FISITA
WORLD CONGRESS





38th FISITA WORLD CONGRESS

FROM AUTOMOBILE TO MOBILITY.
NEW ROLES. NEW CHALLENGES.

14 – 18 SEPTEMBER 2020
PRAGUE, CZECH REPUBLIC

Organised by
CAS CZ

CALL FOR PAPERS AND ROUND TABLE THEMES

WELCOME TO FISITA CONGRESS

Dear colleagues,

On behalf of the organisers, Czech Automotive Society and the international organisation of automotive engineers FISITA, we would like to invite you to the **38th FISITA World Congress** which will take place on **September 14th–18th, 2020 in Prague, Czech Republic.**

The main theme of the Congress **"Automobile and Mobility. New Roles. New Challenges"** reflects together with the Congress topics the forthcoming significant changes. We are focusing to prepare a balanced programme with the strong adherence to future trends in mobility, based on plenary sessions, concurrent sessions, round tables, student programme and technical visits. The strong programme enriched with top keynote speakers is going to guarantee the high-quality scientific content of the upcoming congress. FISITA World Congress is a unique opportunity to learn, share experience and create new business contacts. We encourase you to contribute to the high-level of the congress and submit a round table theme or a technical paper detailing your latest work in any of the congress topics.

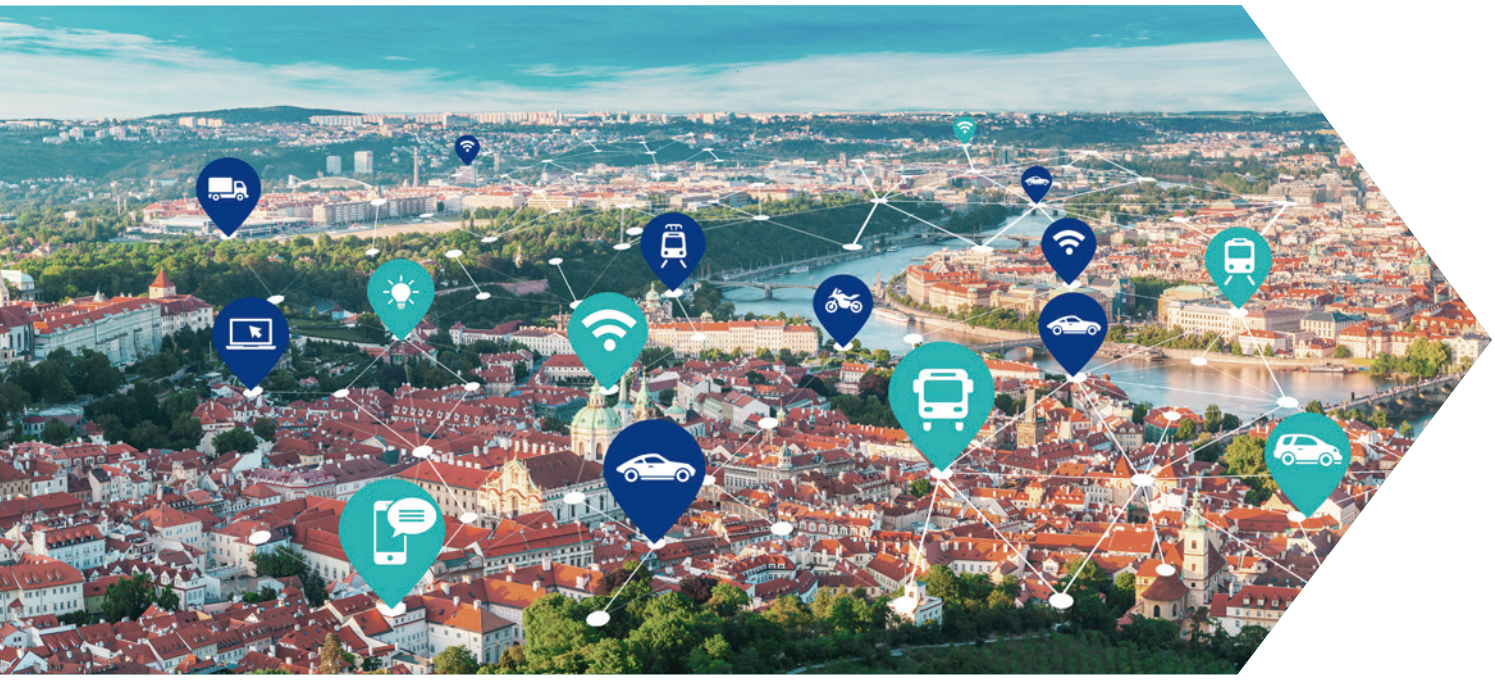
FISITA 2020 hosting destination, the astonishing city of Prague has remarkable architecture, great accessibility and last but not least high level of safety. On top of that, automotive industry writes long tradition in the Czech Republic, the first car in Czechia was manufactured in 1897 and the Czech Republic belongs among European mobility hubs.



