Call for Papers
Special Issue on Cutting-edge Vehicle Technologies Applied in Beijing Winter Olympics

Beijing 2022 Winter Olympic and Paralympic Games, as the focus of global attention, is the best platform for the display of cutting-edge vehicular technologies. As the highlights of the 2022 Winter Olympics, electric vehicles, fuel cell vehicles, and autonomous vehicles will be in service for the Olympics, when they will be challenged by extremely low temperatures and complex traffic scenarios.

Extreme cold can affect the battery performance of electric and fuel cell vehicles, leading to start failure and significantly reduced driving range. To address such problem, new technologies are developed for the Olympic vehicles such as matrix charging, fast battery heating strategies, wireless charging and battery heat preservation, fast-charging battery, high-power fuel cell systems, fast fuel cell cold start strategies, intelligent energy recovery, health management, and high-efficiency low-temperature enthalpy-increasing air conditioning.

Ensuring safe and efficient autonomous driving is critical, especially under extreme weather conditions and complex traffic scenarios. Perception systems need to not only detect obstacles but also have a semantic understanding of the environment. Driving decision systems should consider the high uncertainties of perception systems to ensure safety. A high-definition map is a fundamental tool to enhance both perception and decision systems. However, the construction and rapid update of the map with high precision is still very challenging. For this reason, cutting-edge technologies of AI are applied to improve the ability of autonomous driving systems.

This special issue will present the state-of-the-art automotive technologies to be applied in the 2022 Beijing Winter Olympic Games, specifically regarding electric vehicles, fuel cells, and autonomous driving. It aims to reflect the latest progress in related areas and give readers a clear picture of the advances that are to come. We are soliciting original high-quality research papers on specific topics that include, but are not limited to, the following:

Topic 1: Electric vehicles

- Analysis and optimization of non-interruption propulsion system
- System control strategies for all-climatic electric vehicles
- Battery temperature control technologies
- Fast charging and wireless charging technology
- Integration and control of batteries, motors, and powertrain in electric vehicles under low temperature

Topic 2: Fuel cell vehicles

- Materials and components innovation of fuel cell under low temperature
- Modelling, control, diagnosis, and design of fuel cell stack, system, and vehicles under low temperature
- Applications of fuel cell vehicles and stationary
- Hydrogen production, storage, transport, and refuelling
- Environmental and economic analysis of fuel cells and hydrogen

Topic 3: Intelligent and connected vehicles

- High-definition map for autonomous driving
- Environmental perception and recognition
- Robust and accurate localization
- Intelligent driving decisions with high uncertainty
- Cooperative driving with V2X and 5G

Guest Editors

Electric vehicles

- **Fengchun Sun**, Academician of Chinese Academy of Engineering, Professor of Beijing Institute of Technology
- **Cheng Lin**, Professor of Beijing Institute of Technology
- **Wenwei Wang**, Associate Professor of Beijing Institute of Technology

Fuel cell vehicles

- **Minggao Ouyang**, Academician of Chinese Academy of Science, Professor of Tsinghua University
- **Jianqiu Li**, Professor of Tsinghua University
- **Liangfei Xu**, Associate Professor of Tsinghua University

Intelligent and connected vehicles

- **Diange Yang**, Professor of Tsinghua University
- **Dongpu Cao**, Professor of University of Waterloo, Canada
- **Kun Jiang**, Associate Professor of Tsinghua University

Important Dates

2021.06.01: Deadline for Initial Paper Submission

2021.08.01: Notification of First Round Decision

2021.09.01: Deadline for Revised Paper Submission

2021.10.15: Final Decision Due

2021.11.15: Final Manuscript Due

Submission Guidelines

The paper submission & review process will be handled through *Automotive Innovation*

1. Please submit online via www.springer.com/42154, be sure to select Topical Collection: 2022 Beijing Winter Olympics.
2. Papers should be submitted in two separate .doc files: 1) Blinded Manuscript (paper title, abstract, keywords, and full text); 2) Title Page (paper title, author affiliation, acknowledgment, and any other information related to the authors' identification).
3. If any problems, please feel free to contact the journal editorial office via email: jai-editor@sae-china.org.

AUTOMOTIVE INNOVATION
AN INTERNATIONAL ACADEMIC JOURNAL

Submission and Browse
www.springer.com/42154
www.chinasaejournal.com.cn

About Automotive Innovation

Automotive Innovation is the leading peer-reviewed international journal and China SAE's flagship publication. The journal reflects the innovative findings and changing needs of the automotive industry, supported by an international Editorial Board and published globally on Springer Nature. It fosters the exchange of ideas among researchers in industry, government, and universities worldwide.

The journal provides a forum for the research of principles, methodologies, designs, theoretical background, and cutting-edge technologies in connection with the development of vehicles and mobility. The main topics cover energy-saving, electrification, intelligent and connected, safety, lightweight, and emerging vehicle technologies.

International Platform

- First international academic journal in China automotive industry
- Published globally via Springer Nature
- Papers promoted on all CSAE platforms
- Indexed in Scopus

Welcome your submissions !

www.chinasaejournal.com.cn

www.springer.com/42154

— An International Academic Journal Exploring Automotive Innovation

ISSN (Print Version)**:** 2096-4250
ISSN (Electronic Version)**:** 2522-8765

Sponsored by
China Society of Automotive Engineers

Published by
Springer Nature

Contact
Ms. Lili Lu
Tel:+86-10-50950036
E-mail: jai-editor@sae-china.org