

Protocols For Macroalgae Research

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Harnessing Marine Macroalgae for Industrial Purposes in an Australian Context: Emerging Research and Opportunities Roos, Göran 2018-09-07 In today's environmental and economic climate, it is important for businesses to drive development towards sustainable and zero-waste industries, responsibly leveraging renewable low-cost inputs to generate high-value outputs for the global market. Marine macroalgae presents modern businesses with opportunities for the development of a new and vibrant industry sector that largely fulfills these requirements. *Harnessing Marine Macroalgae for Industrial Purposes in an Australian Context: Emerging Research and Opportunities* provides emerging perspectives on the theoretical and practical aspects of developing a new business sector within the bio-marine industry. Featuring coverage on a broad range of topics such as competitive advantage, food industry, and production systems, this publication is ideally designed for environmental researchers, business students, engineers, and academicians seeking current research on the economics, regulation, and policy in supporting the development of the macroalgal industry sector in the global market.

Handbook of Marine Macroalgae Se-Kwon Kim 2011-11-04 The *Handbook of Macroalgae: Biotechnology and Applied Phycology* describes the biological, biotechnological and the industrial applications of seaweeds. Vast research into the cultivation of seaweeds is currently being undertaken but there is a lack of methodological strategies in place to develop novel drugs from these sources. This book aims to rectify this situation, providing an important review of recent advances and potential new applications for macroalgae. Focusing on the chemical and structural nature of seaweeds the book brings the potentially valuable bioactive nature to the fore. Novel compounds isolated from seaweeds are reviewed to provide an invaluable reference for anyone working in the field.

DNA Barcodes Ida Lopez 2012-06-12 A DNA barcode in its simplest definition is one or more short gene sequences taken from a standardized portion of the genome that is used to identify species through reference to DNA sequence libraries or databases. In *DNA Barcodes: Methods and Protocols* expert researchers in the field detail many of the methods which are now commonly used with DNA barcodes. These methods include the latest information on techniques for generating, applying, and analyzing DNA barcodes across the Tree of Life including animals, fungi, protists, algae, and plants. Written in the highly successful *Methods in Molecular Biology*™ series format, the chapters include the kind of detailed description and implementation advice that is crucial for getting optimal results in the laboratory. Thorough and intuitive, *DNA Barcodes: Methods and Protocols* aids scientists in continuing to study methods from wet-lab protocols, statistical, and ecological analyses along with guides to future,

large-scale collections campaigns.

New Topics in Environmental Research Daniel Rhodes 2006 The environment is considered the surroundings in which an organism operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation. It is this environment which is both so valuable, on the one hand, and so endangered on the other. And it is people which are by and large ruining the environment both for themselves and for all other organisms. This book reviews the latest research in this field which is vital for everyone.

Seaweed Phylogeography Zi-Min Hu 2016-01-04 The book provides an overview of research on the remarkable diversity, adaptive genetic differentiation, and evolutionary complexity of intertidal macroalgae species. Through incorporating molecular data, ecological niche and model-based phylogeographic inference, this book presents the latest findings and hypotheses on the spatial distribution and evolution of seaweeds in the context of historical climate change (e.g. the Quaternary ice ages), contemporary global warming, and increased anthropogenic influences. The chapters in this book highlight past and current research on seaweed phylogeography and predict the future trends and directions. This book frames a number of research cases to review how biogeographic processes and interactive eco-genetic dynamics shaped the demographic histories of seaweeds, which furthermore enhances our understanding of speciation and diversification in the sea. Dr. Zi-Min Hu is an associate professor at Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China. Dr. Ceridwen Fraser is a senior lecturer at Fenner School of Environment and Society, Australian National University, Canberra, Australia.

