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Rubber Division, American Chemical Society

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Receive all of this for only $95 per year!
Visit the membership section of rubber.org to become a member. Reach out to our Membership Manager, Heather Maimone, at 330-972-6685 or hmaimone@rubber.org for more information.
Our International Elastomer Conference will feature the best showcase of companies in our industry, technical programming, educational and networking opportunities.

**Technical program topics** include Rubber Recycling and Retreading, New Commercial Developments, Friction and Abrasion of Rubber, Rubber Processing, Rubber Additives for Technology (plasticizers/resins), Biomaterials and Renewal Resources (recycling), Advances in Material and Processes of Car and Truck Tires, Gent Colloquium...Rubber Mechanics, Market Outlook on Raw Materials in Rubber Industry, Rubber for Dampening in Engineering Applications, Specialty Elastomers, Thermoplastic Elastomers, Building and Construction.

**The expo is ideal for companies** involved with: Machinery and Equipment, Chemical Suppliers, Rubber Processing, Natural and Synthetic Rubber, Raw Materials Suppliers, Testing and Research, Mold Release Agents, Molding, Extrusion and Parts Production, Custom Services, Compounding and Mixing Services, Manufacturing or Distribution, Recycling, Advanced Materials in Healthcare, TPEs

**ATTENDEES include:** Chemists, Product Manufacturers, Distributors and Suppliers, Machinery Manufacturers, Machinery and Testing Equipment Users and Manufacturers, Raw Materials Suppliers, Manufacturers Looking For Component Suppliers and Rubber Products, Quality Assurance Specialists, End Users, Technical Service Representatives, Research and Development Engineers, Product Design Engineers, Sales and Marketing Professionals

**2015 Training Opportunities**

- Rubber as an Engineering Material – May 12; In conjunction w/ DRG, Novi, MI
- Intermediate to Advanced Compounding and Testing of Rubber May 12-15; Twinsburg, OH, Akron, OH & Cuyahoga Falls, OH
- Internal Mixers and Mixing Parameters - June 15; St. Simons Island, GA
- Design of Experiments - September 22 & 23; Atlanta, GA
- Compounding of Fluoroelastomers - September 29; Twinsburg, OH
- International Elastomer Conference - Educational Symposium - October 12-15; Cleveland, OH
- Raw Materials Supply Chain for Rubber Products - November 17; Atlanta, GA
- Compounding for Performance - November 18 & 19; Atlanta, GA
- Solving Problems in Rubber Compounding and Processing - November 20; Atlanta, GA

View all upcoming training opportunities, including course descriptions & pricing at rubber.org/upcoming-training.
5K Walk/Run – Sponsored by H.M. Royal
Wednesday, April 29
Check-in 6:15am in Hyatt Lobby; Depart 6:30am
Runners, walkers, spouses and guests are invited to participate. You must register to attend.

25-Year Club Reception & Luncheon
Tuesday, April 28; 12.00 p.m. – 1:30 p.m.
Regency A & B, First Level
Seating is limited - $60 per person
Come celebrate individuals who have been active in the rubber industry for 25 consecutive years or more. Open to all attendees. Registration is required.

Welcome Reception
Tuesday, April 28; 6:00 p.m. – 7:30 p.m.
Regency A & B, First Level
All registered attendees are invited to attend. Reservations are not required.

Science & Technology Awards Banquet
Wednesday, April 29; 12:00 p.m. – 2:00 p.m.
Regency A & B, First Level
Cost of the S&T Banquet is included in the 187th Technical Meeting paid registration fee. Emeritus, Students, Press and Guests may purchase tickets for $60 each.

Business & Awards Meeting
Thursday, April 30; 11:00 a.m. – 12:00 p.m.
Regency F & G, First Level
AGENDA
Chair’s Remarks             Terry DeLapa
Retiring Committee Chair            Terry DeLapa
Retiring Directors Rep            Terry DeLapa
Retiring Area Directors            Terry DeLapa
Certificate of Appreciation            Terry DeLapa
Arnold Smith Special Service Award           Terry DeLapa
Distinguished Service Award           Terry DeLapa
Past Chair Award             Terry DeLapa
Treasurer’s Report             Terry DeLapa
Necrology             Jerry McCall
Report of the Nominating Committee          Leo Goss
Other Business

RUBBER DIVISION, ACS STAFF

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Christie Robinson, MEd
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330-972-6938
## Schedule of Events

