

Special Issue

Electrochemical Sensing: Technologies, Applications and Challenges

Message from the Guest Editor

Electrochemical sensors are analytical tools that convert chemical interactions into electrical signals. Using potentiometric, amperometric, voltammetric, and field-effect transistor systems, they offer high sensitivity and selectivity for biomedical and environmental use. Miniaturized electrodes and nanostructured surfaces improve response and signal quality, though reproducibility remains a challenge. Amperometric sensors, measuring redox-based currents, are standard in enzymatic biosensing. Potentiometric devices monitor electrolytes and pH, while voltammetric methods enable multi-analyte detection. Recent advances include microfabricated arrays and wearable bioelectronics for real-time biomarker monitoring. This Special Issue welcomes innovative studies on electrode design, sensing materials, and integrated systems that enhance performance, portability, and data processing—fostering collaboration toward the next generation of electrochemical sensors.

If you want to learn more details, please contact Tijana Radosavljevic (tijana.radosavljevic@mdpi.com)

Guest Editor

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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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