

Life & Earth Sciences

January to April 2023



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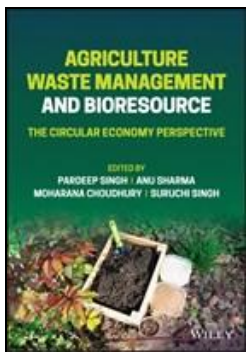
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Agriculture Waste Management and Bioresource

The Circular Economy Perspective

P Singh

Summary

Comprehensive resource detailing the generation of agricultural waste and providing insight into waste management

Agriculture Waste Management and Bioresource provides thorough coverage of the generation of agricultural waste with essential thought leadership about various options in managing the waste, including composting, vermicomposting to form manure and biogas generation. Readers take a crucial step toward more sustainable development and to create a greener planet.

The text includes a wide range of information regarding resource recovery from the waste of the agriculture sector, energy generation, biofuels, reduction in the amount and volume of waste through circular economy, and much more. The authors place particular importance on understanding and managing agricultural waste concerning the sustainability of the environment in the era of global climate change.

Topics covered in *Agriculture Waste Management and Bioresource* include:

- Categories and amounts of agricultural wastes seen in a worldwide perspective and current challenges and perspectives in handling agricultural wastes
- S...

Contributor Bio

Pardeep Singh, Department of Environmental Studies, PGDAV College, University of Delhi, India.

Anu Sharma, Department of Environmental Sciences, University of Jammu, India

Moharana Choudhury, Environmental Research and Management Division, Voice of Environment (VoE) Guwahati, Assam, India



Weed Science and Weed Management in Rice and Cereal-Based Cropping Systems, 2 Volumes

Surajit K. De Datta, Aurora M. Baltazar

Summary

An in-depth exploration of weed science fundamentals and the development of improved methods of sustainable weed management and control

In *Weed Science and Weed Management in Rice and Cereal-Based Cropping Systems*, distinguished researchers Aurora Baltazar and Surajit K. De Datta deliver a robust and comprehensive discussion of the history, production systems, and practices of rice cropping systems in major rice-growing countries, and how those production practices impact crop-weed relationships and weed management practices. *Weed Science* also describes basic weed science principles as they apply to tropical cropping situations. Readers will be able to apply the material in this book to develop improved, efficient, and economically and environmentally sustainable strategies to manage or control weeds.

The weed management methods discussed include chemical, cultural, mechanical, biological, and integrated methods. There is a strong focus on the most recent research, including new herbicide chemistries and modes of action, molecular biology, and weed genomics. Readers will also find:

- A th...

Contributor Bio

Aurora M. Baltazar, first author, is Adjunct Professor at the Institute of Weed Science, Entomology and Plant Pathology, University of the Philippines at Los Banos, where she taught and did research on weed biology, weed ecology and herbicide behavior in plants and soils, including ways to improve selectivity of postemergence grass herbicides in emerged rice and grass weeds.

Surajit K. De Datta, co-author, is Adjunct Senior Faculty, Center for the International Research, Education and Development (CIRED), Virginia Tech, where he served for 20 years as the Director of the Office of International Research, Education, and Development (OIREED), Virginia Tech

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Agriculture

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Hardcover

800 Pages
Technology & Engineering /
Agriculture

A Problem-Solving Workbook on Ionospheric and Space Physics

Pradipta

Summary

Enables students to understand and master basic and advanced concepts of space, atmosphere, and ionospheric physics

A Problem-Solving Workbook on Ionospheric and Space Physics is a unique textbook that contains a set of problems and exercises accompanied with complete solutions that explore and elucidate the most relevant concepts in ionospheric and space physics. The author has chosen problems that are interesting topic-wise, challenging, and that exemplify the physical and mathematical reasoning in ionospheric and space physics.

Specifically, the text conveys core concepts of ionospheric and space physics using a problem-based approach. Each problem elucidates prototypical aspects that readers can easily generalize. Each problem also consists of multi-part questions to facilitate step-by-step understanding. A short introduction to each problem defines the theme and provides context to the readers.

In *A Problem-Solving Workbook on Ionospheric and Space Physics*, readers can expect to learn about:

- Sensing ionospheric plasmas from the ground, slab thickness of a transparent layer, reflecto...

Contributor Bio

Rezy Pradipta, PhD, is Research Scientist at Boston College, MA, USA.



Wiley
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Paperback

208 Pages
Science / Earth Sciences

Climatology in Cold Regions

Chenghai Wang

Summary

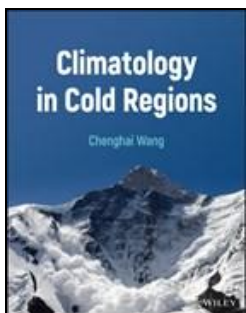
A groundbreaking interdisciplinary study of cold-region weather systems and their vital role in predicting climate change across the globe

Climatology in Cold Regions explores the complexities of land–atmospheric interaction across the Earth’s cryosphere, systematically placing soil thawing, snow melting, surface diabatic heating, and other processes within the context of broader climatological models. Drawing from a wealth of new data, leading atmospheric scientist Chenghai Wang illustrates how cold-region weather systems can be parameterized to improve seasonal climate prediction and provide crucial insights into projected changes in climate over the next 50-100 years.

The book opens with an introduction to the characteristics and classification of cold-region climatology, followed by a detailed description of the primary weather systems and land surface processes in cold regions. The core of the book presents a new approach for seasonal climate prediction using signals obtained from cryospheric processes, supported by a discussion of climate disasters and the impact of climate change...

Contributor Bio

Chenghai Wang is a Full Professor in the School of Atmospheric Sciences at Lanzhou University, China. With more than 30 years of experience in the field of cold-region climatology, Professor Wang has published 150 papers on climate dynamics and predictions, climate modeling, monsoons, and climate change in cold and arid regions. He serves on the editorial boards of *Journal of Glaciology and Geocryology* and *Journal of Arid Meteorology* and is a member of the National Technical Committee on Climate and Climate Change and the National Technical Committee on Wind and Solar Resources in the Standardization Administration of China.



