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Environmental Health Perspectives - 1993

Proceedings of the 15th International Symposium on Bioluminescence and Chemiluminescence - Xun Shen 2009

In the last decade, great advances have been made in fundamental research and in the applications of bioluminescence and chemiluminescence. These techniques have become vital tools for laboratory analysis. Bioluminescence imaging has emerged as a powerful new optical imaging technique, offering real-time monitoring of spatial and temporal progression of biological processes in living animals. Bioluminescence resonance energy transfer (BRET) methodology has also emerged as a powerful technique for the study of protein-protein interactions. Luciferase reporter gene technology facilitates monitoring of gene expression and is used to probe molecular mechanisms in the regulation of gene expression. Chemiluminescence detection and

analysis have also found diverse applications in life science research; for example, chemiluminescent labels and substrates are now widely used in immunoassay and nucleic acid probe-based assays. The latest advances in this exciting field, from fundamental research to cutting-edge applications, are explored in this most recent volume of the biannual symposium series, the Proceedings of the 15th International Symposium on Bioluminescence and Chemiluminescence. The volume highlights advances in fundamental knowledge of luciferase-based bioluminescence, photoprotein-based bioluminescence, fundamental aspects and applications of chemiluminescence, luminescence imaging, fluorescence quantum dots and other inorganic fluorescent materials, phosphorescence and ultraweak luminescence, and instrumentation for measurement and imaging of luminescence.

Chemiluminescence in Analytical Chemistry
- Ana M. Garcia-Campana 2001-03-23

This volume details the theories, mechanisms, technologies and trends for solving qualitative and quantitative problems in diverse areas of analytical research - emphasizing physicochemical principles. It focuses on deriving simpler and more extensive chemiluminescence (CL) detectors reflecting miniaturization trends, including narrow-bore and capillary

Bioluminescence and Chemiluminescence -

Cell Physiology Source Book - Nicholas Sperelakis 2012-01-11

Cell Physiology Source Book gathers together a broad range of ideas and topics that define the field. It provides clear, concise, and comprehensive coverage of all aspects of cellular physiology from fundamental concepts to more advanced topics. The 4e contains substantial new material. Most chapters have been thoroughly reworked. The book includes chapters on important topics such as sensory transduction, the physiology of protozoa and bacteria, and synaptic transmission. Authored by leading researchers in the field Clear, concise, and comprehensive coverage of all aspects of cellular physiology, from fundamental concepts to more advanced topics Full color illustrations

Current Catalog - National Library of Medicine (U.S.)

First multi-year cumulation covers six years: 1965-70.

Chemi- and Bioluminescence - John G. Burr 2020-08-18

This book focuses on instrumentation of chemi- and bioluminescence and discusses the nature of chemiluminescence as the exothermic oxidation of a substrate organic compound to give an energy-rich product that is luminescent. It describes the applications of chemiluminescence.

Chemiluminescence - A. K. Campbell 1988

Toxicological Evaluation of Chemical Interactions - 1994

Bioluminescence and Chemiluminescence - 1978-12-28

The critically acclaimed laboratory standard, *Methods in Enzymology*, is one of the most highly respected publications in the field of

biochemistry. Since 1955, each volume has been eagerly awaited, frequently consulted, and praised by researchers and reviewers alike. The series contains much material still relevant today - truly an essential publication for researchers in all fields of life sciences.

Bio- and Chemi-luminescent Sensors - Loïc J. Blum 1997

This book is aimed at scientists, technologists, engineers, and undergraduate and graduate students involved in analytical and process biochemistry and biotechnology. It reviews the potentialities of light-emitting reaction associated with the sensor approach. The book introduces the concepts of sensors and biosensors and places bio- and chemi-luminescent sensors in the general context of biosensors. It then briefly describes luminescence phenomena and provides some basic knowledge necessary for understanding and exploiting light-emitting reactions. These luminescence reactions, important from an analytical standpoint, are described. Also the applications of bio- and chemi-luminescence which make use of immobilized reagents are explained. Finally, there is discussion of bio- and chemi-luminescent sensors, most of them including fiber optics.

