

Sensors and Materials

Special Issue on Biosensing Technology Using Micro- and Nanostructures

Call for Papers

Micro- and nanostructures have contributed significantly to the progress of biosensors. Micro- and nanomaterials, such as particles and thin films, have unique characteristics, such as electrical conductivity, optical properties, and magnetic properties, brought about by material and size effects. The use of such materials for sensing has led to the development of sensing technologies based on novel principles and marked improvements of sensor performance characteristics (e.g., sensitivity and responsiveness), thereby expanding the range of analytes and application fields.

On the other hand, the micro- and nanofabrication techniques developed from micro-electromechanical system (MEMS) technology have contributed to the development of micromachines and the field of micro- and nanofluidics. BioMEMS technology, in which micromachines are applied to biosensors, has realized localized sensing in areas including the vicinity of a single cell. The combination of microfluidic devices (such as micro total analysis system [μ TAS], lab-on-a-chip, and organs-on-a-chip) and biosensors has achieved the rapid analysis and full automation of analytical operations using devices that integrate sensing with various analytical operations, such as sample introduction, mixing, and reaction.

The development of sensors using micro- and nanostructures will greatly accelerate the field of biosensors in the future. In this special issue, we solicit reports on the progress of biosensing technologies using micro- and nanostructures, which will lead to the next generation of biosensors. This issue focuses on micro- and nanomaterials for sensing, novel sensing technologies, sensing interface design, micro- and nanofluidic channel design, and sensor miniaturization. In addition, we also accept reports on novel technologies useful for future biosensing using micro- and nanostructures for publication.

Scope:

Optical biosensor	Micro- and nanofabrication techniques
Electrochemical biosensor	μ TAS, Lab-on-a-chip
Biosensing interface design	Organs-on-a-chip
Micro- and nanomaterials	Device development

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(Attention)

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authors should bear the proofreading fee (JPY 10000–40000), which will be charged with the publication fee.

If you have any questions, please feel free to contact the editorial staff at the address below.

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