Wiley-Blackwell
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Hardcover

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Science / Earth Sciences

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Reversing Global Warming

Engineering Theories and Applications for Mitigating Climate Change

A. B. Chhetri

Wiley-Scrivener
9781119526339
Pub Date: 4/25/23
\$195.00 USD
Hardcover

300 Pages
Science / Earth Sciences

Sedimentary Petrology (4th Edition)

ME Tucker

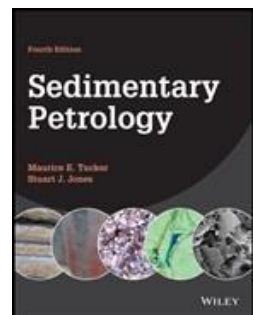
Summary

Authoritative, accessible, and updated introduction to sedimentary rocks for undergraduate students

Sedimentary Petrology provides readers with a concise account of sedimentary rock composition, mineralogy, texture, structure, diagenesis, and depositional environments. The new edition of this classic text incorporates the many technological and analytical advances of the last decade, revealing exciting details of processes such as microbial precipitation, how microporosity is created within mudrocks, and the chemical composition of foraminifera deposits, which can be a key indicator for changing seawater temperature.

This fourth edition offers a comprehensive update and expansion of the previous editions with a new set of illustrations, new references, and further reading. The new co-author Stuart Jones has brought his considerable expertise in clastic sedimentology to the rewritten chapters on sandstones and mudrocks. The addition of color images throughout the text will aid students immensely in their studies and petrographic fieldwork.

Sample topics covered in *Sedimentary Petrology* i...



Wiley
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Paperback

448 Pages
Science / Earth Sciences

Eco-Restoration of Mine Land

Vimal Chandra Pandey, Jitendra Ahirwal, Roopali Roychowdhury, Ritu Chaturvedi

Summary

An authoritative introduction to the ecosystem-based approach for restoring land after coal and mineral mining operations.

Mining activities, in particular where metal ores have been mined, often leave behind vast areas of dumps and disused mine lands that have become environmental hazards. Soil degradation and poisoning are major environmental concerns in these areas, requiring comprehensive and long-term interventions in order to restore those lands to an ecologically productive state.

Eco-Restoration of Mine Land provides a comprehensive overview of ecosystem-based solutions for remediating polluted soil and re-establishing vegetation in disused mine lands, synthesizing cutting-edge research, experiential knowledge, and longstanding best practices to offer a holistic introduction to the science of mine land restoration.

Eco-Restoration of Mine Land readers will also find:

- A basic introduction to soil contamination, risk assessment, and phytoremediation of mine land
- Discussion of carbon sequestration potential of restored mine soils and other environmental benefits of remediated mine la...

Contributor Bio

Vimal Chandra Pandey, PhD, Department of Environmental Science, Babasaheb Bimrao Ambedkar University, Lucknow, India.

Jitendra Ahirwal, PhD, Department of Forestry, Mizoram University, Aizawal, India.

Roopali Roychowdhury, PhD, Department of Biotechnology, Techno India University, Kolkata, India.

Ritu Chaturvedi, PhD, Department of Botany, St. John's College, Agra, India

Advances in Remote Sensing Technology and the Three Poles

Manish Pandey, Prem C. Pandey, Yogesh Ray, Aman Arora, Shridhar D. Jawak, Uma K. Shukla

Summary

Covers recent advances in remote sensing technology as applied to the so-called Three Poles the Arctic, Antarctica, and the Himalayas

Advances in Remote Sensing Technology and the Three Poles explores the developments in satellite remote sensing, geoinformatics, and landscape evolution modeling techniques that have made it possible to trace the harsh effects of climate change on the three poles and attempts to understand the subtle link between climate change and its effects on cryospheric and related processes. The work also addresses the increased resolution of the satellite data that has aided in the quantification of ever-changing landforms and surface processes.

Sample topics covered in the work include:

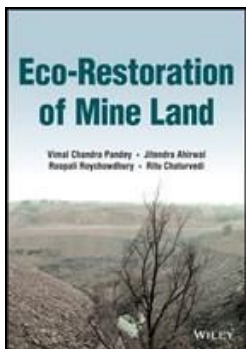
- Terrestrial net primary production of the Arctic and modeling of Arctic landform evolution
- Glaciers and glacial environments, including a geological, geophysical, and geospatial survey of Himalayan glaciers
- Sea ice dynamics in the Antarctic region under a changing climate, plus the quaternary geology and geomorphology of Antarctica
- Continuous satellite missions, data availability, and...

Contributor Bio

Manish Pandey currently works at the University Center for Research & Development (UCRD), Chandigarh University located in Mohali, Punjab, India.

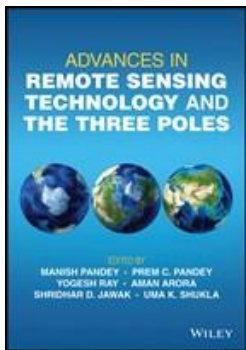
Prem Chandra Pandey currently works as Assistant Professor in Center for Environmental Sciences and Engineering, Shiv Nadar University, UP India.

Shridhar Jawak is currently working as a Senior Adviser in Remote Sensing at the Svalbard Integrated Arctic Earth Observing System (SIOS), Longyearbyen, Norway.



