

**Routledge - CRC Press**

# Science & Technology Catalogue

July - December 2024  
New and Forthcoming Titles

Apple Academic Press, Environment & Sustainability, Food & Nutrition, Forensics & Homeland Security, Jenny Stanford Publishing and Life Science

# Welcome

Welcome to the July to December 2024 Science & Technology Catalogue.

Subjects include Apple Academic Press, Environment & Sustainability, Food & Nutrition, Forensics & Homeland Security, Jenny Stanford Publishing and Life Science.

We welcome your feedback on our publishing programme, so please do not hesitate to get in touch – whether you want to read, write, review, adapt or buy, we want to hear from you, so please visit our website below or please contact your local sales representative for more information.

[www.routledge.com](http://www.routledge.com)

*Prices are correct at time of going to press and may be subject to change without notice.  
Some titles within this catalogue may not be available in your region.*

## eBooks

We have over 50,000 eBooks available across the Humanities, Social Sciences, Behavioural Sciences, Built Environment, STM and Law, from leading Imprints, including Routledge, Focal Press and Psychology Press. These eBooks are available for both individual and institutional purchase.

### INDIVIDUALS

Our eBooks are available from Amazon, Apple iBookstore, Google eBooks, Ebooks.com, Kobo, Barnes & Noble, Waterstones, Mobipocket, VitalSource, and CourseSmart.

### LIBRARIES AND INSTITUTIONS

Subscribe to or purchase a wide range of eBook packages or pick and mix your own from our complete collection (a minimum number of titles applies). FREE TRIALS are available. For more information, please visit [www.tandfebooks.com](http://www.tandfebooks.com) or contact your local sales team.

## eUpdates

Register your email at [www.tandf.co.uk/eupdates](http://www.tandf.co.uk/eupdates) to receive information on books, journals and other news within your area of interest.

an **informa** business

*Prices, publication dates and content are correct at time of going to press, but may be subject to change without notice.*

## Partnership Opportunities at Routledge

At Routledge we always look for innovative ways to support and collaborate with our readers and the organizations they represent.

If you or your organization would like to discuss partnership opportunities, from reciprocal marketing activities to commercial enterprises, please do get in touch on [partnerships@routledge.com](mailto:partnerships@routledge.com).

## Considering Books for Course Use?



This symbol shows books that are available as complimentary exam copies for lecturers or faculty considering them for course adoption. To obtain your copy visit the URL listed beneath the title in the catalog and select your choice of print or electronic copy.

Visit [www.routledge.com](http://www.routledge.com) or in the US you can call 1-800-634-7064.



This symbol shows books that are available as electronic inspection copies only.

For a complete list, visit: [www.routledge.com/representatives](http://www.routledge.com/representatives).

## Trade Customers' Representatives, Agents and Distribution

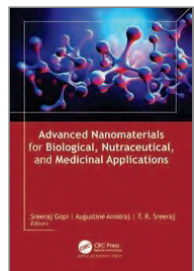
For a complete list, visit:  
[www.routledge.com/representatives](http://www.routledge.com/representatives).



# Contents

Apple Academic Press .....	2
Environment & Sustainability .....	12
Food & Nutrition .....	28
Forensics & Homeland Security .....	35
Jenny Stanford Publishing .....	38
Life Science .....	42
<b>Index .....</b>	<b>60</b>

## Advanced Nanomaterials for Biological, Nutraceutical, and Medicinal Applications



Edited by **Sreeraj Gopi , Augustine Amalraj , T. R. Sreeraj**

This new volume discusses a selection of nanomaterials that can be employed for advanced biological, nutraceutical, and medicinal applications. The book also includes a chapter that provides a helpful comparison of market analysis between biological and synthetic nanomaterials. The volume concludes with an insightful perspective on possible future applications of nanomaterials as nutraceutical, biological, and medicinal agents.

Apple Academic Press  
July 2024:328  
Hb: 978-1-774-91346-8: \$189.95  
eBook: 978-1-003-38916-3

\* For full contents and more information, visit: [www.routledge.com/9781774913468](http://www.routledge.com/9781774913468)

## Advanced Research in Electronic Devices for Biomedical and mHealth



Edited by **Rajesh Kumar Kesharwani , Upendra Kumar , Raj K. Keservani**

Addresses the major design challenges and research potential in electronic device applications in healthcare and biomedical systems, exploring the blending of innovative mobile communications, network technologies, medical sensors, and ubiquitous computing devices with medical and biological applications. It looks at machine learning, convolutional neural networks, smartphone-based devices, IoT sensors, and other smart technologies for health diagnosis and monitoring. Topics include integrated circuit design, energy harvesting systems, mHealth technologies by using machine learning to predict which blood groups provide resistance against the COVID-19 Delta variant, and more.

Apple Academic Press  
September 2024:324  
Hb: 978-1-774-91516-5: \$170

\* For full contents and more information, visit: [www.routledge.com/9781774915165](http://www.routledge.com/9781774915165)

## Advancements in Chemical Enhanced Oil Recovery



Edited by **Tushar Sharma , Krishna Raghav Chaturvedi , Tarek Ganat , Imtiaz Ali**

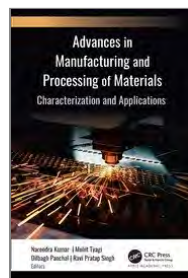
Presents, describes, and summarizes the latest advances in chemical enhanced oil recovery, covering methods that include low-salinity water flooding, polymer and surfactant flooding, foam flooding, nanofluid flooding, hybrid methods, ionic liquid applications, and others. It discusses chemical synthesis of EOR agents and numerical simulation of compositional models in porous media, including a description of possible application of nanotechnology acting as a booster of traditional chemical EOR processes. The volume also addresses the need for customized approaches for unconventional reservoirs and the challenges.

Apple Academic Press  
September 2024:404  
Hb: 978-1-774-91508-0: \$220  
eBook: 978-1-003-45372-7

\* For full contents and more information, visit: [www.routledge.com/9781774915080](http://www.routledge.com/9781774915080)

## Advances in Manufacturing and Processing of Materials

Characterization and Applications



Edited by **Narendra Kumar , Mohit Tyagi , Dilbagh Panchal , Ravi Pratap Singh**

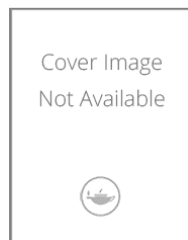
Examines important advancements in materials and manufacturing processes, focusing on characterization and applications and defining solutions to current issues as well as for inspiration for future innovation. It looks material characterization using modern technologies, process and chemical characterization, drilling, milling, structural materials, polymers, mortars, scanning-electron, atomic-force, transmission-electron, materials and methods for surface coating, additive manufacturing, 3D and 4D printing technologies and applications, biodegradable packaging materials, processing of materials for novel drug delivery systems, hardfacing of aluminum alloys, and more.

Apple Academic Press  
August 2024:332  
Hb: 978-1-774-91492-2: \$179.95  
eBook: 978-1-003-40834-5

\* For full contents and more information, visit: [www.routledge.com/9781774914922](http://www.routledge.com/9781774914922)

## Advances in Medicinal and Aromatic Plants

Production, Processing, and Pharmaceuticals, 2-volume set



Edited by **Amrithes C. Shukla , Sunita Facknath , Debashis Mandal , Bernadette Montanari**

Provides detailed information on highly demanded and medicinally important plants and their natural habits and habitats, taxonomy, cultivation practices, essential oils, active ingredients, biomolecules, modes of action, drug development, and value additions for marketing purpose. It details the history of many major medicinal and aromatic plants also covering their systematic botany, advanced production and propagation technologies, plant nutrition, moisture management, intercultivation, plant protection, postharvest technology, processing-value addition, and marketing trade.

Apple Academic Press  
July 2024:882  
Hb: 978-1-774-91488-5: \$389.95  
eBook: 978-1-032-68690-5

\* For full contents and more information, visit: [www.routledge.com/9781774914885](http://www.routledge.com/9781774914885)

## Advances in Plant Microbiome Research for Climate-Resilient Agriculture

Toward Sustainable Farming



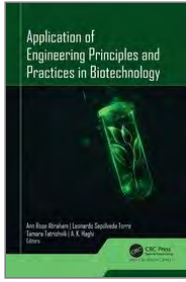
Edited by **Ashwani Kumar**

Covers important aspects of plant microbiome research. It introduces the concept of plant microbiome and its importance for climate-resistant crop plants and discusses the tools and techniques to analyze plant microbiome for sustainable agriculture productivity. It covers microbial endophytes as warriors for plant defense against abiotic and biotic stress. It highlights importance of phyto-microbiomes and overviews role of metabolomics in bioremediation for sustainable crop production, introducing metabolomics tools such as GC-MS, LC-MS, and NMR for the sustainable remediation of toxic pollutants.

Apple Academic Press  
August 2024:268  
Hb: 978-1-774-91764-0: \$220  
eBook: 978-1-003-50189-3

\* For full contents and more information, visit: [www.routledge.com/9781774917640](http://www.routledge.com/9781774917640)

## Application of Engineering Principles and Practices In Biotechnology



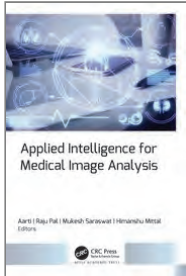
Edited by **Ann Rose Abraham** Sacred Heart College (Autonomous), Kochi, India, **Leonardo Sepúlveda Torre** Autonomous University of Coahuila, Mexico, **Tamara Tatrishvili**, **A.K. Haghi**

Reflects the multidisciplinary nature of the goals of biotechnology engineering and provides a firm foundation in the science and engineering of biological processes. It is a research-oriented reference book designed to equip practitioners in biotechnology and bioengineering with a highly technical career path. The book discusses the combination of both engineering and science of biological processes from wastewater treatment to tissue engineering. It discusses experimental and theoretical solutions for environmental pollution, new frontiers in bioengineering and biotechnology and use of biotechnology and bio-based routes to sustainable composites.

Apple Academic Press  
September 2024:318  
Hb: 978-1-774-91560-8: \$190

\* For full contents and more information, visit: [www.routledge.com/9781774915608](http://www.routledge.com/9781774915608)

## Applied Intelligence for Medical Image Analysis



Edited by **Aarti**, **Raju Pal**, **Mukesh Saraswat**, **Himanshu Mittal**

Explores the latest research in medical image analysis. The advanced intelligent technologies discussed include machine learning, ensemble methods in machine learning, deep learning methods and firebase technology, infrared thermography, deep convolution neural networks, and more. It covers the application of deep learning techniques for the medical image problems, the development of future machine learning techniques, applications of applied intelligence for the diagnosis of medical images, image genomics, and brain connectomics, latest technologies and algorithms related to modern medical image analysis in assessing and diagnosing diseases.

Apple Academic Press  
July 2024:272  
Hb: 978-1-774-91476-2: \$170  
eBook: 978-1-003-46185-2

\* For full contents and more information, visit: [www.routledge.com/9781774914762](http://www.routledge.com/9781774914762)

## Artificial Intelligence for Smart Technology in the Hospitality and Tourism Industry



Edited by **Vinod Kumar Shukla**, **Amit Verma**, **Jean Paolo G. Lacap**

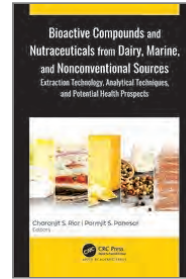
Focuses on the shifting requirements of the hospitality service industry, aiming to incorporate smart information technology into the tourism services. The book explains how artificial intelligence can support a company's strategy to revolutionize the business by sharing how to use smart technology most effectively. The chapters explore the myriad evolving technologies, including artificial intelligence, Internet of Things, big data, blockchain, and automation and robotics in the hospitality industry, for transforming hotels into smart hotels and for revolutionizing many aspects involved in effectively servicing hospitality clientele.

