1. Record Nr. UNINA9910810053503321 Sustainable practices in the textile industry / / edited by Lugman **Titolo** Jameel Rather, Aminoddin Haji, Mohd Shabbir Pubbl/distr/stampa Hoboken, New Jersey:,: Scrivener Publishing LLC,, [2021] 2021 **ISBN** 1-119-81890-7 1-119-81891-5 1-119-81889-3 Descrizione fisica 1 online resource (320 pages) Disciplina 615.902 Soggetti Dyes and dyeing - Environmental aspects Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Intro -- Table of Contents -- Title page -- Copyright -- Preface -- Part Nota di contenuto 1: SUSTAINABLE DYE EXTRACTION AND DYEING TECHNIQUES -- 1 Extraction and Application of Natural Dyes -- 1.1 Introduction -- 1.2 What are Natural Dyes? -- 1.3 Why Natural Dyes? -- 1.4 What are Synthetic Dyes? -- 1.5 Sources of Natural Dyes -- 1.6 Types of Natural Dyes -- 1.7 Natural Dyes Need Fixing Agent (Mordants) for Bonding --1.8 Fibers/Fabrics Used for Natural Dyeing -- 1.9 Extraction of Natural Dyes -- 1.10 Dyeing Process -- 1.11 Evaluation of the Dyed Fabric --1.12 Some Special Characteristics of Naturally Dyed Fabric -- 1.13 Conclusion -- Acknowledgement -- References -- 2 Recent Advances in Non-Aqueous Dyeing Systems -- 2.1 Introduction -- 2.2 Supercritical Fluid Dyeing System -- 2.3 Reverse Micelle Systems -- 2.4 Solvent Dyeing -- 2.5 Silicone Non-Aqueous Dyeing -- 2.6 Conclusion -- References -- 3 Structural Coloration of Textile Materials -- 3.1 Introduction -- 3.2 Thin-Film Interference -- References -- 4 Enzymatic Wet Processing -- 4.1 Introduction -- 4.2 Enzymes -- 4.3 Function of Enzymes -- 4.4 Classification of Enzymes -- 4.5 n-Amylase Enzyme for Desizing -- 4.6 Pectinase Enzyme for Scouring --4.7 Protease Enzyme for Wool Anti-Felting -- 4.8 Cellulase Enzyme for Biopolishing and Biostoning -- 4.9 Hairiness Removal Mechanism --

4.10 Enzyme Decolorization of Textile Effluent -- 4.11 Enzymes for

Increasing Dyeability of Different Fibers -- 4.12 Conclusion --References -- Part 2: SUSTAINABLE FUNCTIONAL FINISHING OF VARIOUS TEXTILE MATERIALS -- 5 Coating Textiles: Towards Sustainable Processes -- 5.1 Introduction -- 5.2 Most Used Polymers for Coating Textiles -- 5.3 Traditional Coating Methods -- 5.4 Environmental Friendly Polymers -- 5.5 Sustainable Coating Technologies -- 5.6 Conclusion -- References. 6 A Review on Hydrophobicity and Fabricating Hydrophobic Surfaces on the Textiles -- 6.1 Introduction -- 6.2 Self-Cleaning Surfaces -- 6.3 Applications of Hydrophobic Surfaces -- 6.4 Basic Theories: Modeling of Contact Angle -- 6.5 Techniques to Make Super-Hydrophobic Surfaces -- 6.6 Methods of Applying Hydrophobic Coating on Textiles -- 6.7 Contact Angles (CA) Measurement -- 6.8 Research Records on Hydrophobic Surface Production -- 6.9 Conclusion -- References -- 7 UV Protection: Historical Perspectives and State-of-the-Art Achievements -- 7.1 Introduction -- 7.2 Fundamentals Regarding UV Protection of Textile Fabrics -- 7.3 UV Stabilizers Beginnings and Initial Development -- 7.4 Conclusion -- References -- 8 Synthetic and Natural UV Protective Agents for Textile Finishing -- 8.1 Introduction -- 8.2 Ultraviolet Radiation (UVR) -- 8.3 Importance of Ultraviolet Protective Finish -- 8.4 Methods of Blocking Ultraviolet Rays -- 8.5 Ultraviolet Protection Factor Measurement System -- 8.6 Clothing Factors Affecting Ultraviolet Protection Factor -- 8.7 Mechanisms of UV Protection -- 8.8 Types of Ultraviolet Absorbers -- 8.9 Commercial Ultraviolet Protective Clothing -- 8.10 Nanoparticle Coatings for Ultraviolet Protective Textiles -- 8.11 Durability of Ultraviolet Protective Finish -- 8.12 Conclusion -- References -- 9 Sustainable Orientation of Textile Companies -- 9.1 Introduction -- 9.2 Textile Industry-Environmental, Social and Economic Issues -- 9.3 Circular Economy --9.4 Sustainability Circles -- 9.5 Circularity in the Supply Chain -- 9.6 Consumer Behavior of Sustainable Textile Products -- 9.7 Decision to Purchase Sustainable Textile Products -- 9.8 Policies and Strategies Used in the Sustainable Textile Industry -- 9.9 Conclusions --References -- Part 3: SUSTAINABLE WASTEWATER REMEDIATION. 10 Sustainable Application of Ionic Flocculation Method for Textile Effluent Treatment -- 10.1 Introduction -- 10.2 Conventional Methods for Degradation of Textile Effluents -- 10.3 Surfactants -- 10.4 Adsorptive Micellar Flocculation (AMF) -- 10.5 Mechanism -- 10.6 Choice of Flocculant -- 10.7 Analysis and Calculations -- 10.8 Optimization of Conditions for Better Removal of Dye Using AMF --10.9 Potential Advantages of AMF -- 10.10 Application to Wastewaters -- 10.11 Conclusion -- 10.12 Future Prospective -- References -- 11 Remediation of Textile Wastewater by Ozonation -- 11.1 Introduction -- 11.2 Sources of Wastewater -- 11.3 Ozonation Remediation for Textile Water -- 11.4 Impact of Various Techniques in Combination Ozonation Process for Treatment of Textile Wastewater -- 11.5 Degradation of Dyes via Ozonation -- 11.6 Conclusion -- References -- 12 Design of a New Cold Atmospheric Plasma Reactor Based on Dielelectric Barrier Discharge for the Treatment and Recovery of Textile Dyeing Wastewater: Profoks/CAP Reactor -- 12.1 Introduction -- 12.2 Advanced Oxidation Processes (AOP) in Wastewater Treatment -- 12.3 Profoks/CAP Wastewater Treatment and Water Recovery System -- 12.4 Conclusion -- References -- 13 Nanotechnology and its Application in Wastewater Treatment -- 13.1 Introduction -- 13.2 Nanotechnology --13.3 Conclusion -- References -- Index -- Also of Interest -- End User License Agreement.