EPA 630/R 1998

Fuels, Chemicals and Materials from the Oceans and Aquatic Sources Francesca M. Kerton 2017-06-26 Fuels, Chemicals and Materials from the Oceans and Aquatic Sources provides a holistic view of fuels, chemicals and materials from renewable sources in the oceans and other aquatic media. It presents established and recent results regarding the use of water-based biomass, both plants and animals, for value-added applications beyond food. The book begins with an introductory chapter which provides an overview of ocean and aquatic sources for the production of chemicals and materials. Subsequent chapters focus on the use of various ocean bioresources and feedstocks, including microalgae, macroalgae, and waste from aquaculture and fishing industries, including fish oils, crustacean and mollusc shells. Fuels, Chemicals and Materials from the Oceans and Aquatic Sources serves as a valuable reference for academic and industrial professionals working on the production of chemicals, materials and fuels from renewable feedstocks. It will also prove useful for researchers in the fields of green and sustainable chemistry, marine sciences and biotechnology. Topics covered include: • Production and conversion of green macroalgae • Marine macroalgal biomass as an energy feedstock • Microalgae bioproduction • Bioproduction and utilization of chitin and chitosan • Applications of mollusc shells • Crude fish oil as a potential fuel

Seaweed Invasions Craig Johnson 2008-12-19 In recognising an urgent need to move beyond case studies and develop a conceptual synthesis, the scope of this volume is broad, covering the principal elements of both the invasion process and human responses to seaweed invasions. This includes addressing legal frameworks for regulatory control, practical means to track and respond to invasive seaweeds in the field, as well as the ecology of invasions. The result is both a valuable multidisciplinary synthesis of work to date, and a pointer to future challenges and priorities.

Algae Nooruddin Thajuddin 2016-06-29 *Algae - Organisms for Imminent Biotechnology* will be useful source of information on basic and applied aspects of algae for post graduate students, researchers, scientists, agriculturists, and decision makers. The book comprises a total of 12 chapters covering various aspects of algae particularly on microalgal biotechnology, bloom dynamics, photobioreactor design and operation of microalgal mass cultivation, algae used as indicator of water quality, microalgal biosensors for ecological monitoring in aquatic environment, carbon capture and storage by microalgae to enhancing CO₂ removal, synthesis and biotechnological potentials of algal nanoparticles, biofilms, silica-based nanovectors, challenges and opportunities in marine algae, and genetic identification and mass propagation of economically important seaweeds and seaweeds as source of new bioactive prototypes.

Recent Advances in Micro- and Macroalgal Processing Gaurav Rajauria 2021-04-15 A comprehensive review of algae as novel and sustainable sources of algal ingredients, their extraction and processing This comprehensive text that offers an in-depth exploration of the research and issues surrounding the consumption, economics, composition, processing and the health effects of algae. With contributions from an international team of experts, the book explores the application of conventional and emerging technologies for algal processing. The book includes recent developments such as drying and milling technologies along with advancements in sustainable greener techniques. The text also highlights individual groups of compounds including polysaccharides, proteins, polyphenols, carotenoids, lipids and fibres from algae. The authors provide insightful reviews of the traditional and more recent applications of algae/algal extracts in food, feed, pharmaceutical and cosmetics products. Offering a holistic view of the various applications, the book looks at the economic feasibility, market trends and considerations, and health hazards associated with algae for industrial applications. This important book: Provides a comprehensive overview of algal biomolecules and the role of emerging processing technologies Explores the potential biological and health benefits of algae and their applications in food, pharmaceuticals and cosmetic products Includes a current review of algal bioactives and processing technologies for food and ingredient manufacturers Contains contributions from leading academic and industrial experts Written for food scientists, allied researchers and professional food technologists, this book offers a guide to the novel processing and extraction techniques for exploring and harnessing the immense potential of algae.

Drawdown Paul Hawken 2017-04-18 • New York Times bestseller • The 100 most substantive solutions to reverse global warming, based on meticulous research by leading scientists and policymakers around the world “At this point in time, the *Drawdown* book is exactly what is needed; a credible, conservative solution-by-solution narrative that we can do it. Reading it is an effective inoculation against the widespread perception of doom that humanity cannot and will not solve the climate crisis. Reported by-effects include increased determination and a sense of grounded hope.” —Per Espen Stoknes, Author, *What We Think About When We Try Not To Think About Global Warming* “There’s been no real way for ordinary people to get an understanding of what they can do and what impact it can have. There remains no single, comprehensive, reliable compendium of carbon-reduction solutions across sectors. At least until now. . . . The public is hungry for this kind of practical wisdom.” —David Roberts, *Vox* “This is the ideal environmental sciences textbook—only it is too interesting and inspiring to be called a textbook.” —Peter Kareiva, Director of the Institute of the Environment and Sustainability, UCLA In the face of widespread fear and apathy, an international coalition of researchers, professionals, and scientists have come together to offer a set of realistic and bold solutions to climate change. One hundred techniques and practices are described here—some are well known; some you may have never heard of. They range from clean energy to educating girls in lower-income countries to land use practices that pull carbon out of the air. The solutions exist, are economically viable, and communities

