Tuesday, April 28th

**New Reinforcing Materials for Rubber (Room 1)**
Chair: **Lewis Tunnicliffe**, Birla Carbon

7:45 a.m. Highly Air Impermeable Graphene-Carbon Black Hybrid Nanocomposites for Tire Applications – **T R Aswathy**, Indian Institute of Technology Kharagpur

8:15 a.m. Graphene based Hybrid fillers as New Reinforcing Agents for Tire Industry - **Anil Bhowmick**, The University of Houston

8:45 a.m. Joint Hybridization of Secondary Fillers and Secondary Polymers Towards Improved Silica-Reinforced NR Tire Tread Compounds - **Wisut Kaewsakul**, University of Twente

9:15 a.m. Break & Table Top Exhibits

9:30 a.m. Micro- Vs. Macro- Dispersion: Payne Effect as Indirect Micro-Dispersion Measurement for Silica-Reinforced Elastomer Compounds - **A. Kharel**, University of Twente

10:00 a.m. Nanodiamond as a New Reinforcing Material for Natural Rubber - **Seiichi Kawahara**, Nagaoka University of Technology

**Sustainable Developments in the Tire Industry (Room 2)**
Co-Chairs: **Lena Nguyen**, Dow Chemical and **Amy Landis**, Colorado School of Mines

7:45 a.m. Latest Trends in Tyre Retreading Technology - **Sabari Nadha Prasad**, Eastern Treads Ltd.

8:15 a.m. The Use of Biobased Estolides in Tire Processing - **Mark Miller**, Biosynthetic Technologies

8:45 a.m. Technical Approaches for the Continuous Devulcanization of ELT Material - **Mathias Zabel**, KraussMaffei Extrusion GmbH

9:15 a.m. Break & Table Top Exhibits

9:30 a.m. New Processes for a Modification of Ground Rubber Particles Produced from Spent Tires and their Anticipated Impact on Rubber Recycling - **Georg Bohm**, Appia LLC

10:00 a.m. Sustainable Rubbers from Renewable Biomass - **Anil Bhowmick**, The University of Houston
10:30 a.m.  Optimization of Processing and Performance of Truck Tread Compounds Utilizing Organic and Inorganic Processing Aids - **Miles Dearth**, Spherix Products

11:00 a.m.  KEYNOTE ADDRESS: **Ali Dhinojawala**, The University of Akron College of Polymer Science & Polymer Engineering

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

**New Reinforcing Materials for Rubber (Room 1)**

Chair: **Lewis Tunnicliffe**, Birla Carbon

1:15 p.m.  New Insights in the CNT-Rubber Structure for a Rational Development of Advanced Materials - **Juan Lopez Valentin**, Institute of Polymer Science and Technology ICTP-CSIC

1:45 p.m.  High Efficient Anisotropic Fillers for Advanced Properties and Light Weight - **Ulrich Giese**, German Institute of Rubber Technology e.V. (DIK)

2:15 p.m.  Utilization of Enzyme to Bioprocess Soybean Hull into Nanoparticles for Use as Reinforcing Fillers in Rubber - **Vamsi Bhadriraju**, The University of Akron

2:45 p.m.  Preparation and Properties of Natural Rubber with Nanodiamond Nanomatrix Structure - **Seiichi Kawahara**, Nagaoka University of Technology

3:15 p.m.  Break & Table Top Exhibits

3:30 p.m.  Modification of Vulcanized Natural Rubber-Bacterial Cellulose (NRBC) Composites via Thermo-Responsive and pH Responsive Polymers - **Sirilak Phomrak**, The University of Akron

4:00 p.m.  Novel Crosslinking Strategies Toward Strengthened and Malleable Rubbers - **Baochun Guo**, South China University of Technology

4:30 p.m.  Reinforcement of Rubber by Lignin Coated Nanocellulose Fibrils - **Lewis Tunnicliffe**, Birla Carbon

**3D Printing with Elastomers (Room 2)**

Chair: **Chris Robertson**, Endurica, LLC

1:15 p.m.  3D Printing of Silicone Elastomers Using Freeform Reversible Embedding (FRE) - **Adam W. Feinberg**, Carnegie Mellon University

1:45 p.m.  3D and 4D Printing of Elastomeric and Rubber Materials - **Rigoberto Advincula**, Case Western Reserve University

2:15 p.m.  Breakthroughs in 3D printing - **Matthew White**, American Additive Manufacturing

2:45 p.m.  Additive Manufacturing of Elastomers (AME, Rubber 3D) - **Lion Sundermann**, German Institute of Rubber Technology e.V. (DIK)

3:15 p.m.  Break & Table Top Exhibits
3:30 p.m. Silicone Elastomers for Sustainable Additive Manufacturing – Remi Thiria, Elkem Silicones

4:00 p.m. Predicting Durability of 3D Printed Elastomeric Lattice Structures - Chris Robertson, Endurica, LLC

Wednesday, April 29th

Fracture Mechanics of Elastomers, Networks and Gels (Room 1)
Chair: Will V. Mars, Endurica, LLC

7:45 a.m. Analysis of Domain Break in the Elongation of TPE using CGMD Simulations - Hiroshi Morita, AIST

