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Nota di contenuto	Cover; Half Title page; Title page; Copyright page; Dedication; Preface; Acknowledgements; About the Editor; Chapter 1: Removal of Organic Dyes from Industrial Effluents: An Overview of Physical and Biotechnological Applications; 1.1 Introduction; 1.2 Classification of Dyes; 1.3 Technologies for Color Removal; References; Chapter 2: Novel Carbon-Based Nanoadsorbents for Removal of Synthetic Textile Dyes from Wastewaters; 2.1 Introduction; 2.2 Basic Properties of Carbon Nanoadsorbents; 2.3 Adsorpton of Textile Dyes by Carbon Nanoadsorbents 2.4 Mechanism of Dye Adsorption onto Carbon-Based Nanoadsorbents2.5 Conclusion and Future Perspectives; References; Chapter 3: Advanced Oxidation Processes for Removal of Dyes from Aqueous Media; 3.1 Introduction; 3.2 Advanced Oxidation Processes; 3.3 Concluding Remarks; References; Chapter 4: Photocatalytic Processes for the Removal of Dye; 4.1 Introduction; 4.2 Photocatalysis - An Emerging Technology; 4.3 Photo-Oxidation Mechanism; 4.4 Solar Photocatalysis/Photoreactors; 4.5 Solar Photoreactor for Degradation of

Different Dyes; 4.6 Dependence of Dye Degradation on Different Parameters
4.7 ConclusionsAcknowledgement; References; Chapter 5: Removal of Dyes from Effluents Using Biowaste-Derived Adsorbents; 5.1 Introduction; 5.2 Agro-Based Waste Materials as Dye Adsorbents; References; Chapter 6: Use of Fungal Laccases and Peroxidases for Enzymatic Treatment of Wastewater Containing Synthetic Dyes; 6.1 Introduction; 6.2 Textile Dyes - Classifications, Chemical Structures and Environmental Impacts; 6.3 Biodegradation of Synthetic Dyes by White Rot Fungi; 6.4 Fungal Decolorization Mechanisms and Involvement of Ligninolytic Enzymes
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

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Nota di contenuto	pt. 1. Design thinking and its emergence in K-12 education -- pt. 2. Young designers : K-12 students take on design thinking -- pt. 3. Design thinking as a catalyst for reimagining education -- pt. 4. Inspiring teaching : design thinking in the classroom.
Sommario/riassunto	Taking Design Thinking to School: How the Technology of Design Can Transform Teachers, Learners, and Classrooms uses an action-oriented approach to reframing K-12 teaching and learning, examining interventions that open up dialogue about when and where learning, growth and empowerment can be triggered.