

Special Issue

Intelligent Microfluidics

Message from the Guest Editor

This Special Issue illuminates significant progress in the interdisciplinary field of microfluidics, emphasizing the transformative role of AI, machine learning (ML), and sensor technologies. Microfluidics, involving precise manipulation of fluids at submillimeter scale, has revolutionized sectors like healthcare, diagnostics, and chemical synthesis. The focus is sensor-integrated microfluidic chips for real-time monitoring, AI-empowered microfluidic systems for high-throughput analysis, and ML predictive models. AI and ML applications in microfluidics have brought about considerable advancements, enabling real-time monitoring of chemical reactions, cell cultures, and biological assays. AI has enhanced data analysis speed and accuracy, while ML predictive models have helped foresee microfluidic system behavior under various conditions, promoting efficient experimentation. This Issue offers a comprehensive overview of the latest developments in microfluidics, serving as a valuable resource for researchers, scientists, and engineers. We invite contributions presenting pioneering research and stimulating discussions on the future and potential of intelligent microfluidics.

Guest Editor

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Message from the Editor-in-Chief

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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