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Multi-Modal Microfluidics and Programmable Microfluidics for Biomedical Applications

Guest Editor:

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Message from the Guest Editor

Multimodal microfluidics and reprogrammable technologies have become popular in the BioMEMS community for biomedical studies, including but not limited to point-of-care (POC) techniques. Reprogrammable microfluidics have contributed to synthetic biology topics, involving biomedical studies, such as physiology studies from single-cell to tissue level. Advanced BioMEMS techniques, especially programmable and reprogrammable modules in microfluidics, are utilized to build artificial cells, or rearrange living cells, or engineered cells to achieve bioinformatics and biocomputing functions, or to build miniaturized experimental platforms for biomedical applications. The integration of multimodal microfluidics and reprogrammable microfluidics usually involves multiple advanced biofabrication processes, such as stereolithography, additive manufacturing for 3D microfluidics, programmable and reprogrammable microfluidics, single-cell or cell cluster patterning, cellular level or subcellular level biosensing, in vitro organ-on-a-chip models, synthetic-biology-associated techniques, smart device interfaces, and processes assisted by machine learning or artificial intelligence.

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Message from the Editor-in-Chief

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