

| | |
|-------------------------|--|
| 1. Record Nr. | UNINA9910784631803321 |
| Autore | Rajeshwar Krishnan |
| Titolo | Environmental electrochemistry [[electronic resource]] : fundamentals and applications in pollution abatement // Krishnan Rajeshwar, Jorge G. Ibanez |
| Pubbl/distr/stampa | San Diego, : Academic Press, c1997 |
| ISBN | 1-281-18665-1 9786611186654 0-08-053109-1 |
| Descrizione fisica | 1 online resource (793 p.) |
| Altri autori (Persone) | IbanezJorge G |
| Disciplina | 628.5 |
| Soggetti | Electrochemistry Photoelectricity Pollution |
| 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 and index. |
| Nota di contenuto | Front Cover; Environmental Electrochemistry: Fundamentals and Applications in Pollution Abatement; Copyright Page; Table of Contents; Chapter 1; 1.1. Introduction; 1.2. Some Definitions and Classification of Pollutants; 1.3. Environmental Media and Pollutant Transport; 1.4. Environmental Chemistry and Toxicology of Common Pollutants - A Primer; 1.5. Current Methods for Pollutant Analyses; 1.6. Current Methods for Pollutant Treatment; 1.7. Electrochemical Technology and the Environment; 1.8. Summary; References; Supplementary Reading; Chapter 2; 2.1. Introduction 2.2. Current, Charge, and Potential 2.3. Charge and Mass Transport; 2.4. Electrode/Electrolyte Interfaces and Electrochemical Cells; 2.5. Thermodynamics and Kinetics in Electrochemical Systems; 2.6. Electroanalytical Chemistry; 2.7. Electrolysis and Electrodeposition; 2.8. Mass Transport Under Forced Convection in an Electrochemical Cell; 2.9. Electrochemical Reactor Design; 2.10. Electrokinetic Phenomena; 2.11. Semiconductor Electrochemistry; 2.12. Photoemission at Metal Electrodes; 2.13. Instrumentation; 2.14. Summary; References; Supplementary Reading; Chapter 3; 3.1. Introduction |

3.2. Electrochemistry of Organic Pollutants 3.3. Electrochemistry of Inorganic Pollutants; 3.4. Summary; References; Supplementary Reading; Chapter 4; 4.1. Introduction; 4.2. Flow Injection Analysis; 4.3. Potentiometric Sensors; 4.4. Amperometric-Coulometric and Voltammetric-Polarographic Detection in Flow Systems; 4.5. Amperometric Sensors for Environmental Pollutants: Some Examples; 4.6. Amperometric Gas Sensors; 4.7. Stripping Analyses: Specialized Aspects; 4.8. Direct Voltammetric (or Polarographic) Determination of Pollutants
4.9. Electrochemistry as an Auxiliary Tool to Atomic Spectroscopies
4.10. Conductivity Detectors; 4.11. Photoassisted Detection of Pollutants; 4.12. Summary; References; Supplementary Reading; Chapter 5; 5.1. Introduction; 5.2. Positive Features of Electrochemical Remediation; 5.3. Direct Electrolysis of Pollutants; 5.4. Indirect Electrolysis of Pollutants; 5.5. Electroflotation, Electrocoagulation, and Electroflocculation; 5.6. Electrochemical Remediation of Gaseous Pollutants; 5.7. Membrane-Assisted Processes; 5.8. Electrokinetic Processing of Soil
5.9. Emerging Materials for Electrochemical Treatment of Pollutants
Summary; References; Supplementary Reading; Chapter 6; 6.1. Introduction; 6.2. Photolysis of H₂O₂ and O₃ and Generation of eaq; 6.3. Destruction of Organics as Mediated by OH and eaq; 6.4. Direct Photodissociation of the Pollutant; 6.5. Reaction Kinetics, Mechanisms and Examples of Application of the UV-H₂O₂ System; 6.6. Reaction Kinetics, Mechanisms, and Examples of Application of the UV-O₃ System; 6.7. The UV-H₂O₂-O₃ Process; 6.8. UV-H₂O₂ and UV-O₃ Systems: Practical Considerations; 6.9. Heterogeneous Photocatalysis
6.10. Summary

Sommario/riassunto

The first book of its kind, Environmental Electrochemistry considers the role that electrochemical science and engineering can play in environmental remediation, pollution targeting, and pollutant recycling. Electrochemical-based sensors and abatement technologies for the detection, quantification, and treatment of environmental pollutants are described. Each chapter includes an extensive listing of supplemental readings, with illustrations throughout the book to clarify principles and approaches detailed in the text. Key Features* The first book to review electro- and photoel
