

## Special Issue

# Advances in Intelligent Gas Sensors from Materials to Application

### Message from the Guest Editors

Gas sensing technologies are vital for addressing global challenges in environmental monitoring, industrial safety, healthcare diagnostics and sustainable energy applications. Conventional sensing platforms, while widely used, often suffer from limitations such as poor selectivity, high power consumption and slow response/recovery times. Recent developments in nanomaterials, quantum structures, neuromorphic systems and machine learning integration are transforming the landscape of gas sensors, enabling devices that are not only ultra-sensitive and selective but also capable of adaptive learning, multifunctionality and IoT compatibility. This Special Issue aims to bring together contributions that highlight emerging materials, innovative device architectures, hybrid heterostructures and intelligent signal processing approaches for gas sensing. Both experimental and theoretical studies are encouraged, with emphasis on interdisciplinary approaches that bridge materials science, electronics, chemistry and AI. The goal is to showcase cutting-edge advances that push beyond detection to include gas adsorption analysis, catalytic conversion and smart integration for real-world deployment.

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## Sensors

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### 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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