throughout the world are currently enacting them with skill and determination. If deployed collectively on a global scale over the next thirty years, they represent a credible path forward, not just to slow the earth's warming but to reach drawdown, that point in time when greenhouse gases in the atmosphere peak and begin to decline. These measures promise cascading benefits to human health, security, prosperity, and well-being—giving us every reason to see this planetary crisis as an opportunity to create a just and livable world.

Algae Laura Barsanti 2005-11-14 An exhaustive review on all things algae would require a multi-volume encyclopedic work. Even then, such a tome would prove to be of limited value, as in addition to being quite complex, it would soon be outdated, as the field of phycology is full of continual revelations and new discoveries. *Algae: Anatomy, Biochemistry, and Biotechnology* o

Algal Adaptation to Environmental Stresses L.C. Rai 2012-12-06 Algae, generally held as the principal primary producers of aquatic systems, inhabit all conceivable habitats. They have great ability to cope with a harsh environment, e.g. extremely high and low temperatures, suboptimal and supraoptimal light intensities, low availability of essential nutrients and other resources, and high concentrations of toxic chemicals, etc. A multitude of physiological, biochemical, and molecular strategies enable them to survive and grow in stressful habitats. This book presents a critical account of various mechanisms of stress tolerance in algae, many of which may occur in microbes and plants as well.

Research in Fisheries University of Washington. School of Fisheries 1993

Journal of Shellfish Research 2007

Quality Assurance Guidelines for Biological Testing Richard E. Stanley 1978

Marine Biodiversity Observation Network (MBON) Frank Edgar Muller-Karger 2022-02-25

Seaweed Biology Christian Wiencke 2012-06-06 Seaweeds, also known as macroalgae, are among the most important primary producers and act as ecological engineers on rocky coasts of the world's oceans. In addition to their extreme ecological importance they are also of high economic relevance. Complementing available textbooks with its more research-oriented approach, this volume contains 22 chapters by renowned experts, grouped in five parts. In Part I fundamental processes and acclimation strategies of seaweeds towards the abiotic environment are covered. Part II focuses on the multitude of biotic interactions in seaweed communities, and in Part III the reader is introduced to the structure and function of the main seaweed systems of the world. The chapters of Part IV highlight and discuss the effects of global and local environmental changes on seaweeds and their communities. In the final Part V a comprehensive overview of developments in seaweed aquaculture, industrial applications and the overall economic importance of seaweeds is provided. Summarizing the advances in seaweed biology achieved within the last few decades, this book also identifies gaps in the present knowledge and needs for future research.

Sustainable Seaweed Technologies Maria Dolores Torres 2020-05-20 Sustainable Seaweed Technologies: Cultivation, Biorefinery, and Applications collates key background information on efficient cultivation and biorefinery of seaweeds, combining underlying chemistry and methodology with industry experience. Beginning with a review of the opportunities for seaweed biorefinery and the varied components and properties of macroalgae, the book then reviews all the key steps needed for

industrial applications, from its cultivation, collection and processing, to extraction techniques, concentration and purification. A range of important applications are then discussed, including the production of energy and novel materials from seaweed, before a set of illustrative case studies shows how these various stages work in practice. Drawing on the expert knowledge of a global team of editors and authors, this book is a practical resource for both researchers and businesses who currently work with macroalgae. Highlights the specific challenges and benefits of developing seaweed for sustainable products Presents useful case studies that demonstrate varied approaches and methodologies in practice Covers the complete seaweed chain, from cultivation to waste management