Apple Academic Press  
July 2024:372  
Hb: 978-1-774-91490-8: \$180  
eBook: 978-1-003-43295-1

\* For full contents and more information, visit: [www.routledge.com/9781774914908](http://www.routledge.com/9781774914908)

## Bioactive Compounds and Nutraceuticals from Dairy, Marine, and Nonconventional Sources

Extraction Technology, Analytical Techniques, and Potential Health Prospects



Edited by **Charanjit S. Riar**, **Parmjit S. Panesar**

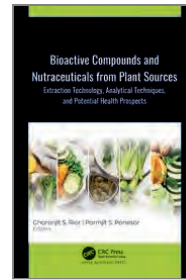
Provides an overview of bioactive compounds and nutraceuticals with explanations of their chemical characteristics, profile, and physicochemical aspects of bioactive compounds and nutraceuticals from natural sources such as milk and dairy products, marine algae and seaweeds, and nonconventional sources, such as from spices and condiments sources and microbial sources. It details the extraction technologies of active ingredients and analytical techniques along with the profiling of functional compounds and nutraceuticals. It gives detailed descriptions of the techniques for extraction, isolation, and characterization of active ingredients from food preparations.

Apple Academic Press  
June 2024:324  
Hb: 978-1-774-91498-4: \$180  
eBook: 978-1-003-45276-8

\* For full contents and more information, visit: [www.routledge.com/9781774914984](http://www.routledge.com/9781774914984)

## Bioactive Compounds and Nutraceuticals from Plant Sources

Extraction Technology, Analytical Techniques, and Potential Health Prospects



Edited by **Charanjit S. Riar**, **Parmjit S. Panesar**

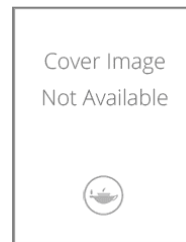
Focuses on the technology of bioactive compounds and nutraceuticals from fruit and vegetable sources, from cereal grain sources, and from cereal processing by-products. The chapters look at the extraction technologies, analytical techniques, and potential health prospects specifically from fruits and vegetables sources. They cover plants such as plantation crops, roots, and tubers, as well as fruit and vegetable processing byproducts. They also consider bioactive compounds and nutraceuticals from major and minor cereal grain sources and from cereal processing byproducts.

Apple Academic Press  
July 2024:340  
Hb: 978-1-774-91500-4: \$180  
eBook: 978-1-003-45517-2

\* For full contents and more information, visit: [www.routledge.com/9781774915004](http://www.routledge.com/9781774915004)

## Bio-Based Polymers and Composites

Properties, Durability, and Applications



Edited by **Amadou Belal Gueye**, **Sabu Thomas**, **Nandakumar Kalarikkal**, **Modou Fall**

Explores the latest in natural biopolymers, green composites, and green nanocomposites. It consolidates information on the synthesis and applications of biopolymers, green composites, and green nanocomposites for various applications with detailed characterization, mechanical approaches, and theoretical consideration. It provides fundamentals and advanced concepts for developing nanostructured materials based on biopolymers and their composites. It also looks at bio-based polymers and composites for environmental sustainability, natural polymers from waste products, the use of bio-based polymers and composites in fertilization in horticulture, etc.

Apple Academic Press  
August 2024:334  
Hb: 978-1-774-91532-5: \$180  
eBook: 978-1-032-66924-3

\* For full contents and more information, visit: [www.routledge.com/9781774915325](http://www.routledge.com/9781774915325)

## Biodiversity Hotspot of the Himalaya



Edited by **T. Pullaiah**

Series: *Biodiversity Hotspots of the World*

Focuses on the most interesting and important aspects of the Himalayan biodiversity hotspot, covering physiography and climatology; vegetation and forest types; amphibian and reptile biodiversity; genetic diversity of crops, plants, fishes, butterflies, insects, birds, mammals, angiosperms, and gymnosperms; and threats and conservation efforts. The highlands have exceptionally rich biodiversity, high endemism, and over 160 globally threatened species.

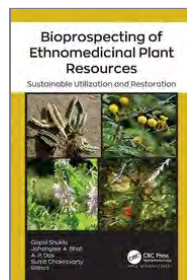
Apple Academic Press  
July 2024:538

Hb: 978-1-774-91458-8: \$249.95  
eBook: 978-1-003-45520-2

\* For full contents and more information, visit: [www.routledge.com/9781774914588](http://www.routledge.com/9781774914588)

## Bioprospecting of Ethnomedicinal Plant Resources

Sustainable Utilization and Restoration



Edited by **Gopal Shukla, Jahangeer A. Bhat, A. P. Das, Sumit Chakravarty**

Discusses importance of bioprospecting plants of ethnic origins in a sustainable manner while presenting effective methods of bioprospecting. It shows the importance of sustainability and bioprospecting for formulating novel chemical compounds and new drugs from raw materials from ethnomedicinal plants present in the wild for healthcare and nutritional practices. It provides information on medicinal plant diversification, cultivation techniques, biotechnological approaches, modern and traditional usages, developing new strategies and policies for the systematic management and conservation of medicinal resources for future use.

Apple Academic Press  
September 2024:466

Hb: 978-1-774-91618-6: \$220  
eBook: 978-1-003-45148-8

\* For full contents and more information, visit: [www.routledge.com/9781774916186](http://www.routledge.com/9781774916186)

## Bio-Inspired Technologies for the Modern World

Emerging Trends and Applications



R. Ramakrishna Reddy, T. Pullaiah

This new volume delves into a sampling of these bio-inspired technologies, those that have inspired scientists and inventors to create new products and innovations. It looks at technological issues that have been tackled with the help of biologically inspired engineering, by such things in nature as bionic plants, the lotus leaf, insects and beetles, geckos, bats, spiders, and butterflies. It considers bio-inspired technologies applied in water purification, for business lessons, in healthcare and medicine, and more.

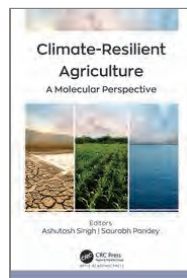
Apple Academic Press  
August 2024:506

Hb: 978-1-774-91482-3: \$200  
eBook: 978-1-003-45523-3

\* For full contents and more information, visit: [www.routledge.com/9781774914823](http://www.routledge.com/9781774914823)

## Climate-Resilient Agriculture

A Molecular Perspective



Edited by **Ashutosh Singh, Saurabh Pandey**

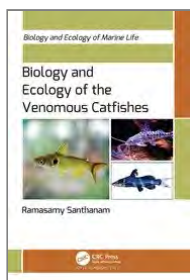
Covers the current aspects of climate-resilient agriculture, including the crucial physiological, biochemical, and molecular aspects of cultivated crops under stress conditions, which play a pivotal role in developing climate-smart crops. It discusses the state of climate change and its effect on crop diversity and germplasm along with advanced technologies and approaches to crops that can withstand adverse climate scenarios. The volume explores breeding, omics, genetic engineering, bioengineering of metabolic pathways, and artificial intelligence.

Apple Academic Press  
July 2024:564

Hb: 978-1-774-91506-6: \$219  
eBook: 978-1-003-45527-1

\* For full contents and more information, visit: [www.routledge.com/9781774915066](http://www.routledge.com/9781774915066)

## Biology and Ecology of the Venomous Catfishes



Ramasamy Santhanam

Series: *Biology and Ecology of Marine Life*

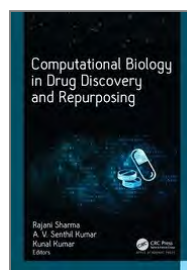
Here is a first-of-its-kind volume on the biology and ecology of venomous and traumatogenic freshwater and marine catfishes, covering their diversity; the aspects of venomology of catfish such as venom apparatus and venom characteristics; catfish envenomation and its treatment and management; and the pharmaceutical value of catfish venoms. This comprehensive volume first provides an introduction to venomous catfish families and then goes on to describe and explain their diversity, species, characteristics, geographical distribution, venomous symptoms, ecology, importance, and more.

Apple Academic Press  
May 2024:274

Hb: 978-1-774-91452-6: \$179.95  
eBook: 978-1-003-40929-8

\* For full contents and more information, visit: [www.routledge.com/9781774914526](http://www.routledge.com/9781774914526)

## Computational Biology in Drug Discovery and Repurposing



Edited by **Rajani Sharma, A. V. Senthil Kumar, Kunal Kumar**

Takes an in-depth look at the emerging field of computational biology and bioinformatics, which possesses the ability to analyze large accumulated biological data collected from sequence analysis of proteins and genes and cell population for new drug discovery. The book explains the basic methodology associated with a bioinformatics and computational approach in drug designing and covers the implementation of computational programming, bioinformatics, pharmacophore modeling, biotechnological techniques, and pharmaceutical chemistry in designing drugs. Using computer language and programming helps to reduce the time and costs in drug design.

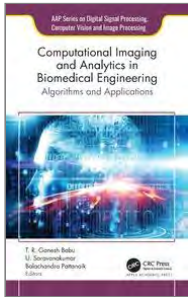
Apple Academic Press  
August 2024:478

Hb: 978-1-774-91556-1: \$250

\* For full contents and more information, visit: [www.routledge.com/9781774915561](http://www.routledge.com/9781774915561)

## Computational Imaging and Analytics in Biomedical Engineering

Algorithms and Applications



Edited by **T. R. Ganesh Babu , U. Saravanakumar , Balachandra Pattanaik**

Series: *AAP Series on Digital Signal Processing, Computer Vision and Image Processing*

Focuses on mathematical and numerical methods for medical images and data. It presents the various mathematical modeling techniques, numerical analysis, computing and computational techniques, and applications of machine learning for medical images and medical informatics. It also focuses on programming concepts using MATLAB and Python for medical image and signal analytics. It demonstrates the use of various computational techniques and tools such as machine learning, deep neural networks, artificial intelligence and human-computer interaction, fusion methods for CT and pet images, etc. for diagnosis of various disorders and diseases.

Apple Academic Press  
July 2024:356

Hb: 978-1-774-91471-7: \$189.95

eBook: 978-1-032-66968-7

\* For full contents and more information, visit: [www.routledge.com/9781774914717](http://www.routledge.com/9781774914717)

## Corporate Social Responsibility in the Global Business World

A Conceptual, Regulatory, and Illustrative Framework



Edited by **Meenu Maheshwari , Ashok Kumar Gupta , Pragya Gaur , Nupur Tiwari , Shobhna Goyal**

This new volume covers the parameters of corporate social responsibility around the world, elucidating the concepts, evolution, cultural dimensions, key areas, and disclosure and reporting methods and how CSR is being considered and implemented across the globe. The book also offers a future outlook for CSR. The book begins with a thorough introduction to CSR, covering its meaning and definition along with the principles of CSR for effective implementation, its inherent benefits, and its challenges. It goes on to cover the status of CSR in emerging economies with the emphasis on emerging trends in corporate governance, reporting, indexing, and certification.

