39th Annual Conference on Tire Science and Technology
September 28 – October 2, 2020
Conference Theme: *Intelligent Transportation*

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Monday, September 28, 2020 *(all times listed in EDT, GMT-4)*

8:00am EDT (GMT-4)   Conference Opening

8:15am EDT (GMT-4)   Keynote Address:
                               Chris Helsel
                               Senior Vice President and Chief Technology Officer
                               The Goodyear Tire & Rubber Co.

9:30am – 12:05pm EDT (GMT-4)   Technical Sessions

Simulation / Data Science - Tim Davis	
9:30am – 9:50am	**"Voxel-based Finite Element Modeling to Predict Tread Stiffness Variation Around Tire Circumference"** Sanyal (Cooper)
9:55 am– 10:15am	**"Tire Curing Process Analysis through SIGMASOFT Virtual Molding"** Geyne (3Dsigma)
10:20am – 10:40am	**"Off-the-Road Tire Performance Evaluation Using High Fidelity Simulations"** Nandi, Lewis (Dassault)
10:40am – 10:55am	**Break**
10:55am– 11:15am	**"A Study on Tire Ride Performance using Flexible Ring Models Generated by Virtual Methods"** Siramdasu, Li, et al (Hankook)
11:20am – 11:40am	**"Data-Driven Multiscale Science for Tire Compounding"** Xu, Sheridan, et al (Goodyear, et al)
11:45am – 12:05pm	**"Development of Geometrically Accurate Finite Element Tire Models for Virtual Prototyping and Durability Investigations"** Grossi, Samarini, Shabana (Exponent / Univ. Ill.)

Tuesday, September 29, 2020 *(all times listed in EDT, GMT-4)*

8:00am EDT (GMT-4)	Plenary Lecture: Giorgio Rizzoni The Ohio State University Director – Center for Auto. Research

9:30am – 12:05pm EDT (GMT-4)　　　Technical Sessions

Tire Performance - Eric Pierce	
9:30am – 9:50am	**"Periodic Results Transfer Operations for the Analysis of Damage Accrual Under Steady / Transient Rolling"** Mars, Paudel, Suter (Endurica / Dassault)
9:55am – 10:15am	**"Effect of Tyre Imperfection on Vehicle Response"** Jha, Madhav, et al (Hari Shankar)
10:20am – 10:40am	**"Road Induced Interior Noise: Use of OTPA to Determine Tire Contribution and Vehicle Sensitivity"** Demaziere (Michelin)
10:45am – 11:05am	**"Advantages of a cross-ply carcass tire construction on key performances (especially for electrically driven vehicles)"** Calabrese, Bäcker, Gallrein (Fraunhofer-Institut)
11:05am – 11:20am	**Break**
Supplier Technologies - Jan Terziyski	
11:20am – 11:40am	**"Tire Conditions Needed to Maintain Contact Patch Shape"** Van Gennip, Okamoto (A&D)
11:45am – 12:05pm	**"Wheel Speed Effect on Transient Lateral Force and its Characterization by Ramp-Steer Test Method"** Y. Li (GCAPS)

Wednesday, September 30, 2020 *(all times listed in EDT, GMT-4)*

8:00am EDT (GMT-4)	Business Meeting Gerald Potts Tire Society President

9:00am – 11:35am EDT (GMT-4)　　　Technical Sessions

Experimental Technologies - Tan Li	
9:00am – 9:20am	**"Measuring Strain Fields and Crack Advance in a Pre-cut Planar Tension Test Specimen during Slow, Medium and High-Speed Straining"** Dodger, Miller (Axel Prod.)
9:25am – 9:45am	**"A Validated Test Methodology to Evaluate Radial Ply Tire Road Hazard Impact Failures"** Southwell (Tyrexperts)
9:50am – 10:10am	**"Influence of Tire Force and Moment Properties on Sine with Dwell Maneuver Test Metric Variability"** Mousseau (General Motors)
10:10 am– 10:25am	**Break**
10:25am – 10:45am	**"Tire Mode Identification, Distribution Chart, and Correlation with Vehicle NVH"** T. Li (Maxxis)
10:50am– 11:10am	**"Self-Excited Full Vehicle Oscillations Caused by Tire-Road-Interaction – Virtual and Real-World Experimental Investigation"** Engel (HAW)
11:15am– 11:35am	**"Elimination of Stray Forces from Tire Dynamics Measurements"** Potts (GRP Dynamics)

Thursday, October 1, 2020 *(all times listed in EDT, GMT-4)*

8:00am – 10:05am EDT (GMT-4)   Technical Sessions

Student Papers - Yusheng Chen	
8:00am – 8:20am	**"Research on the Contradiction Mechanism of Tire Rolling Resistance and Grip Performance "** Liang, Li, et al (Jiangsu Univ.)
8:25am – 8:45am	**"Application of Steady State and Transient Acceleration Signals in Intelligent Tire"** Zhao, Liang, et al (Tsinghua Univ.)
8:50am – 9:10am	**"How to Test Snow Tread Block Traction in Lab: Effect of Snow Density"** Hindemith, Heidelberger, Wangenheim (Leibnitz University)
9:10am – 9:20am	**Break**
9:20am – 9:40am	**"A Predictive Modeling of the Viscoelastic Response of Styrene Butadiene Rubber due to Aging"** Alkandari, Mhatre, et al (Virginia Tech)
9:45am– 10:05am	**"Isogeometric Analysis for Tire Simulations: From Mesh Generation to High Precision Results"** Israfilova, Garcia, Kaliske (TU Dresden)

10:15am – 11:30am EDT (GMT-4)   Invited Lecture
Ross Tessien
Author / Futurist
Principal at Electricwaze LLC

Friday, October 2, 2020 *(all times listed in EDT, GMT-4)*

8:00am – 10:05am EDT (GMT-4)   Special Talk + Technical Session

Special talk - Meysam Khaleghian	
8:00am – 8:20am	**"40 Years and More of Tire Science and Technology - A History of the Tire Society"** McIntyre (Bridgestone)

Emerging Technology - Corissa Lee	
8:25am – 8:45am	**"A 3D-Textile-Rubber Composite: Description and Multiscale Modeling"** Aranda-Iglesias, Keniray, et al (Goodyear / Lux. Inst. Science & Tech.)
8:50am – 9:10am	**"A Comprehensive Constitutive Equation and the Prediction of Tire Temperature and Rolling Resistance"** Assaad, Ebbott, Jiang (Goodyear)
9:10am – 9:20am	**Break**
9:20am – 9:40am	**"Speed Dependent Maxxis-Savkoor Friction Model for Rubber Compound"** Watson, Chung, et al (Maxxis)
9:45am – 10:05am	**"Improved Vehicle Longitudinal Velocity Estimation Using Accelerometer Based Intelligent Tire"** Nalawade, Nouri, et al (Virginia Tech)

10:15am – 11:30am EDT (GMT-4)   Panel Discussion
11:30am EDT (GMT-4)   Conference closing