

Special Issue

Functional Nanomaterials for Advanced Biosensing: From Molecular Design to Real-World Applications

Message from the Guest Editor

Functional nanomaterials have emerged as transformative tools in the field of biosensing, particularly in healthcare. Their tunable physicochemical properties, high surface-to-volume ratios, and unique electronic, optical, and catalytic characteristics enable the development of ultra-sensitive, selective, and miniaturized biosensors. Recent progress has demonstrated their crucial role in early disease diagnostics, monitoring of infectious pathogens, real-time health tracking, and point-of-care testing. These materials are key to advancing personalized medicine, facilitating rapid clinical decisions, and improving patient outcomes—especially in resource-limited and decentralized settings. As healthcare continues to evolve toward greater precision and accessibility, the integration of functional nanomaterials into biosensing platforms stands at the forefront of this innovation. This Special Issue aims to showcase recent advances in the development, characterization, and application of functional nanomaterials that enable high-performance biosensors.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Biosensors is a leading journal, devoted to fast publication of the latest achievements, technological developments and scientific research in the exciting multidisciplinary area of biosensors. Both experimental and theoretical papers are published, including all aspects of biosensor design, technology, proof of concept and application. Special issues are devoted to specific technologies and applications, and a selection of the most outstanding papers each year is recognized. Pushing the boundaries of the discipline, we invite original papers, as well as timely reviews on cutting edge fields within the subject area.

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