

1. Record Nr.	UNINA9910786959803321
Titolo	Biotechnological applications of microalgae : biodiesel and value added products / / edited by Faizal Bux
Pubbl/distr/stampa	Boca Raton : , : CRC Press, , 2013
ISBN	0-429-08711-X 1-4665-1530-9
Descrizione fisica	1 online resource (251 p.)
Classificazione	MED009000SCI011000TEC010000
Altri autori (Persone)	BuxF (Faizel)
Disciplina	579.8
Soggetti	Microalgae - Biotechnology Biomass energy Microalgae - Industrial use
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Contents; Preface; Acknowledgments; About the Editor; Contributors; Chapter 1 - Introduction; Chapter 2 - The Biology of Microalgae; Chapter 3 - Strain Selection for Biodiesel Production; Chapter 4 - Enumeration of Microalgal Cells; Chapter 5 - Microalgal Cultivation Reactor Systems; Chapter 6 - Harvesting of Microalgal Biomass; Chapter 7 - Lipid Identification and Extraction Techniques; Chapter 8 - Synthesis of Biodiesel/Bio-Oil from Microalgae; Chapter 9 - Analysis of Microalgal Biorefineries for Bioenergy from an Environmental and Economic Perspective Focus on Algal Biodiesel Chapter 10 - Value-Added Products from Microalgae Chapter 11 - Algae-Mediated Carbon Dioxide Sequestration for Climate Change Mitigation and Conversion to Value-Added Products; Chapter 12 - Phycoremediation by High-Rate Algal Ponds (HRAPs); Chapter 13 - Microalgal Biotechnology: Today's (Green) Gold Rush; Back Cover
Sommario/riassunto	The book gives an in-depth analysis of microalgal biology, ecology, biotechnology and biofuel production capacity as well as a thorough discussion on the value added products that can be generated from diverse microalgae. It summarizes the state of the art in microalgal biotechnology research, from microalgal strain selection, microbiology, cultivation, harvesting, and processing. Contributors from the US,

Africa, Asia, South America, and Europe cover microalgal physiology, biochemistry, ecology, molecular biology, and more--

Preface Over the decades, much of the literature has focused on the biology and ecological aspects of algae found in freshwater, marine, and brackish environments. These organisms are also known to inhabit various other environments on Earth. More recently, there has been a substantial shift toward the concept of sustainable development and the green economy with emphasis on exploiting biological systems for the benefit of mankind. This underpins the fundamentals of the field of biotechnology, which has revolutionized various fields including agriculture, food, pharmaceutical and medical sciences, environmental sciences, and industrial feedstock, thus positively impacting most spheres of human endeavor. Algae--but more specifically, microalgae--have been associated with problematic events such as algal blooms caused by eutrophication of aquatic environments and in some cases the toxins produced have serious health impacts on the aquatic environment, plants, animals, and humans. However, these events are largely due to human activities resulting in the Proliferation of nutrients in aquatic environments. The significance of algae cannot be underestimated as they contribute to approximately 40% of the oxygen in the atmosphere, are the original source of fossil fuels, and are the primary producers in the oceans. Therefore, there is potential for exploitation of this invaluable biomass source that could lead to definite environmental and economic benefits for man--
