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Nota di contenuto	Preface -- List of Authors and their addresses -- PART 1. Biology of Algae -- 1. General characteristics of Algae -- 2. Classification of Algae -- 3. Cyanobacteria -- 4. Green algae -- 5. Growth forms and life histories in green algae -- 6. Brown algae -- 7. Red algae -- 8. Diatoms: Yellow or Golden Brown Algae -- 9. Xanthophyceae, Euglenophyceae and Dinophyceae -- 10. Survey Of Algae In Extreme Environments -- PART 2. Applied Phycology -- 11. Algal Biotechnology -- 12. Harmful Algal Blooms -- 13. Phycoremediation -- 14. Bioactivity of secondary metabolites from Macroalgae -- 15. Marine algae: Gathered resource to global food industry -- 16. Metalic Nanoparticle Synthesis by Cyanobacteria: Fundamentals and Applications -- 17. Blue Green Algae: A Potential Biofertilizer For Rice -- 18. Polyunsaturated Fatty Acids From Algae -- 19. Algae as a source of biofuel -- 20.

Phylogenomics in Algal Research: Current Trends and Future Perspectives -- 21. Advance Techniques in Algae -- 22. Culturing Micro Algae.

Sommario/riassunto

Algae are an important group of organisms which are found in a wide range of habitats be it oceans, rivers, fresh water lakes, ponds or brackish water bodies, snow, barks of the trees, etc. Ranging from a small tiny cell to the Giant Kelp measuring up to several metres, this group of plants have some unique features which are not found in any other group of organisms. Algae have both Prokaryotic and Eukaryotic groups, large varieties of pigment systems, triphasic life cycle and a long evolutionary history. Algae have also changed the planet's atmosphere by producing oxygen thus paving the way for evolution of life on earth. These tiny organisms not only give us oxygen to breathe, food to eat, medicines to heal and cosmetics to use but they also provide a lot of information about the origin of life. It has been predicted that not only vehicles will run on algal biofuels in the future but power plants will use algae for carbon dioxide sequestration. Despite its huge importance, algae remains a much neglected subject because of its stereotype boring class room table materials as "Pond Scum". Globally, algae is already a multi-billion dollar industry employing large numbers of people in various industries and their value is set to increase in future. Therefore, the purpose of writing and editing this book is not to publish one more text book in the field of phycology but to give an alternative outlook and encouragement to our readers and students to understand, feel and unravel the beauty and use of this group of organisms in many different ways. The 22 chapters are divided into two different parts which have been authored by eminent researchers from across the world. The first part, Biology of Algae, contains 10 chapters dealing with the general characteristics, classification and description of different groups such as Blue Green Algae, Green Algae, Brown Algae, Red Algae, Diatoms, Xanthophyceae, Dinophyceae, etc. In addition, it has two important chapters covering Algae in Extreme Environments and Life Histories and Growth Forms in Green Algae. The second part, Applied Phycology, contains 12 chapters dealing with the more applied aspects ranging from Algal Biotechnology, Biofuel, Phycoremediation, Bioactive Compounds, Biofertilizer, Fatty Acids, Harmful Algal Blooms, Industrial Applications of Seaweeds, Nanotechnology, Phylogenomics and Algal culture Techniques, etc. This volume has been carefully written and edited with an interdisciplinary appeal and aims to bring all aspects of Algae together in one volume.