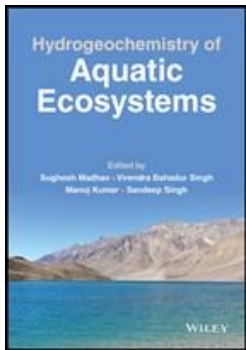
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Science / Earth Sciences



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500 Pages
Technology & Engineering /
Remote Sensing &
Geographic Information
Systems



Wiley
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Hardcover

416 Pages
Science / Earth Sciences

Hydrogeochemistry of Aquatic Ecosystems

Sughosh Madhav, Virendra Bahadur Singh, Manoj Kumar, Sandeep Singh

Summary

Discover the geological foundation of global water supply, focusing on resource conservation and restoration

Hydrogeochemistry explores the connections between the geology of a region and the chemical characteristics and quality of its water sources, including such factors as erosion, evaporation, and, increasingly, man-made activities. With the emergence of climate change as a major factor reshaping water quality and availability, the need to understand interactions between hydrochemistry and geology has never been greater.

Hydrogeochemistry of Aquatic Ecosystems meets this need by offering foundational knowledge about the hydrochemistry of different types of aquatic systems, the nature of their interactions with various pollutants and geological processes, and the possibilities and dangers of human intervention. With a particular focus on aqueous resource conservation and restoration, this is a vital, timely guide to a potentially life-saving subject.

Hydrogeochemistry of Aquatic Ecosystems readers will also find:

- Detailed treatment of subjects including water-sediment interactions, ar...

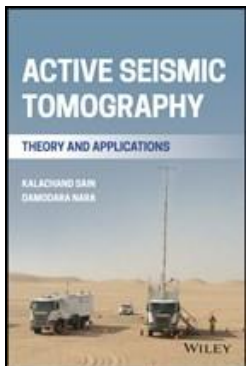
Contributor Bio

Sughosh Madhav is Assistant Professor at Shaheed Bhagat Singh College, University of Delhi, New Dehli, India.

Virendra Bahadur Singh is a Postdoctoral Fellow in the Department of Geology, University of Delhi, New Delhi, India.

Manoj Kumar is Assistant Professor in the Department of Environmental Studies, Central University of Haryana, India.

Sandeep Singh is Professor in the Department of Earth Sciences, Indian Institute of Technology Roorkee



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300 Pages
Science / Physics

Active Seismic Tomography

Theory and Applications

Kalachand Sain, Nara Damodara

Summary

Imaging complex regions or difficult terrains like the sub-volcanic sediments or thrust fold belt areas is crucial to understanding the earth's subsurface. *Active Seismic Tomography: Theory and Applications* describes current technologies for the study of seismic velocities and the elucidation of fine details of the subsurface. Key use cases include hydrocarbon reservoir characterization, identification of faults and channels, and stratigraphic and structural traps.

Volume highlights include:

- Theory and development of seismic tomography
- Numerous examples of the interpretation and analysis of active source seismic data
- Relevance of tomography data for computational geophysicists

This volume is a valuable resource for academics and professionals interested in using or developing integrated imaging approaches of the Earth's subsurface.

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Isotope Geochemistry (2nd Edition)

William M. White

Summary

Provides a thorough and up-to-date overview of radiogenic and stable isotope geochemistry

Now in its second edition, *Isotope Geochemistry* presents a comprehensive introduction to radiogenic and stable isotope geochemistry. The book opens with an overview of the physics and origins of atoms and nuclei, followed by a review of radioactive decay schemes and geochronological techniques such as fission-track and carbon-14 dating. Subsequent chapters cover nucleosynthetic anomalies in meteorites, early solar system chronology, the theory and application of stable isotope geochemistry, isotopic variation in the noble gases, and more.

This edition includes new sections on thermochronology, U-He dating, recently published La-Ce isotope data, stable isotopes in ore deposits, nuclear volume and nuclear spin effects, and the application of isotope geochemistry in areas such as agriculture, forensics, and environmental studies. Revised and expanded discussions address topics including isotope cosmochemistry, non-traditional isotopes, nucleosynthesis, advanced U-Pb dating and isotopic analysis techn...

Contributor Bio

William M. White is Professor Emeritus of Earth and Atmospheric Sciences at Cornell University. He is a fellow of the Geochemical Society, the European Association of Geochemistry, and the American Geophysical Union. He served as the founding editor of *Geochemistry*, *Geophysics*, *Geosystems*, and is the author of *Geochemistry*, also published by Wiley-Blackwell.

Polluted Earth

The Science of the Earth's Environment

Alexander Gates

Summary

A fresh and engaging introduction to the science behind pollution disasters for science and non-science majors

Coming generations will have to reckon with a growing number of environmental challenges, whether caused by climate change, population growth or industrial production. *Polluted Earth: The Science of Earth's Environment* combines the best features of a textbook and a popular science book. It retains the organization needed for a course while adopting a highly illustrative style that is mirrored in a multitude of case studies: short, self-contained and well-illustrated stories of well-known pollution disasters that are highly engaging for both science and non-science majors, from the historic Black Sunday dust storm in the midwestern United States to the more recent *Deepwater Horizon* spill in the Gulf of Mexico. From the very start, it also introduces the concept of environmental justice that ties pollution to economic and social life, bringing its subject into the world of the reader in an unprecedented way.

Polluted Earth readers will also find:

- Well-known case studies including...

Contributor Bio

Alexander Gates, PhD is a Distinguished Service Professor in the Department of Earth & Environmental Sciences at Rutgers University, New Jersey, USA.



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Paperback
400 Pages
Science / Environmental
Science



Handbook of Archaeological Sciences, 2 Volume Set (2nd Edition)

Pollard

Summary

A modern and comprehensive introduction to the methods and techniques in archaeology

In the newly revised Second Edition of the *Handbook of Archaeological Sciences*, a team of more than 100 researchers delivers a comprehensive and accessible overview of modern methods used in the archaeological sciences. The book covers all relevant approaches to obtaining and analyzing archaeological data, including dating methods, quaternary paleoenvironments, human bioarchaeology, biomolecular archaeology and archaeogenetics, resource exploitation, archaeological prospection, and assessing the decay and conservation of specimens.

Overview chapters introduce readers to the relevance of each area, followed by contributions from leading experts that provide detailed technical knowledge and application examples.

