

Special Issue

Advances in Multiplex Lateral Flow Biosensors for Simultaneous Biomarker Detection

Message from the Guest Editors

Lateral flow biosensors are rapid and portable diagnostic tools widely used for point-of-care testing because they are inexpensive, simple to use, and provide quick results. Recent technological developments have significantly improved their sensitivity, accuracy, and overall performance. Nanomaterials such as gold nanoparticles, quantum dots, and carbon nanotubes are now commonly used to enhance signal intensity and detection sensitivity, making it possible to detect very low concentrations of biological markers. Another important advancement is the integration of gene-editing technologies like CRISPR-Cas12 and CRISPR-Cas13 with lateral flow assays, which enables highly specific detection of nucleic acids and rapid identification of pathogens. In addition, multiplex detection allows several targets to be detected on a single test strip, improving diagnostic efficiency. Overall, these advancements have expanded the applications of lateral flow biosensors in areas such as medical diagnostics, food safety, and environmental monitoring, and ongoing research continues to improve their sensitivity, reliability, and accessibility.

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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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