



NEWSLETTER

January 2020

Please forward our monthly Tire Society newsletters to any colleagues and friends you think might be interested in learning more about the Tire Society and our mission to increase and disseminate knowledge of the science and technology of tires.

Tire Society Conference News

Intelligent Transportation will be theme of 2020 Conference



“Intelligent Transportation” is the theme for this year’s [Conference on Tire Science and Technology](#) to be held **September 9-10** at the Akron-Fairlawn Hilton in Akron, Ohio. (Though typically scheduled for Tuesday and Wednesday, the first day of this year’s Annual

Meeting and Conference has been shifted a day later to start on **Wednesday** due to the Monday holiday in the U.S.)

As *the* scientific professional organization for the tire industry, the Tire Society welcomes all interested individuals to join our annual forum where researchers, policymakers, students, and industry advocates come to exchange knowledge, communicate research results, and hear about the most advanced thinking from the scientific leaders who work at the boundary of the known and the unknown for tires.

In addition to the Keynote address by an industry leader (to be announced in an upcoming newsletter), the Conference will also include a Plenary lecture by a recognized technical expert addressing the implementation of technology and science, panel discussions, and two days of technical paper presentations filled with opportunities for networking and meeting your industry colleagues.

Students and young professionals are encouraged to participate and join in the unique opportunities to gain experience, develop leadership skills, and network with people who share their professional passion. The best paper submitted by a full-time university student will receive a cash prize. More information about the [Student Paper requirements and submission process](#) is posted on our website.

Tire Industry Trends

Regulations & Standards, Autonomous/Shared Vehicles, Next Generation Mobility, Sustainable Material Sourcing

Emerging Technologies

Smart Tires, RFID, Sensors, Tire Electronics, Non-pneumatic Tires

Tire Performance

Durability, Rolling Resistance, F&M, Testing, Tire Design

Tire / Vehicle / Road

Vehicle Dynamics and Stability, Ride, Harshness, Noise, Wear, Rollover, Pull, Uniformity, Friction, Tire Effects on Pavement

Data Analytics; Big Data

Tire/Vehicle Performance, Materials/Lab Data, Simulation Results, Manufacturing Processes and Intelligent Factory

Virtual Design

Tire Modeling and Model Characterization, Constitutive Models, Virtual Prototyping, Advancements in Tools and Techniques

Tire Materials

Polymers, Cords, Steel, Green & Cured Rubber, Material Characterization, Tire Lifecycle

Tire Manufacturing

Advances in Established and Emerging Methods, Simulation

Call for Papers

Papers are being accepted in the areas of Tire Industry Trends, Tire Performance, Data Analytics and “Big Data”, Emerging Technologies, Tire/Vehicle System, Virtual Design, Tire/Road Interaction, and Tire Materials.



Individual Paper and Oral Presentation: Individuals or small groups of authors are encouraged to submit abstract proposals for papers whose content could be conveyed in **15-20 minutes** (including a question/answer period). *Paper presentations will be grouped into sessions with a common topic or theme.* The Tire Society will provide a moderator for each session.

Panel Presentation: Small groups of authors are encouraged to submit 2-4 distinct but thematically linked presentation proposals as part of a panel discussion session. Presentations would be 5-10 minutes each, followed by a panel of the presenters. Panel presentations will be reviewed as a group. The Tire Society will provide a moderator for each session.

Poster Presentation: Individuals or groups of authors are encouraged to submit proposals for interactive poster presentations in which they can to discuss their work with conference participants. Poster proposals will also be peer-reviewed.

Generally, presenters of papers are expected to also submit a technical paper for publication in the refereed Tire Science and Technology journal. In special cases, oral-only presentations may be accepted. Please contact the [program chairmen](#) if it is necessary to make special arrangements.

The deadline for submitting abstracts is **April 30, 2020**. The paper submission deadline is **July 1, 2020**.

About Us...

Promotional Partners

A vibrant annual Conference is key to our Society’s mission to increase and disseminate knowledge of the science and technology of tires, and we are gratified by the nearly 50% increase in Conference attendance in 2019 over 2018. A contributing factor to this increase in Conference participation is our strategy to expand our reach and global visibility through synergistic collaborations with other global tire organizations that share an aligned mission. Two such organizations are **Asian Business Media (ABM)**, which has been the publisher of **Tyre Asia** and **Rubber Asia** (which are now being combined into **Tyre Trends**), and **UKI Media**, the publisher of **Tire Technology International (TTI)** out of Great Britain. You may have noticed the names of both of these organizations listed under our “Promotional Partners”, in the 2019 Conference Program, as well as in our Newsletters. Both organizations hold their own conferences: ABM hosts the biennial **Asian Tyre & Rubber Conference (ATRC)**, providing a platform to share industry trends and networking opportunities, and UKI hosts **Tire Technology Expo**, with a manufacturing focus.

Our partnership with ABM, which reorganized itself in November under the banner **PIN 365**, started modestly, with the free distribution of their glossy magazines at the 2017 Tire Society

Conference. Since then, our collaboration has ramped up, including the Tire Society submitting a number of articles for publication in their magazines in order to raise global awareness of the Conference and Journal. The most recent of these was a two-page interview with our President, Jerry Potts, in the August/September issue of Tyre Asia. Also in 2019, a brief Compendium from our Journal was distributed to attendees at their ATRC Conference and two advertisements were placed in their magazines. We have a shared interest, as explained by their President, Antony Powath: "We are in a digital age where countries have come closer and international business is upon us...we should try to connect with the different tyre associations around the world. This will help grow the tyre industry."

