11th International Conference

INTELLIGENT TIRE TECHNOLOGY

News on intelligent tire technologies – Advanced tire materials – Innovation on tire technology for commercial vehicles

17 – 19 November 2015 | Kempinski Hotel Taschenbergpalais Dresden, Germany

Meet experts from the following companies:

Learn from these experts among others:

- Takeshi Masago, Staff Member of Tire Sensing Advanced Chassis Engineering, Research Unit, Bridgestone, Japan
- Dr. Daniel Fischer, Tire Monitoring Solutions Senior Manager, Continental Engineering Services GmbH, Germany
- Guenther Maecckle, Manager Tire Pressure Monitoring Systems, Daimler AG, Germany
- Dr.-Ing. Michael Unterreiner, Advanced Chassis Engineering, Dr. Ing.h.c.F. Porsche AG, Germany
- Philippe Lallement, Tire Electronics Pre Development Manager, Michelin, France
- Angelo Giombelli, Cyber Operation, Pirelli Tyre S.p.A, Italy

Sponsors:
Your top ten reasons to attend this conference:

1) Discover latest innovations of indirect TPMS
2) Discuss Asia’s market developments and regulations to evaluate its impact on European tire industry
3) Find out about tire identification technology and standards as possible key enablers for future developments of the intelligent tire
4) Understand fleet TCO optimization adopting TMS solutions
5) See how to improve materials for car and for truck tires to enhance safety, durability and efficiency in terms of energy
6) Get in touch with some of the most important industry professionals via our interactive sessions
7) Enjoy our networking dinner on the first evening of the conference to get in contact with new experts in an informal and inspiring surrounding
8) Discuss future trends of intelligent tire technology
9) Develop tire wear estimation with the use of acceleration of a tire
10) Find out how to utilize sustainable materials to improve tire performance

IQPC wants to thank the advisory board members of the ITT 2015 for the kind support:

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Executive Vice President Standards and Regulations, Bridgestone Europe, NV/SA, Belgium

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Manager New Tire/Wheel-Systems, Quality and Tire Data, Daimler AG, Germany

Dr. Gregor Kuchler,
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HungaroJet has developed a rubber recycling technology based on a proprietary process of milling whole tires with ultra high pressure (UHP) water jets, the best alternative to existing milling processes. The tread, sides and interior of the tires are milled separately providing chemical homogeneity of the powder obtained. The rubber powder shows very high surface to weight ratio, completely metal and textile free, displays no surface oxidation or thermal degradation, outstanding in re-vulcanization properties, REACH compliant.

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“You can succeed on your own terms but you can’t succeed alone”

Join our interactive workshops and benefit from in-depth sessions, hosted by selected industry experts. In our unique workshops, industry experts will share their expertise with a limited group of peers. Our workshop leaders provide in-depth knowledge and will actively foster open exchange and discussion to help you face challenges, discover solutions, and make decisions crucial to business excellence.

08:30 Registration & welcome coffee
10:30 Refreshment break & networking

Workshop A | 09:00 – 12:00

Technical directions and fundamentals for intelligent tire technology to enhance vehicle energy efficiency, mobility and safety

The workshop offers an overview of technical history and formulates new directions in vehicle dynamics with an emphasis on the intelligent tire technology for future research and engineering work. Coupled and interactive dynamics of vehicle systems is discussed to illustrate advantages of intelligent locomotion modules/sets of intelligent tires in future vehicle layouts. Power distribution between intelligent tires is explained as a key element to enhance vehicle energy efficiency, mobility and safety. Requirements for intelligent tire sensors and actuator systems are discussed in the light of new vehicle dynamics and design fundamentals.

In this workshop you will have the opportunity to discuss:
• Future directions in vehicle dynamics and developments of intelligent tire technology fundamentals
• Coupled vs. interactive dynamics of tires and vehicle systems
• Intelligent tire vs. set of intelligent tires and locomotion modules
• Wheel power distribution management for vehicle energy efficiency and mobility enhancement
• Safety and security in intelligent tire technology

Please be aware that this is an interactive session. Participants are welcome to prepare their questions in advance and also share their experiences.

Workshop leader:
Vladimir V. Vantsevich,
Professor and Director, Vehicle and Robotics Engineering Laboratory,
University of Alabama at Birmingham, USA

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Workshop D | 16:00 – 18:30

Tire safety, durability and failure analysis

Tires have been considered as the last frontier of classical physics and for the chemist a constant challenge, it is a hi-tech complex product. Pneumatic tire is an indispensable component of an automobile because of its capability to withstand repeated large transformation and restoration. The flexibility of pneumatic tire not only contributes to vehicle durability and passenger comfort, but plays most important role in safety. However, tyres can become damaged, or when push beyond their limit, they will fail. Failure analysis of tire is important for making modern automobile more safe and durable.

In this session you will find out about the following topics:

• Tire a most indispensable component for automobile
• Tire safety – tire servicing and maintenance
• Fundamental of tire durability
• Tire failure mode and analysis

Workshop leader:

Dr. R Mukhopadhyay,
Director (R&D), JK Tyre & Industries Ltd.,
Director & CE, Hari Shankar Singhania Elastomer & Tyre Research Institute (HASETRI), India

18:30 End of workshop day
08:00 Registration & welcome coffee

**Who is Who**
Discover who else is participating in the conference. The matchmaking picture wall will help you identify who you want to meet at the conference.