Biofuels from Algae Ashok Pandey 2013-08-08 This book provides in-depth information on basic and applied aspects of biofuels production from algae. It begins with an introduction to the topic, and follows with the basic scientific aspects of algal cultivation and its use for biofuels production, such as photo bioreactor engineering for microalgae production, open culture systems for biomass production and the economics of biomass production. It provides state-of-the-art information on synthetic biology approaches for algae suitable for biofuels production, followed by algal biomass harvesting, algal oils as fuels, biohydrogen production from algae, formation/production of co-products, and more. The book also covers topics such as metabolic engineering and molecular biology for algae for fuel production, life cycle assessment and scale-up and commercialization. It is highly useful and helps you to plan new research and design new economically viable processes for the production of clean fuels from algae. Covers in a comprehensive but concise way most of the algae biomass conversion technologies currently available Lists all the products produced from algae, i.e. biohydrogen, fuel oils, etc., their properties and potential uses Includes the economics of the various processes and the necessary steps for scaling them up

Chlorophyll a Fluorescence in Aquatic Sciences: Methods and Applications David J. Suggett 2010-08-23 Measurements of variable chlorophyll fluorescence have revolutionised global research of photosynthetic bacteria, algae and plants and in turn assessment of the status of aquatic ecosystems, a success that has partly been facilitated by the widespread commercialisation of a suite of chlorophyll fluorometers designed for almost every application in lakes, rivers and oceans. Numerous publications have been produced as researchers and assessors have simultaneously sought to optimise protocols and practices for key organisms or water bodies; however, such parallel efforts have led to difficulties in reconciling processes and patterns across the aquatic sciences. This book follows on from the first international conference on "chlorophyll fluorescence in the aquatic sciences" (AQUAFLUO 2007): to bridge the gaps between the concept, measurement and application of chlorophyll fluorescence through the synthesis and integration of current knowledge from leading researchers and assessors as well as instrument manufacturers.

Solar Energy Update 1984

Protocols for Macroalgae Research Bénédicte Charrier 2018-04-17 This book presents a wide range of tested and proven protocols relevant to a number of fields within biotechnology used in laboratory experiments in everyday phycological (seaweed) research. A major focus will be on bioenergy related aspects of this emerging technology. These protocols will be written in a clear and concise manner using simple language permitting even nonspecialist to adequately understand the significance of this research. It will also contain all necessary notes and guidelines for successful execution of these experiments.

Burn Albert Bates 2019-02-26 An 800-CEO-READ "Editor's Choice" March 2019 How We Can Harness

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Carbon to Help Solve the Climate Crisis In order to rescue ourselves from climate catastrophe, we need to radically alter how humans live on Earth. We have to go from spending carbon to banking it. We have to put back the trees, wetlands, and corals. We have to regrow the soil and turn back the desert. We have to save whales, wombats, and wolves. We have to reverse the flow of greenhouse gases and send them in exactly the opposite direction: down, not up. We have to flip the carbon cycle and run it backwards. For such a revolutionary transformation we'll need civilization 2.0. A secret unlocked by the ancients of the Amazon for its ability to transform impoverished tropical soils into terra preta—fertile black earths—points the way. The indigenous custom of converting organic materials into long lasting carbon has enjoyed a reawakening in recent decades as the quest for more sustainable farming methods has grown. Yet the benefits of this carbonized material, now called biochar, extend far beyond the soil. Pyrolyzing carbon has the power to restore a natural balance by unmining the coal and undrilling the oil and gas. Employed to its full potential, it can run the carbon cycle in reverse and remake Earth as a garden planet. Burn looks beyond renewable biomass or carbon capture energy systems to offer a bigger and bolder vision for the next phase of human progress, moving carbon from wasted sources: into soils and agricultural systems to rebalance the carbon, nitrogen, and related cycles; enhance nutrient density in food; rebuild topsoil; and condition urban and agricultural lands to withstand flooding and drought to cleanse water by carbon filtration and trophic cascades within the world's rivers, oceans, and wetlands to shift urban infrastructures such as buildings, roads, bridges, and ports, incorporating drawdown materials and components, replacing steel, concrete, polymers, and composites with biological carbon to drive economic reorganization by incentivizing carbon drawdown Fully developed, this approach costs nothing—to the contrary, it can save companies money or provide new revenue streams. It contains the seeds of a new, circular economy in which energy, natural resources, and human ingenuity enter a virtuous cycle of improvement. Burn offers bold new solutions to climate change that can begin right now.