### Monday, April 27

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 a.m.</td>
<td>Steering Committee Breakfast*</td>
<td>Roost, Second Level</td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td>Steering Committee Meeting*</td>
<td>Dogwood, First Level</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>Registration</td>
<td>Regency D &amp; E Foyer, First Level</td>
</tr>
<tr>
<td>1:30 p.m.</td>
<td>Membership Committee Meeting</td>
<td>Dogwood, First Level</td>
</tr>
<tr>
<td>2:00 p.m.</td>
<td>Program Planning Committee Meeting</td>
<td>Regency F &amp; G, First Level</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>S&amp;T Committee Meeting*</td>
<td>Dogwood, First Level</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>Area Directors Caucus*</td>
<td>Regency H, First Level</td>
</tr>
<tr>
<td>9:00 a.m. – 12:00 p.m.</td>
<td>Steering Committee Meeting*</td>
<td>Dogwood, First Level</td>
</tr>
</tbody>
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### Tuesday, April 28

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<thead>
<tr>
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<tr>
<td>7:30 a.m.</td>
<td>Registration</td>
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</tr>
<tr>
<td>8:30 a.m.</td>
<td>25-Year Club Reception &amp; Luncheon</td>
<td>Regency A &amp; B, First Level</td>
</tr>
<tr>
<td>11:00 a.m. – 12:00 p.m.</td>
<td>Keynote Address</td>
<td>Regency C, First Level</td>
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<tr>
<td></td>
<td>Ralph Dimenna, Senior VP; Michelin Global Incubator Program</td>
<td>Regency C, First Level</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>Technical Session</td>
<td>Regency F &amp; G, First Level</td>
</tr>
<tr>
<td>1:00 p.m.</td>
<td>Exhibits &amp; Meeting Sites Committee Meeting</td>
<td>Regency C, First Level</td>
</tr>
<tr>
<td>1:30 p.m.</td>
<td>Technical Session</td>
<td>Regency A &amp; B, First Level</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>Welcome Reception – All are invited!</td>
<td>Regency A &amp; B, First Level</td>
</tr>
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</table>

### Wednesday, April 29

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<tr>
<td>7:30 a.m.</td>
<td>Registration</td>
<td>Regency D &amp; E Foyer, First Level</td>
</tr>
<tr>
<td>8:30 a.m.</td>
<td>5K Walk/Run - Sponsored by H.M. Royal, Inc.</td>
<td>Meet in Hyatt Lobby; Depart 6:30 a.m.</td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td>Finance &amp; Budget Committee Meeting*</td>
<td>Regency C, First Level</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>Science &amp; Technology Awards Banquet</td>
<td>Regency A &amp; B, First Level</td>
</tr>
<tr>
<td>1:00 p.m.</td>
<td>Technical Session</td>
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</tr>
<tr>
<td>3:30 p.m.</td>
<td>Area Directors Meeting*</td>
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### Thursday, April 30

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<td>8:30 a.m.</td>
<td>Technical Session</td>
<td>Regency, First Level</td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td>Executive Committee Meeting</td>
<td>Regency F &amp; G, First Level</td>
</tr>
<tr>
<td>11:00 a.m.</td>
<td>Business &amp; Awards Meeting</td>
<td>Regency F &amp; G, First Level</td>
</tr>
</tbody>
</table>

* Closed Meeting

Rubber Division, ACS members are welcome to attend all open committee meetings.
BASIC RESEARCH ON MATERIALS AND CHARACTERIZATION TECHNIQUES FOR MATERIALS
Chair: J. Cal Moreland, Michelin North America
Co-Chair: Robert H. Schuster, Dik, Deutsches Institut für Kautschuktechnologie, Germany

8:30 a.m. The Thermo-Oxidation of POLY(ISOBUTYLENE) and Its Copolymers with Isoprene in Terms of Activation Energies and Reaction Mechanisms – Richard Pazur, Department of National Defence, Canada

9:00 a.m. Characterization of Aging Kinetics and DLO-Effect in Rubbers – Ulrich Giese, Deutsches Institut für Kautschuktechnologie e. V., Germany

9:30 a.m. Break

9:45 a.m. Infinite Fatigue Life: Challenges and Solutions in Measuring Rubber’s Endurance Limit – William V. Mars, Endurica

10:15 a.m. Hard Problems with Soft Materials: The Tribology of Elastomers – Kyle Rowe, University of Florida

11:00 a.m. KEYNOTE ADDRESS (Open To All Attendees)
Michelin Tweel Technologies - Driving Growth through Innovation
Since October 2014, Ralph Dimenna, 44 years old, has been the Senior Vice President directing the global incubator program at Michelin. He is responsible for leading the Michelin incubator program office, with locations in Greenville, SC, Clermont-Ferrand, France, and Shanghai, China. He is also responsible for Michelin Tweel Technologies. Prior to his current role, Dimenna served for five years as the worldwide technical director for passenger and light truck original equipment tire development at Michelin. From 2005-2009, he was the technical director for North American passenger and light truck original equipment development. He has played an important role in the design, development and launch of key Michelin product applications for original equipment including the introduction of the Energy, Primacy, Pilot Sport, and Pilot Super Sport product lines. Joining Michelin in 1993, Dimenna has amassed extensive experience in product development, having held various positions in tire design and development while on assignments in the United States and Europe. Dimenna holds Bachelors of Science and Masters of Science Mechanical Engineering degrees from the University of Illinois.

