

1. Record Nr.	UNINA9910789401403321
Titolo	Advanced oxidation technologies : sustainable solutions for environmental treatments // editors, Marta I. Litter, Remediation Technologies Division, Environmental Chemistry Department, Chemistry Management, National Atomic Energy Commission, Buenos Aires, Roberto J. Candal, National University of General San Martin, School of Science and Technology, J. Martin Meichtry, Remediation Technologies Division, Environmental Chemistry Department, Chemistry Management, National Atomic Energy Commission, Buenos Aires
Pubbl/distr/stampa	Boca Raton : , : CRC Press, , [2014] ©2014
ISBN	0-429-22744-2 1-315-77765-7
Descrizione fisica	1 online resource (382 p.)
Collana	Sustainable Energy Developments ; ; Volume 9
Classificazione	SCI013000TEC010000TEC010030
Disciplina	628.3/5
Soggetti	Sewage - Purification - Oxidation Oxidation - Environmental aspects Sustainable engineering Environmental chemistry - Technique
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"A Balkema book."
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Front Cover; About the book series; Editorial board; Table of contents; Contributors; Editors' foreword; About the editors; Acknowledgements; 1. Decontamination of water by solar irradiation; 2. Reduction of pentavalent and trivalent arsenic by TiO ₂ -photocatalysis: An innovative way of arsenic removal; 3. Synthesis, characterization and catalytic evaluation of tungstophosphoric acid immobilized on Y zeolite; 4. Kinetic aspects of the photodegradation of phenolic and lactonic biocides under natural and artificial conditions 5. Fenton-like oxidation of phenol with a Cu-chitosan/Al ₂ O ₃ catalyst in a recirculating batch reactor 6. Degradation of a mixture of glyphosate and 2,4-D in water solution employing the UV/H ₂ O ₂

process, including toxicity evaluation; 7. Degradation of perchlorate dissolved in water by a combined application of ion exchange resin and zerovalent iron nanoparticles; 8. Eco-friendly approach for Direct Blue 273 removal from an aqueous medium; 9. Decontamination of commercial chlorpyrifos in water using the UV/H₂O₂ process 10. Abatement of nitrate in drinking water. A comparative study of photocatalytic and conventional catalytic technologies 11. Photocatalytic inactivation of airborne microorganisms. Performance of different TiO₂ coatings; 12. Water decontamination by heterogeneous photo-Fenton processes over iron, iron minerals and iron-modified clays; 13. Modified montmorillonite in photo-Fenton and adsorption processes; 14. Photocatalytic degradation of dichlorvos solution using TiO₂-supported ZSM-11 zeolite 15. Water disinfection with UVC and/or chemical inactivation. Mechanistic differences, implications and consequences 16. Ag/AgCl composite material: synthesis, characterization and application in treating wastewater; 17. Highly photoactive Er³⁺-TiO₂ system by means of up-conversion and electronic cooperative mechanism; 18. Stabilized TiO₂ nanoparticles on clay minerals for air and water treatment; 19. Photodegradation of beta-blockers in water; 20. Final conclusions; Book series page

Sommario/riassunto

Providing a state-of-the-art overview on environmental applications of Advanced Oxidation Technologies (AOTs) as sustainable, low-cost and low-energy consuming treatments of water, air, and soil. It includes information on innovative research and development on TiO₂ photocatalytic redox processes, Fenton, Photo-Fenton processes, zerovalent iron technology, etc highlighting possible applications of ATOs in developing and industrialized countries around the world in the framework of A crosscutting and comprehensive look at environmental problems. Advanced Oxidation Technologies (AOTs) or Processes (AOPs) are relatively new and innovative technologies to remove harmful and toxic pollutants--