Special Issue

Emerging Trends in Single-Cell Biosensors: Technologies, Applications, and Future Directions

Message from the Guest Editors

Advancements in biosensor technologies have expanded the capabilities of single-cell analysis, enabling direct measurement of biophysical and biochemical properties with high spatial and temporal resolution. These tools offer quantitative insights into cell function and support applications across biology, medicine, and engineering. This Special Issue focuses on recent progress and future directions in single-cell biosensors. We welcome contributions on sensing technologies, signal acquisition, data analysis, and practical applications. Scope includes:

- Platform Development: Sensor design, microfluidics, nanomaterials, wireless/IoT systems
- Signal Detection: Biochemical, electrical, mechanical signals; multimodal sensing; Al-assisted processing
- Applications: In vitro/in vivo monitoring, cancer/immune profiling, high-throughput screening, diagnostics

We invite you to contribute original research articles, reviews, communications, and perspectives that will be instrumental in advancing the field of single-cell biosensing across disciplines

Guest Editors

Prof. Dr. Eiichi Tamiya

- Advanced Photonics and Biosensing Open Innovation Laboratory, National Institute of Advanced Industrial Science and Technology, Photonics Center, Osaka University, 2-1 Yamadaoka, Suita 565-0871, Osaka, Japan
- 2. SANKEN-The Institute of Scientific and Industrial Research, Osaka University, 8-1 Mihogaoka, Suita 567-0047, Osaka, Japan

Dr. Xi Luo

School of Chemical and Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

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

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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

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