Physical Methods for Microorganisms Detection - W. H. Nelson 2018-01-18

This volume presents detection and identification methods for bacteria and yeast. Chapters are written by expert laboratory practitioners and instrument makers and focuses on those methods that show widespread practical application, such as ATP luminescence. Food applications include rapid detection and quantitation of bacteria in raw milk, pasteurized milk, other dairy products, and raw meat. Other topics include brewing applications for beverages, starter culture monitoring, clinical analyses, blood and urine analysis procedures, analysis of aerosols, bioprocess safety, and biodeterioration. This book is a must for microbiologists in food quality labs and clinical labs.

Advances in Microbial Physiology - 1993-01-13

Advances in Microbial Physiology
Bioluminescence and Chemiluminescence - M. Pazzagli 1989-09-25

Contains the proceedings of the Fifth International Symposium on Bioluminescence and Chemiluminescence, held in Florence and Bologna, Italy, in September of 1988.

Contributors present recent findings in the biochemistry of chemiluminescence reactions, practical applications, luminescence-based sensors, instrumentation, and imaging techniques.

Fundamentals of BioMEMS and Medical Microdevices - Steven Saliterman 2006

The world is on the threshold of a revolution that will change medicine and how patients are treated forever. Bringing together the creative talents of electrical, mechanical, optical and chemical engineers, materials specialists, clinical-laboratory scientists, and physicians, the science of biomedical microelectromechanical systems (bioMEMS) promises to deliver sensitive, selective, fast, low cost, less invasive, and more robust methods for diagnostics, individualized treatment, and novel drug delivery. This book is an introduction to this multidisciplinary technology and the current state of micromedical devices in use today. The first text of its kind dedicated to bioMEMS training. Fundamentals of BioMEMS and Medical Microdevices is Suitable for a single semester course for senior and graduate-level students, or as an introduction to others interested or already working in the field.

Cell Physiology Sourcebook - Nicholas Sperelakis 2001-05-15

This completely revised and updated source book provides comprehensive and authoritative coverage of cell physiology and membrane biophysics. Intended primarily as a text for advanced undergraduate and graduate students and as a reference for researchers, this multidisciplinary book includes several new chapters and is an invaluable aid to scientists interested in cell physiology, biophysics, cell biology, electrophysiology, and cell signaling. * Includes broad coverage of both animal and plant cells * Appendices review basics of the propagation of action potentials, electricity, and cable properties

A Comprehensive Guide to Chemiluminescence - Luis Pinto da Silva 2019
Chemiluminescence is a fascinating and mesmerizing phenomenon, which consists on the

generation of light as the result of a chemical reaction. This process has been gaining attention in the last decades, being now a standard tool in analytical, bioimaging, biomedical and pharmaceutical applications. This book provides a detailed overview of the basic mechanisms and principles of the most relevant chemiluminescent systems, as well as describing the most recent advances and applications. Written by experts, this is a reference text suitable both for researchers focused on chemiluminescence and for those wanting to start working on this field. In Chapter One, the progress and evolution of the chemiluminescent studies in imidazopyrazinone-based compounds are reviewed, with emphasis on their potential as diagnosis tools. Chapter Two addresses the spectral changes associated with firefly bioluminescence by focusing on the tautomeric equilibria of the light emitter. Chapter Three reviews, for the first time, the liquid-phase chemiluminescence of fullerene and derivatives. Chapter Four is devoted to studies of chemiluminescence with the participation of lanthanide ions. Chapter Five summarizes the mechanism behind the chemiluminescence of acridinium esters, while discussing their current applications. Chapter Six explains the potential of phenothiazine derivatives as enhancers in analytic chemiluminescent assays. Chapter Seven collects the available information of both well-known and lesser-known examples of squid bioluminescence. Chapter Eight discusses the enhancement of chemiluminescent emission by using metal-nanoparticles near a luminescent molecule, which is known as metal-enhanced chemiluminescence. In Chapter Nine it is explained how model molecules can make the study of complex bioluminescence reaction mechanisms accessible, as well as allowing for chemiluminescence on macroscopic molecular crystals. Chapter Ten describes experimental and computational approaches used for enhancing the thermostability of firefly luciferase. Chapter Eleven demonstrates the usefulness of theoretical studies for better understanding chemiluminescent reactions. Chapter Twelve describes the fundamental theoretical aspects of state-of-the-art multiconfigurational methods and shows illustrative examples of their application to the

