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Tuesday, April 25 – Ballroom 1-3, 1st Floor

CRYSTALLIZATION OF RUBBER
Chair: C. Michael Roland, Naval Research Laboratory

8:00 a.m. Crystallite Growth Enhances Segmental Dynamics in Star-Shaped Semi-Crystalline Polymer - **Martin Tress**, University of Tennessee Knoxville 1

8:30 a.m. Application of Dielectric Spectroscopy for Investigation of Crystallization Kinetics of Supercooled Liquids at Elevated Pressure - **Marian Paluch**, University of Silesia, Poland 13

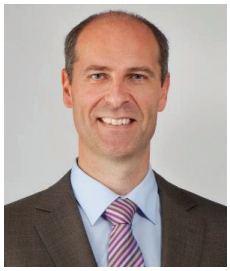
9:00 a.m. New Concept of Strain-Induced Crystallization in Cross-Linked Natural Rubber - **Masatoshi Tosaka**, Kyoto University, Japan 21

9:30 a.m. **Break & Table Top Exhibits in Ballroom 4-6**

9:45 a.m. Crystallization Tendencies of Glass-Forming Liquids: High Pressure Versus Nanoscale Confinement - **Karolina Adrjanowicz**, University of Silesia, Poland 35

10:15 a.m. Dynamics and Thermodynamics Along the Melting Line - **C. Michael Roland**, Naval Research Lab 46

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



Topic: Leading Through Innovation – Foundation for Success in Synthetic Rubber 55
Kurt Aerts was appointed vice president of the global Specialty Elastomers & Butyl rubber business in June of 2015. In this role, he is accountable for the operational and financial business results in the short term, as well as the development and implementation of the longer-term business strategies. Mr. Aerts previously was vice president of ExxonMobil Chemicals' global supply chain operations from 2013-2015 and before that was vice president of the global adhesion industry business from 2011-2013. In the earlier part of his career, he has held several leadership positions across Europe, Asia-Pacific and the United States since joining the company in 1992 as a contact engineer at the Antwerp Polymers Plant in Belgium. Between 1995 and 2006, he held various roles in polyethylene sales and marketing and as feedstock and supply manager in Basic Chemicals in Belgium and the Netherlands. During this time, he also moved to Houston for the first time as polyethylene business planning manager. In January 2006, he moved to Shanghai where he served as Asia Pacific regional polyolefins sales manager. During his time in China, Mr. Aerts was instrumental in recruiting and assimilation of new hires and supported the Shanghai Technology Center project. After 3.5 rewarding years in China, he returned to Houston in 2009 as a senior planning advisor. Mr. Aerts received a master's degree in chemical engineering from University of Leuven (Belgium). He is married with two daughters and enjoys spending time with family, traveling, exercising and reading.

1:30 p.m. Advanced Analysis of Crystallization Kinetics and Tear Fatigue Behavior of Natural Rubber - **G. Heinrich**, Leibniz Institute of Polymer Research Dresden, Germany 64

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2:30 p.m. Strain Induced Crystallisation during Crack Propagation, Consequence of Thermo-Oxydative Aging - **Laurent Chazeau**, Laboratoire MATEIS INSA de LYON, France 97

3:00 p.m. The Effect of Strain-Induced Crystallization on the Thermomechanical Behaviour of Rubbers - **Jean-Benoit LE CAM**, University of Rennes 1, France .....N/A

3:30 p.m. **Break & Table Top Exhibits in Ballroom 4-6**

3:45 p.m. Shape-Memory and Self-Stretching Thermoset Elastomers - **Mitchell Anthamatten**, University of Rochester 109

4:15 p.m. Structure of Filled Natural Rubber Near the Tip of a Fatigue Crack - **Costantino Creton**, ESPCI Paris, France 128

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Wednesday, April 26 – Ballroom 1-3, 1st Floor

NANOTECHNOLOGY AND NANOCOMPOSITES
Chair: Christopher G. Robertson, Cooper Tire & Rubber Company

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8:00 a.m. Small-Angle Scattering Analysis of the Structure of Chains and Filler in Polymer Nanocomposites - **Julian Oberdisse**, CNRS/University of Montpellier, France .....N/A

8:30 a.m. Local, Global, and Particle Dynamics in Polypropylene Glycol / Silica Nanocomposites - **Mike Roland**, Naval Research Lab 175

9:00 a.m. Insights into Filler-Induced Toughening from Molecular Dynamics Simulations - **Scott Smith**, The University of Akron 184

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10:15 a.m. Enhancing Elastomeric Performance and Application Window for Thermoplastic Polyurethanes (TPU) By Incorporation of Carbon Nanotubes (CNTs) - **Vahab Solouki Bonab**, Case Western Reserve University 218

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Chair: Dr. Maria D. Ellul, ExxonMobil Chemical Co.