Apple Academic Press  
July 2024:330

Hb: 978-1-774-91514-1: \$180

eBook: 978-1-003-41100-0

\* For full contents and more information, visit: [www.routledge.com/9781774915141](http://www.routledge.com/9781774915141)

## Digital Analytics Applications for Sustainable Training and Education



Edited by **Kiran Sood , Prateek Kalia , Simon Grima , Aryan Chaudhary**

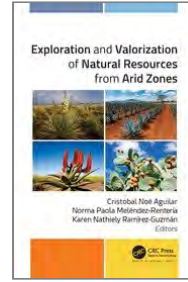
Showcases digital analytics (DA) as a new trend using new technologies to measure, collect, analyze, and report on data about learners and their contexts to understand and optimize learning and learning environments. It looks at digital technologies as a means to foster sustainable educational innovations for improving the teaching, learning, and assessment from K-12 to higher education. Such technological tools for quantitative and qualitative data analysis and data mining techniques as artificial intelligence, deep learning, cloud computing, big data, machine learning are discussed in the context of educational digital analytics.

Apple Academic Press  
November 2024:520

Hb: 978-1-774-91594-3: \$220

\* For full contents and more information, visit: [www.routledge.com/9781774915943](http://www.routledge.com/9781774915943)

## Exploration and Valorization of Natural Resources from Arid Zones



Edited by **Cristobal Noé Aguilar , Norma Paola Meléndez-Rentería , Karen Nathiely Ramirez-Guzman**

Analyses the exploration and sustainable valorization of natural resources from the arid zones, focusing on the challenges the industry faces in an era of sustainability. The volume describes the geographic and climatic characteristics and the natural resources from arid zones, divided into three main groups: a) microbiological resources; b) plants as an important source of principal compounds or subproducts; and c) animal resources, including insects, animal residues, products from animal sources. The authors focus on the processes or bioprocesses used in the valorization and transformation of these three main groups for research purposes.

Apple Academic Press

August 2024:282

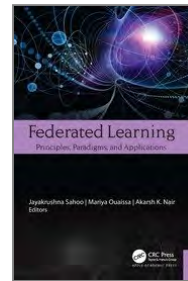
Hb: 978-1-774-91552-3: \$190

eBook: 978-1-032-67223-6

\* For full contents and more information, visit: [www.routledge.com/9781774915523](http://www.routledge.com/9781774915523)

## Federated Learning

Principles, Paradigms, and Applications



Edited by **Jayakrushna Sahoo , Mariya Ouaisa , Akarsh K. Nair**

Provides an in-depth understanding of federated learning. It explores how federated learning integrates AI technologies, such as blockchain, machine learning, IoT, edge computing, and fog computing systems, allowing multiple collaborators to build a robust machine-learning model using a large dataset. It highlights the capabilities and benefits of federated learning, addressing critical issues such as data privacy, data security, data access rights, and access to heterogeneous data. The volume presents a comprehensive analysis of some of the common challenges, proven threats, and attack strategies affecting FL systems.

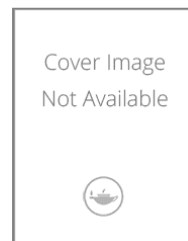
Apple Academic Press

September 2024:352

Hb: 978-1-774-91638-4: \$200

\* For full contents and more information, visit: [www.routledge.com/9781774916384](http://www.routledge.com/9781774916384)

## Formulations, Regulations, and Challenges of Nutraceuticals



Edited by **Tingirikari Jagan Mohan Rao , Rajesh K. Kesharwani , Raj K. Keservani , Anil K. Sharma**

Series: *AAP Advances in Nutraceuticals*

Focuses on novel micro- and nanocarriers being employed in the formulation and delivery of nutraceutical ingredients to increase their efficacy, bioavailability, safety, and stability. It also highlights the current challenges and future strategies for the development of novel nutraceuticals and functional foods with enhanced health benefits. This volume addresses the need for common regulatory guidelines with important research on the production of stable and efficient nutraceutical formulations. The numerous regulatory frameworks being employed in Asia and European regulatory agencies in commercialization of nutraceutical products are discussed.

Apple Academic Press

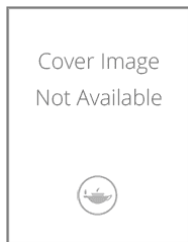
August 2024:356

Hb: 978-1-774-91456-4: \$189.95

eBook: 978-1-003-41249-6

\* For full contents and more information, visit: [www.routledge.com/9781774914564](http://www.routledge.com/9781774914564)

## Functional Nanocomposites and Their Applications



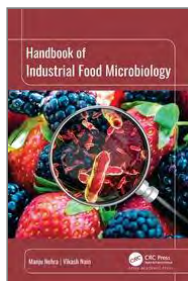
Edited by **Dhanya K. R. , Sanal P. S. , Sabu Thomas , Nandakumar Kalarikkal**

This book explains innovative developments in nanocomposites. It covers novel findings and various applications of nanocomposites in different emerging fields. Chapters cover several types of nanocomposites as well as their synthesis, manufacturing, characteristics, and applications. Special emphasis is given to innovative works on functional nanocomposites and their relevant areas of use. The authors depict the stability and functionality of nanocomposites and their applications in various sectors, such as industrial, structural, biomedical, etc. This book will help readers easily understand the effective implementation of different types of nanocomposites.

Apple Academic Press  
September 2024:372  
Hb: 978-1-774-91440-3: \$189.95

\* For full contents and more information, visit: [www.routledge.com/9781774914403](http://www.routledge.com/9781774914403)

## Handbook of Industrial Food Microbiology



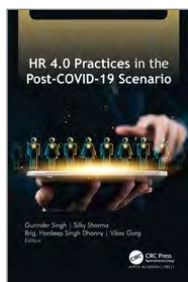
Edited by **Manju Nehra , Vikash Nain**

Introduces industrial microbiology in the food industry. The techniques and technologies focus on production, processing, and recovery of food industry metabolites (primary or secondary). The process of alcohol production, fermentation metabolites, and drug delivery components through food are the highlights of the book. The book lays out the principles of overproduction of metabolites in the food industry and also addresses biomass production, immobilization of enzymes in food systems, and waste treatment in the food industries.

Apple Academic Press  
August 2024:262  
Hb: 978-1-774-91526-4: \$190

\* For full contents and more information, visit: [www.routledge.com/9781774915264](http://www.routledge.com/9781774915264)

## HR 4.0 Practices in the Post-COVID-19 Scenario



Edited by **Gurinder Singh , Silky Sharma , Brig. Hardeep Singh Dhanny , Vikas Garg**

Examines the dramatic impact of the COVID-19 pandemic and the digital revolution on human resources management practices, processes, and systems. It looks at the major difficulties, challenges, and opportunities that arose because of the COVID pandemic, equipping HR managers, researchers, and practitioners with the knowledge they need for future organizational directions. Topics include work-from-home, workplace digitization, employee work-life balance, task automation via AI, HRM curriculum in schools and universities, employee development, e-recruitment, internal marketing, and more. The volume includes case studies and data gathered from employee/worker surveys.

Apple Academic Press  
May 2024:278  
Hb: 978-1-774-91460-1: \$169.95  
eBook: 978-1-003-41612-8

\* For full contents and more information, visit: [www.routledge.com/9781774914601](http://www.routledge.com/9781774914601)

## Industry 4.0 and People Analytics

A Technical Perspective of HRM



Edited by **Vinod Kumar Shukla , Praveen Kulkarni , Deepika Gaur , Pradeep N , Jean Paolo G. Lacap , Amina Omrane**

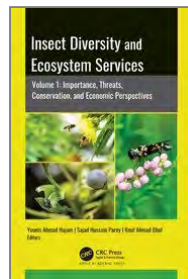
Provides an insightful examination the role of people analytics—the data-driven and goal-focused method of studying people processes, functions, challenges, and opportunities at work to elevate these systems and achieve sustainable business success—in the era of Industry 4.0. It explores the use of AI and other technologies in analyzing cognition, human potential, and talent management; for studying diversity and inclusion in the workplace; in performance management and reward analytics; to enhance emotional and social intelligence in decision making; for using games in employee training programs; for employee wellness enhancement; for leadership development; and more.

Apple Academic Press  
July 2024:356  
Hb: 978-1-774-91446-5: \$169.95  
eBook: 978-1-003-41419-3

\* For full contents and more information, visit: [www.routledge.com/9781774914465](http://www.routledge.com/9781774914465)

## Insect Diversity and Ecosystem Services

Volume 1: Importance, Threats, Conservation, and Economic Perspectives



Edited by **Younis Ahmad Hajam , Sajad Hussain Parey , Rouf Ahmad Bhat**

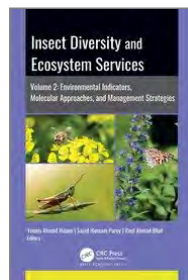
An innovative work on insects and their impact on the ecosystem, describing their enormous free ecosystem services. It covers a range of topics related to insects including their role in environmental pollution, their use in sustainable agricultural services, and the industrial, forensic, and medical applications of insects and their pure products. It also covers the entomological and molecular aspects of insects, identifies the gaps in the research, and looks at integrated management strategies for pests. It discusses the different diversity patterns of biogeographic zones of the world and how insects contribute to maintaining ecological diversity in the world.

Apple Academic Press  
August 2024:292  
Hb: 978-1-774-91580-6: \$200  
eBook: 978-1-003-46720-5

\* For full contents and more information, visit: [www.routledge.com/9781774915806](http://www.routledge.com/9781774915806)

## Insect Diversity and Ecosystem Services

Volume 2: Environmental Indicators, Molecular Approaches, and Management Strategies



Edited by **Younis Ahmad Hajam , Sajad Hussain Parey , Rouf Ahmad Bhat**

An innovative work on insects and their impact on the ecosystem, describing their enormous free ecosystem services. It covers topics related to insects including their role in environmental pollution, their use in sustainable agricultural services, and the industrial, forensic, and medical applications of insects and their pure products. It covers topics such as their role as environmental indicators, the effect of pesticides on insect diversity, strategies to control insects, medical and forensic importance of insects, exploring new insect species through DNA barcoding, integrated pest management, and eco-friendly pest management approaches.

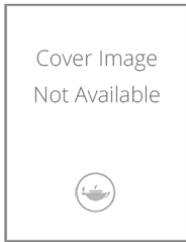
Apple Academic Press  
August 2024:268  
Hb: 978-1-774-91582-0: \$200  
eBook: 978-1-003-47119-6

\* For full contents and more information, visit: [www.routledge.com/9781774915820](http://www.routledge.com/9781774915820)



## Insect Diversity and Ecosystem Services

2-volume set



*Edited by* **Younis Ahmad Hajam , Sajad Hussain Parey , Rouf Ahmad Bhat**

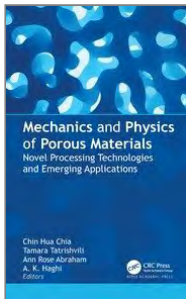
This two-volume set is an innovative work on insects and their enormous free ecosystem services. Vol 1 focuses on the different diversity patterns of biogeographic zones of the world and how insects contribute to maintaining ecological diversity in different biogeographic regions of the world. Vol 2 delves into their role as environmental indicators, the effect of pesticides on insect diversity, strategies to control the diversity of insects, medical and forensic importance of insects, exploring new insect species through DNA barcoding, integrated pest management, the role of insect population in agriculture, and eco-friendly pest management approaches, etc.