study of chemiluminescence. Finally, Chapter Thirteen discusses chemiluminescent experiments that are simple, inexpensive and can be performed by students.

Bioluminescence: Fundamentals and Applications in Biotechnology - Volume 1 -

Gérald Thouand 2014-08-01

This book review series presents current trends in modern biotechnology. The aim is to cover all aspects of this interdisciplinary technology where knowledge, methods and expertise are required from chemistry, biochemistry, microbiology, genetics, chemical engineering and computer science. Volumes are organized topically and provide a comprehensive discussion of developments in the respective field over the past 3-5 years. The series also discusses new discoveries and applications. Special volumes are dedicated to selected topics which focus on new biotechnological products and new processes for their synthesis and purification. In general, special volumes are edited by well-known guest editors. The series editor and publisher will however always be pleased to receive suggestions and supplementary information. Manuscripts are accepted in English.

Bioluminescence and Chemiluminescence -

Philip E Stanley 2002-11-05

The Proceedings of the 12th International Symposium on Bioluminescence (BL) and Chemiluminescence (CL) contains up-to-date information on the latest developments in BL and CL presented by scientists from around the world. Light-emitting reactions are now a vital component of many key technologies in research and in routine analytical laboratories — replacing radionuclides in many situations. This volume presents a compilation of the latest developments from key experts and leading-edge researchers in this area.

Contents: Bioluminescence Beetle
Bioluminescence Marine Bacteria
Bioluminescence Coelenterate
Bioluminescence Chemiluminescence Luminescence in Education Instrumentation & Devices Antioxidants, Reactive Oxygen Species & Phagocytosis Applications of Luminescence Pathogen Detection Ecological, Environmental & Food Testing Immunoassays Gene Expression &

Reporter Gene Assays Readership: Scientists in basic luminescence research, analytical chemists and biochemists. Keywords:

Bioluminescence and Chemiluminescence - James F. Case 2001

Light-emitting reactions occur in some living organisms, and are also now extensively exploited by industry and various branches of biomedical science. Luminescence from the natural world, particularly from marine organisms, is increasingly being harnessed by genetic and chemical manipulation to enhance the quality of human life. This volume contains cutting-edge contributions from most of the world's leading researchers in this field. It presents an up-to-date compilation of the range of biomedical, strategic and ecological applications of chemiluminescence and bioluminescence. It documents and highlights the rapid advance in knowledge concerning both the mechanisms and the uses of luminescence, and covers all the important developments of recent years. Contents: Marine Bioluminescence; Firefly Bioluminescence; Chemiluminescence; Applications of Bioluminescence; Applications of Chemiluminescence; Immunoassay and DNA Probe Assays; Cellular Luminescence; Reporter Genes in Cell Biology and Analysis; Luminescence in Science and Education; Instrumentation and Imaging of Luminescence. Readership: Biomedical specialists, biochemists, marine biologists and geneticists.

