free for undergraduate Student Members (discount for masters & graduate Student Members). All courses are held virtually except for a few scheduled to be held at partner locations.

CEUs are now available for many of our courses!