1:30 p.m. Effect of Polydispersity on the Properties of 1, 4-Polybutadiene – C. Michael Roland, Naval Research Lab

2:00 p.m. Preparation and Properties of Natural Rubber with Filler Nanomatrix Structure – Seiichi Kawahara, Nagaoka University of Technology, Japan

2:30 p.m. Polysisoprene Grafted Silica Nanoparticles for Designed Interfaces in Rubber Nanocomposites – Brian Benicewicz, University of South Carolina

3:00 p.m. Break

3:15 p.m. Highly Reinforced Blends Based on in-situ Synthesized Polyurethane-urea and Nitrile Butadiene Rubber – Muhammad Tahir, Institut fur Werkstoffwissenschatr Leibniz, Germany

3:45 p.m. Novel PTFE Nanocomposites Reinforced with Artificially Stacked Hybrid Graphene/h-BN Nanostructures – Kousaalya Bakthavatchalam, Clemson University

4:15 p.m. Water-Based Elastomeric Gas Barrier Nanocoatings – Kevin M. Holder, Texas A & M University
RUBBER PARTS IN AUTOMOTIVE  
Chair: Alton McConnell, Avon Automotive  
8:30 a.m. Selecting the Best Peroxide and Coagent Combination for High Performance Application – Steven Monthey, Rhein Chemie Corp.  
9:00 a.m. Achieving Durability Before You Build and Break: Modern Solutions – William V. Mars, Endurica  
9:30 a.m. Rubber Bushing Design and Shape Optimization Based on Fatigue Life Prediction – Jing Bi, SIMULIA  
10:00 a.m. Break  

RUBBER ADHESION TO METALLIC CABLES AND TEXTILE CORD  
Chair: Andrew L. Tisler, Omnova Solutions, Inc.  
10:45 a.m. RFL Treatment for Tire Reinforcement Cord – Steve F. Sherriff, DuraFiber Technologies  

SCIENCE & TECHNOLOGY AWARD WINNERS  
Chair: Maria D. Ellul, ExxonMobil Chemical Co.  
2:15 p.m. Meso Crystalline Propylene-Ethylene Copolymers: Elastomers with Plastics Processing; Charles Goodyear Medalist – Dr. Sudhin Datta  
3:15 p.m. Stress-strain Behaviour of Rubber: Applications of Models; Melvin Mooney Distinguished Technology Award Recipient – Dr. Alan Muhr  
3:45 p.m. Break  
4:00 p.m. A Constitutive Tube Model of Rubber Elasticity: the Path from Polymer Network to the Rubber Component; George Stafford Whitby Award for Distinguished Teaching and Research Recipient – Dr. Gert Heinrich  
4:30 p.m. Recent Progresses in Physical Understanding, Mechanical Characterization and Modeling of the Mullins Softening in Carbon-Black Filled Rubbers; Sparks-Thomas Award Recipient – Dr. Julie Diani  
5:00 p.m. Advances in the Synthesis of Thermoplastic Elastomers-Styrenic Block Copolymers; Chemistry of Thermoplastic Elastomers Award Recipient – Dr. Carl Willis
VEHICLE AND TIRE TESTING

Co-Chairs: Patrick Rawlinson, Michelin North America

8:30 a.m. Development of a Test Rig for Rapid Assessment of Tire-Vehicle System Integration – Beshah Ayalew, Clemson University

9:00 a.m. Development of a Trailer Axle Friction/Wear Tester – Chuang Su, Virginia Tech

9:30 a.m. Break

9:45 a.m. Visualizing Tire Wear – Pamela Martin, Tun Abdul Razak Research Centre, United Kingdom

10:15 a.m. Development of Rubber-Road Contact Friction Theory and Comparison with Experiments – Mehran Motamedi, Center for Tire Research (CenTiRe) at Virginia Tech

Visit rubber.org/187th-technical-meeting2 for more information about the presenters and award winners at this meeting.