

Special Issue

Advancements in Pathogen Detection, Microdevice Technologies and AI-Driven Analysis

Message from the Guest Editor

From Ebola and Zika to MERS and COVID-19, each outbreak has exposed vulnerabilities while simultaneously driving groundbreaking innovations in diagnostics. Today, the demand for rapid, accurate, and scalable solutions is not just a scientific pursuit but a public health imperative, positioning pathogen detection as a cornerstone of global health resilience.

Advancements in microdevices have transformed pathogen detection from complex laboratory procedures into streamlined, accessible solutions suitable for both clinical and point-of-care settings. Moreover, the integration of artificial intelligence (AI) has further elevated detection capabilities, enhancing sensitivity, specificity, and the interpretation of complex datasets without user bias. This powerful synergy of technology and data is reshaping how we identify, monitor, and respond to infectious threats. This Special Issue, entitled “Advancements in Pathogen Detection, Microdevice Technologies and AI-Driven Analysis”, aims to highlight the latest breakthroughs and address ongoing challenges in the field.

Guest Editor

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The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

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