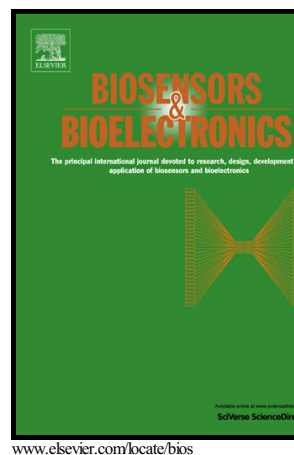


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## Recent Advances in Electrochemical Biosensors based on Graphene Two-Dimensional Nanomaterials

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### Abstract

Graphene as a star among two-dimensional nanomaterials has attracted tremendous research interest in the field of electrochemistry due to their intrinsic properties, including the electronic, optical, and mechanical properties associated with their planar structure. The marriage of graphene and electrochemical biosensors has created many ingenious biosensing strategies for applications in the areas of clinical diagnosis and food safety. This review provides a comprehensive overview of the recent advances in the development of graphene based electrochemical biosensors. Special attention is paid to graphene-based enzyme biosensors, immunosensors, and DNA biosensors. Future perspectives on high-performance graphene-based electrochemical biosensors are also discussed.

**Keywords:** two-dimensional nanomaterials; graphene; electrochemical biosensor; enzyme-based biosensors; DNA sensors; immunosensors

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