Graz/Spielberg, May 9 to 10, 2019
Electrification & All-Wheel Drive Congress
Congress Program
May 9, 2019

Venue: Messe Congress Graz, Messeplatz 1, 8010 Graz, Austria

07:30 - 08:30 Registration

08:30 - 10:10 Plenary:
Keynotes: New Energy for All-Wheel Drive

08:30 - 08:50 Welcome and Opening

08:50 - 09:10 Formula E, a case for AWD technology or not
Roger Griffiths, Andretti Autosport

09:10 - 09:30 Keynote
BorgWarner

09:30 - 09:50 Highly efficient drivetrains for the mobility of the future
Hannes Prenn, GKN ePowertrain

09:50 - 10:10 New Technologies for All-Wheel Drive
A journey through the challenges of electrified AWD Powertrains
Harald Naunheimer, Magna Powertrain

10:10 - 10:25 Short Break

10:25 - 11:00 Panel Discussion - New Energy for All-Wheel Drive

11:00 - 11:30 Coffee Break

11:30 - 13:00 Forum A:
All-Wheel Drive Performance
Forum B:
Trends & Future All-Wheel Drive Concepts

11:30 - 12:00 The new Mercedes Benz SUV
All Wheel Drive Systems
Ralf Koelsing, Daimler AG

12:00 - 12:30 TwinAWD: A new approach on standard AWD Hang on Systems
Michael Höck, GKN

12:30 - 13:00 Alfa Romeo Q4: Four Wheel Drive for four-leaf clover
Alessandro Avallone, Maserati S.p.A.

13:00 - 14:00 Lunch Break

14:00 - 15:30 Forum A:
Batteries & Power Electronics
Forum B:
48 Volt Systems for All-Wheel Drive Efficiency

14:00 - 14:30 Electrification trends call for (R)evolution in BEV battery pack technology. Samsung SDI’s scalable high performance EV battery design.
Dr. Nikolaus Hochgatterer, Samsung SDI

14:30 - 15:00 Battery Immersion Cooling 2.0 - The new battery generation
Markus Kreisel, Kreisel Electric

15:00 - 15:30 Innovative adhesive solutions for Electric Drive Systems (E-axis) and Power Electronics
Erwin Rauh, Henkel AG

15:30 - 16:00 Coffee Break

16:00 - 17:30 Forum A:
Electrification
Forum B:
Electrified Performance

16:00 - 16:30 P2 Modular Hybrid Architectures
Tim Olsson, BorgWarner

16:30 - 17:00 Innovative planetary electric drive module with AC Induction Motor
Dipl.-Ing. Hans-Joachim Schmeink, GKN ePowertrain

17:00 - 17:30 Comparison of various All-Wheel Drive powertrain topologies for electric vehicles
Christian Angerer, Lehrstuhl für Fahrzeugtechnik, Technische Universität München

17:30 - 17:45 Short Break

17:45 - 18:30 Plenary: Closing Keynote

17:45 - 18:30 How Graz became the Center of All-Wheel Drive - A Success Story since 60 Years
Prof. Dipl.-Ing. Dr. h. c. Jürgen Stockmar

18:30 End of the First Congress Day

19:00 Evening Event at the Alte Universität Graz, Hofgasse 14, 8010 Graz, Austria

Program is subject to change.

Organized by Magna Powertrain
Sponsored by BorgWarner and GKN
www.eawdcongress.com
**Program**

