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This comprehensive research bibliography compiles, annotates, indexes and cross-references resources in the principal Western languages which focus on China, Japan, and Korea in the areas of philosophy and religious studies, supporting resources in theology, history, culture, and related social sciences. A notable additional feature is the inclusion of extensive Internet-based resources, such as a wide variety of web-sites, discussion lists, electronic texts, virtual libraries, online journals and related material.

Over a half century of exploration of the Earth's space environment, it has become evident that the interaction between the ionosphere and the magnetosphere plays a dominant role in the evolution and dynamics of magnetospheric plasmas and fields. Interestingly, it was recently discovered that this same interaction is of fundamental importance at other planets and moons throughout the solar system. Based on papers presented at an interdisciplinary AGU Chapman Conference at Yosemite National Park in February 2014, this volume provides an intellectual and visual journey through our exploration and discovery of the paradigm-changing role that the ionosphere plays in determining the filling and dynamics of Earth and planetary environments. The 2014 Chapman conference marks the 40th anniversary of the initial magnetosphere-ionosphere coupling conference at Yosemite in 1974, and thus gives a four decade perspective of the progress of space science research in understanding these fundamental coupling processes. Digital video links to an online archive containing both the 1974 and 2014 meetings are presented throughout this volume for use as an historical resource by the international heliophysics and planetary science communities. Topics covered in this volume include:

Ionosphere as a source of magnetospheric plasma Effects of the low energy ionospheric plasma on the stability and creation of the more energetic plasmas The unified global modeling of the ionosphere and magnetosphere at the Earth and other planets New knowledge of these coupled interactions for heliophysicists and planetary scientists, with a cross-disciplinary approach involving advanced measurement and modeling techniques Magnetosphere-Ionosphere Coupling in the Solar System is a valuable resource for researchers in the fields of space and planetary science, atmospheric science, space physics, astronomy, and geophysics.

Therapeutic options for late-stage liver cancer are very limited and the prognosis is often poor. A better understanding of the molecular mechanisms involved in the initiation, progression, and metastasis of hepatocellular carcinoma is critical for developing more rational diagnostic and therapeutic approaches. This e-book covers current developments on clinically relevant research on the molecular biology of hepatocellular carcinoma. This e-book should be a valuable reference for professional gastroenterologists, hepatologists and oncologists as well as medical students and researchers.

This book constitutes the thoroughly refereed post-proceedings of the First International Joint Conference on Natural Language Processing, IJCNLP 2004, held in Hainan Island, China in March 2004. The 84 revised full papers presented in this volume were carefully selected during two rounds of reviewing and improvement from 211 papers submitted. The papers are organized in topical sections on dialogue and discourse; FSA and parsing algorithms; information extractions and question answering; information retrieval; lexical semantics, ontologies, and linguistic resources; machine translation and multilinguality; NLP software and applications, semantic disambigui- ties; statistical models and machine learning; taggers, chunkers, and shallow parsers; text and sentence generation; text mining; theories and formalisms for morphology, syntax, and semantics; word segmentation; NLP in mobile information retrieval and user interfaces; and text mining in bioinformatics.

