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Nota di contenuto	Emerging Nanostructured Materials for Environmental Remediation – An Overview -- Nanostructures in Photocatalysis – Opportunities and Challenges for Environmental Applications -- Rising Hierarchical Nanostructured Materials for Environmental Remediation -- Nanomaterials for Photocatalytic Decomposition of Toxic Pollutants in Air -- Nanomaterials for Photocatalytic Decomposition of Pharmaceuticals in Water -- Nanostructured Materials-based Sensors -- II-VI Material-based Nanostructures for Pollutant Degradation -- Advances in Conducting Polymer Nanocomposites in Shielding of Electromagnetic Pollution -- Magnetically Separable Nanocatalysts for Photocatalytic Degradation -- Nano-structuring of Hybrid Materials Using Wrapping to Enhance the Efficiency of Visible-light-responsive

Semiconductor Photocatalysts -- Soil remediation by (magnetic) Zero-valent Iron Nanoparticles for Organic Pollutant Elimination -- Recent Advances in Tungsten Disulfide Photocatalyst System with Homo/Hetero Junctions for Photocatalytic Performance -- Black TiO<sub>2</sub>: An Emerging Photocatalyst and Its Applications -- Metal Organic Frameworks: A New Generation Coordination Polymers for Visible Light Photocatalysis -- Carbonaceous Nanomaterials for Environmental Remediation -- Bi-Photocatalytic Efficiency of Bi-based Aurivillus Compounds: Critical Review and Discernment of the Factors Involved -- Co-catalyst Reinforced Photocatalysts in Environmental Cleanup: Fundamentals and Perspectives -- Summary and Future Perspectives of Materials and Technologies for Remediation.

#### Sommario/riassunto

This book discusses how nanostructured materials play a key role in helping address environmental challenges. Employing nanostructured materials in catalysis can increase the efficient decomposition of toxic pollutants in air, water, and soil. This multidisciplinary book discusses the most promising nanostructured materials made-up of metals, metal oxides, metal chalcogenides, multi-metal oxides, carbon nanostructures, and hybrid materials that can address environmental remediation. It provides a well-referenced introduction to newcomers from allied disciplines and will be valuable to researchers in academia, industry, and government working on solutions to environmental problems. Provides a state-of-the-art review of key concepts of nanostructured materials in environmental science Discusses the most promising nanostructured materials that can assist with environmental remediation Illustrates challenges and opportunities for development, experimental design, methodology, and interpretation of results .