The Science of Photobiology - Kendrick C. Smith 2013-03-08

The first edition of *The Science of Photobiology* was published in 1977, and was the first textbook to cover all of the major areas of photobiology. The science of photobiology is currently divided into 14 subspecialty areas by the American Society for Photobiology. In this edition, however, the topics of phototechnology and spectroscopy have been combined in a new chapter entitled "Photophysics." The other subspecialty areas remain the same, i.e., Photochemistry, Photosensitization, UV Radiation Effects, Environmental Photobiology, Photomedicine, Circadian Rhythms, Extraretinal Photoreception, Vision, Photomorphogenesis, Photomovement, Photosynthesis, and Bioluminescence. This book has been written as

a textbook to introduce the science of photobiology to advanced undergraduate and graduate students. The chapters are written to provide a broad overview of each topic. They are designed to contain the amount of information that might be presented in a one-to two-hour general lecture. The references are not meant to be exhaustive, but key references are included to give students an entry into the literature. Frequently a more recent reference that reviews the literature will be cited rather than the first paper by the author making the original discovery. The chapters are not meant to be a repository of facts for research workers in the field, but rather are concerned with demonstrating the importance of each specialty area of photobiology, and documenting its relevance to current and/or future problems of man.

Bioluminescence: chemical principles and methods (3rd edition) - Shimomura Osamu 2019-06-06

This book is the bible of bioluminescence and a must-read not only for the students but for those who work in various fields relating to bioluminescence. It summarizes current structural information on all known bioluminescent systems in nature, from well-studied ones to those that have been seldom investigated. This book remains an important source of chemical knowledge on bioluminescence and, since the second edition's publication in 2012, has been revised to include major developments in two systems: earthworm *Fridericia* and higher fungi whose luciferins have been elucidated and synthesized. These two new luciferins represent an essential addition to seven previously known, with fully rewritten sections covering this new subject matter.

International Symposium on Analytical Applications of Bioluminescence and Chemiluminescence - Pat Foster 1979

Luminescence - Jagannathan Thirumalai 2016-11-10

The aim of this book is to give readers a broad review of topical worldwide advancements in theoretical and experimental facts, instrumentation and practical applications erudite by luminescent materials and their prospects in dealing with different types of luminescence like photoluminescence,

electroluminescence, thermo-luminescence, triboluminescence, bioluminescence design and applications. The additional part of this book deals with the dynamics, rare-earth ions, photon down-/up-converting materials, luminescence dating, lifetime, bioluminescence microscopical perspectives and prospects towards the basic research or for more advanced applications. This book is divided into four main sections: luminescent materials and their associated phenomena; photo-physical properties and their emerging applications; thermoluminescence dating: from theory to applications, and bioluminescence perspectives and prospects. Individual chapters should serve the broad spectrum of common readers of diverse expertise, layman, students and researchers, who may in this book find easily elucidated fundamentals as well as progressive principles of specific subjects associated with these phenomena. This book was created by 14 contributions from experts in different fields of luminescence and technology from over 20 research institutes worldwide.

Bioluminescence and Chemiluminescence - J F Case 2001-08-22

Light-emitting reactions occur in some living organisms, and are also now extensively exploited by industry and various branches of biomedical science. Luminescence from the natural world, particularly from marine organisms, is increasingly being harnessed by genetic and chemical manipulation to enhance the quality of human life. This volume contains cutting-edge contributions from most of the world's leading researchers in this field. It presents an up-to-date compilation of the range of biomedical, strategic and ecological applications of chemiluminescence and bioluminescence. It documents and highlights the rapid advance in knowledge concerning both the mechanisms and the uses of luminescence, and covers all the important developments of recent years. Contents: Marine Bioluminescence Firefly Bioluminescence Chemiluminescence Applications of Bioluminescence Applications of Chemiluminescence Immunoassay and DNA Probe Assays Cellular Luminescence Reporter Genes in Cell Biology and Analysis Luminescence in Science and Education Instrumentation and

Imaging of Luminescence Readership: Biomedical specialists, biochemists, marine biologists and geneticists. Keywords:

Handbook of Instrumental Techniques for Analytical Chemistry - Frank A. Settle 1997

With this handbook, these users can find information about the most common analytical chemical techniques in an understandable form, simplifying decisions about which analytical techniques can provide the information they are seeking on chemical composition and structure.

List of Journals Indexed in Index Medicus - National Library of Medicine (U.S.) 1989
Issues for 1977-1979 include also Special List journals being indexed in cooperation with other institutions. Citations from these journals appear in other MEDLARS bibliographies and in MEDLING, but not in Index medicus.

