

Marine Biofouling Colonization Processes And Defenses

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American Book Publishing Record - 2004

Living Along Gradients: Past, Present, Future - Ulrich Bathmann
2020-02-24

Molecular and functional ecology of aquatic microbial symbionts - Hans-Peter Grossart
Nothing provided

Advances in Contact Angle, Wettability and Adhesion - K. L. Mittal
2018-02-23

This is the third Volume in the series “Advances in Contact Angle, Wettability and Adhesion” initiated to consolidate information and provide commentary on certain recent research aspects dealing with this important topic. Its predecessor Volumes 1 and 2 were published in 2013 and 2015, respectively. This new book comprising 15 research and review articles is divided into four parts: Part 1: Contact Angle Measurement and Analysis; Part 2: Wettability Behavior; Part 3: Hydrophobic/Superhydrophobic Surfaces; Part 4: Wettability, Surface Free Energy and Adhesion. The topics covered include: O Procedure to measure and analyse contact angles/drop shape behaviors. O Contact

angle measurement considering spreading, evaporation and reactive substrate. O Measurement of contact angle of a liquid on a substrate of the same liquid. O Evolution of the axisymmetric droplet shape parameters. O Interfacial modulus of a solid surface. O Functionalization of textiles using UV-based techniques for surface modification—patterned wetting behavior. O Wettability behavior of oleophilic and oleophobic nanorough surfaces. O Wettability behavior of nanofluids. O Dielectrowetting for digital microfluidics. O Hydrophobicity and superhydrophobicity in fouling prevention. O Superhydrophobic/superhydrophilic hybrid surface. O Laser material processing for enhancing stem cell growth. O Wettability correlation for bioadhesion to different materials. O Determination of the surface free energy of solid surfaces: statistical consideration. O Determination of apparent surface free energy using hysteresis approach.

Marine Biofouling - Alexander I. Railkin 2003-12-29

Recent instances of bioinvasion, such as the emergence of the zebra mussel in the American Great Lakes, generated a demand among marine biologists and ecologists for groundbreaking new references that detail how organisms colonize hard substrates, and how to prevent damaging biomass concentrations. Marine Biofouling: Colonization Processes a

Molluscan Shellfish Aquaculture - Sandra Shumway 2021-07-15

A useable manual for all those interested in an up-to-date introduction to the field. Each of the major cultured species of commercial importance are covered, providing cutting-edge information of practical use to all those involved in shellfish aquaculture.

Sea Plants - 2014-05-21

Advances in Botanical Research publishes in-depth and up-to-date reviews on a wide range of topics in plant sciences. The series features several reviews by recognized experts on all aspects of plant genetics, biochemistry, cell biology, molecular biology, physiology and ecology. This thematic volume, number 71, features reviews on sea plants. Its chapters cover topics such as the role of algae in sustainability; the status of kelp exploitation and marine agronomy; potential applications for enzymatic recovery of metabolites from seaweeds; and many more.

Publishes in-depth and up-to-date reviews on a wide range of topics in plant sciences Features a wide range of reviews by recognized experts on all aspects of plant genetics, biochemistry, cell biology, molecular biology, physiology, and ecology Volume features reviews on sea plants

Understanding Microbial Biofilms - Surajit Das 2022-10-28

Understanding Microbial Biofilms: Fundamentals to Applications focuses on the microbial biofilms of different environments. The book provides a comprehensive overview of the fundamental aspects of microbial biofilms, their existence in nature, their significance, and the different clinical and environmental problems associated with them. The book covers both the fundamentals and applications of microbial biofilms, with chapters on the introduction to the microbial community and its architecture, physiology, mechanisms and imaging of biofilms in nature and fungal, algal, and bacillus biofilm control. In addition, the book highlights the molecular and biochemical aspects of bacterial biofilms, providing a compilation of chapters on the bacterial community and communication from different environments. Finally, the book covers recent advancements in various aspects of microbial biofilms including the chapters on their biotechnological applications. All the chapters are written by experts who have been working on different aspects of

microbial biofilms. Illustrates fundamental aspects surrounding microbial biofilms, along with recent advancements Provides an overview on the principal aspects of biofilms, i.e., formation, regulation, distribution, control, and application Updates on the progress on biofilm regulation through 'omics' Serves as a classical manual for all researchers, academicians, and students who would want complete insights on biofilms in a single resource Covers all recent advancements and amendments on microbial biofilms

