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Titolo	Nanostructured Metal-Oxide Electrode Materials for Water Purification : Fabrication, Electrochemistry and Applications // edited by Onoyiwwe Monday Ama, Suprakas Sinha Ray
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Collana	Engineering Materials, , 1612-1317
Disciplina	620.115
Soggetti	Materials science Force and energy Electrochemistry Water - Pollution Ceramics Glass Composite materials Nanotechnology Water-supply Energy Materials Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution Ceramics, Glass, Composites, Natural Materials Nanotechnology and Microengineering Water Industry/Water Technologies
Lingua di pubblicazione	Inglese
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Nota di contenuto	The dynamic degradation efficiency of major organic pollutants from wastewater -- Synthesis and fabrication of photoactive nanocomposite electrodes for the degradation of wastewater pollutants -- The essence of electrochemical measurements on corrosion characterization and electrochemistry application -- Electrochemical cells -- Properties and synthesis of metal oxide nanoparticles in electrochemistry -- Metal

oxide nanomaterials for biosensor application -- Metal oxide nanomaterials for electrochemical detection of heavy metals in water -- Application of metal oxides electrodes -- Application of modified metal oxide electrodes in photoelectrochemical removal of organic pollutants from wastewater -- Metal oxide nanocomposites for adsorption and photoelectrochemical degradation of pharmaceutical pollutants.

Sommario/riassunto

This book reports on the development of nanostructured metal-oxide-based electrode materials for use in water purification. The removal of organic pollutants and heavy metals from wastewater is a growing environmental and societal priority. This book thus focuses primarily on new techniques to modify the nanostructural properties of various solvent-electrolyte combinations to address these issues. Water treatment is becoming more and more challenging due to the ever increasing complexity of the pollutants present, requiring alternative and complementary approaches toward the removal of toxic chemicals, heavy metals and micro-organisms, to name a few. This contributed volume cuts across the fields of electrochemistry, water science, materials science, and nanotechnology, while presenting up-to-date experimental results on the properties and synthesis of metal-oxide electrode materials, as well as their application to areas such as biosensing and photochemical removal of organic wastewater pollutants. Featuring an introductory chapter on electrochemical cells, this book is well positioned to acquaint interdisciplinary researchers to the field, while providing topical coverage of the latest techniques and methodology. It is ideal for students and research professionals in water science, materials science, and chemical and civil engineering.