8:15 a.m. Numerical Leak Prediction of Elastomeric Seals - Travis Hohenberger, Queen Mary University of London

8:45 a.m. Polymer Tack and Interfacial Crack Mechanics - Xiaorong Wang, Institute for Advanced Study, Tongji University, Shanghai

9:15 a.m. Break & Table Top Exhibits

9:30 a.m. Intrinsic Strength and Tearing Behavior of Tread Rubber Compounds - Nihat A. Isitman, Goodyear Tire & Rubber Company

9:45 a.m. Infinite Life Design Principles for Rubber Structures - William Mars, Endurica LLC

Advances in Polymer Blends (Room 2)
Co-Chairs: Dominica Wong and Malikh Al-Afyouni, Eastman Chemical Company

7:45 a.m. Characterization of Recycled Polymer Compound by Thermal Analysis - Yanxi Zhang, Netzsch Instruments

8:15 a.m. Influence of Electron Beam Irradiation on the Thermomechanical Properties of Styrene-Ethylene-Butylene-Styrene (SEBS)/ Thermoplastic Polyurethane (TPU) Blends - M G Anagha, Indian Institute of Technology, Kharagpur, India

8:45 a.m. Design Strategy for Self-Healing Epoxy Coatings - Ica Manas-Zloczower, Case Western Reserve University

9:15 a.m. Break & Table Top Exhibits

9:30 a.m. Combining Polyethylene and Polypropylene with Multiblock Polymers - James M. Eagan, The University of Akron

10:30 a.m. Charles Goodyear Medalist Address - Dr. Nissim Calderon, Goodyear Tire & Rubber Company (Retired)

11:30 a.m. Science & Technology Awards Banquet
Science & Technology Awards Symposium
Chair: Dr. Maria D. Ellul, ExxonMobil Chemical Co. (Retired)

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

3:15 p.m. Break & Table Top Exhibits

3:45 p.m. Chemistry of Thermoplastic Elastomers Award - Dr. Lewis Fetters, Cornell University

4:15 p.m. Fernley H. Banbury Award - Dr. Ken Nakajima, Tokyo Institute of Technology

4:45 p.m. Bioelastomer Award - Dr. Colleen McMahan, United States Department of Agriculture

Thursday, April 30th

Materials Research and Applications - Contributed (Room 1)
Chair: Terry Hogan, Bridgestone Americas

8:30 a.m. Flow and Aging of Silicone Rubber for Fuel Cell Sealing Applications - Anita Luong, University of Michigan

9:00 a.m. The Synthesis of Functionalised Solution Styrene-Butadiene Copolymers Exploiting Myrcene and the “Fire and Forget” Approach - Lian R. Hutchings, Durham University

9:30 a.m. Highly Stretchable and Responsive Electrode Using Conductive ITO Thin Film Based on Wrinkle Structure - Hyunsang Lee, Jeonbuk National University

10:00 a.m. Break

10:15 a.m. Enhanced Thermal Conductivity of Thermoplastic Composites with Hybrid Fillers of Polydopamine coated Copper Nanowires and MXene Nanosheets - Subhadip Mondal, Jeonbuk National University

10:45 a.m. Silica Masterbatches Produced with Liquid Phase Mixing Part III. Quasi-static Stress-softening Effect - Liang Zhong, EVE Rubber Institute

11:15 a.m. Silica Masterbatches Produced with Liquid Phase Mixing: Part IV. Volume Variation and SEM Observation upon stretching - Hao Zhang, EVE Rubber Institute

11:45 a.m. Effect of Polymeric Hydrogels in Effluent Treatments - K R Dhanya, CIPET-IPT, Kochi

Characterization of Elastomers - Contributed (Room 2)
Chair: Ed Terrill, Akron Rubber Development Laboratory, Inc.
8:30 a.m.  Probing the Viscoelastic Properties of Polymer Composites across Time and Temperature with AFM-based Nano-DMA - Bede Pittinger, Bruker Nano Surfaces

9:00 a.m.  Online Monitoring of Styrene Butadiene Copolymerization, Including a Final Coupling Reaction - W. Craig Allshouse, Fluence Analytics

9:30 a.m.  Insights into the Microscopic Origins of Dynamic Mechanical Properties of Filled Rubber Investigated with X-ray Photon Correlation Spectroscopy - Dillon Presto, The University of Akron

10:00 a.m.  Break

10:15 a.m.  Characterisation of Friction Behaviour for Dynamic O-ring Seals During Cyclic Testing Under Extreme Pressure and Temperature Conditions - Eduardo Yanes, Queen Mary University of London

10:45 a.m.  Investigation of Polymer-Silane Coupling in Model Natural Rubber-Silica/Silane Systems - Claude Arreyngang Tabe, Deutsches Institut für Kautschuktechnologie e. V. (DIK)

11:15 a.m.  Rheology and Flow Instabilities of Polypropylene/Ethylene Propylene-Diene-Monomer (PP/EPDM) based Thermoplastic Vulcanizates - Savvas Hatzikiriakos, The University of British Columbia

11:45 a.m.  Mechanical and Structural Investigation of Thermoplastic Vulcanizates Using Molecular Dynamics Simulations - A O Wang, Northwestern University