Prof. Jan Macek
President of 38th FISITA World Congress



Prof. Frank Zhao
FISITA President



CONGRESS TOPICS

1. Digital Transformation

1.1	Intelligent and smart mobility solutions
1.2	Digitalization of Vehicle R&D, Design and Testing
1.3	Defining new UX (User Experience) of mobility solutions
1.4	Mobility as a service
1.5	Shared mobility, multimodal mobility, micromobility
1.6	Machine learning
1.7	Artificial Intelligence applied to Future Mobility Concepts
1.8	Cybersecurity
1.9	Vehicle related digital services (e.g. predictive maintenance, etc.)
1.10	Mobility related data storing and processing (e.g. EDR, Data Trustee)

2. Advanced Vehicle Driveline and Energy Management

2.1	Electric and Hybrid Drivelines
2.2	Advanced Internal Combustion Engines
2.3	Driveline Design and Simulation Based Optimization and Control
2.4	Renewable and Synthetic Fuel Combustion and Mixture Formation, Fuel Injection and Sprays
2.5	Rightsizing of Engines for New Roles in Electrified Vehicle Powertrains
2.6	Advanced Transmission Concepts
2.7	Advanced Battery System Technologies
2.8	New Concepts and Control of Electric Motors and Power Electronics
2.9	Fuel Cells and Fuel Cell Systems, Hydrogen Technologies
2.10	Smart charging solutions

3. Emissions and Pollutants Caused by Vehicles

3.1	Environmental impact through complete life-cycle
3.2	After Treatment and Emission Control
3.3	Clean and Efficient Engine Technologies
3.4	Testing Procedures and Cycles
3.5	RDE methodology and practical results, transfer of road results to dynamometer
3.6	Recent Regulations and Future Prospects
3.7	Simulation Approach to Emission Control
3.8	On-board and Remote Diagnostics of Emission Systems
3.9	Identification of Big Polluters in Operation
3.10	Non-combustion Related Emissions

4. Conventional and Alternative Fuels and Lubricants

4.1	Advancement of Conventional Fuels
4.2	New synthetic fuels
4.3	Engine Lubricant & Compatibility Tests
4.4	Interaction between New Fuels and After-Treatment Devices
4.5	Driveline Lubricants
4.6	Fuel Economy and Advanced Automotive Lubricants
4.7	Alternative Fuels and Propulsion Technology
4.8	Hydrogen as a Fuel
4.9	Additives in Fuels & Lubrication
4.10	WTW Analysis

5. Mobility Comfort

5.1	Powertrain and vehicle NVH
5.2	Aero-Acoustic Wind Noise
5.3	Intake & Exhaust Noise
5.4	Mechanism of Tire and Road Noise
5.5	Incab & Passby Noise
5.6	Thermal Comfort and HVAC Systems
5.7	NVH in xEV Vehicles
5.8	Passive and Active Controls of NVH Problem
5.9	NVH Measurement, Simulation, and Analysis
5.10	Ergonomics

