Special Issue

Electrochemical Biosensors and Bioassays Based on Nanomaterials

Message from the Guest Editors

The synthesis, biofunctionalization and application of novel nanomaterials open a plethora of possibilities for both biosensor and bioassay applications. Nanomaterials provide unique chemical, physical, electronic, and magnetic properties, and make them very attractive for developing novel and outstanding devices for biosensing applications. For example, magnetic nanoparticles, as nanosized support in electrochemical bioassays, offer numerous advantages. Bioassay and biosensor technologies have the potential to speed up the target detection, increase specificity and sensitivity, and may be used for early diagnosis. In addition, different types of bioreceptors and transduction elements may be combined. Among different approaches, electrochemical transduction offers the advantages of high sensitivity and selectivity, low cost, miniaturization, real-time output, simplicity of starting materials, and the possibility to develop user-friendly and ready-to-use biosensors and bioassays.

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Nanotechnology Nanomaterials Magnetic beads Nanoparticles Biofunctionalization

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