

## Oral Session Summary

### Plenary Speech

Plenary Place: Grand Ballroom A+C on 3F Date: Apr.17 (Wed) am			
Time	No.	Speaker	Title
09:00-09:35		Xianghong Cao	Automobile Power Revolution and Green Tire
09:35-10:10	D01	J.W.M Noordermeer	Feasibility of Real De-vulcanization for Elastomer Products with Emphasis on Tires
10:10-10:25	Tea Break		
10:25-11:00	A06	Liqun Zhang	Novel Bio-based Elastomers with Tunable Properties
11:00-11:35	E01	William V. Mars	Engineering Elastomer Durability
11:35-12:10		Renfei Wang	Present Achievement and Development Strategy of Scientific and Technological Innovation in Natural Rubber Industry

### Parallel Session Speech

Session: Rubber Design and Synthesis Place: Room1, Grand Ballroom B on 3F Date: Apr.17 (Wed) pm			
Time	No.	Speaker	Title
13:30-13:55	A01	Hongyu Chen	Generational Development of Olefin Block Copolymers
13:55-14:20	A07	Chenxi Bai	Synthesis and Properties of $\beta$ -Cyclodextrin/Boron Nitride/Polybutadiene Composites
14:20-14:45	A23	Bogeng Li	The Epoxidation of C=C Containing Rubber by Reaction-Controlled Phase-Transfer Catalyst
14:45-15:10	A29	Yunxiang Xu	The Role of Phospholipid Groups in Sequentially Controlled Polyisoprene
15:10-15:25	Tea Break		
15:25-15:50	A02	Anil K. Bhowmick	Sustainable Rubbers from Renewable Biomass
15:50-16:15	A08	Dongmei Cui	Synthesis of High Performance Rubbery Materials
16:15-16:40	A09	Guangbi Gong	Design and Synthesis of New Core-Shell SiO <sub>2</sub> Nanoparticles Applied in Rubbers Reinforcement
16:40-17:05	D24	Hailan Kang	Fabricated Eucommia Ulmoides Gum/Polyethylene-octene Elastomer Thermoplastic Vulcanizates into a Shape Memory Materials
17:05-17:30	A27	Gengsheng Weng	Moisture-sensing Tough Elastomer with Switchable Fluorescence Using Dynamic Coordination of Eu-Iminodiacetate
Session: Nano-fillers Synthesis and Modification Place: Room2, Grand Ballroom D on 3F Date: Apr.17 (Wed) pm			
Time	No.	Speaker	Title
13:30-13:55	B01	Walter H. Waddell	Factors Influencing the Effectiveness of Precipitated Silica Use in a Passenger Car Radial Tire Tread
13:55-14:20	B06	Junping Zheng	Study the Mechanism That Carbon Nanotubes Improve Thermal Stability of Rubber Composites by Designing SNTs@CNTs Core-Shell Hybrids
14:20-14:45	B05	Zhixin Jia	One-step Approach to Reduce and Modify Graphene Oxide via Rubber Additives and Its Application for Elastomer Reinforcement
14:45-15:10	B14	Xiaoyan Liu	Surface Modification of Silica and Its Effect on the Properties of Low Temperature Fluoroether Rubber
15:10-15:25	Tea Break		
15:25-15:50	B02	Juan L. Valentín	New Insights in the CNT-Rubber Structure for a Rational Development of Advanced Materials
15:50-16:15	B04	Zhen Liu	CARBONX: A Revolutionary New Carbon. Unlocking New Design Opportunities in Elastomers
16:15-16:40	B12	Tao Ding	Preparation of Novel Nano-SiO <sub>2</sub> and Its Application in SSBR/BR
16:40-17:05	B24	Xuling Wei	Study on Properties of Emulsion Polymerized Styrene-Butadiene Rubber Modified by Organic Montmorillonite
17:05-17:30	B16	Lin Li	Green and High-Efficiency Production of Graphene by Tannic Acid-assisted Exfoliation of Graphite in Water
Session: Simulation Place: Room3, 301 Date: Apr.17 (Wed) pm			
Time	No.	Speaker	Title
13:30-13:55	E02	Yintao Wei	State of the Art of Smart Tire Concept, Theory and Application
13:55-14:20	E03	Youshan Wang	Tire Design Theory of Variable Constrained Equilibrium Profile and Its Application
14:20-14:45	E06	Zhibo Cui	Prediction of the Deformation and Footprint of High-speed Rotating Radial Tire
14:45-15:10	E15	Hao Wang	Durability Estimation of a Rubber Shock Absorber under Stochastic Loading Conditions
15:10-15:25	Tea Break		
15:25-15:50	E05	Zhengtao Su	Analysis of Factors Affecting Fatigue Performance of Rubber Cylinder
15:50-16:15	E04	Jun Liu	New Progress on Computer Simulation and Experimental Studies of Rubber Nanocomposites
16:15-16:40	E07	Jian Wu	Effect of Groove on Wear Performance of Aircraft Tire Tread Rubber
16:40-17:05	E12	Kuan Qiao	Introduction of Tyre Tread Winding Process

