

CONTENTS

Preface		vii
Chapter 1	Microalgae Biotechnological Applications: Nutrition, Health and Environment <i>A. E. Marques, J. R. Miranda, A. P. Batista, and L. Gouveia</i>	1
Chapter 2	Assessing the Renewability of Biodiesel from Microalgae via Different Transesterification Processes <i>Ehiae Ehimen, Zhifa Sun, and Gerry Carrington</i>	61
Chapter 3	Toxicity and Removal of Organic Pollutants by Microalgae: A Review <i>Lin Ke, Yuk Shan Wong, and Nora F. Y. Tam</i>	101
Chapter 4	Microalgal Engineering: The Metabolic Products and the Bioprocess <i>Jorge Alberto Vieira Costa, Michele Greque de Moraes and, Michele da Rosa Andrade</i>	141
Chapter 5	Hydrothermal Carbonization of Microalgae and Other Low Cellulosic Biomass Materials <i>Steven M. Heilmann, Marc G. von Keitz, and Kenneth J. Valentas</i>	171
Chapter 6	Investigations on the Use of Microalgae for Aquaculture <i>José Antonio López Elías, Luis Rafael Martínez Córdova, and Marcel Martínez Porchas</i>	201
Chapter 7	Microalgae: The Future of Green Energy <i>K. K. I. U. Arunakumara</i>	227
Chapter 8	Real-Time Spectral Techniques for the Detection of Buildup of Valuable Compounds and Stress in Microalgal Cultures: Implications for Biotechnology <i>Alexei Solovchenko, Inna Khozin-Goldberg, and Olga Chivkunova</i>	251
Chapter 9	Microalgae as an Alternative Feed Stock for Green Biofuel Technology <i>G. S. Anisha and Rojan P. John</i>	277

Chapter 10	A Critical Review: Microalgal CO ₂ Sequestration, Which Strain Is the Best? <i>Yanna Liang</i>	295
Chapter 11	Use of Microalgae as Biological Indicators of Pollution: Looking for New Relevant Cytotoxicity Endpoints <i>Ángeles Cid, Raquel Prado, Carmen Rioboo, Paula Suárez-Bregua, and Concepción Herrero</i>	311
Chapter 12	Application of Green Technology on Production of Eyes-Protecting Algal Carotenoids from Microalgae <i>Chao-Rui Chen, Chieh-Ming J. Chang, Chun-Ting Shen, Shih-Lan Hsu, Bing-Chung Liao, Po-Yen Chen, and Jia-Jiuan Wu</i>	325
Chapter 13	Microalgae as Biodeteriogens of Stone Cultural Heritage: Qualitative and Quantitative Research by Non-Contact Techniques <i>Ana Zélia Miller, Miguel Ángel Rogerio-Candelera, Amélia Dionísio, Maria Filomena Macedo, and Cesareo Saiz-Jimenez</i>	345
Chapter 14	Astaxanthin Production in Cysts and Vegetative Cells of the Microalga <i>Haematococcus Pluvialis</i> Flotow <i>C. Herrero, M. Orosa, J. Abalde, C. Rioboo, and A. Cid</i>	359
Chapter 15	Nitrogen Solubility, Antigenicity, and Safety Evaluation of an Enzymatic Protein Hydrolysate from Green Microalga <i>Chlorella Vulgaris</i> <i>Humberto J. Morris, Olimpia Carrillo, María E. Alonso, Rosa C. Bermúdez, Alfredo Alfonso, Onel Fong, Juan E. Betancourt, Gabriel Llauroadó, and Ángel Almarales</i>	373
Chapter 16	Heterotrophic Microalgae in Biotechnology <i>Niels Thomas Eriksen</i>	387
Chapter 17	Microalgae Growth and Fatty Acid Composition Depending on Carbon Dioxide Concentration <i>C. Griehl, H. Polhardt, D. Müller, and S. Bieler</i>	413
Index		455