Apple Academic Press  
August 2024:560  
Hb: 978-1-774-91577-6: \$400

\* For full contents and more information, visit: [www.routledge.com/9781774915776](http://www.routledge.com/9781774915776)

## Mechanics and Physics of Porous Materials

Novel Processing Technologies and Emerging Applications



*Edited by* **Chin Hua Chia , Tamara Tatrishvili , Ann Rose Abraham , A. K. Haghi**

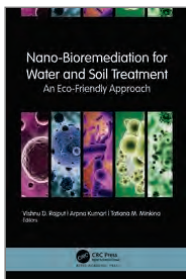
Presents new research on a wide range of porous materials with case studies on the synthesis, design, characterization, and applications of different types of porous materials and solids, considering experimental and theoretical aspects of materials science related to porous materials and solids. The book aims to help approach characterizing a particular type of materials for more in-depth analysis.

Apple Academic Press  
June 2024:350  
Pb: 978-1-774-91464-9: \$99  
Hb: 978-1-774-91465-6: \$179.95  
eBook: 978-1-003-41446-9

\* For full contents and more information, visit: [www.routledge.com/9781774914649](http://www.routledge.com/9781774914649)

## Nano-Bioremediation for Water and Soil Treatment

An Eco-Friendly Approach



*Edited by* **Vishnu D. Rajput , Arpna Kumari , Tatiana M. Minkina**

Presents recent nanotechnological advances that provide significant potential for decontamination of many polluted sites. It describes the introductory background of nanoremediation along with the various types and applications in the restoration of environmental sites contaminated with a diverse range of pollutants, such as heavy metal, pesticides, and dyes in soil and water. It details how different types of nanomaterials are used to treat various pollutants, offering various strategies, including nano-phytoremediation, nanomaterials for inorganic pollutants, and more.

Apple Academic Press  
June 2024:388  
Hb: 978-1-774-91486-1: \$190  
eBook: 978-1-003-41496-4

\* For full contents and more information, visit: [www.routledge.com/9781774914861](http://www.routledge.com/9781774914861)

## New Advances in Materials Technologies

Experimental Characterizations, Theoretical Modeling, and Field Practices



*Edited by* **Hossein Hariri Asli , Ali Pourhashemi , Ann Rose Abraham , A. K. Haghi**

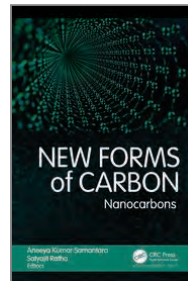
Examines the mathematical and experimental methods for advanced engineering materials and structures to determine practical applications under a wide range of conditions. The diversity of such mathematical models and experimental methods applied for different types of advanced materials and structures and their behavior is highlighted. Topics include geospatial information systems and networked sensors modeling, mathematical modeling in fluid and solid mechanics, deformations in a nonlocal isotropic thermoelastic materials, optical properties of solid materials, nano-scale and modern energy materials and devices, and smart materials-based E-nose technology.

Apple Academic Press  
June 2024:322  
Hb: 978-1-774-91484-7: \$179.95  
eBook: 978-1-003-45926-2

\* For full contents and more information, visit: [www.routledge.com/9781774914847](http://www.routledge.com/9781774914847)

## New Forms of Carbon

Nanocarbons



*Edited by* **Aneeya Kumar Samantara , Satyajit Ratha**

A detailed overview of the fundamental aspects of nanocarbons and their allotropic forms, their preparation techniques, and their applications in several fields of interest. New forms of carbon have the potential to revolutionize many aspects of research, including drug delivery, catalysis, energy conversion and storage, high-strength physics, structural engineering, and more. This volume covers the recent literature on carbon with emphasis on the emerging carbon-based materials developed, studies of their properties, and possible prototype fabricated for practical applications.

Apple Academic Press  
July 2024:276  
Hb: 978-1-774-91279-9: \$169.95  
eBook: 978-1-003-37646-0

\* For full contents and more information, visit: [www.routledge.com/9781774912799](http://www.routledge.com/9781774912799)

## Novel Packaging Systems for Fruits and Vegetables



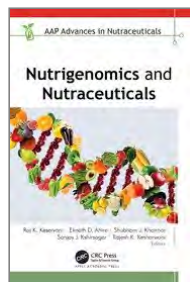
*Edited by* **Kirtiraj K. Gaikwad , Suman Singh**

Provides a comprehensive overview of the new and diverse technologies in food packaging of fruits and vegetables, providing an emphasis on new commercially available packaging technologies for fresh produce. It looks at important biopolymeric films for fresh produce packaging along with a historical overview, followed by coverage of the mechanical, physical, and permeability properties and recent developments in investigative techniques of biopolymers as well as their applications in modified atmosphere packaging used in fresh produce packaging.

Apple Academic Press  
July 2024:348  
Hb: 978-1-774-91496-0: \$180  
eBook: 978-1-003-41570-1

\* For full contents and more information, visit: [www.routledge.com/9781774914960](http://www.routledge.com/9781774914960)

## Nutrigenomics and Nutraceuticals



Edited by **Raj K. Keservani**, **Eknath D. Ahire**, **Shubham J. Khairnar**, **Sanjay J. Kshirsagar**, **Rajesh K. Kesharwani**

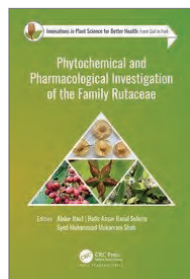
Series: *AAP Advances in Nutraceuticals*

A comprehensive overview of the field of nutraceuticals and genomics—also called nutrigenomics, a rapidly growing field as the science of nutrition and genomics advances. It discusses techniques to investigate the nutritional basis of health disorders and covers the nutrigenomic tools for the prevention of disease conditions such as cancer, viral infection, microbial infection, COVID-19, HIV/AIDS, tuberculosis, hypertension, neurodegenerative disease, obesity, baldness, and anemia. Some nutrigenomic tools can also be used for brain health, weight loss, human nutrition, skin care, and maintaining health during pregnancy.

Apple Academic Press  
June 2024:374  
Hb: 978-1-774-91438-0: \$189.95  
eBook: 978-1-003-42826-8

\* For full contents and more information, visit: [www.routledge.com/9781774914380](http://www.routledge.com/9781774914380)

## Phytochemical and Pharmacological Investigation of the Family Rutaceae



Edited by **Abdur Rauf**, **Hafiz Ansar Rasul Suleria**, **Syed Muhammad Mukarram Shah**

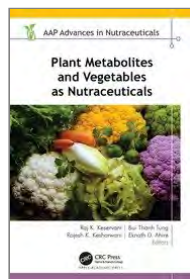
Series: *Innovations in Plant Science for Better Health: From Soil to Fork*

Provides an introduction to the family Rutaceae, which comprises numerous ornamental as well as economically significant fruit-bearing trees with significant phytochemistry and medicinal uses that are important for new drug discovery for pharmaceutical industries, and delineates its phytochemical and pharmacological properties and uses. Also addressed are the nutritional, clinical, and toxicological profiles, elaborating on the nutritional value, healthcare and clinical applications, and possible toxic side effects. The chapters may also direct researchers to isolate/extract pure compounds from family Rutaceae for new and novel drug discoveries.

Apple Academic Press  
July 2024:242  
Hb: 978-1-774-91371-0: \$189.95  
eBook: 978-1-003-40146-9

\* For full contents and more information, visit: [www.routledge.com/9781774913710](http://www.routledge.com/9781774913710)

## Plant Metabolites and Vegetables as Nutraceuticals



Edited by **Raj K. Keservani**, **Bui Thanh Tung**, **Rajesh K. Kesharwani**, **Eknath D. Ahire**

Series: *AAP Advances in Nutraceuticals*

Explores vegetables and plant metabolites as nutraceuticals facilitating the prevention and/or treatment of diseases and maintaining the body's energy balance. It looks at the potential of nutraceuticals and health promotion of plant metabolites and vegetables, the nutraceutical benefits of bioactives and flavonoids, and the benefits of plant metabolites and vegetables in prevention and treatment of diseases. It explores various applications and implications of plant metabolites and vegetables as nutraceuticals and the relationship between eating fruits and vegetables and the incidence of serious and chronic diseases.

Apple Academic Press  
August 2024:458  
Hb: 978-1-774-91544-8: \$190  
eBook: 978-1-032-68012-5

\* For full contents and more information, visit: [www.routledge.com/9781774915448](http://www.routledge.com/9781774915448)

## Revolutionary Challenges and Opportunities of Fintech



Edited by **Shweta Anand**, **Shalini Srivastav**, **Vikas Garg**, **Geetika Garg**

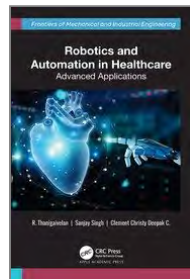
This book explores the emergence of artificial intelligence blended with financial concepts as a promising new area in business and technology—financial technology, or fintech. It introduces the concepts of fintech, its financial derivatives, management information systems, and artificial intelligence and provides tools to find solutions to complex problems in the finance and investment domain. The case studies provide firsthand knowledge of real problems faced by the industry and highlight the thought processes in resolution of complex problems.

Apple Academic Press  
May 2024:240  
Hb: 978-1-774-91504-2: \$160  
eBook: 978-1-003-42871-8

\* For full contents and more information, visit: [www.routledge.com/9781774915042](http://www.routledge.com/9781774915042)

## Robotics and Automation in Healthcare

Advanced Applications



Edited by **R. Thanigaivelan**, **Sanjay Singh**, **Clement Christy Deepak C.**

Series: *Frontiers of Mechanical and Industrial Engineering*

Explores new technologies related to robotics and automation in healthcare. It reviews wireless charging of implantable pacemakers, considers smart bot design for library building of medical colleges, and discusses strain distribution in biomechanical systems. It also discusses medical imaging, drone technology, 3D printing, nano-robots technology and image processing techniques. It also reviews applications and importance of actuators in medical devices as well as in wearable devices for pre-identification of seizure development. Also looks at a decision support system for detection of suitable robots with the support of image processing techniques.

Apple Academic Press  
July 2024:314  
Hb: 978-1-774-91548-6: \$190  
eBook: 978-1-003-42416-1

\* For full contents and more information, visit: [www.routledge.com/9781774915486](http://www.routledge.com/9781774915486)

## SARS-CoV-2 Variants and Global Population Vulnerability

Diagnostic Strategies, Vaccine Development, and Therapeutic Management



Edited by **Vivek P. Chavda**, **Vladimir N. Uversky**

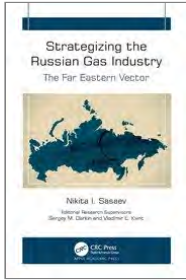
Provides detailed and systemic information regarding the biology and immunophysiology of SARS-CoV-2 and highlights the global vulnerability of the world population to it. It discusses the diagnostics, vaccine development, and therapeutic management starting from the zoonotic origin, organization, and transmission of SARS-CoV-2, lifestyle and immunophysiology of the virus, detection and diagnosis techniques, and more. It presents strategies for fast-track vaccine development, role of nasal vaccines and nucleic acid vaccines for COVID-19 management, monoclonal antibody therapy, and other alternative remedies for COVID-19 management.

Apple Academic Press  
July 2024:612  
Hb: 978-1-774-91758-9: \$250  
eBook: 978-1-003-46793-9

\* For full contents and more information, visit: [www.routledge.com/9781774917589](http://www.routledge.com/9781774917589)

## Strategizing the Russian Gas Industry

The Far Eastern Vector



**Nikita I. Sasaev, Sergey M. Darkin, Vladimir L. Kvint**

The book discusses the concept of the Russian Far East gas industry strategy, based on the results of a comprehensive strategic analysis and focusing on the resulting goals and the main effects of public and economic efficiency. Making a significant scientific and practical contribution to the study of long-term prospects for the development of the gas industry at the global and regional level, the author identifies strategic opportunities and future prospects for gas industry development that will make it possible to develop effective long-term strategic priorities that generate high multiplier public and economic efficiency.