The Montenegrin Adriatic Coast - Danijela Joksimović 2021-08-01

This is the second of two volumes that together provide an integrated picture of the Montenegrin Adriatic coast, presenting the natural components of the system as well as the chemical composition and chemical processes in the extended area. This book covers all aspects of marine chemistry such as the hydrographic and oceanographic characteristics of seawater, the toxicity of heavy metals in the marine environment, the quality of marinas and maritime areas, and the legal regime for protecting the marine environment from pollution. Given the breadth and depth of its coverage, the book offers an invaluable source of information for researchers, students and environmental managers alike.

Inverse Heat Conduction and Heat Exchangers - Suvanjan Bhattacharyya 2020-12-02

A direct solution of the heat conduction equation with prescribed initial and boundary conditions yields temperature distribution inside a specimen. The direct solution is mathematically considered as a well-posed one because the solution exists, is unique, and continuously depends on input data. The estimation of unknown parameters from the measured temperature data is known as the inverse problem of heat conduction. An error in temperature measurement, thermal time lagging, thermocouple-cavity, or signal noise data makes stability a problem in the estimation of unknown parameters. The solution of the inverse problem can be obtained by employing the gradient or non-gradient based inverse algorithm. The aim of this book is to analyze the inverse problem and heat exchanger applications in the fields of aerospace,

mechanical, applied mechanics, environment sciences, and engineering.

Global Change: Mankind-Marine Environment Interactions -

Hubert-Jean Ceccaldi 2011-01-12

Based on the material presented at a conference organized by the Centre d'Océanologie of Marseille, held in 2008, this text covers a wealth of hot topics related to the way mankind interacts with the marine environment. With the state of our oceans and seas becoming an increasing source of concern worldwide, this timely addition to the debate features the latest research in both France and Japan. The book's chapters present work on many of the key areas of oceanographic study. The concept of marine biodiversity is treated, in particular how it is affected by human agency and invasive species, many of which have been introduced anthropogenically. Coastal zones are analyzed in detail, with a focus on the interaction between ports and natural environments, and the ecological and economical consequences of this relationship. A chapter on aquaculture looks at ecologically sound management as well as the preservation of resources. New and emerging technologies that aid our observation of the marine environment are covered, as is the physical, chemical, biological and biogeochemical functioning of natural and man-made environments. Featuring work by some of the leading researchers in the field from both France and Japan, this work demonstrates the strength of the links between the two scientific communities, and is an important contribution to the ongoing discussion on the effects of global warming as well as mankind's impact on the marine environment we depend on for so much.

Advances in Marine Antifouling Coatings and Technologies - Claire Hellio 2009-05-22

Marine biofouling can be defined as the undesirable accumulation of microorganisms, algae and animals on structures submerged in seawater. From the dawn of navigation, marine biofouling has been a major problem for shipping in such areas as reduced speed, higher fuel consumption and increased corrosion. It also affects industries using offshore structures such as oil and gas production and aquaculture. Growing concerns about the environmental impact of antifouling

coatings has led to major new research to develop more environmentally-friendly alternatives. Advances in marine antifouling coatings and technologies summaries this wealth of research and its practical implications. This book is divided into four sub-sections which discuss: marine fouling organisms and their impact, testing and development of antifouling coatings, developments in chemically-active marine antifouling technologies, and new surface approaches to the control of marine biofouling. It provides an authoritative overview of the recent advances in understanding the biology of fouling organisms, the latest developments on antifouling screening techniques both in the field and in the laboratory, research on safer active compounds and the progress on nontoxic coatings with tailor-made surface properties. With its distinguished editors and international team of contributors, Advances in marine antifouling coatings and technologies is a standard reference for manufacturers of marine antifouling solutions, the shipping industry, oil and gas producers, aquaculture and other industries using offshore structures, and academics researching this important area. Assesses marine antifouling organisms and their impact, including a historical review and directions for future research Discusses developments in antifouling coatings examining chemically-active and new surface approaches Reviews the environmentally friendly alternative of safer active compounds and the progress of non-toxic compounds