Readers will also find:

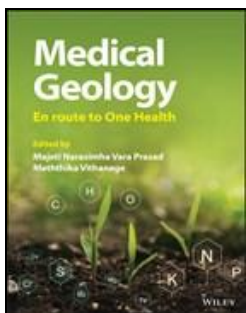
- A thorough introduction to human bioarchaeology, including hominin evolution and paleopathology
- The use of biomolecular analysis to characterize past environments
- Novel approaches to the analysis of archaeological materials that shed new light on early human lifestyles and soci...

Contributor Bio

A. Mark Pollard is the Edward Hall Professor of Archaeological Science at the University of Oxford in the United Kingdom.

Ruth-Ann Armitage works at the Eastern Michigan University in the United States.

Cheryl Makarewicz works at the Institute for Prehistoric and Protohistoric Archaeology at the University of Kiel in German.



Medical Geology

En route to One Health

Majeti Narasimha Vara Prasad, Meththika Vithanage

Summary

The key to understanding the relationship between the geological environment and human health

Medical geology deals with of the impact of environmental factors on the health of individual human beings and communities. In particular, it studies environmental exposure to both macro- and micronutrients in the geosphere, hydrosphere, and atmosphere respectively, soil, water, and airborne dust which may positively or negatively impact human growth, development, and overall health. The insights contributed by this burgeoning field can aid not only in individual medical cases, but also in assessing disproportionately impacted communities and addressing global medical inequality.

Medical Geology: En route to One Health is among the first books to address this vital subject by summarizing recent research in this field. It also serves as an introduction to the multidisciplinary One Health methodology, which unites medical, geological, and environmental insights in one continuous approach to public health.

Medical Geology readers will also find:

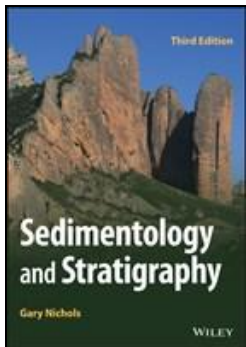
- An explanation of the influence of climate on nutrient ...

Contributor Bio

M. N. V. Prasad, PhD, is Emeritus Professor at the School of Life Sciences, University of Hyderabad, India. His awards include the Pitamber Pant National Environment Fellowship (2007) and the Excellent Scholar Award from the XIX International Botanical Congress (2017). He has nearly forty years of experience teaching environmental science, and has published extensively on related subjects.

Meththika Vithanage, PhD, is Professor and founding director of the Ecosphere Resilience Centre, University of Sri Jayewardenepura, Sri Lanka. She is a Young Affiliate of the Third World Academy of Sciences and Chairperson of the Young Scientists forum, and has received awards including the General Research ...

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Hardcover
500 Pages
Science / Earth Sciences



Sedimentology and Stratigraphy (3rd Edition)

Nichols

Summary

Comprehensive textbook on all aspects of sedimentology and stratigraphic principles

Sedimentology and Stratigraphy introduces the reader to the subjects and provides tools for the interpretation of sediments and sedimentary rocks, covering the processes of formation, transport, and deposition of sediment and applying them to develop conceptual models for the full range of sedimentary environments, from deserts to deep seas and reefs to rivers. Different approaches to using stratigraphic principles to date and correlate strata are also considered to provide a comprehensive overview of all aspects of sedimentology and stratigraphy.

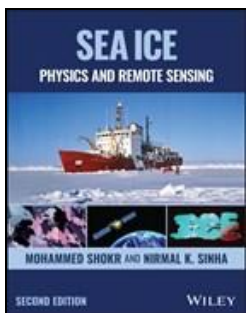
The 3rd edition has been thoroughly revised and updated. The chapter structure has been revised, such that there are distinct sections on geomorphology and on stratigraphy for each depositional setting. The new edition also features a new set of illustrations in full colour.

Key concepts introduced in *Sedimentology and Stratigraphy* include:

- The importance of changes in plant and animal life through time and the effects on characteristics of both marine and conti...

Contributor Bio

Gary Nichols has taught sedimentology and stratigraphy at Royal Holloway University of London, UK, and at the University Centre on Svalbard, Norway. His research interests in the analysis of facies and sedimentary basins have taken him to every continent, providing experience of a wide range of sedimentary rocks types of different ages in a variety of depositional settings.



Sea Ice (2nd Edition)

Physics and Remote Sensing

Shokr

Summary

An in-depth review of ice features and structural properties with latest advances in geophysical sensors, ice parameters retrieval techniques, and remote sensing data

The second edition of *Sea Ice: Physics and Remote Sensing* has been revised and updated to reflect the latest developments in geophysical sensors and ice parameters retrieval techniques. This volume addresses experiences acquired mainly in Canada by researchers in the fields of ice physics and growth history in relation to its polycrystalline structure as well as ice parameters retrieval from remote sensing observations. The volume describes processes operating at the macro- and microscale (e.g., brine entrapment in sea ice, crystallographic texture of ice types, brine drainage mechanisms, etc.). The information is supported by high-quality photographs of ice thin-sections prepared from cores of different ice types, all obtained by leading experts during field experiments using photographic cameras and scanning microscopy. In addition, this volume presents techniques to retrieve a suite of sea ice parameters (e.g. ice typ...

Wiley
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Hardcover
592 Pages
Science / Earth Sciences

Fuzzy Systems Modeling in Environmental and Health Risk Assessment

Boris Faybishenko, Rehan Sadiq, Ashok Deshpande

Summary

Demonstrates the successful application of fuzzy systems modeling to real-world environmental and health problems

In *Fuzzy Systems Modeling in Environmental and Health Risk Assessment*, a team of distinguished researchers delivers an up-to-date collection of the most successful and innovative attempts to apply fuzzy logic to problems involving environmental risk assessment, healthcare decision-making, the management of water distribution networks, and the optimization of water treatment and waste management systems.

By explaining both the theoretical and practical aspects of using fuzzy systems modeling methods to solve complex problems, analyze risks and optimize system performance, this handy guide maintains a strongly application-oriented perspective throughout, offering readers a practical treatment of a cutting-edge subject.