Apple Academic Press  
July 2024:138  
Pb: 978-1-774-91935-4: \$99  
Hb: 978-1-774-91934-7: \$190

\* For full contents and more information, visit: [www.routledge.com/9781774919354](http://www.routledge.com/9781774919354)

## Supply Chain Performance Measurement in Textile Enterprises



**Pranav C. Charkha, Santosh B. Jaju, Prasenjit Chatterjee**

*Series: Frontiers of Mechanical and Industrial Engineering*

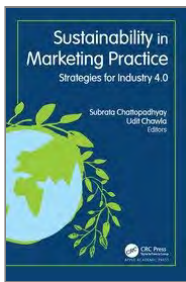
Provides detailed insight into supply chain management (SCM) and supply chain performance measurement (SCPM) in textile industry, offering the information needed to understand, implement, and evaluate the supply chain performance of the textile industry and its cyclic processes. Also offers a comprehensive set of performance sub-criteria for the evaluation of supply chain performance measurement and elaborating on the practices of supply chain performance in identified textile industries. Using the Delphi, the authors studied companies of diverse sizes and applied an analytical hierarchy process to establish crucial performance measurement criteria.

Apple Academic Press  
June 2024:252  
Hb: 978-1-774-91386-4: \$169.95  
eBook: 978-1-003-40024-0

\* For full contents and more information, visit: [www.routledge.com/9781774913864](http://www.routledge.com/9781774913864)

## Sustainability in Marketing Practice

Strategies for Industry 4.0



*Edited by Subrata Chattopadhyay, Udit Chawla*

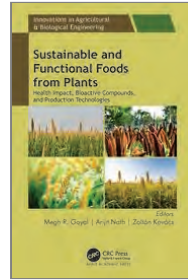
Explores sustainable marketing, and the promotion of environmentally and socially responsible products, practices, and brand values. It discusses integration of sustainability into a marketing strategy and how to develop, broaden, and maintain a sustainable marketing strategy that appeals to the values of the general public. It addresses dominant areas of research in sustainability from the marketing perspective. It discusses the practice of misplacing the idea of sustainability in pursuit of short-term business goals and emphasizes longer term sustainable strategies. It also highlights innovation and high-end new research in sustainability.

Apple Academic Press  
August 2024:338  
Hb: 978-1-774-91588-2: \$200  
eBook: 978-1-032-66812-3

\* For full contents and more information, visit: [www.routledge.com/9781774915882](http://www.routledge.com/9781774915882)

## Sustainable and Functional Foods from Plants

Health Impact, Bioactive Compounds, and Production Technologies



*Edited by Megh R. Goyal, Arijit Nath, Zoltán Kovács*

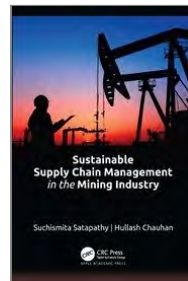
*Series: Innovations in Agricultural & Biological Engineering*

Details food and functionality of plant-based products and provides insight into the nutritional composition of key elements of plant-based diets. It introduces the most common adulteration practices and details quality monitoring and potential applications. The book primarily focuses on millets within plant-based products and discusses the uses of wine and beer, while mapping consumption trends and consumers' expectations and preferences. It also explores some ethnic foodstuffs, ingredients, and condiments in the African, European, and Far Eastern cuisines while exploring the potential of bioactive compounds in medicinal foods.

Apple Academic Press  
June 2024:458  
Hb: 978-1-774-91454-0: \$189.95  
eBook: 978-1-003-41576-3

\* For full contents and more information, visit: [www.routledge.com/9781774914540](http://www.routledge.com/9781774914540)

## Sustainable Supply Chain Management in the Mining Industry



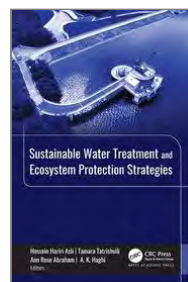
**Suchismita Satapathy, Hullash Chauhan**

Provides an overview of sustainable supply chain management through computational and multicriteria decision-making analyses. It explores sustainability and sustainable supply chain management in the context of transportation and electricity generation. Soft computing methods are also discussed as are the detrimental effects of mines and how sustainability management can be forecast. The most significant difficulties in the mining sector are covered as well, taking into account specific analytical indicators to discover the most socially and ecologically responsible solutions. It evaluates the security risks in the mining business and offers solutions as well.

Apple Academic Press  
September 2024:196  
Hb: 978-1-774-91584-4: \$190

\* For full contents and more information, visit: [www.routledge.com/9781774915844](http://www.routledge.com/9781774915844)

## Sustainable Water Treatment and Ecosystem Protection Strategies



*Edited by Hossein Hariri Asli, Tamara Tatrishvili, Ann Rose Abraham, A. K. Haghi*

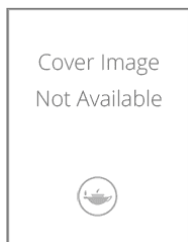
Reports on research studies on sustainable water treatment and ecosystem protection strategies. It reviews new advances in pollution control and addresses the need to design greener water treatment systems to prevent water pollution from affecting ecosystems. The chapters explain the most recent practical techniques to be used for wastewater and water treatment. It also covers new insights in green technologies for a cleaner environment. It describes in detail the consequences and outcome of increasing global water pollution and analyzes precaution measures for mitigation.

Apple Academic Press  
August 2024:388  
Hb: 978-1-774-91518-9: \$180  
eBook: 978-1-003-47001-4

\* For full contents and more information, visit: [www.routledge.com/9781774915189](http://www.routledge.com/9781774915189)

## Technological Advancement in Clean Energy Production

Constraints and Solutions for Energy and Electricity Development



*Edited by* **Amritanshu Shukla , Kian Hariri Asli , Neha Kanwar Rawat , Ann Rose Abraham , A. K. Haghi**

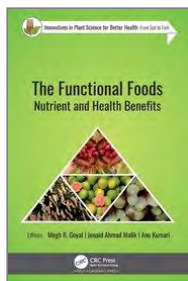
Presents the latest progress on clean energy technology and related materials. It also presents recent advances in theoretical and experimental research on devices that can be used in production of new types of solar cells and hydrogen generation for pollution control. It also examines potential applications to promote green processes and techniques for energy and environment sustainability, pathways to achieve pollution reduction, new insights into novel forms of energy and the latest progress in the field of green energies and nanomaterials technology. The book also reviews the new development and characterization of modern energy materials.

Apple Academic Press  
November 2024:322  
Hb: 978-1-774-91558-5: \$190

\* For full contents and more information, visit: [www.routledge.com/9781774915585](http://www.routledge.com/9781774915585)

## The Functional Foods

Nutrient and Health Benefits



*Edited by* **Megh R. Goyal , Junaid Ahmad Malik , Anu Kumari**

*Series: Innovations in Plant Science for Better Health: From Soil to Fork*

Discusses the nutritional and health benefits of functional foods. It details the functional activities of plants and their derivatives, discussing microgreens as functional foods, antiviral activities of functional foods, the beneficial antidiabetic activities of plants, probiotics as functional foods for human health, discussing the role of probiotics in gut microflora, probiotics as dietary supplements, various extraction methods, and more. The volume addresses the quality aspects of functional foods, providing an overview of foodborne pathogens and food-related microorganisms.

Apple Academic Press  
August 2024:466  
Hb: 978-1-774-91536-3: \$200

\* For full contents and more information, visit: [www.routledge.com/9781774915363](http://www.routledge.com/9781774915363)

## The Fusion of Artificial Intelligence and Soft Computing Techniques for Cybersecurity



*Edited by* **M. A. Jabbar , Sanju Tiwari , Subhendu Kumar Pani , Stephen Huang**

*Series: AAP Advances in Artificial Intelligence and Robotics*

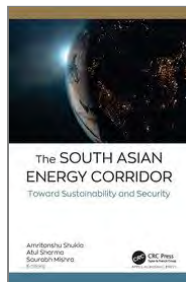
Investigates the advances in artificial intelligence and soft computing techniques in cybersecurity. It specifically looks at cybersecurity during the COVID-19 pandemic, the use of cybersecurity for cloud intelligent systems, applications of cybersecurity techniques for web applications, and cybersecurity for cyber-physical systems. A diverse array of technologies and techniques are explored for cybersecurity applications, such as the Internet of Things, edge computing, cloud computing, artificial intelligence, soft computing, machine learning, cross-site scripting in web-based services, neural gas (GNG) clustering technique, and more.

Apple Academic Press  
June 2024:294  
Hb: 978-1-774-91480-9: \$169.95  
eBook: 978-1-003-42850-3

\* For full contents and more information, visit: [www.routledge.com/9781774914809](http://www.routledge.com/9781774914809)

## The South Asian Energy Corridor

Toward Sustainability and Security



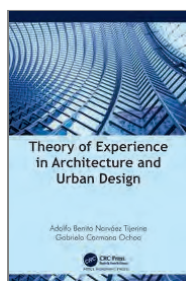
*Edited by* **Amritanshu Shukla , Atul Shama , Saurabh Mishra**

Up-to-date coverage of the energy scenario in the South Asian Energy Corridor, discussing energy security versus clean energy. It explores the role of diversifying supplies for the future to gain energy security that can lead to mapping joint ventures among conventional rival countries, especially India, China, Japan, and Pakistan. It examines the role of major technologies vis-a-vis dominant energy players in South Asia to put checks and balances on energy security along with clean energy resources hand in hand.

Apple Academic Press  
August 2024:372  
Hb: 978-1-774-91478-6: \$190

\* For full contents and more information, visit: [www.routledge.com/9781774914786](http://www.routledge.com/9781774914786)

## Theory of Experience in Architecture and Urban Design



*Edited by* **Adolfo Benito Narváez Tijerina , Gabriela Carmona Ochoa**

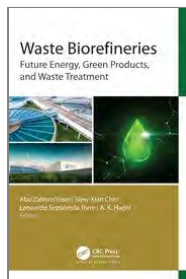
Presents practical tools for architects and urban designers to improve the work processes of architectural design—from the conception to the construction, taking into consideration the personalized world of users, architects, and urban designers. It starts from the conception of architectural space as a continuum that goes from the subjective depth of the mind to the objective reality, taking into consideration the perspective of building experiences for users.

Apple Academic Press  
July 2024:430  
Hb: 978-1-774-91218-8: \$179.95  
eBook: 978-1-003-33205-3

\* For full contents and more information, visit: [www.routledge.com/9781774912188](http://www.routledge.com/9781774912188)

## Waste Biorefineries

Future Energy, Green Products, and Waste Treatment



*Edited by* **Abu Zahrim Yaser , Siew-Xian Chin , Leonardo Sepúlveda Torre , A. K. Haghi**

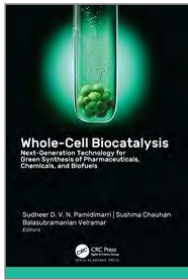
Provides a comprehensive overview of biorefining processing techniques, technologies, and materials that can use waste products in a number of innovative ways. It covers proven case studies that demonstrate the most advanced and innovative processes and product developments on waste biorefinery principles. This new book also provides valuable data and technologies that consider environmental impacts. The book discusses recent steps toward renewable and clean energy along with waste-to-energy technologies, modern technologies for waste valorization that holds a valuable prospective for a sustainable green world and the future energy, green products, and waste treatment.