Examination of the Effects of Localized Electric Signals on the Inhibition of Undesired Biological Adhesion - Rodolfo E. Perez 2008

Symphony in C: Carbon and the Evolution of (Almost) Everything - Robert M. Hazen 2019-06-11

An enchanting biography of the most resonant—and most necessary—chemical element on Earth. Carbon is everywhere: in the paper of this book and the blood of our bodies. It's with us from beginning to end, present in our baby clothes and coffin alike. We live on a carbon planet, and we are carbon life. No other element is so central to our well-being; yet, when missing or misaligned, carbon atoms can also bring about disease and even death. At once ubiquitous and mysterious,

carbon holds the answers to some of humanity's biggest questions. Where did Earth come from? What will ultimately become of it—and of us? With poetic storytelling, earth scientist Robert M. Hazen explores the universe to discover the past, present, and future of life's most essential element. We're not only "made of star stuff," as Carl Sagan famously observed, but "Big Bang stuff," too. Hazen reveals that carbon's grand symphony began with a frenzied prelude shortly after the dawn of creation, bringing new attention to the tiny number of Big Bang-created carbon atoms that often get overlooked. In minutes, violently colliding protons and neutrons improbably formed the first carbon atoms, which can still be found within our bodies. His book then unfolds in four movements, building momentum as he explores carbon as the element of Earth, Air, Fire, and Water. He visits the famed volcanic crater Solfatara di Pozzuoli near Naples, where venting carbon dioxide and other noxious fumes condense into beautiful crystals. He climbs the cliffs of the Scottish Highlands and delves deep into the precious-metal mines of Namibia, journeying toward Earth's mysterious core in search of undocumented carbon structures. Hazen often asks us to pause and consider carbon's role in climate change and what we can do about it, for our lives and this element are inextricably intertwined. With prose that sparkles like a diamond, *Symphony in C* tells the story of carbon, in which we all have a part.

Interactions Between Aquaculture and the Environment - World Conservation Union 2007-03

Marine Hard Bottom Communities - Martin Wahl 2009-06-22

Marine hard bottoms feature some of the most spectacular and diverse biological communities on this planet. These not only contain a rich treasure of genetic, taxonomic and functional information but also deliver irreplaceable ecosystem services. At the same time, they are highly vulnerable and increasingly threatened by anthropogenic pressures. This volume has collected contributions by 50 scientists from numerous biogeographic regions, dealing with characteristics of hard bottom communities. Distributional patterns in space and time are

described, followed by analyses of the intrinsic and extrinsic dynamics producing these patterns. A strong emphasis is placed on the ongoing changes occurring in the structure and diversity of these communities in response to spiralling environmental impacts, and on state-of-the-art countermeasures aiming to preserve these ecological treasures. Finally, various values of diversity are assessed, hopefully as an incentive for enhanced conservation efforts.

[A New Era for Microbial Corrosion Mitigation Using Nanotechnology](#) - Basma A. Omran 2020-07-16

This book focuses on corrosion and microbial corrosion, providing solutions for these problems based on nanotechnology and nanobiotechnology. It introduces the causes, consequences, cost and control of corrosion processes. It gives a particular emphasis on microbial corrosion of steel and other metals in oil, gas and shipping industries. The book presents the materials vulnerable to such kind of corrosion, and the use of nanomaterials to control it.