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3:45 p.m. Sparks-Thomas Award - **Dr. Juan L. Valentin**, Molecular Evidences in Rubber Science and Technology by Means of Time-domain NMR Experiments 269

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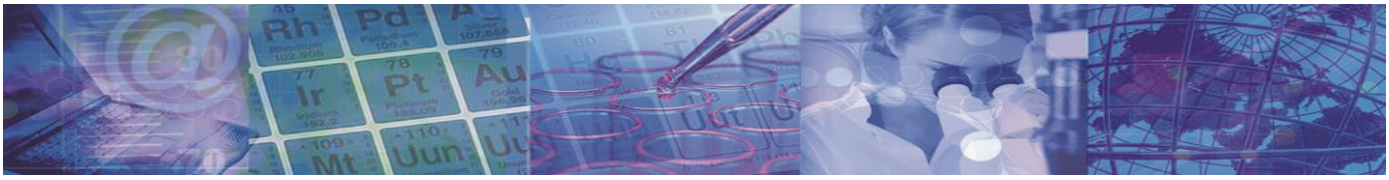
5:30 p.m. Fernley H. Banbury Award - **Richard J. Jorkasky**, Mixing Parameters: The Rubber Mixer's Tool Belt 322



Thursday, April 27 – Ballroom 1-3, 1st Floor

CARBON FOOTPRINT AND SUSTAINABILITY
Chair: Kenneth Bates, Struktol Company of America

7:30 a.m. Sustainable Plasticizer for Butyl Rubber Cured by Phenolic Resin - **Jiaxi Li**, The University of Akron 336

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9:00 a.m. Challenges in the Use of Recycled Rubber in Automotive Applications - **Janice Tardiff**, Ford Motor Company

9:30 a.m. Investigation of fatty acids as renewable fillers for elastomers - **Kevin Cavicchi**, The University of Akron

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CONTRIBUTED SESSION
Chairs: C. Jeffrey Lin, Monolith Materials

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2:45 p.m. Application of Thermal Analysis and Related Techniques in Rubber Industry - **Yanxi Zhang**, Netzsch Instruments North America, LLC 501

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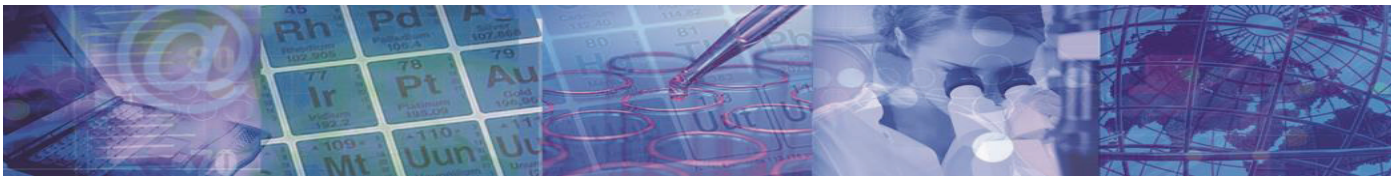

3:45 p.m. Break

4:00 p.m. Rubber Friction and Tire Traction on Ice Surfaces: Physical Background and Predictive Testing - **G. Heinrich**, Leibniz Institute of Polymer Research Dresden, Germany 518

4:30 p.m. **Dr. Shogo Sumitani**, Asahi Kasei Corporation - Design and Characterization of Functionalized S-SBR for Eco-tires with Low Rolling Resistance and High Wear Resistance 535

Interested in more training opportunities?
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Intermediate to Advanced Compounding and Testing of Rubber – May 9-12, 2017; Akron, OH
Essentials of Rubber Technology – May 9, 2017; Novi, MI
Silicone Rubber Chemistry and Technology – May 9, 2017; Novi, MI
Compound Mixing and Consistency – May 10, 2017; Novi, MI
Establishing a Rubber Molding Process – May 10, 2017; Novi, MI
Applied Rubber Technology – May 11 & 12, 2017; Novi, MI
Understanding Raw Materials, the Building Blocks of Rubber Compounding – May 16, 2017; Cerritos, CA
Compounding for Performance – May 17 & 18, 2017; Cerritos, CA
Solving Problems in Rubber Compounding and Processing – May 19, 2017; Cerritos, CA
Chemistry & Technology of Polyurethane Elastomers – May 23, 2017; Akron, OH
Failure Analysis of Rubber & Plastics by Physical and Chemical Analysis – May 24, 2017; Akron, OH
Introduction to Compounding and Testing of Elastomers – September 12, 2017; Akron, OH
Internal Mixers and Mixing Parameters – September 13, 2017; Akron, OH
Molding of Rubber – September 14, 2017; Akron, OH
Introduction to Rubber Bonding – September 15, 2017; Akron, OH
Design of Experiments – September 27 & 28, 2017; Akron, OH

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