This book is a comprehensive guide to contrast-enhanced mammography (CEM), a novel advanced mammography technique using dual-energy mammography in combination with intravenous contrast administration in order to increase the diagnostic performance of digital mammography. Readers will find helpful information on the principles of CEM and indications for the technique. Detailed attention is devoted to image interpretation, with presentation of case examples and highlighting of pitfalls and artifacts. Other topics to be addressed include the establishment of a CEM program, the comparative merits of CEM and MRI, and the roles of CEM in screening populations and monitoring of response to neoadjuvant chemotherapy. CEM became commercially available in 2011 and is increasingly being used in clinical practice owing to its superiority over full-field digital mammography. This book will be an ideal source of knowledge and guidance for all who wish to start using the technique or to learn more about it. A definitive, clinically oriented guide to the pathology of genetics of developmental neuropathology Developmental neuropathology relates to the wide range of disorders affecting the developing brain or pre- and post-natal life, with emphasis on the genetic and molecular mechanisms involved. This book provides a practical guide to diagnosing and understanding these disorders affecting this vulnerable population and potentially stimulates further advances in this exciting area. It also addresses the controversies in inflicted head injury in infants. The fourth major title to be approved by the International Society of Neuropathology (ISN), Developmental Neuropathology offers in-depth chapter coverage of brain development; chromosomal changes; malformations; secondary malformations and destructive pathologies; developmental vascular disorders; acquired metabolic and exogenous toxins; metabolic disorders; Rett syndrome and autism; and infectious diseases. The text provides: Clinical, disease-oriented approach to the pathology and genetics developmental neuropathology Fuses classical and contemporary investigative approaches Includes genetic and molecular biological pathogeneses Fully illustrated Approved and endorsed by International Society of Neuropathology

Developmental Neuropathology is the perfect book for practicing neuropathologists, pediatric pathologists, general pathologists, neurologists, and geneticists in deciphering the pathology and pathogenesis of these complex disorders affecting the nervous system of the embryo, fetus, and child.

First paperback printing includes "Bonus chapter."

Japanese-style shoji screens are translucent, wooden-lattice panels that subtly transform light and space and add an elegant touch to any decor. This book contains all the information you need to design and make shoji for your own home or apartment.

Features • Notes on aesthetics and design fundamentals • Complete how-to guide covering basic construction methods, screen materials, and wood selection • Home projects, including window inserts, sliding and hanging screens, glass panel shoji, double- and single-sided shoji, skylight shoji, decorative wall boxes, and floor and table lanterns • Introduction to Japanese hand tools and planing and joinery techniques • Sample lattice patterns, photographs, and line drawings for design and remodeling ideas • List of suppliers

The goals of the 10th International Space Conference on “Protection of Materials and Structures from Space Environment” ICPMSE-10J, since its inception in 1992, have been to facilitate exchanges between members of the various engineering and science disciplines involved in the development of space materials, including aspects of LEO, GEO and Deep Space environments, ground-based qualification, and in-flight experiments and lessons learned from operational vehicles that are closely interrelated to disciplines of the atmospheric sciences, solar-terrestrial interactions and space life sciences. The knowledge of environmental conditions on and around the Moon, Mars, Venus and the low Earth orbit as well as other possible candidates for landing such as asteroids have become an important issue, and protecting both hardware and human life from the effects of space environments has taken on a new meaning in light of the increased interest in space travel and colonization of other planets. And while many material experiments have been carried out on the ground and in open space in the last 50 years (LDEF, MEEP, SARE, MISSE, AOP, DSPSE, ESEM, EURECA, HST, MDIM, MIS, MPID, MPAC and SEED), many questions regarding the environmental impact of space on materials remain either poorly understood or unanswered. The coming generations of scientists will have to continue this work and tackle new challenges, continuing to build the level of confidence humans will need to continue the colonization of space. It is hoped that the proceedings of the ICPMSE-10J presented in this book will constitute a small contribution to doing so.

A discussion of the synthesis, problems, theories and applications of fluorinated surfactants, this second edition is updated with four new chapters on repellency and protection against soiling and staining and over 2900 references, equations, and drawings (800 more than the previous edition). It lists alphabetically and explores numerous applications of fluorinated surfactants. Called "...a most useful introduction to these fascinating materials" by the Journal of Dispersion Science and Technology and "...a coherent and stimulating handbook...the most useful book in the fluorinated surfactants field to date. Recommended." by the Journal of the Chemical Society, Faraday Transactions - this book is a source of factual data, methods of manufacture, and chemical structures for the surfactant scientist and user.