6. Automated and Connected Mobility

6.1	Highly Automated Driving/Autonomous Driving / Driverless Vehicles
6.2	Advanced Driver Assistance Systems
6.3	Testing of systems of automated driving (virtual tests, simulators, HiL/SiL/MiL, proving ground, FOT, NDS)
6.4	Sensors and Signal Fusion
6.5	Situation Representation and Awareness (Object recognition …)
6.6	Voice and Motion Recognition
6.7	Autonomous Vehicle Control
6.8	Networks for Connected Vehicles
6.9	V2X Communication
6.10	Cloud-Connected and Teleoperated Vehicles

7. Vehicle Dynamics and Controls

7.1	Vehicle Dynamics, Modelling and Simulation
7.2	Integrated Chassis Control
7.3	Adaptive Chassis Systems
7.4	Human Vehicle Interface
7.5	Heavy Duty Vehicle Control
7.6	Sensors and Actuators
7.7	Intelligent Tire
7.8	Ride comfort & Handling
7.9	Suspension, Steering & Brakes
7.10	Holistic Approach to Vehicle Predictive Control

8. Passive and Integral Safety

8.1	Accident Statistics, Analysis and Reconstruction Technologies
8.2	Biomechanics & Human models
8.3	Occupant, Child and Elderly Safety Protection
8.4	Protection of Vulnerable Road Users
8.5	Vehicle Structure Crashworthiness
8.6	Crashworthiness of Light Frame Design with New Materials
8.7	Crash Avoidance or Mitigation Systems
8.8	Emergency Call System
8.9	International Regulations and New Car Assessment Program
8.10	Test Methods

9. Vehicle Electronics and Software

9.1	E/E Architecture for future vehicles
9.2	Software Development - Design Methods, Testing, Development Processes and Quality management
9.3	Software & Hardware Reliability and Safety (Functional Safety, SOTIF, etc.)
9.4	Model-Based Design, Analysis and Verification
9.5	In-Vehicle Networks
9.6	ECU Consolidation and Multicore ECUs
9.7	Automotive Operating Systems
9.8	AUTOSAR and Software Architecture
9.9	Automotive HMI
9.10	Telematics and Infotainment Systems

10. Manufacturing, Materials and Lightweight Solutions

10.1	Industry 4.0 in Vehicle Manufacturing and Maintenance
10.2	Novel/Emerging Manufacturing Technologies
10.3	Weight Reduction Technology & Materials in Automotive Industry
10.4	Forming processes
10.5	Applications of Non-Metallic Materials (Rubber, Polymer, Composite)
10.6	Fatigue, Fracture and Failure of Traditional and Lightweight Materials
10.7	Welding and Joining/Fastening of Traditional and Lightweight Materials
10.8	Coating, Wear, Corrosion Protection and Surface Engineering
10.9	Lightweight body design
10.10	Platforming

TECHNICAL PAPER SUBMISSION

Submitted papers will be reviewed by the Scientific & Technical Committee (STC) of FISITA 2020. The STC reserves the right to assign accepted papers for oral presentation to the technical sessions. All accepted authors will be required to submit a full paper to be published in the Congress Proceedings. All papers should be original works and not have been published elsewhere. 20 minutes will be allocated for each oral presentation, including discussion time.