*In cooperation with FIJIFILM*

08:50 Welcome & opening address by
Hans-Rudolf Hein,
Executive Advisor Standards and Regulations,
Bridgestone Europe, NV/SA, Belgium

China’s legislation and Asia’s market developments

09:00 Market developments in China
- China’s tire market today
- Influence of U.S.A high tariff, China tire shift to European market
- Progress of China’s tire labeling regulation
- Forecast of China’s economy and China’s tire market

Sunny Song (Song Zhiling),
Director of Expo & Conference Department,
China Rubber Industry Association, China

09:40 Speed Networking
The perfect opportunity to speak directly with your peers and network effectively.
Maximise your time at this event by participating in this interactive networking session.

*Don’t forget your business cards!*

10:20 Refreshment break & networking

10:50 Latest developments in China tire industry
- Mergers, acquisitions, consolidation
- International tariffs and trade barriers
- Labels and legislation

David Shaw FIMMM,
CEO,
Tire Industry Research, United Kingdom

11:30 Indian tire industry – Opportunities and challenges of radialisation
- Indian economic and tire market scenario
- Radialisation of commercial vehicles – Opportunities & challenges
- Trends of tire material usage for extreme service conditions (overload and bad roads)
- Preparedness of Indian tire industry to respond to global situation

Dr. R Mukhopadhyay,
Director (R&D),
JK Tyre & Industries Ltd.,
Hari Shankar Singhania Elastomer & Tyre Research Institute (HASETRI), India

12:10 Networking luncheon
### Streams

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<tr>
<th>Time</th>
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<tr>
<td>13:40</td>
<td>A development of tire wear estimation with the use of acceleration of a tire</td>
<td>Takeshi Masago, Staff Member of Tire Electronics Research Unit, Bridgestone, Japan</td>
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<tr>
<td>14:20</td>
<td>Tire identification technology and standards as possible key enablers for future developments of the intelligent tire</td>
<td>Philippe Lallement, Tire Electronics Pre Development Manager, Michelin, France</td>
</tr>
<tr>
<td>15:00</td>
<td>Latest developments on indirect TPM</td>
<td>Terence Wei, Team Leader, Tire/Vehicle Technology, Bridgestone America, USA</td>
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<td>Dr. Daniel Fischer, Senior Manager Tire Monitor Solutions, Continental Engineering Services GmbH, Germany</td>
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**Advanced intelligent tire technology**

**Chairman:**
Guenther Maeckle, Manager Tire Pressure Monitoring Systems, Daimler AG, Germany

**Advanced intelligent tire technology for commercial vehicles**

**Chairman:**
Angelo Giombelli, Cyber Operation, Pirelli Tyre S.p.A., Italy

**Fleet TCO optimization adopting TMS solutions**
- Commercial vehicles – TCO analysis
- Tyres – impact on Fleet TCO
- “Intelligent Tyres” adoption enabling enhanced services
- Pirelli solutions overview

Angelo Giombelli, Cyber Operation, Pirelli Tyre S.p.A., Italy

**Effect of embedded location and tire size on RFID read range**
- Sufficient RFID read range is necessary for many use cases, such as trucking fleet asset tracking. Improper matching of tags to tires will not produce sufficient read range
- The read range of helical dipole UHF RFID tags embedded in tires has a high sensitivity to many features, including tire size and proximity of the tag to steel belts
- Changing the overall antenna length can be used to maximize the antenna gain, and therefore read range, for a particular embedded location and tire construction
- There is a need for a next-generation RFID tag for tires, allowing sufficient read range to be achieved by a single tag design embedded into many different tire sizes and constructions

Philip Heijnen, Expert in Technology Strategy and Innovation, Bridgestone Technical Center Europe, Belgium

Terence Wei, Team Leader, Tire/Vehicle Technology, Bridgestone America, USA

**Connected Conti Pressure Check - Advanced functions and 3rd party integration**
- Automatic Trailer Learning and other advanced functions
- Connected CPC: TIS web integration, 3rd party telematic integration, cluster integration
- Challenges for cross - industry business models

Hartwig Kuehn, ContiPressureCheckTM Manager, Continental Reifen Deutschland GmbH, Germany
Advanced intelligent tire technology

Chairman:
Guenther Maeckle,
Manager Tire Pressure Monitoring Systems,
Daimler AG, Germany

16:10 Active Tools
• Industry trends / Market overview
• New generation sealant technology
• An eye for the future
• Our story
Dr. Louis Lam,
Head of Research,
Active Tools Group, China

16:50 Tyre pressure monitoring direct performance sensing, current and future challenges and solutions
• Status of technologies in use for direct TPMS applications, sensor solutions and system arrangements
• Market trends in terms of OE performance demand for system enhancements
• The Sensata prospective toward these market trends
• Challenges and solutions in the repair and service segment
Alfonso DI PASQUALE,
General Manager of Global Aftermarket,
Sensata Technologies, Germany