This book creates a platform for music educators to share their experience and

expertise in creative music teaching and learning with the international community. It presents research studies and practices that are original and representative of music education in the Japanese, Asian and international communities. It also collects substantial literature on music education research in Japan and other Asian societies, enabling English-speaking readers to access excellent research and practical experiences in non-English societies.

The spectrum of systemic rheumatologic disease (often termed connective tissue disease) is characterized by autoimmune-mediated organ dysfunction, and the lungs are a frequent target. There are numerous pulmonary manifestations associated with connective tissue diseases, and all patients with rheumatologic disease are at risk of developing associated lung disease. *Pulmonary Manifestations of Rheumatic Disease* covers the comprehensive management of rheumatologic lung disease, which requires a multi-disciplinary approach and is optimized by active engagement by rheumatologists working closely with pulmonologists and other specialists. The book offers a practical reference using a case-based approach for practicing clinicians in the ongoing assessment and understanding of rheumatologic lung disease, and presents the science and pathophysiology underlying rheumatologic lung diseases. The first text of its kind specifically dedicated to describe diverse, commonplace, and challenging aspects of rheumatologic lung diseases, *Pulmonary Manifestations of Rheumatic Disease* serves as an invaluable tool for the practicing clinician.

The future of music archiving and search engines lies in deep learning and big data. Music information retrieval algorithms automatically analyze musical features like timbre, melody, rhythm or musical form, and artificial intelligence then sorts and relates these features. At the first International Symposium on Computational Ethnomusicological Archiving held on November 9 to 11, 2017 at the Institute of Systematic Musicology in Hamburg, Germany, a new Computational Phonogram Archiving standard was discussed as an interdisciplinary approach.

Ethnomusicologists, music and computer scientists, systematic musicologists as well as music archivists, composers and musicians presented tools, methods and platforms and shared fieldwork and archiving experiences in the fields of musical acoustics, informatics, music theory as well as on music storage, reproduction and metadata. The Computational Phonogram Archiving standard is also in high demand in the music market as a search engine for music consumers. This book offers a comprehensive overview of the field written by leading researchers around the globe.

Coastal and estuarine environments at the interface of terrestrial and marine areas are among the most productive in the world. However, since the beginning of the industrial era, these ecosystems have been subjected to strong anthropogenic pressures intensified from the second half of the 20th century, when there was a marked acceleration in the warming (climate change) of the continents, particularly at high latitudes. Coastal ecosystems are highly vulnerable to alteration of their physical, chemical and biological characteristics (marine intrusion, acidification of marine environments, changes in ecosystems, evolution and artificialization of the coastline, etc.). In contact with heavily populated areas, these environments are often the receptacle of a lot of chemical and biological pollution sources that significantly diminish their resilience. In this context of accelerated evolution and degradation of these areas important for food security of many populations around the world, it is necessary to

better identify the factors of pressure and understand, at different scales of observation, their effects and impacts on the biodiversity and on the socio-eco-systems, in order to determine the degree of vulnerability of these coastal ecosystems and the risks they face. A transdisciplinary and integrated approach is required to prevent risks. Within this framework, operational coastal oceanography occupies an important place but also the implementation of a true socio-eco-system approach in order to set up an environmentally friendly development.

Publisher Description

The presence of endotoxin in the bloodstream is the consequence of an immunological response triggered by bacterial invasion of the host. This condition leads to altered cardiovascular function, lung dysfunction and acute kidney injury. Removing as much as possible of the circulating endotoxin is therefore imperative to mitigate its biological and clinical effects at the cellular, tissue and organ levels. The publication at hand summarizes the basic mechanisms, rationale and clinical results of a new therapeutic approach that promises to attain this goal: It consists of a specific hemoperfusion process that utilizes cartridges with immobilized polymixin B in an extracorporeal circuit. Containing contributions by renowned researchers, this book represents as a milestone in the field of extracorporeal therapies in sepsis. It will be a valuable reference work for both basic scientists and clinical professionals who want to keep abreast of current developments.

