Special Issue

Biomolecule Manipulation in Micro/Nanoscale: Separation, Preconcentration, and Detection

Message from the Guest Editors

Selective and sensitive bioanalysis, especially molecule-scale analysis, play a critical role in biomedical research and clinical applications. These biomolecule (i.e., DNA/RNA, protein, or cell)-based bioanalyses can be used for disease diagnosis or to define specific and personal therapies. Biomolecule separation, preconcentration, and detection have become essential for a wide range of applications, including clinical diagnostics, environmental monitoring, and food safety testing. Moreover, when such platforms are miniaturized to the micro- and nanoscale, they will have several merits, such as a short analysis time, low cost, multiplexed analysis of several analytes, and portability. Accordingly, this Special Issue seeks to showcase research papers, short communications, and review articles that focus on (1) novel designs, fabrication, control, and modeling of devices (e.g., microfluidic chip, wearable or implantable device, portable device), and (2) improvement in conventional technologies, development of novel technologies or hybrid techniques for micro- and nano-scale biomolecule manipulation, including separation, preconcentration, and detection.

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