Special Issue

Capacitive and Impedance-Based Biosensors

Message from the Guest Editor

Capacitive and impedance biosensors belong to the group of label-free affinity biosensors. This type of biosensors measures changes in dielectric properties and/or thickness of the dielectric layer at the electrolyte/electrode interface. Capacitive biosensors have been successfully used for the detection of proteins, nucleotides, heavy metal ions, saccharides, small organic molecules, and microbial cells so far. The concentration range where this type of sensors can operate is from 10–17 M up to 10–2 M. The affinity capture was initially based on the use of antibodies and other biomolecules. In recent years, the molecular imprinting method has been used to create very sensitive and selective biorecognition cavities on the surfaces of capacitive gold electrodes. This Special Issue summarizes the principles of the two biosensor types and different applications of capacitive biosensors and impedance-based units in health care, environmental monitoring, food quality analysis, etc., and molecular imprinting is expanding with its recent capacitive biosensor applications.

Guest Editor

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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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