Readers will also find:

- Comprehensive explorations of the practical applications of fuzzy systems modeling in hydrogeology and environmental science
- Practical advice on environmental quality assessments and human health risk analyses
- In-depth case studies involving...

Contributor Bio

Boris Faybishenko is a Staff Scientist in the Earth Sciences Division at the Lawrence Berkeley National Laboratory, Earth and Environmental Sciences Area in California, USA.

Rehan Sadiq is Professor and Associate Dean of the Faculty of Applied Science in the School of Engineering at the University of British Columbia, Kelowna Center in Canada.

Ashok Deshpande (deceased) was a Professor in the College of Engineering, Pune (COEP), India, as well as Chair, Guest Faculty, and Scientist at the Berkeley Initiative in Soft Computing (BISC), Special Interest Group

Multi-Criteria Decision Making for Risk Assessment of Emerging Environmental Contaminants

Vijay Kumar, Prasenjit Chatterjee, Jyoti Chawla, Rajeev Kumar

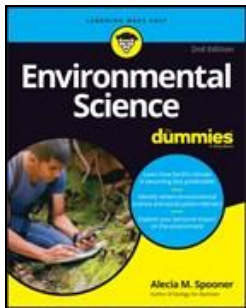
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Science / Physics
Series: Water Resources
Monograph

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Political Science / Public
Policy
Series: Sustainable
Computing and Optimization



Environmental Science For Dummies (2nd Edition)

Alecia M. Spooner

Summary

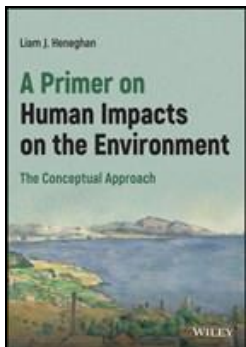
Ace your environmental science class and get smart about the environment

Environmental Science For Dummies is a straightforward guide to the interrelationships of the natural world and the role that humans play in the environment. This book tracks to a typical introductory environmental science curriculum at the college level—and is great as a supplement or study guide for AP Environmental Science, too. Uncover fascinating facts about the earth's natural resources and the problems that arise when resources like air, water, and soil are contaminated by pollutants. If you're in need of extra help for a class, considering a career in environmental science, or simply care about our planet and want to learn more about helping the environment, this friendly Dummies resource is a great place to start.

- The key concepts of environmental science, clearly explained
- All about the changing climate, including new understanding of methane release in the arctic
- Earth's natural resources and the importance of protecting them
- A new chapter on environmental justice, where issues of poverty and sustainability...

For Dummies
9781394161393
Pub Date: 4/25/23
\$24.99 USD
Paperback

Science / Environmental
Science



A Primer on Human Impacts on the Environment

The Conceptual Approach

Liam Heneghan

Summary

An insightful and illuminating discussion of the impact humans have had on Earth

In *The Environmental Transformation of Earth: Old Planet, New Ape*, distinguished environmental scientist Liam Heneghan explores the manifold interaction between humankind and the Earth. From the wide variety of illuminating case studies and examples drawn from contemporary literature that the author has selected, readers will gain the methodological and intellectual tools to grasp the intricate and multi-layered relationship between humans and their home planet.

The author writes in an accessible and engaging style and creates a truly international feel with examples taken from around the world. The author challenges his readers to think out of the box and across multiple disciplines, showing the "big picture" that is all too often lost in the details of contemporary environmental studies.

Readers will also find:

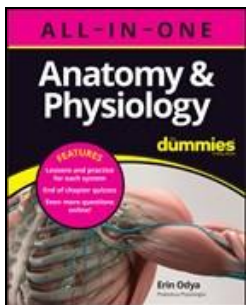
- A thorough introduction to the "old planet", before humans began to transform it
- Comprehensive explorations of the human impact on the Earth, including an examination of how many people the Earth can...

Contributor Bio

Liam Heneghan, PhD, is Professor of Environmental Science and Studies at De Paul University in Chicago, Illinois, USA. His research is focused on invasive species and the efficacy of ecological restoration.

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272 Pages
Political Science / Public
Policy



Anatomy & Physiology All-in-One For Dummies (+ Chapter Quizzes Online)

Erin Ody

Summary

The knee-bone's connected to the...what was it again?

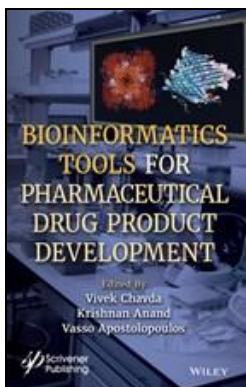
From complicated Latin names to what can seem like a million-and-one things to memorize, no one's saying anatomy and physiology is easy. But, with a little help from your friends at *Dummies*, it doesn't have to be impossible!

Anatomy & Physiology All-in-One For Dummies is your go-to guide for developing a deep understanding of the parts of the human body and how it works. You'll learn the body's structures and discover how they function with expert help from the book's easy-to-use teaching features. You can even go online to access interactive chapter quizzes to help you absorb the material.

With this book, you'll:

- Get a grip on key concepts and scientific terminology used to describe the human body
- Discover fun physiology facts you can apply to everyday life both inside and outside the classroom
- Learn how the body's different systems interact with one another

So, if you're looking to ace that next test, improve your overall grade, reduce test anxiety, or just increase your confidence in the subject, grab a copy of *Anatomy & Physiology All...*



Bioinformatics Tools for Pharmaceutical Drug Product Development

Vivek Chavda, K. Anand, Vasso Apostolopoulos

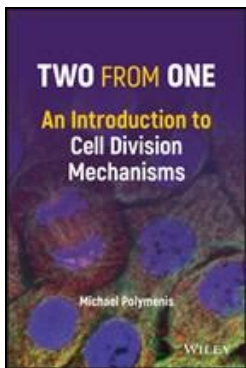
Summary

The book contains 17 chapters categorized into 3 sections. The first section presents the latest information on bioinformatics tools, artificial intelligence, machine learning, computational methods, protein interactions, peptide-based drug design and omics technologies. The following 2 sections include bioinformatics tools for the pharmaceutical sector and for the healthcare sector. Bioinformatics brings a new era in research with the aim to accelerate drug target and vaccine design development, improve validation approaches as well as facilitate in identifying side effects and predict drug resistance. As such, this will aid in more successful drug candidates from discovery to clinical trials to the market, and most importantly making it a more cost-effective process overall.

