1. Record Nr. UNINA9910254639203321

Titolo	Biosensors for Security and Bioterrorism Applications / / edited by Dimitrios P. Nikolelis, Georgia-Paraskevi Nikoleli
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-28926-8
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (514 p.)
Collana	Advanced Sciences and Technologies for Security Applications, , 1613-5113
Disciplina	610.284
Soggetti	System safety Nanotechnology Analytical chemistry Environmental monitoring Electrochemistry Security Science and Technology Analytical Chemistry Monitoring/Environmental Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Biosensors for Security and Bioterrorism: Definitions, History, Types of Agents, New Trends and Applications -- Microfluidics a Potent Route to Sample Delivery for Non-Intrusive Sensors -- New Routes in the High-Throughput Screening of Toxic Proteins Using Immunochemical Tools -- Voltammetric Electronic Tongue for the Sensing of Explosives and its Mixtures -- Magneto Actuated Biosensors for Foodborne Pathogens and Infection Diseases Affecting Global Health -- Electrochemical Biosensors for Chemical Warfare Agents.-Macromolecular Imprinting for Improved Health Security -- Electrochemical DNA Biosensors for Bioterrorism prevention -- Biosensors for the Express Evaluation of the Level of Genotoxicity of Chemical Substances -- Efficiency of Instrumental Analytical Approaches at the Control of Bacterial Infections in Water, Foods and Feeds.-Biosensors for the Detection of Emerging Marine Toxins.-Aptasensor Technologies Developed for

Detection of Toxins.-Electrochemical and Acoustic Biosensors based on DNA Aptamers for Detection of Mycotoxins; T. Hianik -- Electrochemical Biosensors for Food Security: Allergens and Adulterants Detection -- Redox Labeling of Nucleic Acids for Electrochemical Analysis of Nucleotide Sequences and DNA Damage -- Biosensing of Neurotoxicity to Prevent Bioterrorist Threats and Harmful Algal Blooms -- Biosensors for Detection of Anticholinesterase Agents -- Efficiency of Non-Label Optical Biosensors for the Express Control of Toxic Agents in Food -- Sensors for Rapid Detection of Environmental Toxicity in Blood of Poisoned People -- Emerging Biosensor for Pesticide Detection -- Label-free Optical Biosensors for Monitoring Cellular Processes and Cytotoxic Agents at Interfaces Using Guided Modes and Advanced Phase-Contrast Imaging Techniques -- Electrochemical Biosensors for Food Security: Mycotoxins Detection -- Comparative Studies on Optical Biosensors for Detection of Bio-toxins. < .

Sommario/riassunto

This book offers comprehensive coverage of biomarker/biosensor interactions for the rapid detection of weapons of bioterrorism, as well as current research trends and future developments and applications. It will be useful to researchers in this field who are interested in new developments in the early detection of such. The authors have collected very valuable and, in some aspects indispensable experience in the area i.e. in the development and application of portable biosensors for the detection of potential hazards. Most efforts are centered on the development of immunochemical assays including flow-lateral systems and engineered antibodies and their fragments. In addition, new approaches to the detection of enzyme inhibitors, direct enzymatic and microbial detection of metabolites and nutrients are elaborated. Some realized prototypes and concept devices applicable for the further use as a basis for the cooperation programs are also discussed. There is a particular focus on electrochemical and optical detection systems, including those employing carbon nanotubes, quantum dots and metal nanoparticles. The authors are well-known scientists and most of them are editors of respected international scientific journals. Although recently developed biosensors utilize known principles, the biosensing devices described can significantly shorten the time required for successful detection and enhance efforts in more time-consuming directions, e.g. remote sensing systems and validation in real-sample analysis. The authors describe advances in all stages of biosensor development: the selection of biochemical components, their use in biosensor assembly, detection principles and improvements and applications for real sample assays.