Springer Handbook of Nanotechnology - Bharat Bhushan 2017-11-05

This comprehensive handbook has become the definitive reference work in the field of nanoscience and nanotechnology, and this 4th edition incorporates a number of recent new developments. It integrates nanofabrication, nanomaterials, nanodevices, nanomechanics, nanotribology, materials science, and reliability engineering knowledge in just one volume. Furthermore, it discusses various nanostructures; micro/nanofabrication; micro/nanodevices and biomicro/nanodevices, as well as scanning probe microscopy; nanotribology and nanomechanics; molecularly thick films; industrial applications and nanodevice reliability; societal, environmental, health and safety issues; and nanotechnology education. In this new edition, written by an international team of over 140 distinguished experts and put together by an experienced editor with a comprehensive understanding of the field, almost all the chapters are either new or substantially revised and expanded, with new topics of interest added. It is an essential resource for anyone working in the rapidly evolving field of key technology, including mechanical and electrical engineers, materials scientists, physicists, and chemists.

An Examination of the Effects of Highly Localized, Low Voltage Pulsed Electric Fields on Biofouling Prevention - Rodolfo Perez (E.) 2006

Coastal Ocean Observing - Jorge E. Corredor 2018-05-30

This manual describes the wide range of electromechanical, electrochemical and electro-optical transducers at the heart of current field-deployable ocean observing instruments. Their modes of operation, precision and accuracy are discussed in detail. Observing platforms ranging from the traditional to the most recently developed are described, as are the challenges of integrating instrument suits to individual platforms. Technical approaches are discussed to address environmental constraints on instrument and platform operation such as power sources, corrosion, biofouling and mechanical abrasion. Particular attention is also given to data generated by the networks of observing platforms that are typically integrated into value-added data visualization products, including numerical simulations or models. Readers will learn about acceptable data formats and representative model products. The last section of the book is devoted to the challenges of planning, deploying and maintaining coastal ocean observing systems. Readers will discover practical applications of ocean observations in diverse fields including natural resource conservation, commerce and recreation, safety and security, and climate change resiliency and adaptation. This volume will appeal to ocean engineers, oceanographers, commercial and recreational ocean data users, observing systems operators, and advanced undergraduate and graduate students in the field of ocean observing.

Monitoring and Control of Macrofouling Mollusks in Fresh Water Systems, Second Edition - Gerald L. Mackie 2009-12-23

Upon its initial publication more than fifteen years ago, this book broke new ground with its comprehensive coverage of the biology and ecology, distribution and dispersal mechanisms, physiology, monitoring, negative and positive impacts, and control of aquatic invasive species of mussels, clams, and snails. Building on this foundation, the second edition of

Monitoring and Control of Macrofouling Mollusks in Fresh Water Systems includes completely revised information on species such as the zebra mussel while also covering up-and-coming nuisance species such as the quagga mussel, Conrad's false mussel, the Asian clam, and the fast-spreading golden mussel. The Second Edition includes: Ten new species of mussels and snails International case studies on mussel fouling problems and how to cope with them New control and monitoring techniques Discussions of the latest threats and possible future scenarios The book contains brief descriptions of the external and internal structures, examining only those features relevant to the monitoring and control of the invasive species. It discusses why the mollusks are pests, distinguishing nuisance species from native species, their habits and habitat, reproductive potential, and life cycles and population dynamics. The authors also explain how efficient dispersal mechanisms employed by the nuisance mollusks not only help them spread so rapidly to inland lakes and rivers across continents, but how they can invade virtually every part of a facility. While many other resources contain segments of this information, none cover all areas and link them in a cohesive fashion. It is this approach that makes the understanding of potential impacts on ecosystems, industries and utilities, as well as the many human-made physical and chemical mitigants for controlling the mollusks supplied by this book so crucial for preserving the health of raw water supplies.

Algal Chemical Ecology - Charles D. Amsler 2007-11-03

Yet another Springer world-beater, this is the first ever book devoted to the chemical ecology of algae. It covers both marine and freshwater habitats and all types of algae, from seaweeds to phytoplankton. While the book emphasizes the ecological rather than chemical aspects of the field, it does include a unique introductory chapter that serves as a primer on algal natural products chemistry.