Contributor Bio

The editors are well-known experts in their respective fields of bioinformatics, computational chemistry, drug discovery, vaccines, nanotechnology and chronic disease management. Editors Dr. Vivek Chavda, Dr. Krishnan Anand and Dr. Vasso Apostolopoulos have several publications in the field of chronic diseases, vaccines, pharmaceutical drug product development, bioinformatics, drug design, and drug delivery systems.

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Medical / Biostatistics

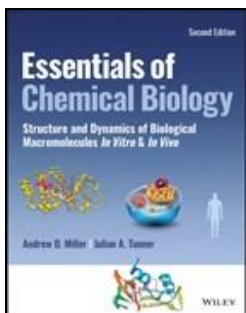


Two from One - A Short Introduction to cell Division Mechanisms

Polymenis

Wiley-Blackwell
9781119930143
Pub Date: 3/20/23
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Paperback

240 Pages

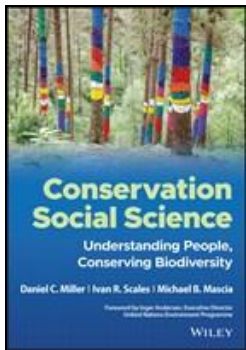


Essentials of Chemical Biology: Structures and Dynamics of Biological Macromolecules In Vitro and In Vivo, 2nd Edition

Miller

Wiley-Blackwell
9781119437970
Pub Date: 12/29/22
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Paperback

656 Pages



Conservation Social Science

Understanding People, Conserving Biodiversity

DC Miller

Summary

Earth's biodiversity is in crisis. Forests are shrinking, fisheries are collapsing, and species are disappearing around the globe. Drawing upon the biological sciences, the conservation community has responded to this crisis by investing billions of dollars in programs designed to protect endangered species and ecosystems. While conservation efforts sometimes fail because of biological ignorance, conservationists more often get the biology "right," but still fail to preserve target species and ecosystems.

This book is a rigorous, clearly articulated, and comprehensive introduction to the role of social scientific theory and knowledge in conservation policy and practice. The authors are leading scholars at the nexus of social science and biodiversity conservation, and seek to present a book that will transform the prevailing conservation paradigm by discussing how social scientific theory and knowledge can inform and strengthen conservation policy and practice.

Key features:

- Integrates the many relevant disciplines of social sciences into Conservation Science in general
- Illustrated t...

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Hardcover

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Science / Life Sciences



Conservation Social Science

Understanding People, Conserving Biodiversity

Daniel C. Miller, Ivan R. Scales, Michael B. Mascia

Summary

Earth's biodiversity is in crisis. Forests are shrinking, fisheries are collapsing, and species are disappearing around the globe. Drawing upon the biological sciences, the conservation community has responded to this crisis by investing billions of dollars in programs designed to protect endangered species and ecosystems. While conservation efforts sometimes fail because of biological ignorance, conservationists more often get the biology "right," but still fail to preserve target species and ecosystems.

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Key features:

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356 Pages
Science / Life Sciences

Microbiomics and Sustainable Crop Production

MY Mir

Summary

Highly detailed resource covering microbiome research, new omics, and gene editing technologies and approaches

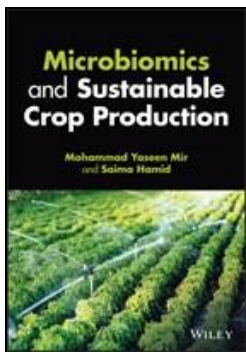
Microbiomics and Sustainable Crop Production presents an overview of the current state of the art in microbiome research, discussing many new technologies and approaches in order to bridge knowledge gaps between field and lab experimental systems. New and emerging strategies to improve the survival and activity of microbial inoculants are covered, including the use of selected indigenous microbes, optimizing microbial delivery methods, and taking advantage of modern gene editing tools to engineer microbial inoculants.

The two highly qualified authors address new molecular tools and powerful biotechnological advances, providing readers with knowledge of the complex chemical and biological interactions that occur in the rhizosphere and ensuring that strategies to engineer the rhizosphere are safe, beneficial to productivity, and result in improvements to the sustainability of agricultural systems. The relationship between phyllosphere microbial communities and functional traits ...

Contributor Bio

Dr Mohammad Yaseen Mir, Centre of Research for Development, University of Kashmir, India. Dr. Mir's research interest is in studying the ecology, molecular biology, conservation, and management of plant resources.

Dr Saima Hamid, Researcher, Department of Environmental Sciences, University of Kashmir, India. Dr. Hamid researches plant stress biology, genetic diversity of high altitudinal medicinal plants, and more.



Wiley
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Hardcover

375 Pages
Science / Life Sciences

Genetic Theory and Analysis (2nd Edition)

Finding Meaning in a Genome

Danny E. Miller, Angela L. Miller, R. Scott Hawley

Summary

Understand and apply what drives change of characteristic genetic traits and heredity

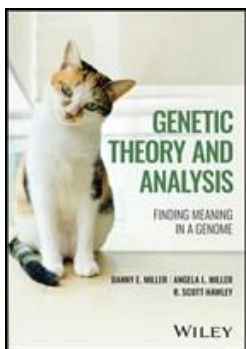
Genetics is the study of how traits are passed from parents to their offspring and how the variation in those traits affects the development and health of the organism. Investigating how these traits affect the organism involves a diverse set of approaches and tools, including genetic screens, DNA and RNA sequencing, mapping, and methods to understand the structure and function of proteins. Thus, there is a need for a textbook that provides a broad overview of these methods.