This study examines the significance of the archetypal heroes and heroines of Japanese cinema and traces both their prior development in literature, drama, and folklore, and their subsequent variations in popular culture.

(Selected) -- Plenary Lectures: New Catalysts for Controlled/Living Atom Transfer Radical Polymerization (ATRP; Catalysis and Applications of Gold Nanoparticles -- Oral Presentations: Ionic Liquids as New Solvents and Catalysis for Petrochemical and Refining Processes; High Throughput Experiment on the Investigation of Oxidation Catalysts with Gas Sensor System -- Poster Presentations: Development of a Low-Temperature Dioxin Decomposition Catalyst; Studies on Unique Properties of Polyolefins Prepared with Metallocene Catalyst Systems -- Index.

This first volume in a projected series contains the proceedings of the first of the Keio University International Symposia for Life Sciences and Medicine under the sponsorship of the Keio University Medical Science Fund. As stated in the address by the President of Keio University at the opening of the 1996 symposium, the fund of Dr. Mitsunada Sakaguchi. The Keio was established by the generous donation University International Symposia for Life Sciences and Medicine constitute one of the core activities of the fund. The objective is to contribute to the international community by developing human resources, promoting scientific knowledge, and encouraging mutual exchange. Every year, the Executive Committee of the International Symposia for Life Sciences and Medicine selects the most interesting topics for the symposium from applications received in response to a call for papers to the Keio medical community. The publication of these proceedings is intended to publicize and distribute information arising from the lively discussions of the most exciting and current issues during the symposium. We are grateful to Dr. Mitsunada Sakaguchi, who made the symposium possible, the members of the program committee, and the office staff whose support guaranteed the success of the symposium. Finally, we thank Springer-Verlag, Tokyo,

for their assistance in publishing this work. Akimichi Kaneko, M. D. , Ph. D. In the twenty-first century, applications in medicine and engineering must acquire greater safety and flexibility if they are to yield better products at higher efficiency. Experts from academia, industry, and government research laboratories who have pioneered CME ideas and technologies describe its concept and research approach and discuss related hardware and software, science and technology, and medicine and engineering. This book will be invaluable to scientists, researchers, and graduates in the emerging field of CME.

The Genius of Japanese Carpentry tells the story of the 1200-year-old Yakushiji monastery in Nara and the dedicated modern-day craftsmen who are working to restore what has been lost to the depredations of time, fire and warfare. Although the full monastery reconstruction will not be completed until 2030, one of the main temples, the Picture Hall, has been completely restored employing the same woodworking technology used to create the original building. This new edition of an architectural classic is by Azby Brown—one of the world's leading experts on Japanese architecture. It contains a new preface and many new text materials and photographs—most of them now available in color for the first time. Azby Brown chronicles the painstaking restoration of the temple through extensive interviews with the carpenters and woodworkers along with original drawings based on the plans of master carpenter Tsunekazu Nishioka. An inspiring testament to the dedication of these craftsmen and their philosophy of carpentry work as a form of personal fulfillment, The Genius of Japanese Carpentry offers detailed documentation of this singular project and a moving reminder of the unique cultural continuity found in Japan.

The Tohoku University Graduate School of Dentistry first introduced the concept of "Interface Oral Health Science", designed to establish and maintain healthy oral cavities, which are home to a number of mixed systems. Included in those systems are: (1) host tissues such as teeth, mucosa, muscle and bone, (2) parasites and microorganisms cohabiting the surfaces of the oral cavity and (3) biomaterials that are used for the rehabilitation of oral functions. In addition, (4) these systems are subject to severe and complex mechanical forces. Therefore, it is critical to promote dental studies that integrate a wide range of interdisciplinary research as medicine, agriculture, material science, engineering, and pharmacology. With this incentive, international symposiums for interface oral health science have been held several times in the past. The concept has since refined and expanded, the result being the "Biosis-Abiosis Intelligent Interface," and projects aiming at the creation of highly functional and autonomic intelligent interfaces are ongoing. This book brings together a number of studies on incentives and projects by leading authors. Topics include biosis-abiosis interface of dental implants, biomaterials in interface science, biomedical engineering interface and cell manipulation and tissue regeneration. Readers not only from the field of dentistry but also many related areas will find this book a valuable resource.