**May 10, 2019**

**Venue:** Red Bull Ring, 8724 Spielberg/Knittelfeld, Austria

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 1: Testing &amp; Simulation</th>
<th>Session 2: AWD Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00</td>
<td>Bus Transfer from Graz to the Red Bull Ring / Spielberg</td>
<td></td>
</tr>
<tr>
<td>09:30 - 10:00</td>
<td>Experimental analysis of Dynamic Rolling Radius of tyres at high speed in different working conditions Marco Sbrosi, PhD, Pirelli Spa</td>
<td>Advanced gear optimization for AWD-Systems Michael Braunstingl, BSc, AVL List GmbH</td>
</tr>
<tr>
<td>10:00 - 10:30</td>
<td>Powertrain multibody modelling of front engine - RWD to analyse idle dynamic and NVH Gianluca Quattromani, Politecnico di Milano</td>
<td>Comparison of AWD vehicle powertrains Nikola Holjevac, Politecnico di Milano</td>
</tr>
<tr>
<td>10:30 - 11:00</td>
<td>Frontloaded e-AWD development with automated system optimization Joachim Ecker, AVL List GmbH</td>
<td>Conception und Simulation for the electrified powertrain Alexander Kluger, AKKA</td>
</tr>
<tr>
<td>11:30 - 13:00</td>
<td>Forum A: Torque Control Systems</td>
<td>Forum B: Building Blocks for Conventional and Electric AWD Systems</td>
</tr>
<tr>
<td>11:30 - 12:00</td>
<td>Torsen LSD in conventional and electric axles with EPS Tuning Paolo Sacchettini, JTEKT</td>
<td>Transfer Case Oils – How to master the challenge of multifunctional Gear Lubricants Dr. Erik Schuster, Fuchs Schmierstoffe GmbH</td>
</tr>
<tr>
<td>12:00 - 12:30</td>
<td>High-performance Friction Systems for active torque management Andreas Pombenger, Miba Frictionic</td>
<td>The rolling bearing in the electrified powertrain – requirements and solutions Dipl.-Ing. Thomas M. Wolf, SKF GmbH</td>
</tr>
<tr>
<td>12:30 - 13:00</td>
<td>Electric Torque Vectoring Derek Ward, Ford</td>
<td>The sixth generation of integrated AWD Actuators Mattias Magnusson, BorgWarner</td>
</tr>
</tbody>
</table>

**Plenary: Closing Keynote**

13:00 - 13:30 Closing Keynote

13:30 Lunch & End of the lectures

**Test Drive Program**

**May 10, 2019**

10:00 - 16:00 Ride&Drives: Off-Road and Driving Dynamics Simon Keirner, Daniel Held, Magna Powertrain

Participants can experience driving demonstrations with a wide range of demonstration vehicles.

- Driving Dynamics
- Hybrid and Electric Vehicles
- Offroad Performance

The driving event of the 2019 Electrification & All-Wheel Drive Congress will take place at the “Red Bull Ring” motorsport circuit in Spielberg.

Built in 1969 and formerly known as “Österreichring”, it hosted the Formula One Austria Grand Prix from 1970 to 1987 and from 1997 to 2003. After being renovated and modified, it was re-opened in 2011 and nowadays hosts a variety of national and international motorsport events, such as the DTM Series or the Truck Race Trophy. In 2014, also Formula One returned to the Red Bull Ring.

Offering various on- and offroad tracks as well as a conference area, the Red Bull Ring is located in Spielberg, Austria, around 45 minutes away from Graz. Free shuttle buses will circulate to allow participants a comfortable travel between Spielberg and Graz or Graz Airport on Congress Day 2.

16:00 Official End of the Congress

**Shuttle Buses**

Shuttle buses will run between Graz & Spielberg and Spielberg & Graz Airport / Downtown for the convenience of our participants.

<table>
<thead>
<tr>
<th>Time</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00</td>
<td>Bus Transfer from Graz to the Red Bull Ring / Spielberg</td>
</tr>
<tr>
<td>14:15</td>
<td>Bus 1: Transfer back to Graz airport / downtown</td>
</tr>
<tr>
<td>15:15</td>
<td>Bus 2: Transfer back to Graz airport / downtown</td>
</tr>
<tr>
<td>16:15</td>
<td>Bus 3: Transfer back to Graz airport / downtown</td>
</tr>
</tbody>
</table>

Program is subject to change.

**Organized by** Magna Powertrain  **Sponsored by** BorgWarner and GKN  **www.eawdcongress.com**