Genetic Theory and Analysis meets this need by describing key approaches and methods in genetic analysis through a historical lens. Focusing on the five basic principles underlying the field—mutation, complementation, recombination, segregation, and regulation—it identifies the full suite of tests and methodologies available to the geneticist in an age of flourishing genetic and genomic research. This second edition of the text has been updated to reflect recent advances and increase accessibility to advanced undergraduate student...

Contributor Bio

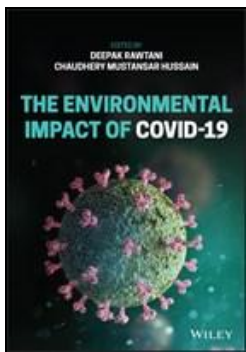
Danny E. Miller, MD, PhD is an Assistant Professor in the Department of Pediatrics, Division of Genetic Medicine and Laboratory Medicine & Pathology at the University of Washington in Seattle, WA, USA. He is the recipient of the 2017 Larry Sandler Memorial Award, the 2018 Lawrence E. Lamb Prize for Medical Research, and a 2022 National Institutes of Health Director's Early Independence Award. Dr Miller is a leader in the field of long-read sequencing technology and the use of new technology to evaluate individuals with unsolved genetic disorders.

Angela L. Miller is a Research Coordinator at the University of Washington in Seattle, WA, USA, with a background in journalism, visual communicatio...



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Paperback

272 Pages
Science / Life Sciences



The Environmental Impact of COVID-19

Deepak Rawtani, Chaudhery Mustansar Hussain

Summary

Discover the wider environmental effects of the COVID-19 pandemic with this timely and up to date resource

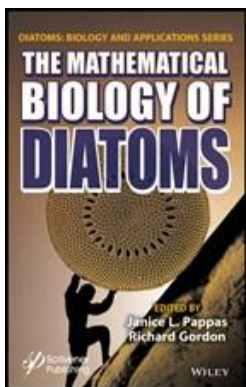
Environmental Impact of COVID-19 delivers an insightful analysis of various environmental aspects of the COVID-19 pandemic that have caused global concern. The book discusses the transmission of COVID-19 in the environment, the evaluation and analysis of COVID-19, the socio-economic implications of COVID-19, its environmental impact, risk mitigation and management, waste management, and the environmental implications of the virus.

It also considers the socio-economic implications of COVID-19's spread, including the effects of international lockdowns on different strata of society and various industries, including the biomedical industry, the environmental industry, and the pharmaceutical industry.

An entire section of the text is devoted to a discussion about the waste generated due to COVID-19 and the effect of that waste on different environmental bodies. Another is dedicated to the impact of COVID-19 on the environment in the short- and long-term, including its effect on clim...

Contributor Bio

Chaudhery Mustansar Hussain, PhD is an Adjunct Professor and Director of Chemistry & EVSc Labs in the Department of Chemistry & Environmental Sciences at the New Jersey Institute of Technology (NJIT), Newark, New Jersey, USA. His research is focused on the applications of Nanotechnology & Advanced technologies & Materials, Analytical Chemistry, Environmental Management, and Various Industries. Dr. Hussain is the author of numerous papers in peer-reviewed journals as well as prolific author and editor of several scientific monographs and handbooks.



The Mathematical Biology of Diatoms

Janice L. Pappas, Richard Gordon

Summary

The work contained in this volume is an eclectic mix of analytical studies on diatoms. Mathematical treatment of the various biological disciplines covered in this book range from implicit, but succinct studies to more elaborate detailed computational studies. Topics include growth models, nanostructure, nanoengineering, cell growth, araphid diatoms, valve ontogeny, diatom metabolism, diatom motility, synchronization, diatom kinematics, photonics, biogenic sensors, photochemistry, diatom light response, colony growth, siliceous unicells, algal kinetics, diatom structure, diatom imaging, functional morphology, geometric structure, biomineralization, high-resolution imaging, non-destructive imaging, and 3D structure. This wide-ranging volume provides an introductory as well as an advanced treatment of recent interests in diatom research.

The mathematical research in this volume may be applicable to studies of other unicells, biomechanics, biological processes, physio-chemical analyses, or nanoscience.

Contributor Bio

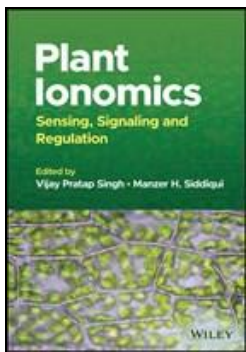
Janice L. Pappas has BA, BS and PhD degrees from the University of Michigan and a MA degree from Drake University. She is a mathematical biologist researching diatoms and invertebrates. She is a Great Lakes aquatic ecologist with studies on-board research vessels and in the lab, resulting in computational analyses of fish distributions in coastal wetlands and ecological informatics analysis of phytoplankton seasonal succession. Other studies include applications to diatom studies using Morse theory and morphospace dynamics, fuzzy measures in systematics, vector spaces in ecological analysis, information theory and Hamiltonian mechanics in morphogenesis, optimization, group and probability th...

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500 Pages
Science / Life Sciences
Series: Diatoms: Biology and
Applications



Plant Ionomics

Sensing, Signaling and Regulation

V Singh

Summary

A thoroughly up-to-date exploration of nutrient uptake in plants

In *Plant Ionomics: Sensing, Signaling, and Regulation*, accomplished botanists and researchers Dr. Vijay Singh and Dr Manzer Siddiqui deliver an up-to-date discussion of the sensing, signaling, and regulation of nutrient uptake in plants under a variety of conditions. The book offers an accessible and easy-to-use reference for researchers with an interest in plant ionomics, combining the latest research from leading laboratories around the globe.

