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1.2.2 What Is an Ethical Issue?; 1.2.3 Basic Principles in Ethical Decision Making; 1.2.3.1 Utility; 1.2.3.2 Fairness; 1.2.3.3 Justice; 1.2.3.4 Proper Human Excellences; 1.2.3.5 Beneficence; 1.2.4 Significance of Nanotechnology in the Water Sector; 1.2.5 Benefits of Nanotechnology; 1.2.6 Ethical Issues and Concerns Related to Application of Nanotechnology in the Water Sector
1.2.6.1 Issues of Safety, Toxicity and Environmental Impact; 1.2.6.2 Distributive Justice Issues; 1.2.6.3 Intellectual Property Rights Issues; 1.2.6.4 Public Involvement and Consumer Awareness; 1.3 Legal and Regulatory Issues and Concerns Related to the Application of Nanotechnology in the Water Sector; 1.3.1 The EC's Code of Conduct for Responsible Nanoscience and Nanotechnology Research and Other Initiatives; 1.3.2 The Precautionary Principle; 1.4 Nanotechnology, Water and Human Health Research; 1.5 Conclusion; References
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2.4.1 Synthesized Nanocomposites; 2.4.2 Generated Nanocomposite Dust from Impact Test; 2.4.2.1 Morphology Studies; 2.4.2.2 Size Effect; 2.5 Conclusion; Acknowledgement; References; Part 2: Remediation; 3 Prospects for Immobilization of Microbial Sorbents on Carbon Nanotubes for Biosorption: Bioremediation of Heavy Metals Polluted Water; 3.1 Dispersion of Metal Pollutants in Water Sources; 3.2 Removal of Metal by Conventional Methods; 3.3 Microbial Sorbents for Removal of Toxic Heavy Metals from Water; 3.3.1 Bio-uptake of Metal; 3.3.2 Factors Affecting Microbial Adsorption Capacity
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3.4.2 Adsorption of Microorganisms on CNTs for Bioremediation

Sommario/riassunto

At the nano size materials often take on unique and sometimes unexpected properties which results in materials being 'tuned' to build faster, lighter, stronger and more efficient devices and systems, as well as new classes of materials. In the water research, nanotechnology is applied to develop more cost-effective and high-performance water treatment systems as well as instant and continuous ways to monitor water quality as well. Nanotechnology in water applications potentially impacts on treatment, remediation, sensing, and pollution prevention. Nanotechnology for water treatment an