17:05-17:30	E08	Guolin Wang	Development and Application of CAE in Virtual Testing Ground of Tire Performance
Session: Rubber Design and Synthesis Place: Room1, Grand Ballroom B on 3F Date: Apr.18 (Thu) am			
Time	No.	Speaker	Title
08:30-08:55	A03	Kohzo Ito	Slide-Ring Materials: Novel Molecular Concept to Toughen Polymers
08:55-09:20	A10	Baochun Guo	Engineering of Sacrificial Bonds into Diene Rubbers
09:20-09:45	B13	Yang Li	The Effect of Amine-functionalized Styrene-Butadiene Rubbers on the Dispersion of Silica Particles
09:45-10:10	A12	Shihui Li	Selective Polymerization of Bio-based Monomers by Using Rare-earth Metal Catalysts
10:10-10:25	Tea Break		
10:25-10:50	A05	Pranabesh Sahu	Sustainable Self-healing Elastomers Derived from Biomass via Emulsion Polymerization
10:50-11:15	A11	Aihua He	New Strategies for Green Tires and High Serving Life Damping Materials
11:15-11:40	A15	Jinrong Wu	High Performance Self-healing Elastomers
11:40-12:05	A14	Zhenghai Tang	Programming Dynamic Covalent Bonds into Diene Rubbers towards Mechanically Robust and Malleable Rubber Materials
Session: New Additives Preparation and Application Place: Room2, Grand Ballroom D on 3F Date: Apr.18 (Thu) am			
Time	No.	Speaker	Title
08:30-08:55	B03	V. Barbera	Sustainable Functionalization of $sp^2$ Carbon Allotropes as Fillers for Rubber Compounds with Lower Dissipation of Energy
08:55-09:20	B20	Chuansheng Wang	Study on Preparation and Properties of Graphene Oxide/Butyl Rubber Composites
09:20-09:45	C06	Ruliang Fan	Study on TBR Tire Compounds with Lower Hysteresis Loss and HBU Performance
09:45-10:10	B18	Shipeng Wen	The Relationship between Structure and Fatigue Properties of Graphene Oxide/Carbon Black/Nature Rubber Composites
10:10-10:25	Tea Break		
10:25-10:50	F13	Degui Xia	Adhesion Investigation of TAWI <sup>®</sup> Ternary-alloy-coated Steel Cord in Cobalt-free Compound
10:50-11:15	B17	Yuzhu Xiong	Synergistic Modification of Multi-layer Graphene Oxide by Two Coupling Agents for High-performance Natural Rubber Composites
11:15-11:40	C13	Dairen Lu	Mechanism and Application of Performance Resin in the Rubber Compound
11:40-12:05	C03	Hui Chen	Application Status and Development Prospect of Low Zinc Environmental Protection Supzn <sup>™</sup> Activator in Rubber Industry
Session: Analysis and Test & Structure Characterization Place: Room3, 301 Date: Apr.18 (Thu) am			
Time	No.	Speaker	Title
08:30-08:55	F01	Nakajima Ken	Hierarchic Heterogeneity in Rubbery Materials
08:55-09:20	F04	Zhongren Chen	Fatigue Resistance of Polymer Composites by Controlling Multi-scale Structures and Interfacial Interactions
09:20-09:45	F05	Qinghong Fang	Corrosion and Medium Diffusion of Fluorine Rubber Composite in Hot Nitric Acid Solution
09:45-10:10	F17	Yonglai Lu	The Effect of Epoxidation on Strain-Induced Crystallization of Epoxidized Natural Rubber
10:10-10:25	Tea Break		
10:25-10:50	F02	Rabindra Mukhopadhyay	A study on Effect of Carbon Black Type on Fatigue Crack Growth Behaviour of Tyre Rubber Compounds
10:50-11:15	F06	Yurong Liang	Cyclic Uniaxial Mechano Optical Studies on Stress-Softening Behavior of Natural Rubber/Clay Nanocomposites
11:15-11:40	A43	Donghan Li	Synthesis of Hydroxyl-terminated Liquid Fluoroelastomer by Sodium Boro-hydride/Neodymium Chloride Reduction System
11:40-12:05	F23	Danling Wang	Using Rubber Processing Analyzer to Study Scorch Behavior of Silica-filled Compound
Session: Rubber Design and Synthesis Place: Room1, Grand Ballroom B on 3F Date: Apr.18 (Thu) pm			
Time	No.	Speaker	Title
13:30-13:55	A04	Guohua Hu	Functionalization of Acrylonitrile Butadiene Rubber (NBR)
13:55-14:20	A21	Xuequan Zhang	Highly Active Controllable Coordination Polymerization for Nd-based Polybutadiene
14:20-14:45	A18	Yanlei Yu	Athermal Shape Memory Effect of Photoresponsive Liquid Crystal Polymers
14:45-15:10	A17	Haifeng Yu	Photo-manipulated Elasticity of Liquid Crystal and Polymer Composites towards Biomimetic Applications
15:10-15:25	Tea Break		
15:25-15:50	D02	Toshio Nishi	Advances in Nano-to Mega-technology of Elastomers
15:50-16:15	A20	Qiuyu Zhang	A Novel Reprocessable and Recyclable Acrylonitrile-Butadiene Rubber Based on Dynamic Oxime-Carbamate Bond
16:15-16:40	A19	Anqiang Zhang	Polysiloxane Elastomer Based on Reversible Aluminum-Carboxylate Coordination: Preparation and Dynamic Properties
16:40-17:05	A16	Yixian Wu	Neodymium Butadiene Rubber: Preparation, Property and Application
17:05-17:30	A41	Dongmei Yue	In-situ Preparation of Hydrogenated Butadiene-Acrylonitrile Rubber by Both Hydrogen Generation and Hydrogenation Graphene Catalyst
Session: Analysis and Test & Structure Characterization Place: Room2, Grand Ballroom D on 3F Date: Apr.18 (Thu) pm			
Time	No.	Speaker	Title