Coupled Bioluminescent Assays - Michael J. Corey 2008-10-22

This book highlights the applications of coupled bioluminescence assay techniques to real-world problems in drug discovery, environmental and chemical analysis, and biodefense. It separates theoretical aspects from the applied sections in a clear and readable way. *Coupled Bioluminescent Assays*, explains the uses of CB technologies across drug discovery to analyze toxicity, drug receptors, and enzymes. It covers applications in environmental analysis and biodefense, including cytotoxicity, fertilizer and explosives analysis, and nerve agent and pesticide detection. This is the premier reference on coupled bioluminescent assays for chemists, biochemists, and molecular biologists.

Bioluminescence & Chemiluminescence - Philip E. Stanley 2002

The Proceedings of the 12th International Symposium on Bioluminescence (BL) and Chemiluminescence (CL) contains up-to-date information on the latest developments in BL and CL presented by scientists from around the world. Light-emitting reactions are now a vital component of many key technologies in research and in routine analytical laboratories -- replacing radionuclides in many situations. This volume presents a compilation of the latest developments from key experts and leading-edge researchers in this area.

Proceedings of the 11th International Symposium on Bioluminescence &

Chemiluminescence - James F. Case 2001
Light-emitting reactions occur in some living organisms, and are also now extensively exploited by industry and various branches of biomedical science. Luminescence from the natural world, particularly from marine organisms, is increasingly being harnessed by genetic and chemical manipulation to enhance the quality of human life. This volume contains cutting-edge contributions from most of the world's leading researchers in this field. It presents an up-to-date compilation of the range of biomedical, strategic and ecological applications of chemiluminescence and bioluminescence. It documents and highlights the rapid advance in knowledge concerning both the mechanisms and the uses of luminescence, and covers all the important developments of recent years.

Advances in Clinical Chemistry - 1993-10-20
Advances in Clinical Chemistry

Bibliography of Agriculture - 1970

Bioluminescence - David Lapota 2012-02-01
We now find ourselves utilizing luciferase - luciferin proteins, ATP, genes and the whole complex of these interactions to observe and follow the progress or inhibition of tumors in animal models by measuring bioluminescence intensity, spatially and temporally using highly sophisticated camera systems. This book describes applications in preclinical oncology research by bioluminescence imaging (BLI) with a variety of applications. Chapters describe current methodologies for rapid detection of contaminants using the Milliflex system, and the use of bioluminescence resonance energy transfer (BRET) technology for monitoring physical interactions between proteins in living cells. Others are using bioluminescent proteins for high sensitive optical reporters imaging in living animals, developing pH-tolerant luciferase for brighter in vivo imaging, and oscillation characteristics in bacterial bioluminescence. The book also contains descriptions of the long-term seasonal characteristics of oceanic bioluminescence and the responsible planktonic species producing bioluminescence. Such studies are few and rare.

Chromic Phenomena - Peter Bamfield
2007-10-31

Chromic phenomena, or those produced by materials which exhibit colour in response to a chemical or physical stimulus, have increasingly been at the heart of 'high-tec' developments in a variety of fields in the last decade. Many of the newer technologies, which are at the cutting edge of research, are multi-disciplinary, involving researchers from areas as diverse as physics, biology, materials science and electronic engineering. Chromic Phenomena covers five main areas: * Colour change materials, such as photochromic, thermochromic and electrochromic materials * Materials which absorb and reflect light - the classical dyes and pigments * Luminescent phenomena, including phosphorescence, fluorescence and electroluminescence * Materials which absorb light and transfer energy, eg photosensitisers, infra-red absorbers and laser-addressable compounds * Phenomena involving the manipulation of light by chemicals, such as liquid crystals, lustre pigments, optoelectronics and photonics Providing an entry point both for new researchers and for established ones, this book, with its emphasis on the technological applications of these chromic phenomena, develops and investigates new applications for colour chemistry. It will be of interest to industrialists and professionals in the biological, medicinal, electronics/telecommunications and colorant industries, as well as academics in these fields.