Microbiological Research In Agroecosystem Management - Rajesh Kannan Velu 2013-03-15

Agroecosystem is an ideal dynamic functional system with a set of chemical and biological interaction taking place in plant surface either

below or above the ground levels. These levels of interaction activities fundamentally with microorganism-plant-soil systems are extended up to the level of entire agricultural economy. Greatly simplified, the agroecosystems control the various range of energy flux, resources exchange, organic and inorganic nutrient budgets and population dynamics. The main aim of this edited volume is to provide a broad spectrum of agroecosystems structure, function and maintenance involved in microbial research. This book consists of 20 full length research articles focusing on the emerging problems in the field and the positive findings are identified on key areas of research such as biodiversity, ecosystem service, environmental cleaning in agroecology, etc. These articles are arranged progressively linking themselves thematically with photographs, figures and tables. Focused field articles are included which prove a valuable contribution to the field of agroecosystem management by microbial facilitations. The editor hopes that these articles would prompt the budding scholars to further their research which in turn would certainly help the agriculturists.

Marine Biofouling - Alexander I. Railkin 2020-01-29

Written by an eminent Russian scientist, "Marine Biofouling" provides a synthesis of current knowledge on the colonization process that determines the formation of communities on hard substrata, their recruitment, and development.

Functional Polymer Coatings - Limin Wu 2015-06-10

Focusing on a variety of coatings, this book provides detailed discussion on preparation, novel techniques, recent developments, and design theories to present the advantages of each function and provide the tools for better product performance and properties. • Presents advantages and benefits of properties and applications of the novel coating types • Includes chapters on specific and novel coatings, like nanocomposite, surface wettability tunable, stimuli-responsive, anti-fouling, antibacterial, self-healing, and structural coloring • Provides detailed discussion on recent developments in the field as well as current and future perspectives • Acts as a guide for polymer and materials researchers in optimizing polymer coating properties and

increasing product performance

Nanozymology - Xiyun Yan 2020-01-30

This book introduces the new concept of "nanozyme", which refers to nanomaterials with intrinsic enzymatic activity, rather than nanomaterials with biological enzymes incorporated on the surface. The book presents the cutting-edge advances in nanozyme, with emphasis on state-of-the-art applications in many important fields, such as in the biomedical fields and for environmental protection. The nanozyme is a totally new type of artificial enzyme and exhibits huge advantages over natural enzymes, including greater stability, low cost, versatility, simplicity, and suitability for industry. It is of interest to university researchers, R&D engineers, as well as graduate students in nanoscience and technology, and biology wishing to learn the core principles, methods, and the corresponding applications of "nanozyme".

Green Tribology - Michael Nosonovsky 2012-01-16

Tribology is the study of friction, wear and lubrication. Recently, the concept of "green tribology" as "the science and technology of the tribological aspects of ecological balance and of environmental and biological impacts" was introduced. The field of green tribology includes tribological technology that mimics living nature (biomimetic surfaces) and thus is expected to be environmentally friendly, the control of friction and wear that is of importance for energy conservation and conversion, environmental aspects of lubrication and surface modification techniques, and tribological aspects of green applications such as wind-power turbines or solar panels. This book is the first comprehensive volume on green tribology. The chapters are prepared by leading experts in their fields and cover such topics as biomimetics, environmentally friendly lubrication, tribology of wind turbines and renewable sources of energy, and ecological impact of new technologies of surface treatment.

Ecosystem Concepts for Sustainable Bivalve Mariculture - National Research Council 2010-03-18

U.S. mariculture production of bivalve molluscs—those cultivated in the marine environment—has roughly doubled over the last 25 years.

Although mariculture operations may expand the production of seafood without additional exploitation of wild populations, they still depend upon and affect natural ecosystems and ecosystem services. Every additional animal has an incremental effect arising from food extraction and waste excretion. Increasing domestic seafood production in the United States in an environmentally and socially responsible way will likely require the use of policy tools, such as best management practices (BMPs) and performance standards. BMPs represent one approach to protecting against undesirable consequences of mariculture. An alternative approach to voluntary or mandatory BMPs is the establishment of performance standards for mariculture. Variability in environmental conditions makes it difficult to develop BMPs that are sufficiently flexible and adaptable to protect ecosystem integrity across a broad range of locations and conditions. An alternative that measures performance in sustaining key indicators of ecosystem state and function may be more effective. Because BMPs address mariculture methods rather than monitoring actual ecosystem responses, they do not guarantee that detrimental ecosystem impacts will be controlled or that unacceptable impact will be avoided. Ecosystem Concepts for Sustainable Bivalve Mariculture finds that while performance standards can be applied for some broad ecosystem indicators, BMPs may be more appropriate for addressing parameters that change from site to site, such as the species being cultured, different culture methods, and various environmental conditions. This book takes an in-depth look at the environmental, social, and economic issues to present recommendations for sustainable bivalve mariculture.