Seaweed in Health and Disease Prevention Joël Fleurence 2016-06-01 Seaweed in Health and Disease Prevention presents the potential usage of seaweed, macroalgae, and their extracts for enhancing health and disease. The book explores the possibilities in a comprehensive way, including outlining how seaweed can be used as a source of macronutrients and micronutrients, as well as nutraceuticals. The commercial value of seaweed for human consumption is increasing year-over-year, and some countries harvest several million tons annually. This text lays out the properties and effects of seaweeds and their use in the food industry, offering a holistic view of the ability of seaweed to impact or effect angiogenesis, tumors, diabetes and glucose control, oxidative stress, fungal infections, inflammation and infection, the gut, and the liver. Combines foundational information and nutritional context, offering a holistic approach to the relationship between sea vegetables, diet, nutrition, and health Provides comprehensive coverage of health benefits, including sea vegetables as sources of nutraceuticals and their specific applications in disease prevention, such as angiogenesis, diabetes, fungal infections, and others Includes Dictionary of Terms, Key Facts, and Summary points in each chapter to enhance comprehension Includes information on toxic varieties and safe consumption guidelines to supplement basic coverage of health benefits

Macroalgal Biorefineries For The Blue Economy Alexander Golberg 2020-11-04 This unique compendium provides an insight into the role of emerging marine biorefineries based on macroalgae (seaweeds) in the development of a sustainable use of ocean resources for economic growth-blue economy. The useful reference text shows a complete picture on the motivation to develop seaweed technologies, and how the combination of biology, cultivation technologies and downstream processing with economics can address the social challenges through the blue growth.

Algal Culturing Techniques Robert A. Andersen 2005-03-04 Algal Culturing Techniques is a comprehensive reference on all aspects of the isolation and cultivation of marine and freshwater algae, including seaweeds. It is divided into seven parts that cover history, media preparation, isolation and purification techniques, mass culturing techniques, cell counting and growth measurement techniques, and reviews on topics and applications of algal culture techniques for environmental investigations. Algal Culturing Techniques was developed to serve as both a new textbook and key reference for phycologists and others studying aquatic systems, aquaculture and environmental sciences. Students of algal ecology, marine botany, marine phycology, and microbial ecology will enjoy the hands-on methodology for culturing a variety of algae from fresh and marine waters. Researchers in industry, such as aquaculture, pharmaceutical, foodstuffs, and biotechnology companies will find an authoritative and comprehensive reference. * Sponsored by the Phycological Society of America * Features color photographs and illustrations throughout * Describes culturing methods ranging from the test tube to outdoor ponds and coastal seaweed farms * Details isolation techniques ranging from traditional micropipette to automated flow cytometric methods * Includes purification, growth, maintenance, and cryopreservation techniques * Highlights methods for estimating algal populations, growth rates, isolating and measuring algal pigments, and detecting and culturing algal viruses * Features a comprehensive appendix of nearly 50 algal culture medium recipes * Includes a glossary of phycological terms

Biennial Report Heḳer yamim va-agamim le-Yiśra'el be-'e. m 1986

Natural Products from Marine Algae Dagmar B. Stengel 2015

Seaweeds and microalgae Food and Agriculture Organization of the United Nations 2021-07-16 Algae, including seaweeds and microalgae, contribute nearly 30 percent of world aquaculture production (measured in wet weight), primarily from seaweeds. Seaweeds and microalgae generate socio-economic benefits to tens of thousands of households, primarily in coastal communities, including numerous women empowered by seaweed cultivation. Various human health contributions, environmental benefits and ecosystem services of seaweeds and microalgae have drawn increasing attention to untapped potential of seaweed and microalgae cultivation. Highly imbalanced production and consumption across geographic regions implies a great potential in the development of seaweed and microalgae cultivation. Yet joint efforts of governments, the industry, the scientific community, international organizations, civil societies, and other stakeholders or experts are needed to realize the potential. This document examines the status and trends of global algae production with a focus on algae cultivation, recognizes the algae sector's existing and potential contributions and benefits, highlights a variety of constraints and challenges over the sector's sustainable development, and discusses lessons learned and way forward to unlock full potential in algae cultivation and FAO's roles in the process. From a balanced perspective that recognizes not only the potential of algae but also constraints and challenges upon the realization of the potential, information and knowledge provided by this document can facilitate evidence-based policymaking and sector management in algae development at the global, regional and national levels.