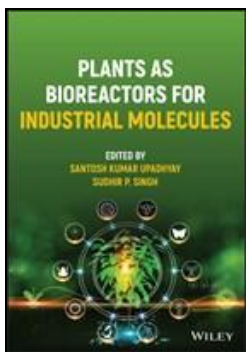
The authors provide coverage of a variety of critical topics, including plant and soil nutrient stoichiometry, nutrient management and stress tolerance in crops, and the relationship between agricultural production and nutrient applications. Readers will also find:

- A thorough introduction to nutrient regulation and abiotic stress tolerance in plants
- In-depth discussions of nutrient uptake and transport in plants and the role of nutrients in ROS metabolism
- Practical explorations of nutrient and sugar signaling and associated gene networks in plants
- Extensive treatments of the role of n...

Contributor Bio

Vijay Pratap Singh is an Assistant Professor in the Department of Botany at C.M.P. Degree College in the University of Allahabad in India. His research is focused on the regulation of abiotic stress in plants, with a special emphasis on nitric oxide, nutrients, phytohormonal, hydrogen sulfide, and reactive oxygen species signaling.

Manzer H. Siddiqui is serving as an Associate Professor of plant physiology at the Department of Botany and Microbiology, College of Science, King Saud University, Saudi Arabia. Dr. Siddiqui has more than 22 years of



Plants as Bioreactors for Industrial Molecules

Santosh Kumar Upadhyay, Sudhir P. Singh

Summary

An incisive and practical discussion of how to use plants as bioreactors

In *Plants as Bioreactors for Industrial Molecules*, a team of distinguished researchers delivers an insightful and global perspective on the use of plants as bioreactors. In the book, you'll find coverage of the basic, applied, biosynthetic, and translational approaches to the exploitation of plant technology in the production of high-value biomolecules. The authors focus on the yield and quality of amino acids, vitamins, and carbohydrates.

The authors explain how high-value biomolecules enable developers to create cost-effective biological systems for the production of biomolecules useful in a variety of sectors. They provide a holistic approach to plant-based biological devices to produce natural molecules of relevance to the health and agriculture industries.

Readers will also find:

- A thorough overview of plants as bioreactors and discussions of molecular farming for the production of pharmaceutical proteins in plants
- Comprehensive explorations of plants as edible vaccines and plant cell culture for biopharmaceutic...

Contributor Bio

Santosh Kumar Upadhyay is Assistant Professor in the Department of Botany at Panjab University in Chandigarh, India. He works in the area of plant molecular biology for the isolation, characterization, and recombinant production of various defense-related and industrial proteins.

Sudhir P. Singh is a scientist of biotechnology and synthetic biology at the Center of Innovative and Applied Bioprocessing in Mohali, India. He works in the area of gene mining and biocatalyst engineering.

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Science / Life Sciences

Recent Advances in Polyphenol Research, Volume 8

J Salminen

Summary

Plant polyphenols are specialized metabolites that constitute one of the most common and widespread groups of natural products. They are essential plant components for adaptation to the environment and possess a large and diverse range of biological functions that provide many benefits to both plants and humans. Polyphenols, from their structurally simplest forms to their oligo/polymeric versions (i.e. tannins and lignins), are phytoestrogens, plant pigments, antioxidants, and structural components of the plant cell wall. The interactions between tannins and proteins are involved in plant defense against predation, cause astringency in foods and beverages, and affect the nutritional and health properties of human and animal food plants.

This eighth volume of the highly regarded Recent Advances in Polyphenol Research series is edited by Juha-Pekka Salminen, Kristiina Wähälä, Victor de Freitas, and Stéphane Quideau, and brings together chapters written by some of the leading experts working in the polyphenol sciences today. Topics covered include:

- Structure, reactivity and synthesis
- Bioac...

Contributor Bio

Juha-Pekka Salminen, current Communication Manager of Groupe Polyphénols (board member since 2018), is Full Professor of Natural Compound Chemistry at the University of Turku, Finland. His research group specializes in analytical chemistry, chemical ecology and bioactivity studies of large polyphenols, with a focus on ellagitannins and proanthocyanidins and their distribution and significance in the plant kingdom.

Kristiina Wähälä, current Vice-President of the Groupe Polyphénols (2012–2014, 2018–2020) is Professor of Organic Chemistry at the University of Helsinki, Finland. Her research is focused on synthesis, analysis, and isotopical labelling of plant polyphenols and their metabolites in ...

Beneficial Chemical Elements of Plants

Recent Developments and Future Prospects

S Pandey

Summary

Understand beneficial elements and their role in the future of botany and agriculture

Beneficial elements are those which, while not essential to plant life, can provide stimulation and enhance plant growth. Properly harnessed, these elements can bolster plant growth in the face of both environmental conditions—including drought, nutrient deficiency, and excessive soil salinity—and biotic stresses like pathogens and animal activity. As climate change and population growth pose increasingly serious challenges to agriculture and essential plant production, it has never been more important to unleash the potential of beneficial elements.

Beneficial Chemical Elements of Plants is an essential resource for researchers and industry specialists looking to enhance their understanding of these elements and the range and variety of their enhancements to plant growth. Written by leading scholars in the field of plant stress tolerance and nutrient enrichment, it discusses not only the rich possibilities of beneficial elements but their mechanisms of action at both biochemical and molecular levels....

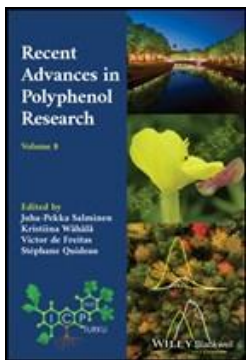
Contributor Bio

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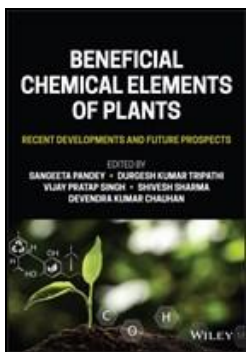
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