Smart Composite Coatings and Membranes - Maria Fatima Montemor 2015-11-09

Smart Composite Coatings and Membranes: Transport, Structural, Environmental and Energy Applications provides the latest information on the increase in demand for new smart materials for a wide array of different technological applications. The book comprehensively reviews the latest developments in smart composite materials used as membranes, barriers, and coatings, with a special focus on corrosion

protection, transportation, structure, and the wide range of applications. Part one examines the properties, processing, and manufacture of smart composite materials, along with techniques for modeling the behavior of these materials, while other sections review the use of smart composite coatings in aerospace, marine, and metal structural applications, examine the protective properties and applications of smart composite coatings, and introduce specific low environmental impact and energy efficient applications, such as energy generation and storage, water management, and stone conservation. Explores the use of smart composite materials for coatings, barriers and membranes Comprehensively reviews the latest developments in smart composite materials, with a special focus on corrosion protection, transportation, structure, and the wide range of applications Examines the properties, processing, manufacture and behavior modeling of smart composite materials Focuses on applications that have an impact on more effective energy savings and efficiency, green-house emissions, and environmental protection

Plastics and Environmental Sustainability - Anthony L. Andrady 2015-03-23

Survey's the issues typically raised in discussions of sustainability and plastics Discusses current issues not covered in detail previously such as ocean litter, migration of additives into food products and the recovery of plastics Covers post-consumer fate of plastics on land and in the oceans, highlighting the environmental impacts of disposal methods Details toxicity of plastics, particularly as it applies to human health Presents a clear analysis of the key plastic-related issues including numerous citations of the research base that supports and contradicts the popularly held notions

Selected Papers from XVI MaNaPro and XI ECMNP - Susana P. Gaudêncio 2021-09-03

The oceans harbor the majority of the Earth's biodiversity. Marine organisms/microorganisms provide a diverse array of natural products, which are important sources of biologically active agents with unique chemical structures and a broad range of medical and biotechnological

applications. The XVI MaNaPro and XI ECMNP conferences aim to present advances and future perspectives on marine natural product research to the scientific community by gathering scientists who work in marine chemistry and related scientific fields from all over the world and at different seniority levels. This Special Issue was organized on the occasion of the 2nd joint XVI MaNaPro and XI ECMNP meeting (<http://wmnp2019.ipleiria.pt/>) held in Peniche, Portugal, in 2019. It comprises 12 original research articles that exemplify research performed in the scope of the conference topics.

Offshore Membrane Enclosures for Growing Algae (OMEGA) - Jonathan Trent 2012

Seaweeds Around the World: State of Art and Perspectives - 2020-04-09

Seaweeds around the World: State of Art and Perspectives, Volume 95, includes discussions on current research conducted in the field of algae. Specific chapters cover Isotopic Labeling of Cultured Macroalgae and Isolation of ¹³C-labeled Cell Wall Polysaccharides for Trophic Investigations, Selected Red Seaweeds from the Philippines with Emerging High-Value Applications, Challenges to the Future Domestication of Seaweed Cultivated Species: Understanding Individual Needs and Physiological Processes for Large-Scale Production, The Importance of Mucilage in Dispersion and Efficiency of Fertilization of Male Gametes, The Application of Seaweeds in Environmental Biotechnology, Indonesian Sargassum Species Prospecting: Potential Applications of Bioactive Compounds, and much more. Presents the most recent biological knowledge and advances on seaweed Content covers innovations to biotechnological, aquacultural and chemical developments about seaweeds field Written by the most experienced authors in the field

