CALL FOR PAPERS 2021
USA & Germany

#cti_sym
www.drivetrain-symposium.world/callforpapers
CTI SYMPOSIA – THE EXPERT SUMMIT THAT DRIVES MOBILITY

CTI SYMPOSIUM – THE MEETING PLACE YOU CANNOT MISS

- Keynote speeches, panel discussions, technical presentations
- Accompanying CTI SYMPOSIUM EXPO (more on page 9)
- Exchange of experiences, R&D results and opinions
- Leading representatives and decision makers of automobile manufacturers, suppliers, engineering consultants, officials
- Live discussion of the latest technologies and strategies for passenger cars and commercial vehicles
- Extensive networking during coffee and lunch breaks as well as at our evening event
- Conference documentations

EVENT DATES

USA

13-14 October 2021: Main Days + Expo
11-12 October 2021: Introductory Seminar (tbc)

GERMANY

30 November – 1 December: Main Days + Expo
29 November 2021: Introductory Seminar (tbc)
2 December 2021: Test Drive (tbc)
The decision on whether to hold the symposium on-site or online will be based on the development of the CoVid-19 situation as well as the foreseeable general conditions in 2021.

As information about the expected general conditions in the second half of 2021 is not yet predictable we ask the authors to wait with possible travel bookings until a decision is made, since the organizer will not be responsible for any cancellation fees etc.

If your lecture is scheduled for the program, please be prepared that in case of a digital execution we will request a pre-recorded video of the lecture in addition to the lecture material. You will of course receive the corresponding information.

Contact
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TOPIC AREAS FOR YOUR PAPER PROPOSAL

MARKETS, REQUIREMENTS, STRATEGIES
• Automotive market development
• Strategies and Scenarios
• Market specific regulations and customer requirements
• Sales and purchasing potential
• Ecological and legal constraints
• Consumer research
• Energy saving and new vehicle programmes
• Regulatory impacts
• Carbon footprint and life-cycle assessment

TRANSMISSIONS (TM), POWERTRAINS FOR ICV AND HEV FROM LOW VOLTAGE TO HIGH VOLTAGE
• Manual TM
• Dual-clutch TM
• Continuously variable TM
• Hybridised TM
• Innovative TM architectures
• Plug-in hybrids
• 48V: technologies & impact on transmission
• Operation strategies, launch characteristics
• Energy recovery, torque vectoring
• Energy and thermal management
• Automated manual TM
• Automatic TM
• Dedicated hybrid TM
• Electrified TM
• Micro, mild, full hybrids

LAUNCH DEVICES AND TRANSMISSION SHIFTING
• Clutch technology
• Torque converter
• Geared neutral
• Actuator technology
• Vibration damping
• Interior and exterior shiftings
• Shift concepts
• Shift comfort
• Friction materials and parameters

COMPONENTS IN TRANSMISSIONS AND DRIVETRAINS: MECHANIC, HYDRAULIC AND ELECTRIC
• Gearset, shafts and housing
• Sealings and bearings
• Electromechanical actuation
• Hydraulics
• Component efficiency
• Light weight measures
• Reduction of parasitic losses
• Electric machine (EM) from low to high speed
• Power electronics (PE)
• Bordnet
**AWD-SYSTEMS, EAWD, LOCKS**
- Challenges, concepts
- Developments to master the current challenges
- Opportunities for fuel efficiency improvements
- Transmissions and locks for all-wheel drives
- Torque vectoring, locking differentials
- Transfer units and axle drives
- Driving dynamics, driving safety
- Control and management

**DEVELOPMENTS AND CONCEPTS IN THE FIELD OF**
- Powertrain integration
- Function integration
- Comfort, driving enjoyment and safety
- Fuel/energy consumption
- Downsizing and downspeeding of combustion engines

**TRANSMISSIONS, ELECTRIFIED POWER- AND DRIVETRAINS FOR COMMERCIAL VEHICLES**
- Innovative transmission concepts
- System efficiency for MT, AMT, DCT, AT and CVT
- Fuel consumption reduction by electric, pneumatic and hydraulic hybrid technologies
- Fuel efficiency i.v.o. architecture options, duty cycles
- Axle drives and differential transmissions
- Relevant, realistic driving cycles
- Power split transmissions (PST)

**E-AXLES, BEV DRIVETRAINS, FROM LOW VOLTAGE (48V) TO HIGH VOLTAGE**
- E-axles: w/wo e-park lock
  - with integrated controller for AWD
- E-drives: Single-speed & multi-speed, CVT
  - E-drives w. high-speed e-motors, TM & components
  - Coaxial planetary e-drives
  - Layshaft gear e-drives
- 400V/800 V
- Fuel cell drives
- Range extenders/range extended drivetrains
- Energy management and thermal management
- 48V BEV concepts

**BATTERIES, ENERGY STORAGE DEVICES, INFRASTRUCTURE**
- Batteries, ultra-caps, fuel cells
- Charging stations
- Hydrogen supply
- Inductive charging
- Fast charging
- Standardisation
ELECTRONICS IN TRANSMISSIONS, POWER- AND DRIVETRAINS
• Transmission electronics, control and regulation
• Sensor and actuator technology
• TCU software development
• Calibration
• Power- and drivetrain integration: efficient cooperation of engine and transmission

