Engage with us and keep up on all our news and happenings:

199th Technical Meeting
April 27 – April 29, 2021
Embassy Suites by Hilton, Cleveland Rockside
Independence, OH
Thank You To Our Valued Platinum & Gold Level Sponsors!

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 presentation slides from this meeting from your Rubber Division, ACS account after May 3rd. Presentation recordings will also be available in your account after May 3rd.

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

- For the safety and protection of all attendees and hotel guests, masks must be worn at all times outside of actively eating and drinking. Social distancing of 6-feet is encouraged whenever possible.
# Schedule of Events

All events take place in the Ballroom area of the lobby level.

## Monday, April 26

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1:00 p.m. –</td>
<td>Registration</td>
</tr>
<tr>
<td>5:00 p.m. –</td>
<td>Top Golf Social Event; 5800 Rockside Woods Blvd. N.</td>
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<tr>
<td>8:00 p.m.</td>
<td><em>for those who registered for this event</em></td>
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## Tuesday, April 27

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00 a.m. –</td>
<td>Registration</td>
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<tr>
<td>9:00 a.m. –</td>
<td>Keynote Address</td>
</tr>
<tr>
<td>10:00 a.m. –</td>
<td>Seiichi Kawahara – Nagaoka University of Technology</td>
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<tr>
<td>10:00 a.m. –</td>
<td>Table Top Exhibits</td>
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<tr>
<td>10:30 a.m. –</td>
<td>Technical Meeting</td>
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<tr>
<td>12:00 p.m. –</td>
<td>25-Year Club Luncheon</td>
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<tr>
<td>5:30 p.m. –</td>
<td>Welcome Reception</td>
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## Wednesday, April 28

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30 a.m. –</td>
<td>Registration</td>
</tr>
<tr>
<td>8:00 a.m. –</td>
<td>Technical Meeting</td>
</tr>
<tr>
<td>9:30 a.m. –</td>
<td>Table Top Exhibits</td>
</tr>
<tr>
<td>6:00 p.m. –</td>
<td>Science &amp; Technology Awards Banquet</td>
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## Thursday, April 29

<table>
<thead>
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<th>Time</th>
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<tbody>
<tr>
<td>7:30 a.m. –</td>
<td>Registration</td>
</tr>
<tr>
<td>8:00 a.m. –</td>
<td>Technical Meeting</td>
</tr>
</tbody>
</table>
Tuesday, April 27

9:00 a.m. **KEYNOTE ADDRESS:** Development of Sustainable Natural Rubber Ecosystem Toward Creation of New Industry; **Seiichi Kawahara**, Department of Materials Science and Technology, Nagaoka University of Technology

Seiichi Kawahara’s Keynote Address will be about the natural rubber ecosystem, which aims to create various products from natural rubber, and how it has potential to contribute to the establishment of a sustainable society in 21st century as an important elementary component.

**Failure of Rubber Materials**

Co-chairs: **Bill Stahl**, Rainbow Master Mixing and **Lewis Tunnicliffe**, Birla Carbon

10:30 a.m. General Considerations in Failure Analysis of Rubber and Plastics - **Jason T. Poulton**, Akron Rubber Development Laboratory

11:00 a.m. Wear Mechanisms of Rubber Tyre Materials under Low Severity: a Model Study - **Paul Sotta**, Centre National de la Recherche Scientifique

11:30 a.m. Infinite Life Design Principles for Rubber Structures - **William V. Mars**, Endurica LLC

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

1:00 p.m. Strain-induced Crystallization Effects in Carbon Black Reinforced and Unfilled Natural Rubber - **William Amoako Kyei-Manu**, Queen Mary University of London


2:00 p.m. Determining the Loading Mode Dependence of the Proportionality Parameter for the Tearing Energy of Embedded Flaws in Elastomers Under Multiaxial Deformations - **Richard Windslow**, Schlumberger Ltd.

2:30 p.m. The Fatigue Threshold of Rubber and its Characterization Using the Cutting Method - **Christopher Robertson**, Endurica LLC

3:30 p.m. New Insights into the Fracture of Carbon Black Reinforced Natural Rubber - **Lewis B. Tunnicliffe**, Birla Carbon

**Structure and Dynamics of Polymer Nanocomposites and Filled Rubber**

Co-chairs: **Christopher Robertson**, Endurica LLC and **Cindy Barrera**, Ford Motor Co.