Apple Academic Press  
August 2024:298  
Hb: 978-1-774-91546-2: \$189.95  
eBook: 978-1-032-68507-6

\* For full contents and more information, visit: [www.routledge.com/9781774915462](http://www.routledge.com/9781774915462)

## Whole-Cell Biocatalysis

Next-Generation Technology for Green Synthesis of Pharmaceutical, Chemicals, and Biofuels



*Edited by* **Sudheer D. V. N. Pamidimarri , Sushma Chauhan , Balasubramanian Velramar**

This book offers a comprehensive understanding of whole-cell biocatalysis. It presents basic as well as advanced concepts of whole-cell biocatalysis. It looks at the promising developments in whole-cell biocatalysis in the past decade and discusses the application of computational tools, the use of metabolic flux systems, and the role of metabolic networks for the cell system development for whole-cell catalysis. The book also explores whole-cell biocatalysis for the production of chemicals, of fuels, and for environmental restoration, through case studies and success stories that showcase new developments in the technology and its practical applications.

Apple Academic Press

June 2024:672

Hb: 978-1-774-91442-7: **\$239.95**

eBook: 978-1-003-41313-4

\* For **full contents** and more information, visit: [www.routledge.com/9781774914427](http://www.routledge.com/9781774914427)

## 3D Printing for Construction in the Transformation of the Building Industry



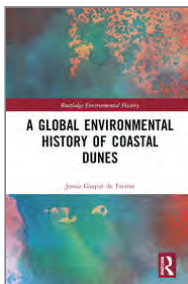
**Edited by Bárbara Rangel** University of Porto, Portugal,  
**Ana Sofia Guimarães** University of Porto, Portugal, **Joao Teixeira**

Process automation and 3d printing (3DP) are commonplace in the industry and our homes. However, due to BI's scale and complexity, Additive Manufacturing (AM) is in its native stage. Ongoing scientific research has been providing knowledge that will simplify the integration of 3DCP in the market, exploring its materiality, technologies, and design methodologies. This book provides an overview of the latest research achievements of the design possibilities that 3DP for construction (3DC) can offer in the various fields of construction, particularly architecture and engineering.

CRC Press  
October 2024:132  
Hb: 978-1-032-51771-1: \$150

\* For full contents and more information, visit: [www.routledge.com/9781032517711](http://www.routledge.com/9781032517711)

## A Global Environmental History of Coastal Dunes



**Joana Gaspar de Freitas**

*Series: Routledge Environmental History*

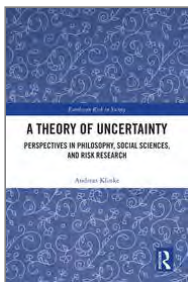
This book provides a holistic perspective on coastal dunes, highlighting new insights into present day challenges to show that narratives, along with numbers, graphics and computer models, have a role to play in climate change science, policymaking, and citizenship awareness. It combines fiction, history and science, to discuss past, present, and future ways of living in coastal areas. It is an engaging and original book that fills a gap in our knowledge of cities, infrastructure, economies, and cultures built on shorelines. A key read for scholars, researchers, and students in environmental history, environmental science, sustainability, coastal land management, and climate change.

Routledge  
September 2024:264  
Hb: 978-1-032-32925-3: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032329253](http://www.routledge.com/9781032329253)

## A Theory of Uncertainty

Perspectives in Philosophy, Social Sciences, and Risk Research



**Andreas Klinke**

Using sources from classical to modern that broach the phenomenon of uncertainty and its relation to risk, this book creates a novel approach to the recognized but theoretically often unattended issue of uncertainty.

Routledge  
August 2024:270  
Hb: 978-1-032-73888-8: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032738888](http://www.routledge.com/9781032738888)

## A Toolkit for Effective Everyday Activism



**Alison Rogers , Leanne Kelly**

This book examines the issues that cause environmental activists to become despondent and disheartened.

Routledge  
July 2024:209  
Pb: 978-1-032-36825-2: \$44.99  
Hb: 978-1-032-36824-5: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032368252](http://www.routledge.com/9781032368252)

## American Farming Culture and the History of Technology



**Joshua T. Brinkman**

*Series: Routledge Studies in Food, Society and the Environment*

This book will be of great interest to students and scholars of agricultural history, technology and policy, rural studies, the history of science and technology and farming culture in the USA.

Routledge  
May 2024:290  
Pb: 978-1-032-63790-7: \$49.99  
Hb: 978-1-032-63794-5: \$180  
eBook: 978-1-032-63795-2

\* For full contents and more information, visit: [www.routledge.com/9781032637907](http://www.routledge.com/9781032637907)

## An Introduction to Severe Storms and Hazardous Weather



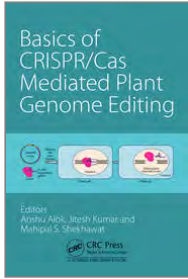
**Jeffrey B. Halverson**

This book presents a deep and encompassing survey of severe weather in all its forms. An Introduction to Severe Storms and Hazardous Weather is an exciting new textbook which allows students to learn the principles of atmospheric science through the drama, exhilaration and even tragedy of severe weather.

Routledge  
June 2024:472  
Pb: 978-1-032-38424-5: \$48.99  
Hb: 978-1-032-38423-8: \$180  
eBook: 978-1-032-34498-8

\* For full contents and more information, visit: [www.routledge.com/9781032384245](http://www.routledge.com/9781032384245)

## Basics of CRISPR/Cas Mediated Plant Genome Editing



Edited by **Anshu Alok , Jitesh Kumar , Mahipal Shekhawat**

CRISPR/Cas endonuclease has emerged, as a powerful genetic engineering tool. It is simple yet highly affordable and robust. This book provides a basic introduction to the mechanism and architecture of the CRISPR/Cas. It enlightens the readers about the new advancements such as gene insertion, transcriptional activation, suppression, gene tagging, multiplexing, base editing, prime editing, and tissue culture free editing which makes it easier for crop improvement.

CRC Press  
August 2024:256  
Hb: 978-1-032-16237-9: **\$160**  
eBook: 978-1-003-24768-5

\* For full contents and more information, visit: [www.routledge.com/9781032162379](http://www.routledge.com/9781032162379)

3RD EDITION

## Biochar for Environmental Management

Science, Technology and Implementation



Edited by **Johannes Lehmann , Stephen Joseph**

Edited by two leading figures in the field, Biochar for Environmental Management is essential reading for students, scholars, practitioners and policymakers interested in biochar and the role it can play in environmental sustainability and global sustainable development.

Routledge  
June 2024:902  
Hb: 978-1-032-28615-0: **\$94**  
eBook: 978-1-003-29767-3

\* For full contents and more information, visit: [www.routledge.com/9781032286150](http://www.routledge.com/9781032286150)

## Building the Critical Anthropology of Climate Change

Towards a Socio-Ecological Revolution



Hans A. Baer , Merrill Singer

Series: *Routledge Environmental Anthropology*

This book applies a critical perspective to anthropogenic climate change and the global socio-ecological crisis. It focuses on the critical anthropology of climate change by opening up a dialogue with the two main contending perspectives, namely the cultural ecological and the cultural interpretive perspectives. Engaging with perspectives from sociology, political science, and the geography of climate change, it explores various approaches to thinking about and responding to the existential threat of an ever-warming climate. This book will be of interest to researchers and students studying environmental anthropology, climate change, human geography, sociology, and political science.

Routledge  
July 2024:296  
Pb: 978-1-032-74576-3: **\$49.99**  
Hb: 978-1-032-74577-0: **\$180**

\* For full contents and more information, visit: [www.routledge.com/9781032745763](http://www.routledge.com/9781032745763)

## Children in Tourism Communities

Sustainability and Social Justice



Marko Koščak , Mladen Knežević , Tony O'Rourke , Tina Šegota

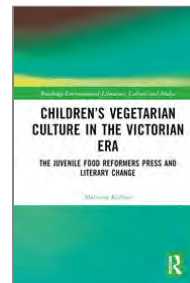
This book explores how children living in tourism destinations are particularly susceptible to the impacts of tourism and how they can be included in public policies, programmes and decision-making. The book is based on original, ground-breaking research with a specific focus on sustainable tourism and development, and it encourages a rethinking of sustainability as a concept and demonstrates how tourism can be utilised as a tool for achieving the sustainable development goals. This will be an important text for students, academics, and instructors in sustainable tourism and development, destination management, culture and heritage, as well as practitioners in these areas.

Routledge  
May 2024:228  
Pb: 978-1-032-44874-9: **\$49.99**  
Hb: 978-1-032-44876-3: **\$180**  
eBook: 978-1-003-37429-9

\* For full contents and more information, visit: [www.routledge.com/9781032448749](http://www.routledge.com/9781032448749)

## Children's Vegetarian Culture in the Victorian Era

The Juvenile Food Reformers Press and Literary Change



Marzena Kubisz

Series: *Routledge Environmental Literature, Culture and Media*

This book fills a unique gap in the research on the cultural history of vegetarianism and veganism, children's literature and Victorian periodicals, and is the first publication to systematically describe the phenomenon of Victorian children's vegetarianism and its representations in literature and culture. It lays the groundwork for contemporary children's vegan literature and traces ethical and environmental concerns back to the Victorian period. It will appeal to researchers interested in the social, cultural and literary aspects of vegetarianism and veganism, human-animal relations, childhood studies, children's literature, periodical studies and Victorian studies.

Routledge  
October 2024:190  
Hb: 978-1-032-50868-9: **\$180**

\* For full contents and more information, visit: [www.routledge.com/9781032508689](http://www.routledge.com/9781032508689)

## Circular Economy Realities

Critical Perspectives on Sustainability



Edited by **Pauline Deutz , Walter J.V. Vermeulen , Rupert J. Baumgartner , Tomás B. Ramos , Andrea Raggi**

Series: *Routledge/ISDRS Series in Sustainable Development Research*

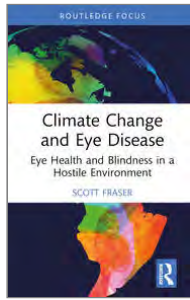
This book addresses the realities of the circular economy, a resource efficiency concept that has risen to global prominence in academic, policy and business circles over the last decade. Considered an approach to sustainable growth, the volume critically analyses how sustainable emerging applications of a circular economy are in practice. Benefitting from extensive empirical research, this critical assessment of sustainability in the context of the circular economy will appeal to a broad readership of academics, upper-level students, practitioners and policy-makers in sustainable development, business, economics, geography, sociology and environmental engineering.

Routledge  
July 2024:242  
Pb: 978-1-032-28181-0: **\$48.95**  
Hb: 978-1-032-28184-1: **\$170**

\* For full contents and more information, visit: [www.routledge.com/9781032281810](http://www.routledge.com/9781032281810)

## Climate Change and Eye Disease

Eye Health and Blindness in a Hostile Environment



**Scott Fraser**

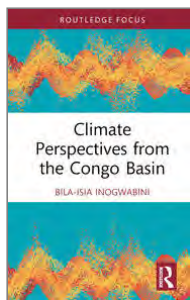
*Series: Routledge Studies in Environment and Health*

This book examines the impact of climate change on eye disease and eye health.

