1. Record Nr. UNINA9910807798703321

Titolo	Nanotechnology applications for clean water [[electronic resource] /] / edited by Nora Savage ... [et al.]
Pubbl/distr/stampa	Norwich, NY, : William Andrew, c2009
ISBN	1-282-38103-2 9786612381034 0-8155-1973-7 0-08-094758-1
Edizione	[1st edition]
Descrizione fisica	1 online resource (635 p.)
Collana	Micro & nano technologies
Altri autori (Persone)	SavageNora F
Disciplina	628.1 22 628.161
Soggetti	Water-supply engineering - Technological innovations Water - Purification - Technological innovations Water - Pollution - Prevention Nanotechnology Nanostructured materials
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; Nanotechnology Applications for Clean Water; Copyright Page; Contents; Contributors; Foreword: The Potential of Nanotechnology for Clean Water Resources; Series Editor's Preface; Preface; Acknowledgments; Introduction: Water Purification in the Twenty-First Century-Challenges and Opportunities; Part 1 Drinking Water; Chapter 1 Nanometallic Particles for Oligodynamic Microbial Disinfection; Chapter 2 Nanostructured Visible-Light Photocatalysts for Water Purification; Chapter 3 Nanostructured Titanium Oxide Film- and Membrane-Based Photocatalysis for Water Treatment Chapter 4 Nanotechnology-Based Membranes for Water PurificationChapter 5 Multifunctional Nanomaterial-Enabled Membranes for Water Treatment; Chapter 6 Nanofluidic Carbon Nanotube Membranes: Applications for Water Purification and Desalination; Chapter 7 Design of Advanced Membranes and Substrates for Water Purification and Desalination; Chapter 8 Customization and

Multistage Nanofiltration Applications for Potable Water Treatment, and Reuse; Chapter 9 Commercialization of Nanotechnology for Removal of Heavy Metals in Drinking Water
Chapter 10 U. S. -Israel Workshop on Nanotechnology for Water PurificationPart 2 Treatment and Reuse; Chapter 11 Water Treatment by Dendrimer-Enhanced Filtration: Principles and Applications; Chapter 12 Nanotechnology-Enabled Water Disinfection and Microbial Control: Merits and Limitations; Chapter 13 Possible Applications of Fullerene Nanomaterials in Water Treatment and Reuse; Chapter 14 Nanomaterials-Enhanced Electrically Switched Ion Exchange Process for Water Treatment; Chapter 15 Detection and Extraction of Pesticides from Drinking Water Using Nanotechnologies; Part 3 Remediation
Chapter 16 Nanotechnology for Contaminated Subsurface Remediation: Possibilities and ChallengesChapter 17 Nanostructurcd Materials for Improving Water Quality: Potentials and Risks; Chapter 18 Physicochemistry of Polyelectrolyte Coatings that Increase Stability, Mobility, arid Contaminant Specificity of Reactive Nanoparticles Used for Groundwater Remediation; Chapter 19 Heterogeneous Catalytic Reduction for Water Purification: Nanoscale Effects on Catalytic Activity, Selectivity, and Sustainability
Chapter 20 Stabilization of Zero-Valent Iron Nanoparticles for Enhanced In Situ Destruction of Chlorinated Solvents in Soils and GroundwaterChapter 21 Enhanced Dechlorination of Trichloroethylene by Membrane-Supported Iron and Bimetallic Nanoparticles; Chapter 22 Synthesis of Nanostructured Bimetallic Particles in Polyligand-Functionalized Membranes for Remediation Applications; Chapter 23 Magnesium-Based Corrosion Nano-Cells for Reductive Transformation of Contaminants; Chapter 24 Water Decontamination Using Iron and Iron Oxide Nanoparticles
Chapter 25 Reducing Leachability and Bioaccessibility of Toxic Metals in Soils, Sediments, and Solid/Hazardous Wastes Using Stabilized Nanoparticles

Sommario/riassunto

The World Health Organization in 2004 estimated approximately 1.1 billion people did not have access to clean water and that 35% of Third World residents died from water-borne illnesses. While the situation is grim, recent advances strongly indicate that many of the current water quality problems can be addresses - and potentially resolved - using nanotechnology.Nanotechnology is already having a dramatic impact on research in water quality and Nanotechnology Applications for Clean Water highlights both the challenges and the opportunities for nanotechnology to positively influence thi