...with the Society, we have been able to acquire high-quality research content from the world's leading tire makers and research institutions...

The first interaction between the Tire Society and UKI actually dates back 20 years. The relationship took off, however, in 2017 when Michael Kaliske, the Editor of our Journal, submitted an edited version of an article previously published in *Tire Science and Technology*, to be reprinted in *Tire Technology International's Annual Review*. In exchange, UKI placed two advertisements in the pages of *TTI* for our Conference and Journal. That approach was repeated in 2019, when our Publications Chair, Will Mars, provided UKI with a summary of a paper previously published in our Tire Society Journal, that he revised for a more general readership appropriate for reprinting in the *TTI Annual Review* issue. UKI not only ran two advertisements for our Conference in their *TTI* magazine, but also advertised our Conference on their *TTI* website. Rachel Evans, Deputy Editor of *Tire Technology International* summarizes the collaboration like this: "Through this mutually beneficial partnership with the Society we have been able to acquire high-quality research content from the world's leading tire makers and research institutions, which has been published in the *Tire Technology International Annual Review* – an authoritative source of information on the very latest tire and rubber research projects, which is published both in print and online."

It is said the world is shrinking. The Tire Society, in cooperation with strategic partners, is doing its best to spread the knowledge of tire science and technology to the four corners of the globe.

Highlights from the Journal

Characterizing the Intrinsic Strength (Fatigue Threshold) of Natural Rubber / Butadiene Rubber Blends

Robertson, C.G., Stoček, R., Kipscholl, C., and Mars, W.V., *Tire Science and Technology, TSTCA*, Vol. 47 No. 4, October-December 2019, pp. 292-307

Tires require rubber compounds capable of enduring more than 10^8 deformation cycles without developing cracks. One strategy for evaluating candidate compounds is to measure the intrinsic strength, which is also known as the fatigue threshold or endurance limit. The intrinsic strength is the residual strength remaining in the material after the strength-enhancing effects of energy dissipation in crack

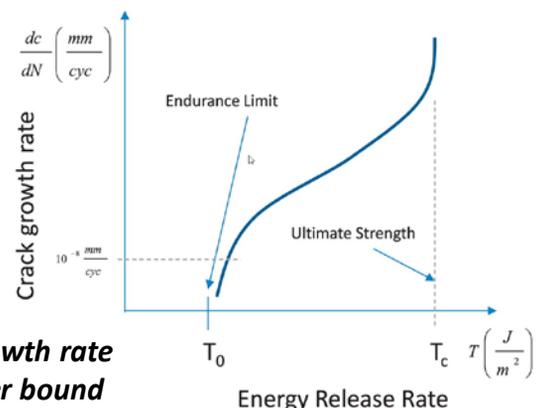


FIG. 1 (at right): Diagram showing typical behavior for crack growth rate of rubber on a log-log plot versus energy release rate. The lower bound on the fatigue crack growth rate curve is the endurance limit, T_0 .

tip fields are removed. If loads stay always below the intrinsic strength (taking proper account of the possibility that the intrinsic strength may degrade with aging), then cracks cannot grow. Using the cutting protocol proposed originally by Lake and Yeoh, as implemented on a commercial intrinsic strength analyzer, the intrinsic strength is determined for a series of carbon black (CB) reinforced blends of natural rubber (NR) and butadiene rubber (BR) typical of tire applications. The intrinsic strength benefits of the blends over the neat NR and BR compounds are only observed after aging at temperatures in the range from 50 to 70 °C, thus providing fresh insights into the widespread durability success of CB-filled NR/BR blends in tire sidewall compounds and commercial truck tire treads.

Read the [entire paper](#) at the Online Journal.

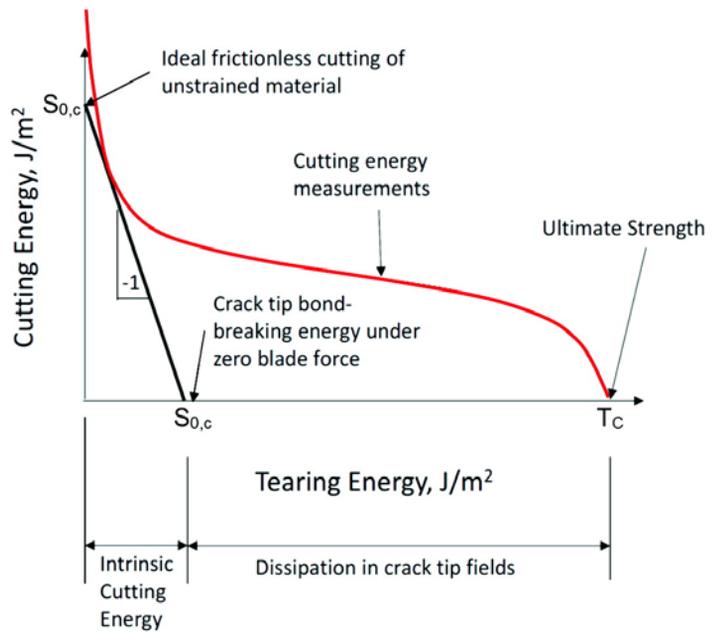


FIG. 7 Method used to determine $S_{0,c}$ from F versus T data.

Thanks to each of our 2020 Conference Sponsors:

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And Thank You to our Promotional Partners:



Information on 2020 conference sponsorship opportunities may be found [HERE](#)

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