Marine Structures - Erkan Oterkus 2020-01-31

Structural mechanics is an important field of engineering. The main goal of structural mechanics is to ensure that structures are safe and durable so that catastrophic situations can be prevented, which can otherwise

cause loss of life, environmental pollution and financial losses. Depending on the uses of the structure and the conditions that the structure is subjected to, special treatment may be required for the analysis. Specifically, marine structures are subjected to harsh environmental conditions due to the marine environment, which can cause several different damage mechanisms including fatigue and corrosion. This book on "Marine structures" considers a wide range of areas related to marine structures and provides a compilation of numerical and experimental studies related to "Marine structures" research.

Shellfish Safety and Quality - Sandra E. Shumway 2009-01-28

Shellfish are a very popular and nutritious food source worldwide and their consumption has risen dramatically. Because of their unique nature as compared to beef and poultry, shellfish have their own distinct aspects of harvest, processing and handling. Edited by leading authorities in the field, this collection of review papers discusses issues of current interest and outlines steps that can be taken by the shellfish industry to improve shellfish safety and eating quality. Opening chapters provide an overview of the key issues associated with microbial and biotoxin contamination. Parts two and three then address in more detail methods to improve molluscan shellfish and crustacean quality and safety. Chapters focus on detection of algal toxins, monitoring and mitigation of the effects of harmful algal blooms, metals and organic contaminants, biofouling, disease control and selective breeding. Part four reviews legislation, regulation, public confidence in shellfish and risk management. Chapters on post-harvest issues, such as depuration, storage and packaging complete the volume. With its distinguished editors and international team of experts, Shellfish safety and quality is an essential reference for those in the shellfish industry, managers, policymakers and academics in the field. Reviews the latest research on significant hazards such as microbial and biotoxin contamination Discusses effective management of shellfish safety and quality, including emerging methods Examines improved packaging methods

Antifouling Surfaces and Materials - Feng Zhou 2014-11-25

This book reviews the development of antifouling surfaces and materials for both land and marine environments, with an emphasis on marine anti biofouling. It explains the differences and intrinsic relationship between antifouling in land and marine environments, which are based on superhydrophobicity and superhydrophilicity respectively. It covers various topics including biomimetic antifouling and self-cleaning surfaces, grafted polymer brushes and micro/nanostructure surfaces with antifouling properties, as well as marine anti biofouling. Marine anti biofouling includes both historical biocidal compounds (tributyltin, copper and zinc) and current green, non-toxic antifouling strategies. This book is intended for those readers who are interested in grasping the fundamentals and applications of antifouling. Feng Zhou is a professor at the State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences.

Marine and Industrial Biofouling - Hans-Curt Flemming 2008-12-11

Biofouling is a costly problem, and it is encountered in a wide spectrum of technical systems, ranging from the shipping industry, power industry, water purification, automobile industry, paint and pharmaceuticals, to the microelectronics and food industries. Micro- and macroorganisms attach to surfaces and accumulate there, forming biofilms that cause interferences - a fundamentally natural process. Usually, a medical

paradigm is applied: kill biofilms and the problem is solved. This leads to excessive biocide use. However, the success of this strategy is very limited; furthermore it leads to equipment damage and environmental pollution. Simply trying to kill the fouling organisms is clearly not seen as a successful strategy while cleaning is put forward as much more important. In this book, strategies to prevent adhesion, to mitigate the extent and effects of biofouling, and to detect and remove fouling layers are presented. Holistic approaches to the fouling process are elaborated, taking into account options such as nutrient limitation, repellent and easy-to-clean surfaces for fouling layer limitation, and replacing biocides with more environmentally friendly methods - in other words: learning how to live with fouling biofilms without suffering the damage they can do.

Brazilian Journal of Oceanography - 2006

Environmental Impact of Ships - Stephen de Mora 2020-11-05

A comprehensive, global review of the impact ships have on the environment, covering pollutant discharges, non-pollutant impacts and international legislation.

Impact and Management of Marine Biofouling - Yigit Kemal Demirel 2022-08-04