Special Issue

The Use of Biosensors in Lab-on-a-Chip Devices: Current Practice and Future Directions

Message from the Guest Editor

Microfluidic 'lab on a chip' implementations of bioassays and medical diagnostics devices will necessarily include some ultimate detection or reporting step. The detection may be based on optical (bioluminescence, fluorescence, absorption, scattering, or turbidity), electrochemical (potentiometric or amperometric), magnetic, or mechanical (mass) means. An optimal combination of microfluidics and biosensors will facilitate improved sensitivity and specificity, portability, reduced costs, and automated operation for ease of use as well as reliability. Application areas include point-of-care medical diagnostics for infectious diseases, cancer screening and monitoring therapies as companion diagnostics, as well as food safety, homeland security, environmental sampling, and organ-on-a-chip systems. In this Special Issue, technological developments and emerging concepts for integrating biosensors into LOC devices will be featured, including conventional and CD (centrifugal compact disk) chips with microfluidic channels, paper-based microfluidics, and 3D-printed devices, optimized for sample type, cost constraints, multiplexing, disposability, single-use.

Guest Editor

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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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