13:30-13:55	D03	Jun Ma	Stretchable Strain Sensors Based on Polymer/Nanomaterial Composites
13:55-14:20	F09	Yihu Song	Viscoelasticity of Rubber Nanocomposites
14:20-14:45	F10	Ming Tian	A Quantitative Approach to Study the Interphase of Elastomer Nanocomposites
14:45-15:10	F07	Shuangquan Liao	Effect of Protein on Structure and Properties of Natural Rubber
15:10-15:25	Tea Break		
15:25-15:50	D05	Toshikazu Takata	Direct Introduction of Movable Cross-link Points to Rubber Polymers Using Nitrile N-oxide-Tethering Rotaxane Cross-linker
15:50-16:15	F12	Xiaorong Wang	The Concept of Jamming in Filled Rubbers
16:15-16:40	F11	Dong Wang	Probing the Structural Evolution in Deformed Isoprene Rubber by In Situ Synchrotron X-ray Diffraction and Atomic Force Microscopy
16:40-17:05	F08	Li Liu	Volume Shrinkage Mechanism of Gutta Percha Point Studied by Differential Scanning Calorimetry and Volume Dilatometer in Vitro
17:05-17:30	A42	Bo LV	NORDEL™ EPDM for High Heat Resistant Rubber Parts Applications
Session: Modern Rubber Process Technology Place: Room3, 301 Date: Apr.18 (Thu) pm			
Time	No.	Speaker	Title
13:30-13:55	D06	Murat Sen	Enhancement of Mechanical and Damping Properties of Silicone Elastomers by Green Radiation Processing Technology
13:55-14:20	D07	Ming Zhang	Magnetic Rubber Composites: Design and Applications
14:20-14:45	D09	Ji Zeng	Development Status and Design Ideas of Electric Vehicle Tires
14:45-15:10	D11	Pengbo Wan	Functional Elastomer Nanocomposite for Wearable Pressure Sensor with Full-range Human-Machine Interfacing
15:10-15:25	Tea Break		
15:25-15:50	D04	Seiichi Kawahara	Mechanical and Viscoelastic Properties of Natural Rubber Prepared with a Nanodiamond Nanomatrix Structure
15:50-16:15	D08	Yong Zhang	Peroxide Curing of Brominated Butyl Rubber
16:15-16:40	D19	Zhihong Yuan	Data-driven Modelling with the Application to the Rubber/Rubber Additive Manufacturing
16:40-17:05	D14	Huiguang Bian	Tire Rubber Full Formula Wet Mixing New Process Technology
17:05-17:30	D13	Siwu Wu	New Approaches for Optimizing Tread Performance of Green Tires