Proceedings of the 14th International Symposium on Bioluminescence and Chemiluminescence - Aladar A. Szalay 2007

In life science, bioluminescence and chemiluminescence have become a vital tool for laboratory analysis and biomedical imaging both in academic research and industrial product development. The latest advances in this exciting field, from fundamental research to cutting-edge applications, are explored in this most recent volume of the biannual symposium series, the Proceedings of the 14th International Symposium on Bioluminescence and Chemiluminescence. The volume highlights advances in fundamental knowledge about the origins and mechanisms of naturally occurring luminescence, including luciferases from firefly, beetle, marine, bacterial and fungal sources. Developments in instrumentation are presented,

together with a wide variety of optical imaging applications for light-emitting gene expressions in optical imaging, such as imaging of gene expression and protein folding in cells, tissues and live animals. In particular, the various contributors describe in detail the use of light-emitting bacteria and viruses for the detection and therapy of tumors, as was highlighted in the symposium.

Chemi- and Bioluminescence - John G. Burr 2020-08-19

This book focuses on instrumentation of chemi- and bioluminescence and discusses the nature of chemiluminescence as the exothermic oxidation of a substrate organic compound to give an energy-rich product that is luminescent. It describes the applications of chemiluminescence.

Proceedings of the 15th International Symposium on Bioluminescence and Chemiluminescence - Xun Shen 2008

In the last decade, great advances have been made in fundamental research and in the applications of bioluminescence and chemiluminescence. These techniques have become vital tools for laboratory analysis. Bioluminescence imaging has emerged as a powerful new optical imaging technique, offering real-time monitoring of spatial and temporal progression of biological processes in living animals. Bioluminescence resonance energy transfer (BRET) methodology has also emerged as a powerful technique for the study of protein-protein interactions. Luciferase reporter gene technology facilitates monitoring of gene expression and is used to probe molecular mechanisms in the regulation of gene expression. Chemiluminescence detection and analysis have also found diverse applications in life science research; for example, chemiluminescent labels and substrates are now widely used in immunoassay and nucleic acid probe-based assays. The latest advances in this exciting field, from fundamental research to cutting-edge applications, are explored in this most recent volume of the biannual symposium series, the Proceedings of the 15th International Symposium on Bioluminescence and Chemiluminescence. The volume highlights advances in fundamental knowledge of luciferase-based bioluminescence, photoprotein-

based bioluminescence, fundamental aspects and applications of chemiluminescence, luminescence imaging, fluorescence quantum dots and other inorganic fluorescent materials, phosphorescence and ultraweak luminescence, and instrumentation for measurement and imaging of luminescence.

Oxygen Radicals and Lung Injury - 1994

Chemiluminescence and Bioluminescence - Aldo Roda 2011

This complete and well-organized overview of chemiluminescence and bioluminescence is divided into two parts. The first covers historical developments and the fundamental principles of these phenomena before going on to review recent advances and instrumentation. The second part deals with the applications in a variety of research fields including life sciences, drug discovery, diagnostics, environment, agrofood, and forensics. The book is suitable not only for researchers currently employing detection techniques in their research activity,

but also for those approaching the subject for the first time. Particular emphasis is placed on the use of chemiluminescence and bioluminescence for the development of a variety of (bio)analytical methods, such as flow-assisted methods, enzyme-, antibody- or gene probe-based assays also in multiplexed formats, miniaturized analytical devices, biosensors, BRET and protein complementation assays, whole-cell biosensors, and bioluminescence molecular imaging. Individual chapters are devoted to the most important and rapidly developing fields including: Instrumentation for Chemiluminescence and Bioluminescence; In vivo, Molecular Imaging; Biotechnological Improvements of Bioluminescent Systems; Cell-based Bioluminescent Biosensors, and Miniaturized Analytical Devices Based on Chemiluminescence, Bioluminescence and Electrochemiluminescence. The book also includes a comprehensive collection of recent bibliographic references.

Cumulated Index Medicus - 2000