Routledge  
August 2024:128  
Hb: 978-1-032-84408-4: **\$66.99**

\* For full contents and more information, visit: [www.routledge.com/9781032844084](http://www.routledge.com/9781032844084)

## Climate Perspectives from the Congo Basin



**Bila-Isia Inogwabini**

*Series: Routledge Focus on Environment and Sustainability*

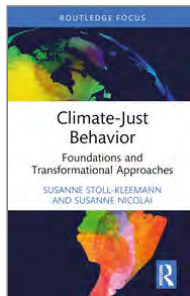
This book considers the global question of climate change from local perspectives in the context of Central Africa.

Routledge  
May 2024:122  
Hb: 978-1-032-79763-2: **\$64.95**  
eBook: 978-1-003-49375-4

\* For full contents and more information, visit: [www.routledge.com/9781032797632](http://www.routledge.com/9781032797632)

## Climate-Just Behavior

Foundations and Transformational Approaches



**Susanne Stoll-Kleemann** University of Greifswald,  
**Susanne Nicolai**

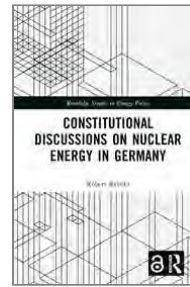
*Series: Routledge Focus on Environment and Sustainability*

This book highlights the obstacles to and potential for a just transformation as a way out of the current climate crisis.

Routledge  
June 2024:122  
Hb: 978-0-367-47116-3: **\$64.95**

\* For full contents and more information, visit: [www.routledge.com/9780367471163](http://www.routledge.com/9780367471163)

## Constitutional Discussions on Nuclear Energy in Germany



**Robert Rybski**

*Series: Routledge Studies in Energy Policy*

This book analyses the German constitutional system's responses towards nuclear energy. It examines constitutional standards derived from the German Constitution, which directly regulates nuclear energy issues within the German system of power. It presents the structure of sources of law that are binding in the area of security of nuclear installations and considers the impact that The European Atomic Energy Community had on the German constitutional system. This book will be of great interest to students, scholars and energy experts who are active in researching or adopting public policies related to the nuclear energy sector.

Routledge  
June 2024:234  
Hb: 978-1-032-58090-6: **\$180**  
eBook: 978-1-003-44890-7

\* For full contents and more information, visit: [www.routledge.com/9781032580906](http://www.routledge.com/9781032580906)

## Consuming the Environment



*Edited by Myra J. Hird*

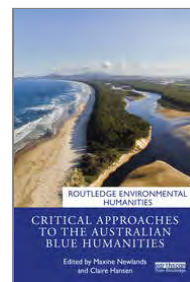
*Series: Routledge-SCORAI Studies in Sustainable Consumption*

Consuming the Environment explores the environmental impacts of consuming everyday products and explains how we can consume more sustainably.

Routledge  
November 2024:224  
Pb: 978-1-032-53537-1: **\$48.99**  
Hb: 978-1-032-53536-4: **\$180**

\* For full contents and more information, visit: [www.routledge.com/9781032535371](http://www.routledge.com/9781032535371)

## Critical Approaches to the Australian Blue Humanities



*Edited by Maxine Newlands, Claire Hansen*

*Series: Routledge Environmental Humanities*

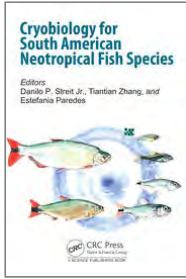
This edited volume explores and analyses the field of the blue humanities through an Australian lens. The blue humanities is a way of understanding humanity's relationship with water and manifestations of what is referred to as the 'blue' – reefs, oceans, rivers, creeks, basins, and inland bodies of water. Contributing to a growing interdisciplinary field, this is the first book to comprehensively examine the blue in Australia, appealing to scholars, educators, and students working across the humanities and social sciences with an interest in the environmental humanities, ecopolitics, ecocriticism, the blue humanities, cultural geography, environmental history, and the role of place.

Routledge  
August 2024:252  
Pb: 978-1-032-43045-4: **\$48.95**  
Hb: 978-1-032-43049-2: **\$170**

\* For full contents and more information, visit: [www.routledge.com/9781032430454](http://www.routledge.com/9781032430454)



## Cryobiology for South American Neotropical Fish Species



Edited by **Daniilo Pedro Streit Jr. , Tiantian Zhang**  
Bournemouth University, **Estefania Paredes Rosendo**  
Universidade de Vigo- Estación de Ciencias Mariñas de Toralla

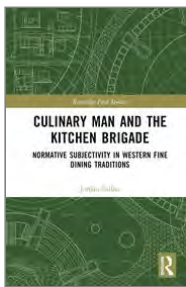
The book presents updated information on the cryopreservation of semen, embryos, germ cells and ovarian follicles of neotropical fish from South America. The chapters address the importance of developing germplasm banks of South American fish, both for commercial production and for conservation of ichthyofauna. This book has been designed mainly to provide a historical review of the 40 years of reproductive cryobiology research on South American fish species.

CRC Press  
October 2024:284  
Hb: 978-1-032-21658-4: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032216584](http://www.routledge.com/9781032216584)

## Culinary Man and the Kitchen Brigade

Normative Subjectivity in Western Fine Dining Traditions



**Jordan Fallon**

Series: *Routledge Food Studies*

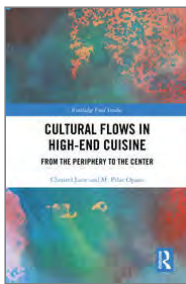
This book offers an exploration of the field of normative subjectivity circulated within western fine dining traditions, presenting a theoretical analysis of the governing relationship between the chef, who embodies the Culinary Man, and the fine dining brigade. The book offers a unique treatment of western haute cuisine's interlocking regime of labor and aesthetics and theorizes the underexplored kitchen brigade as a model of disciplinary formation. It will be of great interest to students and scholars from across the social sciences and humanities interested in critical food studies, political and cultural theory and popular culinary culture.

Routledge  
September 2024:258  
Hb: 978-1-032-84922-5: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032849225](http://www.routledge.com/9781032849225)

## Cultural Flows in High-End Cuisine

From the Periphery to the Center



**Christel Lane , M. Pilar Opazo**

Series: *Routledge Food Studies*

Focusing on high-end cuisine, this book examines the flows of culinary knowledge from culturally peripheral locations to two cities at the global center, London and New York. Theoretically, the book contributes to the debate on cultural globalization. It undertakes a study of hitherto rarely examined cultural counter-flows or reverse cultural globalization and analyses both the precipitants of this occurrence and the effects of cultural counterflows on both Western global cities and the home countries of chefs. It will be of great interest to students and scholars of food studies, food cultures, cultural globalization and culinary studies.

Routledge  
July 2024:224  
Hb: 978-1-032-70263-6: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032702636](http://www.routledge.com/9781032702636)

## Degrowth, Depth and Hope in Sustainable Business

Reflections from Denmark, Finland and Sweden



**Iana Nesterova**

Series: *Routledge Research in Sustainability and Business*

This book takes degrowth theorising in the direction of honouring collaboration, creating new dialogues, emphasising growth and human capacities.

Routledge  
August 2024:184  
Pb: 978-1-032-58958-9: \$48.95  
Hb: 978-1-032-58957-2: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032589589](http://www.routledge.com/9781032589589)

## Delivering a Climate Neutral Europe



Edited by **Jos Delbeke**

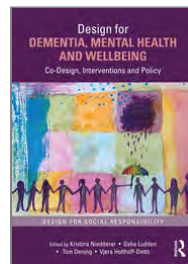
Delivering a Climate Neutral Europe summarises the achievements of twenty-five years of EU Climate Policy, with the emphasis on what has been achieved under the Green Deal. It also highlights climate issues on the table of policy makers in the next European policy cycle 2024-2029.

Routledge  
May 2024:296  
Pb: 978-1-032-79761-8: \$34.99  
Hb: 978-1-032-79760-1: \$150  
eBook: 978-1-003-49373-0

\* For full contents and more information, visit: [www.routledge.com/9781032797618](http://www.routledge.com/9781032797618)

## Design for Dementia, Mental Health and Wellbeing

Co-Design, Interventions and Policy



Edited by **Kristina Niedderer , Geke Ludden , Tom Denning , Vjera Holthoff-Detto**

Series: *Design for Social Responsibility*

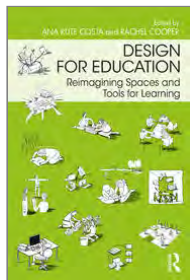
This edited volume offers the first overview and reflective discussion of how design can contribute to people's wellbeing and mental health in the context of dementia, mental illness and neurodiversity. It demonstrates how design can help to support people, their care partners and care professionals in promoting mental health and wellbeing, and it offers a rich resource on how to create a sustainable future for care in this domain. The book provides a unique and holistic overview and resource for designers, researchers, students, policy providers and health and care professionals to help support the development and adoption of person-centred design processes and interventions.

Routledge  
July 2024:374  
Pb: 978-1-032-33117-1: \$44.99  
Hb: 978-1-032-33118-8: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032331171](http://www.routledge.com/9781032331171)

## Design for Education

Spaces and Tools for Learning



Edited by **Ana Rute Costa**, **Rachel Cooper**

Series: *Design for Social Responsibility*

This book charts the impact of design on education, specifically focussing on how design can shape the spaces and tools for learning. It brings together the work of designers, architects, engineers, professionals, educators, and researchers, and presents a series of case studies and research developed from across Europe, North America, South America, Africa, Australia, and Asia. Providing guidance and a theoretical framework for designing spaces and tools for learning, the book will be a useful resource for design and architecture students, as well as practitioners, educational researchers, educational practitioners, policymakers, and behaviour and built environment researchers.

Routledge  
July 2024:300  
Pb: 978-1-032-55267-5: **\$48.95**  
Hb: 978-1-032-55268-2: **\$170**  
eBook: 978-1-003-42982-1

\* For full contents and more information, visit: [www.routledge.com/9781032552675](http://www.routledge.com/9781032552675)

## Digital Communication for Agricultural and Rural Development

Participatory Practices in a Post-COVID Age



Edited by **Ataharul Chowdhury**, **Gordon A. Gow**  
University of Alberta, Edmonton, Canada

Series: *Earthscan Food and Agriculture*

This volume presents insights on the challenges of digital communication and participation in agricultural and rural development. It considers how the concept of participation has been transformed by the realities of the pandemic, reflecting on essential principles and practical considerations of communication for development and social change, particularly in the context of global agriculture and food security, the well-being of rural communities, and environmental challenges such as climate change. It will be of interest to students and scholars of agricultural and rural development, communication for development, digital communication and sustainable development more broadly.

Routledge  
July 2024:314  
Hb: 978-1-032-25208-7: **\$180**  
eBook: 978-1-003-28207-5

\* For full contents and more information, visit: [www.routledge.com/9781032252087](http://www.routledge.com/9781032252087)

## Digital Technologies for Sustainable Futures

Promises and Pitfalls



Edited by **Chiara Certomà**, **Fabio Iapaolo**, **Federico Martellozzo**

Series: *Routledge Studies in Sustainability*

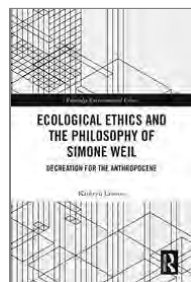
This book critically examines the interplay between digitalisation and sustainability. It gathers a multitude of voices interrogating the premise that increased digitalisation automatically contributes to greater sustainability. The book exposes the extractive logics ingrained within digital capitalism and introduces alternatives like digital degrowth and the circular economy as viable, sustainable paths for the digital era. The volume will prove valuable for students, researchers, and practitioners across various fields, including Geography, Urban Studies, Sustainability Studies, Environmental Media Studies, Critical AI Studies, Innovation Studies, and the Digital Humanities.