Discover the latest research in photocatalysis combined with foundational topics in basic physical and chemical photocatalytic processes In Heterogeneous Photocatalysis: From Fundamentals to Applications in Energy Conversion and Depollution, distinguished researcher and editor Jennifer Strunk delivers a rigorous discussion of the two main topics in her field—energy conversion and depollution reactions. The book covers topics like water splitting, CO₂ reduction, NO_x abatement and harmful organics degradation. In addition to the latest research on these topics, the reference provides readers with fundamental information about elementary physical and chemical processes in photocatalysis that are extremely practical in this interdisciplinary field. It offers an excellent overview of modern heterogeneous

photocatalysis and combines concepts from different viewpoints to allow researchers with backgrounds as varied as electrochemistry, material science, and semiconductor physics to begin developing solutions with photocatalysis. In addition to subjects like metal-free photocatalysts and photocarrier loss pathways in metal oxide absorber materials for photocatalysis explored with time-resolved spectroscopy, readers will also benefit from the inclusion of: Thorough introductions to kinetic and thermodynamic considerations for photocatalyst design and the logic, concepts, and methods of the design of reliable studies on photocatalysis Detailed explorations of in-situ spectroscopy for mechanistic studies in semiconductor photocatalysis and the principles and limitations of photoelectrochemical fuel generation Discussions of photocatalysis, including the heterogeneous catalysis perspective and insights into photocatalysis from computational chemistry Treatments of selected aspects of photoreactor engineering and defects in photocatalysis Perfect for photochemists, physical and catalytic chemists, electrochemists, and materials scientists, Heterogeneous Photocatalysis will also earn a place in the libraries of surface physicists and environmental chemists seeking up-to-date information about energy conversion and depollution reactions.

Shoji and Kumiko DesignThe basicsD & M King

This open access book reviews the water-agro-food and socio-eco-system of the Seine River basin (76,000 km²), and offers a historical perspective on the river's long-term contamination. The Seine basin is inhabited by circa 17 million people and is impacted by intensive agricultural practices and industrial activities. These pressures have gradually affected its hydrological, chemical and ecological functioning, leading to a maximum chemical degradation between the 1960s and the 1990s. Over the last three decades, while major water-quality improvements have been observed, new issues (e.g. endocrine disruptors, microplastics) have also emerged. The state of the Seine River network, from the headwaters to estuary, is increasingly controlled by the balance between pressures and social responses. This socio-ecosystem provides a unique example of the functioning of a territory under heavy anthropogenic pressure during the Anthropocene era. The achievements made were possible due to the long-term PIREN Seine research program, established in 1989 and today part of the French socio-ecological research network "Zones Ateliers", itself part of the international Long-term Socio-economic and Ecological Research Network (LTSER). Written by experts in the field, the book provides an introduction to the water budget and the territorial metabolism of the Seine basin, and studies the trajectories and impact of various pollutants in the Seine River. It offers insights into the ecological functioning, the integration of agricultural practices, the analysis of aquatic organic matter, and the evolution of fish assemblages in the Seine basin, and also presents research perspectives and approaches to improve the water quality of the Seine River. Given its scope, it will appeal to environmental managers, scientists and policymakers interested in the long-term contamination of the Seine River

