21ST ASIA PACIFIC AUTOMOTIVE ENGINEERING CONFERENCE

APAC21

AUTONOMOUS VEHICLE TECHNOLOGY

HARMONISING THE FUTURE OF MOBILITY

Melbourne, Australia | 3 - 5 October 2022

SAE AUSTRALASIA

CALL FOR PAPERS

- Digital Transformation
- Electric, Hydrogen, Fuel Cell Technology
- Emissions and Pollutants Caused by Vehicles
- Ergonomics and Human Factors
- Mobility Comfort and NVH
- Automated and Connected Mobility
- Vehicle Dynamics and Control
- Vehicle Crash Safety
- Vehicle Software and Electronics
- Materials and Manufacturing
- Emerging Transport Technology

Deadline for Abstract Submission: 31 March 2022

autonomous2022.com

FISITA

CALL FOR PAPERS

1. Digital Transformation

1.1 Intelligent and smart mobility solutions
1.2 Digitalization of Vehicle Design, Development, and Testing
1.3 Mobility Solutions
1.4 Shared Mobility, Multimodal Mobility, Micromobility
1.5 Internet of Things (IoT) for Transport Industry
1.6 Artificial Intelligence for Future Mobility Concepts
1.7 Cybersecurity
1.8 Digital Services for Transport Industry
1.9 Data Storing and Processing

2. Electric, Hydrogen, Fuel Cell Technology

2.1 Electric and Hybrid Drivelines
2.2 Hydrogen as a Fuel
2.3 Driveline Design and Simulation Based Optimization and Control
2.4 Renewable and Synthetic Fuel Combustion and Mixture Formation
2.5 Engines for Electrified Vehicle Powertrains
2.6 Battery System Technologies
2.7 New Concepts and Control of Electric Motors and Power Electronics
2.8 Fuel Cells and Fuel Cell Systems, Hydrogen Technologies
2.9 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 Alternative Fuels and Propulsion Technology
3.6 Regulations and Future Prospects
3.7 Simulation Approach to Emission Control
3.8 Board and Remote Diagnostics of Emission Systems
3.9 New Synthetic Fuels
3.10 Non-Combustion Related Emissions

4. Ergonomics and Human Factors

4.1 Driver State Control
4.2 Driver Takeover Performance
4.3 Driver Assistance Systems
4.4 Human Factors and HMI
4.5 Motion Sickness
4.6 Driver Interaction and Road Safety
4.7 Biomechanics and Human Models

5. Mobility Comfort

5.1 New Concept for Vehicle Seat and Cabin
5.2 Aero-Acoustic Wind Noise
5.3 Intake & Exhaust Noise
5.4 Tire and Road Noise
5.5 NVH Testing and Simulation
5.6 Thermal Comfort and HVAC Systems
5.7 In-Vehicle Experience
5.8 Active Controls of NVH Problem
5.9 Vehicle Powertrain Noise
5.10 Human Factors and HMI

6. Automated and Connected Mobility

6.1 Automated Driving/Autonomous Driving/ Driverless Vehicles
6.2 Advanced Driver Assistance Systems (ADAS)
6.3 Autonomous and Connected Vehicles Simulation Software
6.4 Sensor Fusion, Object Tracking, and Path Planning
6.5 Voice and Motion Recognition
6.6 Autonomous Vehicle Control
6.7 Vehicles Urban Air Mobility and Traffic Management
6.8 V2V and V2X Communication
6.9 Cloud-Connected and Teleoperated Vehicles

7. Vehicle Dynamics and Controls

7.1 Vehicle Dynamics, Modelling and Simulation
7.2 Integrated Chassis Control
7.3 Human Machine Interface (HMI)
7.4 Heavy Duty Vehicle Control
7.5 Sensors and Actuators
7.6 Ride Comfort & Handling
7.7 Suspension, Steering & Brakes

8. Vehicle Crash Safety

8.1 Accident Statistics, Analysis and Reconstruction Technologies
8.2 Human Errors and Road Safety
8.3 Occupant, Child and Elderly Safety Protection
8.4 Protection of Vulnerable Road Users
8.5 Vehicle Structure Crashworthiness
8.6 Vehicle Crash Liability
8.7 Crash Avoidance or Mitigation Systems
8.8 Intelligent Vehicle Safety Systems
8.9 Regulations and Crash Safety Standards
8.10 Collision Avoidance System

9. Vehicle Software and Electronics

9.1 E/E Architecture for Future Vehicles
9.2 Software Development for Design, Test, Quality Management
9.3 Software/Hardware Reliability and Safety
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 Vehicle HMI Software
9.10 Telematics and Infotainment Systems

10. Materials and Manufacturing

10.1 Industry 4.0 in Vehicle Manufacturing and Maintenance
10.2 Intelligent and Novel Manufacturing Technologies
10.3 Weight Reduction Technology & Materials in Automotive Industry
10.4 Forming Processes
10.5 Fatigue, Fracture and Failure of Traditional and Lightweight
10.6 Vehicle Manufacturing Technology
10.7 3D and 4D Printing in Automotive Industry

11. Emerging Transport Technology

11.1 UAS (Unmanned Aerial System), VTOL, Drones
11.2 Urban Air Mobility
11.3 VTOL (Vertical Take-Off and Landing) Aircraft

ABSTRACT SUBMISSION

You are invited to submit your abstract online before 31 March 2022.
Please visit autonomous2022.com to submit your abstract.

