

## Special Issue

# AI-Driven Sensor Technologies for Next-Generation Electric Vehicles

### Message from the Guest Editor

Sensor technology innovations drive the rapid advancement of electric vehicles (EVs), which is crucial for enhancing performance, safety, and sustainability. This Special Issue invites cutting-edge research and reviews on developing, integrating, and applying sensors in EV systems. Key topics include:

- Battery management sensors (e.g., state-of-charge estimation, thermal monitoring);
- Motor control and energy efficiency optimization;
- Environmental perception (LiDAR, radar, cameras) for autonomous driving;
- Novel sensor materials, fault detection algorithms, and cybersecurity solutions for EV ecosystems;
- Multi-sensor fusion, real-time data processing, and AI/ML-driven improvements in sensor accuracy, reliability, and decision-making;
- Vehicle-to-everything (V2X) communication and scalability challenges.

We emphasize interdisciplinary research addressing technical barriers, cost-effectiveness, and AI-driven innovations to bridge academia-industry gaps. Contributions advancing sensor technologies for next-generation EVs are particularly encouraged.

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### Guest Editor

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### Deadline for manuscript submissions

31 October 2025



## Sensors

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## About the Journal

### Message from the Editor-in-Chief

*Sensors* is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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### Editor-in-Chief

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