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6.5 Classification and Enzymology of Ligninolytic Enzymes6.6 Enzymatic Treatment of Synthetic Dyes; 6.7 Concluding Remarks; Acknowledgements; References; Chapter 7: Single and Hybrid Applications of Ultrasound for Decolorization and Degradation of Textile Dye Residuals in Water; 7.1 Overview of the Textile Industry, Dyestuff and Dyeing Mill Effluents; 7.2 Sonication: A Viable AOP for Decolorizing/Detoxifying Dying Process Effluents; 7.3 Hybrid Processes with Ultrasound: A Synergy of Combinations; 7.4 Conclusions; References
Chapter 8: Biosorption of Organic Dyes: Research Opportunities and Challenges8.1 General Considerations; 8.2 Biosorbents; 8.3 Factors Affecting Biosorption; 8.4 Biosorption Isotherms, Thermodynamics and Kinetics; 8.5 Future Perspectives and Challenges; References; Chapter 9: Dye Adsorption on Expanding Three-Layer Clays; 9.1 Introduction; 9.2 Classification of Dyes; 9.3 The Expanding Three-Layer Clay Minerals and Dye Adsorption; 9.4 General Remarks; References; Chapter 10: Non-conventional Adsorbents for Dye Removal; 10.1 Introduction; 10.2 Activated Carbons from Solid Wastes; 10.3 Clays 10.4 Siliceous Materials

Sommario/riassunto

The use of synthetic chemical dyes in various industrial processes, including paper and pulp manufacturing, plastics, dyeing of cloth, leather treatment and printing, has increased considerably over the last few years, resulting in the release of dye-containing industrial effluents into the soil and aquatic ecosystems. The textile industry generates high-polluting wastewaters and their treatment is a very serious problem due to high total dissolved solids (TDS), presence of toxic heavy metals, and the non-biodegradable nature of the dyestuffs in the effluent. The chapters in this book pro