

Special Issue

Microfluidics and 3D Printing for Biomedical Applications

Message from the Guest Editors

Microfluidics and 3D printing are two promising microfabrication techniques that have recently gained attention in the biomedical field because of their reliability, precision, and wide range of applications. Microfluidics allows for the fabrication of microscale tissue and disease models that can be used to test drug responses recapitulating human clinical conditions. Three-dimensional printing provides spatial and temporal control on the type, concentration, and distribution of cells, signaling molecules, and materials, enabling the construction of functional tissues and disease models with high precision and complexity. These two techniques make it possible to create a 3D microenvironment for the cells to mimic cell–cell and cell–material interactions in the body, which are essential for tissue-level maturity and functionality. This Special Issue seeks to showcase research papers and review articles that focus on the tissue engineering applications of microfluidics and 3D printing, including organs-on-chips, tissue engineering scaffolds, disease models, and drug testing platforms.

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Deadline for manuscript submissions

closed (28 February 2025)



Micromachines

an Open Access Journal
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Impact Factor 3.0
CiteScore 6.0
Indexed in PubMed



mdpi.com/si/195601

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