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Titolo	Graphene bioelectronics // edited by Ashutosh Tiwari
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ISBN	0-12-813350-3 0-12-813349-X
Descrizione fisica	1 online resource (390 pages) : illustrations (some color), graphs, tables
Collana	Advanced Nanomaterials Series
Disciplina	620.115
Soggetti	Graphene Nanostructured materials Biosensors
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Graphene and 2D-like nanomaterials: different biofunctionalization pathways for electrochemical biosensor development -- Vertical graphene for biosensors -- Recent advances in metal alloy-graphene hybrids for biosensors -- Functionalization of graphene and graphene oxide for plasmonic and biosensing applications -- Graphene field-effect transistor sensors -- Efforts, challenges, and future perspectives of graphene-based (bio)sensors for biomedical applications -- Surface plasmon resonance-modified graphene oxide surfaces for whole-cell-based sensing -- Label-free biosensing platforms based on graphene/DNA interfaces -- The electrochemical aptasensors for the determination of tumor markers -- Nanoengineering of graphene-supported functional composites for performance-enhanced enzymatic biofuel cells -- Graphene-fabricated electrodes for improving the performance of microbial bioelectrochemical systems -- Graphene-based nanosensors and smart food packaging systems for food safety and quality monitoring -- Graphene-based portable, flexible, and wearable sensing platforms: an emerging trend for health care and biomedical surveillance -- Wearable graphene-based electrophysiological biosensing system for real-time health monitoring.

Sommario/riassunto

Graphene Bioelectronics covers the expending field of graphene biomaterials, a wide span of biotechnological breakthroughs, opportunities, possibilities and challenges. It is the first book that focuses entirely on graphene bioelectronics, covering the miniaturization of bioelectrode materials, bioelectrode interfaces, high-throughput biosensing platforms, and systemic approaches for the development of electrochemical biosensors and bioelectronics for biomedical and energy applications. The book also showcases key applications, including advanced security, forensics and environmental monitoring. Thus, the evolution of these scientific areas demands innovations in crosscutting disciplines, starting from fabrication to application. This book is an important reference resource for researchers and technologists in graphene bioelectronics-particularly those working in the area of harvest energy biotechnology-employing state-of-the-art bioelectrode materials techniques.