Harmful Algal Blooms Sandra E. Shumway 2018-08-06 Harmful Algal Blooms: A Compendium Desk Reference provides basic information on harmful algal blooms (HAB) and references for individuals in need of technical information when faced with unexpected or unknown harmful algal events. Chapters in this volume will provide readers with information on causes of HAB, successful management and monitoring programs, control, prevention, and mitigation strategies, economic consequences of HAB, associated risks to human health, impacts of HAB on food webs and ecosystems, and detailed

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information on the most common HAB species. Harmful Algal Blooms: A Compendium Desk Reference will be an invaluable resource to managers, newcomers to the field, those who do not have easy or affordable access to scientific literature, and individuals who simply do not know where to begin searching for the information needed, especially when faced with novel and unexpected HAB events. Edited by three of the world's leading harmful algal bloom researchers and with contributions from leading experts, Harmful Algal Blooms: A Compendium Desk Reference will be a key source of information for this increasingly important topic.

Gel Electrophoresis Sameh Magdeldin 2012-04-04 As a basic concept, gel electrophoresis is a biotechnology technique in which macromolecules such as DNA, RNA or protein are fractionated according to their physical properties such as molecular weight or charge. These molecules are forced through a porous gel matrix under electric field enabling uncounted applications and uses. Delivered between your hands, a second book of this Gel electrophoresis series (Gel Electrophoresis- Advanced Techniques) covers a part, but not all, applications of this versatile technique in both medical and life science fields. We try to keep the contents of the book crisp and comprehensive, and hope that it will receive overwhelming interest and deliver benefits and valuable information to the readers.

Seaweed Sustainability Brijesh K. Tiwari 2015-08-27 Seaweed Sustainability: Food and Non-Food Applications is the only evidence-based resource that offers an abundance of information on the applications of seaweed as a solution to meet an increasing global demand for sustainable food source. The book uncovers seaweed potential and describes the various sources of seaweed, the role of seaweeds as a sustainable source for human food and animal feeds, and the role of seaweed farming for sustainability. In addition to harvesting and processing information, the book discusses the benefits of seaweed in human nutrition and its nutraceutical properties. Offers different perspectives by presenting examples of commercial utilization of wild-harvested or cultivated algae, marine and freshwater seaweeds Discusses seasonal and cultivar variations in seaweeds for a better understanding of their implications in commercial applications Includes a wide range of micro and macro algae for food and feed production and provides perspectives on seaweed as a potential energy source

Handbook of Algal Biofuels Mostafa El-Sheekh 2021-12-10 Handbook of Algal Biofuels: Aspects of Cultivation, Conversion and Biorefinery comprehensively covers the cultivation, harvesting, conversion and utilization of algae for biofuels. Section cover algal diversity and composition, micro- and macroalgal diversity, classification and composition, their cultivation, biotechnological applications, and their current use in industry in biofuels and value-added products. Other sections address algal biofuel production, presenting detailed guidelines and protocols for the production of biodiesel, biogas, bioethanol, biobutanol and biohydrogen, along with thermochemical conversation techniques and integrated approaches for enhanced biofuel production. This book offers an all-in-one resource for researchers, graduate students and industry professionals working in the area of biofuels and phycology. It will be of interest to engineers working in Renewable Energy, Bioenergy and alternative fuels, Biotechnology, and Chemical Engineering. Provides complete coverage of the biofuel production process, from cultivation to biorefinery Includes a detailed discussion of process intensification, lifecycle analysis and biofuel byproducts Describes key aspects of algal diversity and composition, including their cultivation, harvesting and advantages over conventional biomass

Handbook of Marine Model Organisms in Experimental Biology Agnes Boutet 2021-11-26 The importance of molecular approaches for comparative biology and the rapid development of new molecular tools is unprecedented. The extraordinary molecular progress belies the need for understanding the development and basic biology of whole organisms. Vigorous international efforts to

