Special Issue

Field-Effect Transistor Based Biosensing: Development and Applications

Message from the Guest Editors

Among various sensing methods currently available, field-effect transistor (FET)-based biosensors are advantageous due to their attractive features. A plethora of materials/devices have been developed to promote the understanding of FET-based biosensing technology, including ion-sensitive FETs, CNT based FETs, thin-film transistors, silicon nanowires, 2D materials, organic FETs, graphene FETs, and compound-semiconductor FETs. These materials/devices have been used for a variety of clinical applications such as detection of cardiovascular diseases (CVDs), COVID-19, proteins, enzymatic reactions, glucose, stress hormones (e.g., cortisol), cancers, HIV, and DNA sequences. This Special Issue will highlight recent advancements in different advanced materials and FET devices for potential application in clinical diagnosis, point-of-care testing, and on-site detection. We encourage researchers to share their theoretical and experimental studies on a variety of topics in biosensors, including fundamental principles, synthesis of advanced and novel materials, and micro/nanomanufacturing techniques targeting the development of ultrasensitive biosensors for the above-mentioned applications.

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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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