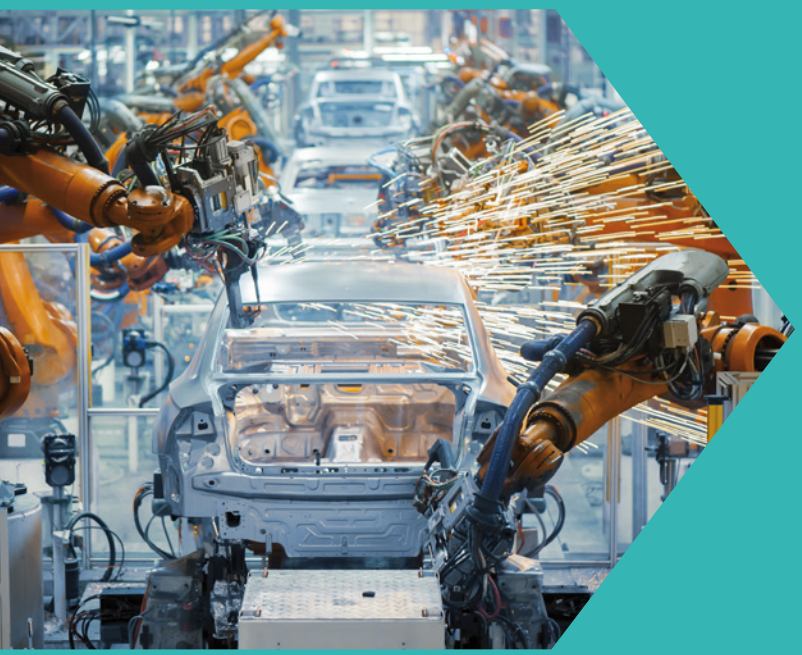
REQUIREMENTS FOR TECHNICAL PAPER ABSTRACTS

Abstracts should contain clear description of the main scientific, technical, economic and/or practical points to be addressed, applied methodology and achieved results paying particular attention to those aspects of the work which are new, innovative and unique.

IMPORTANT DATES – TECHNICAL PAPERS

30 November 2019	Deadline to submit abstracts
01 March 2020	Notification of abstract acceptance
01 May 2020	Deadline for review ready full papers
15 July 2020	Deadline for final manuscripts
15 August 2020	Notification of full paper acceptance
31 August 2020	Deadline for upload of presentations





ROUND TABLE THEMES SUBMISSION

Round Table sessions will run in parallel to the technical paper presentations. The STC will select the round table themes based on the submitted abstracts.

If selected, the proposer will manage their round table discussion as a Round Table Leader. The Leaders will present a kick-off presentation to introduce the theme and define the key questions.

The round table abstract should be prepared in the same format as the technical paper abstracts and should focus on the description of the theme and the key questions.

IMPORTANT DATES – ROUND TABLE THEMES

30 November 2019	Deadline to submit round table themes
31 January 2020	Notification of round table themes
31 August 2020	Deadline for upload of presentations

ABSTRACT FORMAT

- Maximum 500 words without figures
- 3-5 keywords
- Language: English
- All abstract must be submitted electronically at www.fisita2020.com.

FISITA 2020 STUDENT OPPORTUNITIES

The 38th FISITA World Congress held in Prague, Czech Republic, from 14 to 18 September 2020, will provide the perfect opportunity for students and young engineers to learn, exchange knowledge and network with international colleagues as well as experts and leaders from industry and academia. Czech Automotive Society has designed a number of activities for Students and Young Engineers at FISITA 2020 – these start before and lead into the Congress as well as take place throughout the event. Initiatives will include **Student Papers, Travelling Fellowship Programme, Educating the Mobility Engineers of Tomorrow (EMET)** Panel and the opportunity to showcase mobility engineering projects from university teams within the **Islands of Excellence** competition. For the first time, the **Virtual Islands of Excellence** will be presented during the Congress, giving engineering students from around the world the unique opportunity to present and discuss their research projects remotely to a global audience.

Student Papers: These papers will be incorporated within the Congress sessions as a full paper with a student attribute. This means students can directly interact with mobility experts who can immediately assess the benefits of the student work and discuss their future development steps. Full-time undergraduate and postgraduate engineering students are invited to apply – not only will you qualify for a reduced rate you will also benefit from direct interaction with senior experts.

IMPORTANT DATES – STUDENT OPPORTUNITIES – PAPERS

30 November 2019	Deadline to submit abstracts
01 March 2020	Notification of student authors
01 May 2020	Deadline for review ready full papers
15 July 2020	Deadline for final manuscripts
31 August 2020	Deadline for upload of presentations

Travelling Fellowship: This programme is comprised of technical tours to various automotive and mobility industrial and cultural sites in Prague and the surrounding region, followed by participation in the Congress. Travelling Fellows up to the age of 35 can take part in the programme which starts a week before the Congress.