4:00 p.m. Investigation of Dielectric Properties of Rubber Compounds by Simultaneous High Force DMA and DEA - **Yanxi Zhang**, Netzsch Instruments

4:30 p.m. NR-Silica Nanocomposites for Improved Polymer-Filler Interaction in TBR Tread Compounds - **Tom Rosenmayer**, Silpara Technologies LLC
Wednesday, April 28

**Structure and Dynamics of Polymer Nanocomposites and Filled Rubber**
Co-chairs: Christopher Robertson, Endurica LLC and Cindy Barrera, Ford Motor Co.

8:00 a.m. Some Aspects of Nanoparticle Assembly and Polymer Dynamics in Rubber Systems - Anne-Caroline Genix, University of Montpellier, France

8:30 a.m. Triboelectric Generators Derived from Commercial Rubbers for Sustainable Energy Harvesting Solutions - Amit Das, Leibniz Institute of Polymer Research Dresden

9:00 a.m. Thixotropic Flocculation Effects in Particle Reinforced Rubbers and Model Materials - Lewis B. Tunnicliffe, Birla Carbon

9:30 a.m. Flocculation of Carbon Black Monitored by Rheology - Clement Robin, Hutchinson

10:00 a.m. Break & Table Top Exhibits

10:30 a.m. In situ Nanofiller Formation in Rubber Composites - Justin Robert Barone, Virginia Tech, Biological Systems Engineering

11:00 a.m. Highly Efficient Renewable Anisotropic Fillers for Advanced Properties - Ulrich Giese, German Institute of Rubber Technology (DIK)

11:30 a.m. Testing of Radiation Modified Silicone Elastomer Based High Damping Materials by Free Oscillating Dynamic Mechanical Oscillograph (ASTM D945-16) DMYO-5 - Davut Aksut, Hacettepe University

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

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

1:00 p.m. Charles Goodyear Medal – Dr. Nissim Calderon, Goodyear Tire & Rubber Co. (Memorial Address by Adel Halasa, The University of Akron)

2:00 p.m. Melvin Mooney Award for Distinguished Technology - Dr. Kenneth Gillen, Sandia National Laboratories (Retired)

2:30 p.m. Sparks-Thomas Award - Dr. David Simmons, University of South Florida

3:00 p.m. George Stafford Whitby Award for Distinguished Teaching and Research - Dr. Chrys Wesdemiotis, The University of Akron

3:30 p.m. Break & Table Top Exhibits
Thursday, April 29

**Elastomers as Biomaterials**
Co-chairs: **Leandro Forciniti**, Becton Dickinson and **Carin Helfer**, The Ohio State University

8:00 a.m. Electrospun Polyisobutylene-based Fiber Mats for Personal Protective Equipment Applications - **Judit Puskas**, The Ohio State University

8:30 a.m. Stimuli-Responsive Antifouling Polyisobutylene-Based Biomaterials via Modular Surface Functionalization - **Lingyun Liu**, The Ohio State University

9:00 a.m. Butyl Rubber for Medical Applications - **Kevin Kulbaba**, ARLANXEO

9:30 a.m. Break

**Modelling & Simulation**

10:15 a.m. Simulating the Effects on Post-impact Durability of Tire Ageing - **William V. Mars**, Endurica LLC

10:45 a.m. Capitalize on Historical Data in the Rubber Industry with Multivariate Analysis - **Marlene Cardin**, ProSensus Inc.

11:15 a.m. Dynamical Mechanical Analysis (DMA) of Polybutadiene using Molecular Dynamics Simulations - **Sdollah Ebrahimi**, Dassault Systèmes, and Université de Sherbrooke

11:45 a.m. Lunch Break

**Advances in Rubber Processing & Additives**
Co-chairs: **Edward Terrill**, Akron Rubber Development Laboratory Inc. and **John Dick**, Consultant

1:00 p.m. Devulcanizate as a Functional Additive - **Rounak Ghosh**, University of Twente

1:30 p.m. Applications of Fine Mesh Straining in Rubber Processing - **Manuel Bessler**, UTH GmbH
2:00 p.m. Continuous Processing of Rubber-Bitumen Formulations - Michael Wayne Batton, Entex Rust & Mitschke GmbH

2:30 p.m. Novel Bio-based Elastomer for Rubber Compounds, Sealants and Adhesives - Erich Klein, Kuraray

3:00 p.m. Break

3:15 p.m. Development of Sustainable Rubber Composites using Tapioca Flour as Filler for Automobile Applications - Selvakumar Murugesan, National Institute of Technology Karnataka Surathkal

3:45 p.m. Development of a Separation Process of NBR/HNBR Rubber from Metal Substrate - Sarah Scardelatto, Fundação Santo André

Rubber Division, ACS is excited to bring the industry back together!

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 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!
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