Sports performance is primarily associated with elite sport, however, recreational athletes are increasingly attempting to emulate elite athletes. Performance optimization is distinctly multidisciplinary. Optimized training concepts and the use of state-of-the-art technologies are crucial for improving performance. However, sports performance enhancement is in constant conflict with the protection of athletes' health. Notwithstanding the known positive effects of physical activity on health, the prevention and management of sports injuries remain major challenges to be addressed. Accordingly, this Special Issue on "Sports Performance and Health" consists of 17 original research papers, one review paper, and one commentary, and covers a wide range of topics related to fatigue, movement asymmetries, optimization of sports performance by training, technique, and/or tactics enhancements, prevention and management of sports injuries, optimization of sports equipment to increase performance and/or decrease the risk of injury, and innovations for sports performance, health, and load monitoring. As this Special Issue offers several new insights and multidisciplinary perspectives on sports

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performance and health, readers from around the world who work in these areas are expected to benefit from this Special Issue collection.

The essays in this volume examine democracy's development in the United States, demonstrating how that process has shaped—and continues to shape—the American political system. Scholars of American politics commonly describe the political development of the United States as exceptional and distinct from that of other advanced industrial democracies. They point to the United States as the longest-lived and most stable liberal democracy in history. What they often fail to mention, though, is that it took considerable time to extend democracy throughout the country. The contributors to this volume suggest that it is intellectually fruitful to consider the U.S. case in comparison to other countries. They argue that the development of democracy is ongoing in America; that even with a written constitution grounded in liberal democracy, the meaning and significance of U.S. democracy are still evolving. This volume shows that democratization and the pursuit of democracy are processes affected by multiple and continuing challenges—including such issues as citizenship, race, institution building, and political movements—as patterns and practices of politics and governance continue to change. This innovative approach contributes significantly to comparative democratization studies, a field normally confined to Latin America and former communist countries. The U.S. case is a unique reference point for students of American political development and comparative democratization.

With its history of nearly a thousand years, shoji - translucent paper-backed sliding doors and screens - are an inherent part of Japanese tradition and culture. But their beauty and charm can equally be adapted to rooms in a Western home. In this book, Des King examines basic shoji making and design. He gives comprehensive background information about shoji and how they have evolved, and detailed step-by-step instructions, supported by many diagrams and photographs, on how to make three shoji with progressively more complex kumiko arrangements, and variations on structure and joinery. Kumiko patterns enhance the uniqueness and charm of shoji, and Des King introduces three different kinds of patterns, and provides detailed instructions on how to make each kind, including dimensional diagrams of jigs that will improve work efficiency. He also dispels many of the myths about the Japanese hand-plane - the kanna - with an extensive description of how to set up, use and maintain this exceptional tool, including problems that can arise and how to avoid them. Through his highly structured and traditional approach in Book 1, Des King lays solid foundations from which any woodworker can confidently look toward tackling much more complex kumiko patterns and arrangements that can enhance the flair and individuality of shoji in any setting.

Mass Spectrometry (MS) has rapidly become an indispensable tool in polymer analysis, and modern MS today complements in many ways the structural data provided by Nuclear Magnetic Resonance (NMR) and Infrared (IR) methods. Recent advances have sparked a growing interest in this field and established a need for a summary of progress made and results

Celebrating the founding of the Flavor Subdivision of the Agriculture and Food Chemistry Division of the American Chemical Society, this book provides an overview of progress made during the past 30-40 years in various aspects of flavor chemistry as seen by internationally renowned scientists in the forefront of their respective fields. In addition, it presents up-to-date findings in the areas of flavor chemistry, analytical methods, thermally produced flavors and precursors, enzymatically produced flavors and precursors, and sensory methods and results.

The construction of shoji - Japanese sliding doors and screens - requires great

skill and attention to detail. However the task is within the reach of amateur woodworkers. Toshio Odate provides the necessary guidance and skills needed to tackle this traditional craft with confidence.