NVH AND ACOUSTICS IN POWER- AND DRIVETRAINS
• Noise reduction and anti-vibration: in power- and drivetrains
• Sound design
• Active noise cancellation
• Impact of downsizing and downspeeding

DIAGNOSTICS OF POWER- AND DRIVETRAINS, TRANSMISSIONS
• Challenges of diagnostics for electrified TM and drives
• Software based failure mgm. of electronic systems
• Methodology and tools for the diagnostic design
• Challenges, practice, experiences of OBD
• Robustness of OBD
• Validation of diagnostic tools - ISO & SAE standards
• OBD and OTX standardisation
• Tele and remote diagnosis
• Predictive diagnostics, predictive maintainance

TEST, SIMULATION AND EVALUATION METHODS FOR POWER-AND DRIVETRAINS, TRANSMISSIONS
• Functional integration
• Control concepts
• Development methods and tools
• Drive system, transmission synthesis
• Virtual drive system and TM development and testing
• Transmission and component tests
• Test facilities and standards
• Thermal management: efficiency optimisation
• Friction reduction in power- and drivetrains
• Comfort and ergonomics (shifting)
• Test-rigs, representative requirements and set-up

FUNCTIONAL SAFETY, SECURITY
• ASIC, ISO standards
• Relevance and impact on TM, PT and DT development
• Management of quality and functional safety
• From concept of functional safety to technical safety requirements
• Impact of alternative drive concepts on functional safety and drivability
• Practical examples
LUBRICATION, GREASES, THERMAL MANAGEMENT SOLUTIONS FOR E-DRIVES

- Fluids for MT, AT, CVT, DCT, DHT, axles and differentials
- Hardware protection and fuel economy
- Low viscosity transmission fluids
- Additive concepts
- Base oils/base oil concepts
- Multivehicle transmission fluids
- Future industry standards for transmission fluids
- Filter systems
- Tribology, friction materials and parameters
- Wear
- eFuels

INNOVATIVE MANUFACTURING AND GLOBAL PRODUCTION CHALLENGES

- Manufacturing strategies & optimal production planning
- Worldwide production concepts
- Current challenges in global production strategies
- Application of additive manufacturing in serial production
- Use of data sciences in quality & production
- Light weight design in transmission and drivetrains

AUTOMATED DRIVING: CONSEQUENCES FOR POWER- AND DRIVETRAINS

- Comfort and safety requirements for the power- and drivetrain of an automated vehicle
- Power- and drivetrain integration in automated driving vehicles
- Weight reduction through automated driving due to changed load collectives

CONNECTIVITY AND AI APPLICATIONS

- Digital based calibration methods
- Online lifetime calculation and failure prediction
- Operating strategy of hybrid vehicles
- AI- and big-data-based predictive operation strategies and calibration
- Enhanced flexible and scalable software architecture
- Object oriented calibration methods
- Super vehicle-computer
HOW TO HAND IN YOUR PRESENTATION PROPOSAL

WHO SHOULD TAKE AN ACTIVE PART?
Experts of all development areas in the field of automotive transmissions, alternative drives and components are invited to hand in paper proposals.

SUBMISSION
Submission via the call for papers form available at www.drivetrain-symposium.world/callforpapers
Due to the variety of topics, there will be parallel series of presentations according to focuses. You are thus welcome to hand in several topic proposals.

YOUR PROPOSAL SHOULD INCLUDE THE FOLLOWING INFORMATION
• Abstract (max. 1 page)
• Title of the presentation + 3 subtitles about
• Relation to one of the main focuses
• Complete contact details of authors and presenters: Name & surname, academic degree, job title, department, postal address, phone, e-mail

EVALUATION AND FEEDBACK ON SUBMISSIONS
All presentation proposals will be forwarded to the programme committee. Acceptance for the programme will be based on their evaluation. Authors will be informed during July 2021 concerning the USA symposium and during August 2021 for the German symposium.

PRESENTATION DURATION, REQUIRED DOCUMENTS FOR THE CTI SYMPOSIUM (MANDATORY)
• A presentation takes 17 - 20 minutes plus approx. 5 - 10 minutes of discussion with the audience afterwards
• Job history, digital portrait photo (colour, high resolution)
• Presentation slides, not more than one slide per minute
• Fully formulated written article (min. 8 pages)
• Presentation time: 20 minutes (-> max. 20 slides)
• All material is required in English
• Details, slide and CV master will be provided

CONFERENCE FEES FOR PRESENTERS
• The participation for the presenter (1 person) to the conference main days is free.

CLOSING DATE: 1 APRIL 2021
CTI SYMPOSIUM EXPO

The CTI SYMPOSIUM EXPO is going to highlight the latest products, content and equipment that are relevant to the industry.

Whether digital on the web or live on site – the CTI SYMPOSIUM EXPO is your first choice when it comes to connecting with prospective customers, partners and existing clients.

- **Multiple presentation options** for your products and company
- Networking opportunities with **automated matching for targeted contacts**
- Virtual 1-on-1 meetings and **face-to-face video calls**
- **Interest-based chat** or **meeting arrangements**

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