

Special Issue

Microengineering Techniques for Disease Modeling and Drug Discovery

Message from the Guest Editors

Microengineering approaches are enabling technologies for creating biomimetic cell culture systems that recapitulate the cell-cell and cell-tissue interactions, as well as, spatiotemporal chemical gradients, and dynamic mechanical microenvironments in living organs. These bioengineered systems offer unique opportunities for disease modeling and drug discovery due to their ability to promote cellular and tissue organizations which were not possible in conventional monolayer culture systems. The current Special Issue aims to address recent advances in the fabrication and operation of microengineered tissue culture platforms with particular emphasis on microfabricated tissues, single- or multi-organ-on-chip devices, 3D bioprinted tissue models, and multicellular spheroids. The interface of these systems with genomics, metabolomics, and proteomics for the better understanding of disease formation and progression is also of great interest. Moreover, we encourage manuscripts on the development of sensors for long-term monitoring of cellular microenvironments and studies reporting high-throughput designs for investigating the toxicity of drugs and their metabolites.

Guest Editors

Dr. Mohsen Akbari

Laboratory for Innovations in Microengineering (LiME), Department of Mechanical Engineering, University of Victoria, Victoria, BC V9P 0C8, Canada

Dr. Carlos Escobedo

Department of Chemical Engineering, Queen's University, Kingston, ON K7L 3N6, Canada

Deadline for manuscript submissions

closed (20 November 2019)



Micromachines

an Open Access Journal
by MDPI

Impact Factor 3.0
CiteScore 6.0
Indexed in PubMed



mdpi.com/si/16506

Micromachines
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
micromachines@mdpi.com

[mdpi.com/journal/
micromachines](https://mdpi.com/journal/micromachines)





Micromachines

an Open Access Journal
by MDPI

Impact Factor 3.0
CiteScore 6.0
Indexed in PubMed



[mdpi.com/journal/
micromachines](https://mdpi.com/journal/micromachines)



About the Journal

Message from the Editor-in-Chief

You are invited to contribute research articles or comprehensive reviews for consideration and publication in *Micromachines* (ISSN 2072-666X). *Micromachines* is published in the open access format. Research articles, reviews and other contents are released on the internet immediately after acceptance. The scientific community and the general public have unlimited free access to the content as soon as it is published. As an open access journal, *Micromachines* is supported by the authors or their institutes by payment of article processing charges (APC) for accepted papers. We are pleased to welcome you as our authors.

Editor-in-Chief

Prof. Dr. Ai-Qun Liu

1. Department of Electrical and Electronic Engineering, The Hong Kong Polytechnic University, Hong Kong, China
2. School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798, Singapore

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, dblp, and other databases.

Journal Rank:

JCR - Q2 (Instruments and Instrumentation) / CiteScore - Q1 (Mechanical Engineering)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.2 days after submission; acceptance to publication is undertaken in 1.9 days (median values for papers published in this journal in the first half of 2025).