HIGHLIGHTS

Exhibition

The concurrent professional technical exhibition will focus on the most advanced vehicle technologies all over the world, covering five major fields: intelligent and connected vehicles, new energy vehicles, powertrain, materials and car body, as well as vehicle electronics

Technical Tours

Visits to several car plants, research institutes, universities and other related companies around Melbourne will be organized for some delegates during the 2022 APAC.

Test Ride and Drive

Several test ride and drive will enable delegates to experience the most advanced vehicle functions and technologies such as intelligent and connected vehicles, energy saving and new energy vehicles, as well as safety technologies.

IMPORTANT DATES

- **Deadline for Abstract Submission:** 31 March 2022
- **Deadline for Paper Submission:** 31 May 2022
- **APAC21 Congress:** 3 - 5 October 2022

ABOUT APAC21

The Society of Automotive Engineers Australasia (SAE-A) is very pleased to host the 21st Asia Pacific Automotive Engineering Conference in Australia (APAC21).

The Australian automotive industry has been repositioning itself over the past 10 years from a manufacturing producer of vehicles to that of a centre of competency in vehicle design, engineering, innovation and technology. The SAE-A is also transforming. It has over 90 years of automotive history and is well accredited to host the 21st APAC conference and reposition our future in Australia – one that has the infrastructure to be at the forefront of technology and innovation, research and development and smart manufacturing.

The Asia Pacific Automotive Engineering Conference (APAC) has been held every two years since 1981. APAC provides excellent opportunities for international automotive experts to present the latest product and development innovations and exchange information in mobility, autonomous cars, and transport vehicle technology as a global challenge for the industry, users, and society.
The conference will focus on innovative applications, manufacturing, tools, platforms and solutions in all technology areas such as the applications of signal processing, wireless communications, informatics and electronics, related to different types of vehicles such as cars, trucks, buses, off-road vehicles, trams and the intelligent transportation system that connects and manages large numbers of vehicles, not only in the context of smart cities but in many other regional and remote locations with little infrastructure support.

The Conference theme **“Harmonising the Future of Mobility”** reflects the forthcoming significant changes. Autonomous Vehicle Technology is the technological breakthrough of the future for a myriad of reasons: safety, efficiency, connectivity, industry 4.0, smart cities, cost and reliability.
Our balanced program will feature a strong adherence to future trends in mobility, based on keynote sessions, concurrent sessions, and technical demonstrations and visits. The program features leading industry experts providing high quality scientific content addressing the innovation in vehicle manufacturing and the challenges we face with connectivity, whether it be people or infrastructure. The conference is an opportunity for the Asia Pacific Region to maintain its leading position in technology uptake and learn from world experts.

This Asia Pacific Autonomous Vehicle Technology Conference will attract a global audience to learn about the latest innovations and technology being undertaken by industry, research and academia that are at the forefront of the minds of government policy.
Australia is leading the world in the uptake of technology in areas such as the first real-time adaptive controls for traffic systems, automatic tolling systems such as e-tag and number plate recognition, traffic-systems connected route guidance, optimized door to door freight logistics, driverless trucks in mining and semi-autonomous farm tractors and more.

We look forward to seeing you in Melbourne.

ABOUT SAE-A

SAE-A is the world's third oldest mobility society and was founded in Melbourne in 1927 to address the need for further education for all facets surrounding Automotive Engineering and now encompasses all mobility engineering industries in the Asia Pacific region.

The vision of the SAE-A is to advance the mobility engineering professions in Australasia through promoting the transfer of technical knowledge and skills, encouraging research and development in the private, education and government sectors and involving our members in the development and maintenance of Australasian and global technical standards.

The SAE-A is a non-profit organisation that works to serve the needs of its members and to promote the relevance of mobility related technologies to governments, industry and the community in general.

ABOUT FISITA

Delivering collaborative thought leadership and support to the world's mobility systems engineers, helping them to achieve their goals and continue to push the boundaries of technology while maintaining high ethical standards, delivering continuous improvement and enabling progress that will benefit society.

- Established in 1950, FISITA is the international network for automotive engineers, with a reach to over 200,000 engineers in 35 countries
- FISITA provides a global platform for knowledge exchange between industry, societies and academia, helping to guide the future direction of the automotive mobility engineering profession
- As FISITA works to promote excellence and diversity in automotive mobility systems engineering and associated technologies, we are committed in our support of 'Women in Engineering' campaigns and member activities.