Special Issue

Nanomaterial-Driven Innovations in Biosensing and Healthcare

Message from the Guest Editor

The integration of smart nanomaterials in biomedical sensing has revolutionized healthcare diagnostics, these nanomaterials, including metal and metal oxide nanoparticles, carbon-based nanostructures, 2D materials, and functionalized polymers, which significantly enhance sensor performance. Furthermore, the integration of nanomaterials with microfluidic platforms and artificial intelligence-based data analysis has enabled multiplexed detection and improved sensitivity in biomedical applications. This Special Issue aims at exploring recent developments in nanomaterial-based biosensors for detecting diseases, monitoring metabolic parameters, and facilitating early-stage diagnostics. We welcome contributions covering novel sensor architectures, functionalization strategies, signal transduction mechanisms, and real-world applications of nanomaterials in biosensing. Topics of interest include electrochemical, optical, and flexible biosensors, as well as advancements in miniaturized and wireless sensing platforms.

Guest Editor

Dr. Arunkumar Shanmugasundaram

MEMS and Nanotechnology Laboratory, Advanced Medical Device Research Center for Cardiovascular Disease, School of Mechanical Engineering, Chonnam National University, Gwangju 61186, Republic of Korea

Deadline for manuscript submissions

25 November 2025

Sensors

an Open Access Journal by MDPI

Impact Factor 3.5
CiteScore 8.2
Indexed in PubMed

mdpi.com/si/233580

Sensors
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
sensors@mdpi.com

mdpi.com/journal/sensors

Sensors

an Open Access Journal by MDPI

Impact Factor 3.5
CiteScore 8.2
Indexed in PubMed

mdpi.com/journal/sensors

MDPI

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.

Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro
Dipartimento di Ingegneria Elettrica e dell'Informazione (Department of Electrical and Information Engineering), Politecnico di Bari, Via Edoardo Orabona n. 4, 70125 Bari, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, MEDLINE, PMC, Ei Compendex, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Instruments and Instrumentation) / CiteScore - Q1 (Instrumentation)