An intuitive, ingenious and powerful technique, sentinel lymph node biopsy has entered clinical practice with astonishing rapidity and now represents a new standard of care for melanoma and breast cancer patients, while showing great promise for the treatment of urologic, colorectal, gynecologic, and head and neck cancers. This text, written by international experts in the technique, provides a clear and comprehensive guide, presenting a detailed overview and discussing the various mapping techniques available and how these are applied in a number of leading institutions. This essential resource for surgical oncologists, pathologists, and specialists in nuclear medicine will also provide key information for those planning to start a sentinel lymph node program.

This book provides a comprehensive guide to the treatment of small hepatocellular carcinoma (sHCC) using a minimally invasive technique: radiofrequency ablation (RFA). RFA has emerged as a new treatment modality and become the main modality of locoregional therapy. Extensive clinical research indicates that RFA is as effective as surgical resection for sHCC, and it has the advantage of being less invasive. However, the outcomes after RFA are largely dependent on the operators' experience- known as the "learning curve". This book presents the characteristics of sHCC and discusses why sHCC is the best candidate for RFA. Then it introduces all the commercially available RFA systems, and their working principles, advantages, disadvantages and so on. It goes on to demonstrate how to perform RFA under the guidance of ultrasound, CT, laparoscopy, or during open operation. Finally, it discusses the radiologic assessment and follow-up after RFA, as well as adjuvant therapies and clinical trials on RFA. The authors are experts from the fields of pathology, radiology, surgery, and gastroenterology, as well as manufacturers. With this book, readers gain have a clear idea of when and how to do RFA. It aims to standardize and generalize the procedure of RFA, which will be very helpful in improving the outcome of RFA for sHCC.

This text shows how to use Japanese tools effectively and maintain them properly, and explains the role they play in traditional Japanese craftsmanship. It describes how to create razor-sharp cutting edges and introduces almost 50 different planes.

Remote sensing stands as the defining technology in our ability to monitor coral reefs, as well as their biophysical properties and associated processes, at regional to global scales. With overwhelming evidence that much of Earth's reefs are in decline, our need for large-scale, repeatable assessments of reefs has never been so great. Fortunately, the last two decades have seen a rapid expansion in the ability for remote sensing to map and monitor the coral reef ecosystem, its overlying water column, and surrounding environment. Remote sensing is now a fundamental tool for the mapping, monitoring and management

of coral reef ecosystems. Remote sensing offers repeatable, quantitative assessments of habitat and environmental characteristics over spatially extensive areas. As the multi-disciplinary field of coral reef remote sensing continues to mature, results demonstrate that the techniques and capabilities continue to improve. New developments allow reef assessments and mapping to be performed with higher accuracy, across greater spatial areas, and with greater temporal frequency. The increased level of information that remote sensing now makes available also allows more complex scientific questions to be addressed. As defined for this book, remote sensing includes the vast array of geospatial data collected from land, water, ship, airborne and satellite platforms. The book is organized by technology, including: visible and infrared sensing using photographic, multispectral and hyperspectral instruments; active sensing using light detection and ranging (LiDAR); acoustic sensing using ship, autonomous underwater vehicle (AUV) and in-water platforms; and thermal and radar instruments.

Emphasis and Audience This book serves multiple roles. It offers an overview of the current state-of-the-art technologies for reef mapping, provides detailed technical information for coral reef remote sensing specialists, imparts insight on the scientific questions that can be tackled using this technology, and also includes a foundation for those new to reef remote sensing. The individual sections of the book include introductory overviews of four main types of remotely sensed data used to study coral reefs, followed by specific examples demonstrating practical applications of the different technologies being discussed. Guidelines for selecting the most appropriate sensor for particular applications are provided, including an overview of how to utilize remote sensing data as an effective tool in science and management. The text is richly illustrated with examples of each sensing technology applied to a range of scientific, monitoring and management questions in reefs around the world. As such, the book is broadly accessible to a general audience, as well as students, managers, remote sensing specialists and anyone else working with coral reef ecosystems.

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