1. Record Nr. UNINA9910986140103321

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Titolo	Advancements in Voltammetry for Biosensing Applications / / edited by J. G. Manjunatha
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
ISBN	9789819625956 9789819625949
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (630 pages)
Disciplina	541.37
Soggetti	Electrochemistry Materials Detectors Analytical chemistry Food - Analysis Sensors and biosensors Bioanalytical Chemistry Food Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	PART 1. Introduction to Voltammetry for Biosensing Applications -- Chapter 1. Review on Voltammetry -- Chapter 2. Review on Biosensors for electroactive molecules detection -- Chapter 3. Brief Overview of Voltammetry for Biosensing Applications -- Chapter 4. Overview of Sensitivity, Selectivity, and stability of Voltammetric Sensors -- Chapter 5. Challenges in Voltammetry for Biosensing -- Part 2. Developments in Voltammetric Sensors -- Chapter 6. Developments in the Fabrication of Nanomaterial-Based Voltammetric Sensors -- Chapter 7. Trends in the development of Biosensors -- Chapter 8. Current trends in the use of carbon material for Sensing applications -- Chapter 9. Future of voltammetry for biosensing applications -- Part: 3 Applications of voltammetric Sensors in Biosensing -- Chapter 10. Voltammetric Sensors for health -- Chapter 11. Voltammetric Sensors for biological sample analysis -- Chapter 12. Biosensors for drug molecule analysis using voltammetry -- Chapter 13. Hormones detection using

Voltammetric sensors -- Chapter 14. Nanomaterial-based voltammetric sensors for Food related bioactive molecules -- Chapter 15. Voltammetric sensors for the analysis of agricultural-related biomolecules -- Chapter 16. Food quality Assessment by voltammetric sensors -- Chapter 17. Electrochemical Insights: Advanced Voltammetric Sensors for Neurotransmitter DetectionElectrochemical Insights: Advanced Voltammetric Sensors for Neurotransmitter Detection -- Chapter 18. Applications and Commercialization Challenges of Voltammetry in Biosensing applications.

Sommario/riassunto

This book presents a detailed description of the recent advancements in voltammetry for biosensing applications. This book discusses the emerging research trends in the preparation of voltammetry-based electrochemical sensors for their applications in the analysis of medicinal, industrial, environmental, agricultural and food-related biological compounds. Living life is fundamentally influenced by the products utilized in day-to-day life, such as air, soil, water, food, environment, agriculture, and so on. The concentrations of the organic and inorganic biomolecules in these products may cause various problems to living beings which makes it necessary to analyze the biomolecules. The compactness of electrochemical approaches makes them well suited for on-site analysis. Voltammetric techniques like linear sweep voltammetry (LSV), cyclic voltammetry (CV), differential pulse voltammetry (DPV), square wave voltammetry (SWV), amperometry, and other methods give precise information about the analytes under study. Electrochemical approaches have several advantages in the investigation of significant organic and inorganic biomolecules because of their high sensitivity and selectivity, low detection limits, good adaptability, simplicity to use, and lower cost for instrumentations. Voltammetric methods lead to an in-depth understanding of the reaction kinetics and reaction mechanisms underlying the electrochemical reactions of the bioactive molecules, making them perfect tools for bio sensing applications. These features have resulted in the successful application of voltametric biosensing in the analysis of metal ions, hormones, vitamins, amino acids, agriculturally important and hazardous compounds, environmentally important and hazardous compounds, medicinal compounds, and so on. This book is targeted at scientific researchers in the field of electroanalytical chemistry and aims to inspire them to produce highly sensitive voltametric devices for biosensing applications. It also envisions to motivate researchers from other fields to carry out concurrent investigations in this newly emerging interdisciplinary research area i.e. voltammetric biosensing. .