17:30 Panel Discussion: Future developments of Intelligent Tire Technology
• Challenges of intelligent tire technology
• Latest developments
• How to face legal requirements
Moderation:
Guenther Maeckle,
Manager Tire Pressure Monitoring Systems,
Daimler AG, Germany

with
Dr.-Ing. Michael Unterreiner,
Advanced Chassis Engineering,
Dr. Ing.h.c.F. Porsche AG, Germany
Rizwan Ullah,
Task Leader TPMS Wheels & Tyres,
Volvo Car Corporation, Sweden
Alfonso DI PASQUALE,
General Manager of Global Aftermarket,
Sensata Technologies, Germany

18:10 End of day one and closing remarks of Guenther Maeckle

19:00 Evening get-together!
IQPC invites you to a joint evening get-together. Take this opportunity to network and make new business contacts. Or just to relax and round off your first conference day.

To Register  |  T  +49 (0)30 20 91 33 88  |   F  +49 (0)30 20 91 32 10   |   E  eq@iqpc.de   |  www.tires-conference.com/MM
08:00 Registration & welcome coffee

08:30 Welcome & opening address by
Prof. Dr.-Ing. Michael Kaliske,
Institute for Structural Analysis,
Technische Universität Dresden, Germany

Latest update on intelligent tire technology

08:40 Intelligent tires in the market
- Standardization activities
- Tire sensors at Continental: Market feedback
- Future tire sensor functions
Dr. Matthias Kretschmann,
Tire Information Systems - Function Development,
Continental Automotive GmbH, Germany

09:20 Round Table Discussion: The tire and its data
- How to deal with the car industry which will have first access to the data of the tires?
- How could the tire industry get access to the data regarding its tires?
- Legal aspects and requirements

Virtual real world testing

10:00 Evaluation of rolling resistance of tires by numerical simulations
- Steady state rolling
- Material modelling
- Thermo-mechanical coupling
- Evaluation of influence parameters on rolling resistance
Prof. Dr.-Ing. Michael Kaliske,
Institute for Structural Analysis,
Technische Universität Dresden, Germany

10:40 Refreshment break & networking

11:10 Tire carcass deformation as a key to understanding of its transient handling behaviour
- Analysis of different methods to measure deflection of tire carcass
- Development of mathematical handling model based on flexible carcass
- Test rig measurements of tire carcass and tread samples
- Simulation and validation of different approaches to carcass modelling
Dipl.-Ing. Pavel Sarkisov,
PhD Student, Chair of Automotive Engineering,
Technische Universität Dresden, Germany

Co-Authors:
Prof. Dr.-Ing. Günther Prokop,
Head of Chair of Automotive Engineering,
Technische Universität Dresden, Germany

Dipl.-Ing. Jan Kubenz,
Head of the Vehicle Handling, Ride Comfort and Tyre Behaviour Division,
Technische Universität Dresden, Germany

Dr.-Ing. Sergey Popov,
Docent at the Chair of Wheeled Vehicles,
Bauman Moscow State Technical University, Russia
11:50  Building virtual tires – Parametric description and simulation
• Domains of virtual tires
• Parametric description – Geometry, topology and materials
• Tire modeling with FEM
• Optimizations – software system and results
Jan Hempel,
Academic Staff Member at the Faculty of Engineering,
Brandenburg University of Applied Sciences, Germany
Co-Author:
Prof. Dr.-Ing. Christian Oertel,
Professor at the Faculty of Engineering,
Brandenburg University of Applied Sciences, Germany

12:30  Networking luncheon

14:00  A novel method for reinforcing rubber with a sulphur-bearing silane pre-treated kaolin
• Natural rubber
• Kaolin
• Reinforcement
• Rheological and mechanical properties
Dr. Ali Ansarifar,
Senior Lecturer in Polymer Engineering,
Loughborough University, United Kingdom

14:40  Utilizing sustainable materials to improve tire performance
• Renewables company characteristics
• Performance focus
• Sustainability elements and experience
• Sustainability and performance
Sander Ridder,
Global Marketing Manager Tires,
Arizona Chemical, The Netherlands

15:20  Controlled Fine Milling of Elastomers by ultra-high pressure (UHP) water jet technology
• Difficulties in application of recyclates today
• HungaroJet approaches
• Applicability in tire industry
Gábor Kostyál,
CEO,
HungaroJet Ltd., Hungary

16:00  Closing remarks of Hans-Rudolf Hein and end of conference with the announcement of the best speaker 2015 ITT

16:10  Refreshment break & farewell coffee

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<tbody>
<tr>
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<td>€ 3,399, +VAT</td>
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<tr>
<td>Silver</td>
<td>€ 3,099, +VAT</td>
</tr>
<tr>
<td>Bronze</td>
<td>€ 2,599, +VAT</td>
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Every registration includes a complimentary membership to Automotive IQ.

Please indicate your choice of workshop on Tuesday, 17 November 2015:

☐ A: Technical directions and fundamentals for intelligent tire technology to enhance vehicle energy efficiency, mobility and safety

☐ B: Innovation on material development

☐ C: Tire safety, durability and failure analysis

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