train the next-generation of experimental biologists must combine both levels - next generation molecular approaches and traditional organismal biology. This book provides cutting-edge chapters regarding the growing list of marine model organisms. Access to and practical advice on these model organisms have become a *conditio sine qua non* for a modern education of advanced undergraduate students, graduate students and postdocs working on marine model systems. Model organisms are not only tools they are also bridges between fields - from behavior, development and physiology to functional genomics. Key Features Offers deep insights into cutting-edge model system science Provides in-depth overviews of all prominent marine model organisms Illustrates challenging experimental approaches to model system research Serves as a reference book also for next-generation functional genomics applications Fills an urgent need for students Related Titles Jarret, R. L. & K. McCluskey, eds. *The Biological Resources of Model Organisms* (ISBN 978-1-1382-9461-5) Kim, S.-K. *Healthcare Using Marine Organisms* (ISBN 978-1-1382-9538-4) Mudher, A. & T. Newman, eds. *Drosophila: A Toolbox for the Study of Neurodegenerative Disease* (ISBN 978-0-4154-1185-1) Green, S. L. *The Laboratory Xenopus sp.* (ISBN 978-1-4200-9109-0)

An Integrated View of the Molecular Recognition and Toxinology Gandhi Radis-Baptista 2013-07-01 Molecular Toxinology has been consolidated as a scientific area focused on the intertwined description of several aspects of animal toxins. In an inquiring biotechnological world, animal toxins appear as an invaluable source for the discovery of therapeutic polypeptides. Animal toxins rely on specific chemical interactions with their partner molecule to exert their biological actions. The comprehension of how molecules interact and recognize their target is essential for the rational exploration of bioactive polypeptides as therapeutics. Investigation on the mechanism of molecular interaction and recognition offers a window of opportunity for the pharmaceutical industry and clinical medicine. Thus, this book brings examples of two interconnected themes - molecular recognition and toxinology concerning to the integration between analytical procedures and biomedical applications.

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Recent Advances in Micro- and Macroalgal Processing Gaurav Rajauria 2021-04-06 Recent Advances in Micro- and Macroalgal Processing A comprehensive review of algae as novel and sustainable sources of algal ingredients, their extraction and processing This comprehensive text offers an in-depth exploration of the research and issues surrounding the consumption, economics, composition, processing and health effects of algae. With contributions from an international team of experts, the book explores the application of conventional and emerging technologies for algal processing. The book includes recent developments such as drying and milling technologies along with advancements in sustainable greener techniques. The text also highlights individual groups of compounds including polysaccharides, proteins, polyphenols, carotenoids, lipids and fibres from algae. The authors provide insightful reviews of the traditional and more recent applications of algae/algal extracts in food, feed, pharmaceutical and cosmetics products. Offering a holistic view of the various applications, the book looks at the economic feasibility, market trends and considerations, and health hazards associated with algae for industrial applications. This important book: Provides a comprehensive overview of algal biomolecules and the role of emerging processing technologies Explores the potential biological and health benefits of algae and their applications in food, pharmaceuticals and cosmetic products Includes a current review of algal bioactives and processing technologies for food and ingredient manufacturers Contains contributions from leading academic and industrial experts Written for food scientists, allied researchers and professional food technologists, *Recent Advances in Micro- and Macroalgal Processing: Food and Health Perspectives* offers a guide to the novel processing and extraction techniques for exploring and harnessing the immense potential of algae.

Greenhouse Gas Removal Technologies Dr Mai Bui 2022-08-22 Greenhouse gas removal (GGR) technologies can remove greenhouse gases such as carbon dioxide from the atmosphere. Most of the current GGR technologies focus on carbon dioxide removal, these include afforestation and reforestation, bioenergy with carbon capture and storage, direct air capture, enhanced weathering, soil carbon sequestration and biochar, ocean fertilisation and coastal blue carbon. GGR technologies will be essential in limiting global warming to temperatures below 1.5°C (targets by the IPCC and COP21) and will be required to achieve deep reductions in atmospheric CO₂ concentration. In the context of recent legally binding legislation requiring the transition to a net zero emissions economy by 2050, GGR technologies are broadly recognised as being indispensable. This book provides the most up-to-date information on GGR technologies that provide removal of atmosphere CO₂, giving insight into their role and value in achieving climate change mitigation targets. Chapters discuss the issues associated with commercial development and deployment of GGRs, providing potential approaches to overcome these hurdles through a combination of political, economic and R&D strategies. With contributions from leaders in the field, this title is an indispensable resource for graduate students and researchers in academia and industry, working in chemical engineering, mechanical engineering and energy policy.