IMPORTANT DATES – STUDENT OPPORTUNITIES – TRAVELLING FELLOWSHIP

15 July 2020	Deadline to submit abstracts
15 August 2020	Notification of applicants

Islands of Excellence: This event provides a unique opportunity for universities and research institutes to showcase their innovative mobility projects, as a part of the exhibition of the FISITA 2020 World Congress. Czech Automotive Society offers 45 m^2 exhibition space per Island and use of basic exhibition equipment. Student teams can also apply to present via the **Virtual Island of Excellence**, where the presentation will be delivered remotely online.

IMPORTANT DATES – STUDENT OPPORTUNITIES – ISLANDS OF EXCELLENCE (INCLUDING VIRTUAL)

30 November 2019	Deadline to submit applications
01 March 2020	Notification of applicants

Educating the Mobility Engineers of Tomorrow (EMET): The EMET session addresses crucial issues for engineering education, covering the latest trends and developments from both education and industry perspectives. The session brings together a carefully selected panel of leading figures from academia with a link to industry, to discuss engineering education trends and the global skills agenda with in-depth analysis and lively debate.



WHY SHOULD YOU BECOME A PARTNER AND EXHIBITOR OF THE FISITA 2020 WORLD CONGRESS?

MARKETING
Exhibitions is the most effective marketing tool to increase awareness of your brand and products.

NETWORKING
You will have the opportunity to meet and interact with many leading specialists in the automotive industry and mobility.

KNOWLEDGE
Exchanges of the latest technology, information and expertise on new generation automotive and mobility trends.

PROGRAMME
Opportunity to participate in various programmes at the lowest expense.

MEDIA
Get worldwide media attention through different kind of events.

BECOME A PARTNER AND EXHIBITOR AT THE FISITA WORLD CONGRESS 2020

- In its more than 70-year history, the FISITA World Congress has become a world-famous event in the field of mobility.
- The congress presents a rich technical programme of more than 300 technical papers and features about 100 international exhibitors.
- The FISITA World Congress 2020 is located conveniently in Prague - the heart of Europe.

ADVANTAGES OF PARTNERSHIP AND EXHIBITION

- Advertising and interaction with more than 1,500 delegates (attending the FISITA World Congress in 2018) - global audience of engineers, scientists, academics, executives and students from different branches of mobility from more than 40 countries.
- Media coverage.
- Promotion throughout the FISITA network of member societies representing 210,000 mobility engineers from 37 different countries.
- The FISITA World Congress 2020 partnership packages and the accompanying technical exhibition provide a great opportunity to present your company's innovative products, services and technical capabilities to key decision-makers ranging from well-established brands in the industry to recently founded start-ups.

TAKE ADVANTAGE OF OUR PARTNERSHIP OFFER

FOR MORE INFORMATION ON PARTNERSHIP OPPORTUNITIES PLEASE CONSULT
PARTNERSHIP PROSPECTUS

FOR MORE INFORMATION ON EXHIBITION PLEASE VISIT
EXHIBITION RESERVATION

AT WWW.FISITA2020.COM

or contact the FISITA 2020 liaison officer Martin Roucek directly at **roucek@guarant.cz** or **+420 777 151 395.**

VENUE

Prague is the capital and largest city of the Czech Republic and fourteenth-largest city in the European Union. Situated in the north-west of the country on the Vltava river, the city is home to about 1.3 million people. In 1993, the city's historical centre was rightfully added to the UNESCO List of World Cultural Heritage. Prague is also home of many technology companies and research institutions and one of the oldest universities in Europe; the Charles University which was founded in 1348. The tradition of technical education in Prague has begun in 1717.

The road mobility is coupled with the Czechia since the first steam vehicle presented in 1815 through the first car manufactured in 1897 and excellency of automotive engineers such as Ferdinand Porsche or Hans Ledwinka up to present employing more than 150,000 people and accounting for more than 20% of both Czech manufacturing output and Czech export.

The FISITA World Congress will be held in modern conference centre O_2 Universum with excellent public transport connection to the city centre.

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Organised by

WWW.FISITA2020.COM