Routledge  
August 2024:216  
Pb: 978-1-032-57851-4: **\$48.95**  
Hb: 978-1-032-57854-5: **\$170**

\* For full contents and more information, visit: [www.routledge.com/9781032578514](http://www.routledge.com/9781032578514)

## Ecological Ethics and the Philosophy of Simone Weil

Decreation for the Anthropocene



**Kathryn Lawson**

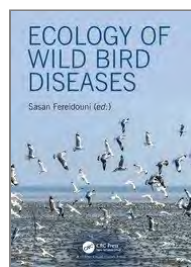
Series: *Routledge Environmental Ethics*

This book places the philosophy of Simone Weil into conversation with contemporary environmental concerns in the Anthropocene. It offers a systematic interpretation of Simone Weil, making her ethical philosophy more accessible to non-Weil scholars, and it uses Weil's thought to propose a decreative ecological ethics that decenters the human being by cultivating human actions towards an ecological ethics. This book will be useful for Simone Weil scholars and academics, as well as students and researchers interested in environmental ethics in departments of comparative literature, theory and criticism, philosophy, and environmental studies.

Routledge  
May 2024:216  
Hb: 978-1-032-58329-7: **\$180**  
eBook: 978-1-003-44962-1

\* For full contents and more information, visit: [www.routledge.com/9781032583297](http://www.routledge.com/9781032583297)

## Ecology of Wild Bird Diseases



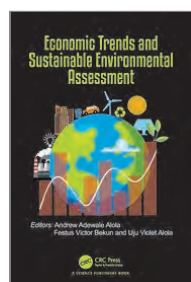
Edited by **Sasan Fereidouni** Senior Scientist, Research Institute of Wildlife Ecology - University of Veterinary Medicine

This volume focuses on the ecology of the most important infectious diseases of wild avian hosts, especially those with high morbidity and mortality rates. It applies a different approach to understand complex and multiscale interactions among various ecological factors for the most important infectious diseases of wild birds. The book provides valuable information to students and everyone who deals with avian species including biologists, researchers, conservationists, and policymakers.

CRC Press  
June 2024:400  
Hb: 978-0-815-37945-4: **\$230**  
eBook: 978-1-351-20695-2

\* For full contents and more information, visit: [www.routledge.com/9780815379454](http://www.routledge.com/9780815379454)

## Economic Trends and Sustainable Environmental Assessment



Edited by **Andrew Adewale Alola** Inland Norway University of Applied Sciences, Norway, **Festus Victor Bekun** Istanbul Gelisim University, Turkey, **Uju Violet Alola** Istanbul Gelisim University, Turkey

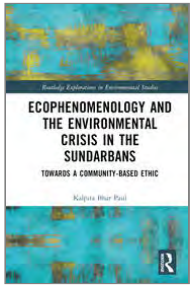
The book 'Economic Trends and Sustainable Environmental Assessment' attempts to x-ray the economic and socioeconomic activities, and cultural or behavioural aspects from the concept of sustainability by employing several related research scenarios spanning the micro-, meso-, and macro-level approaches.

CRC Press  
August 2024:292  
Hb: 978-1-032-30675-9: **\$190**  
eBook: 978-1-003-30621-4

\* For full contents and more information, visit: [www.routledge.com/9781032306759](http://www.routledge.com/9781032306759)

## Ecophenomenology and the Environmental Crisis in the Sundarbans

Towards a Community-Based Ethic



**Kalpita Bhar Paul**

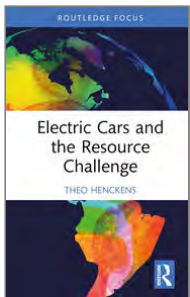
Series: *Routledge Explorations in Environmental Studies*

This book offers a philosophical analysis of the environmental crisis in the Sundarbans, drawing upon phenomenological narratives and dominant place-making narratives to consider the root cause of the crisis. It argues for developing a nuanced understanding of the cause of the crisis by studying islanders' narratives, rather than offering simplistic, symptom-driven measures that do not resolve the underlying issues. The book will appeal to academics and practitioners working in environmental studies, philosophy, human ecology, and island studies, and the conceptual understandings and field narratives will also draw the interest of research students working in correlated fields.

Routledge  
August 2024:214  
Hb: 978-1-032-56055-7: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032560557](http://www.routledge.com/9781032560557)

## Electric Cars and the Resource Challenge



**Theo Henkens**

Series: *Routledge Focus on Environment and Sustainability*

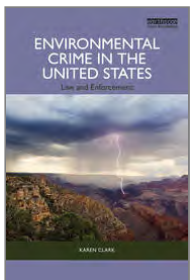
This book is the first to fully explore the short- and long-term impact of the global electric car rollout on the supply of raw materials. It contains detailed information about the material composition of electric and fossil fuel cars in relation to stocks and relative scarcity of corresponding materials in the earth's crust, and estimates the ultimate annual consumption of metals based on predicted population growth. It highlights how to adopt a global long-term raw materials policy to protect the interests of future generations and global fairness. It provides necessary forecasting insight to industry leaders and specialists, policymakers and researchers.

Routledge  
August 2024:156  
Hb: 978-1-032-83313-2: \$66.99

\* For full contents and more information, visit: [www.routledge.com/9781032833132](http://www.routledge.com/9781032833132)

## Environmental Crime in the United States

Law and Enforcement



**Karen Clark**

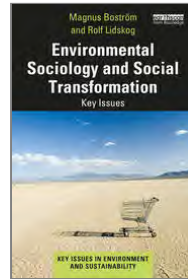
This book will be of great interest to students of environmental crime and justice, green criminology, environmental conservation, natural resource management and environmental law.

Routledge  
July 2024:188  
Pb: 978-1-032-14805-2: \$48.99  
Hb: 978-1-032-14807-6: \$180  
eBook: 978-1-003-24120-1

\* For full contents and more information, visit: [www.routledge.com/9781032148052](http://www.routledge.com/9781032148052)

## Environmental Sociology and Social Transformation

Key Issues



**Magnus Boström, Rolf Lidskog**

Series: *Key Issues in Environment and Sustainability*

Environmental Sociology and Social Transformation demonstrates how sociological theory and research are critical for understanding the social drivers of global environmental destruction and the conditions for transformative change.

Routledge  
June 2024:212  
Pb: 978-1-032-60653-8: \$48.99  
Hb: 978-1-032-60655-2: \$180  
eBook: 978-1-032-62818-9

\* For full contents and more information, visit: [www.routledge.com/9781032606538](http://www.routledge.com/9781032606538)

## European Forest Policy and Governance

An Integrative Analytical Framework



**Filip Aggestam**

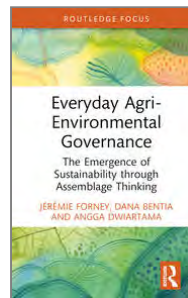
This book provides a state-of-the-art overview covering distinct and relevant aspects of forest policy processes in Europe, presenting a fresh perspective on different analytical approaches, theories, and frameworks. Set against the background of a changing world, driven by significant social, environmental and economic developments, in Europe and elsewhere, there is a growing need for an improved understanding of forest governance and how to analyse the forest policymaking processes. This book introduces the reader to some of the key issues typically encountered in reviewing proposed as well as established forest policies.

Routledge  
November 2024:278  
Pb: 978-1-032-05746-0: \$48.99  
Hb: 978-1-032-05747-7: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032057460](http://www.routledge.com/9781032057460)

## Everyday Agri-Environmental Governance

The Emergence of Sustainability through Assemblage Thinking



**Jérémie Forney** University of Neuchâtel, Switzerland,  
**Dana Bentia, Angga Dwiartama**

Series: *Routledge Focus on Environment and Sustainability*

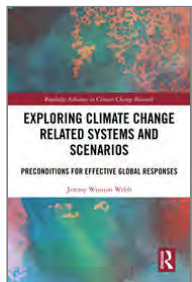
The book will be an essential read for students and scholars interested in sustainable agriculture and food systems, governance modes and approaches and sustainability more broadly.

Routledge  
July 2024:144  
Hb: 978-1-032-22132-8: \$64.95

\* For full contents and more information, visit: [www.routledge.com/9781032221328](http://www.routledge.com/9781032221328)

## Exploring Climate Change Related Systems and Scenarios

Preconditions for Effective Global Responses



**Jeremy Winston Webb**

*Series: Routledge Advances in Climate Change Research*

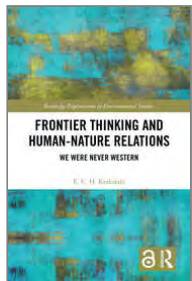
Jeremy Webb draws on multiple disciplines to piece together the climate change puzzle, identifying what it would take to limit climate change and its impacts. The book starts with a summary of the climate change problem and develops a Climate Change, National Interests, International Cooperation (CCNIC) model of the climate response system. In the second half of the book, Webb explores 175 scenarios collected through 27 interviews with climate change experts and develops a signal response model. This book will be of great interest to students and scholars of climate change, environmental policy and future studies.

Routledge  
June 2024:320  
Hb: 978-1-032-73566-5: \$180  
eBook: 978-1-003-46591-1

\* For full contents and more information, visit: [www.routledge.com/9781032735665](http://www.routledge.com/9781032735665)

## Frontier Thinking and Human-Nature Relations

We Were Never Western



**E. C. H. Keskitalo** Umeå University, Sweden.

*Series: Routledge Explorations in Environmental Studies*

Combining historical, social and regulative analysis, this book builds a compelling critique of 'frontier thinking' and demonstrates its pernicious amplification in contemporary human affairs. It systematically identifies the ways in which images of nature and society are formed by historically developed frontier-oriented narratives, illustrating how they have underpinned much Anglo-American and Anglocentric thought, and have come to form our assumptions about social and environmental organisation. The book will be of wide interest to a range of academics and students in the fields of geography, anthropology, environmental studies, sociology, political science and development studies.

Routledge  
July 2024:180  
Hb: 978-1-032-73840-6: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032738406](http://www.routledge.com/9781032738406)

## Future Autonomous Road Vehicles



**Joseph Giacomin**

This book provides a comprehensive overview of the past, present and future of autonomous road vehicles for professionals and students. It brings together the key historical developments in autonomous road vehicle design and the primary explorations of the design possibilities from science fiction. It also introduces five of the most popular future-facing speculative approaches used by designers, with science fiction prototyping identified as best suited to autonomous road vehicle application. Of use to those interested in the psychological, sociological and ethical factors involved in automotive design, human centred design, industrial design and technology.

Routledge  
May 2024:230  
Pb: 978-1-032-72421-8: \$44.99  
Hb: 978-1-032-72422-5: \$180  
eBook: 978-1-032-72423-2

\* For full contents and more information, visit: [www.routledge.com/9781032724218](http://www.routledge.com/9781032724218)

## Governing the Palm Oil Industry

Perspectives from Southeast Asia and Latin America



*Edited by Patrick O'Reilly, Helena Varkkey*

*Series: Earthscan Studies in Natural Resource Management*

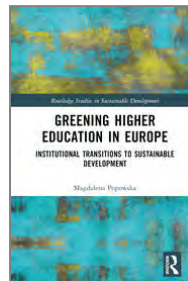
This book examines how different countries across Southeast Asia and Latin America are responding to the emergence and expansion of the lucrative, yet controversial, palm oil industry, paying attention to how national policy and governance regimes are shaping the global industry.

Routledge  
August 2024:300  
Pb: 978-1-032-60552-4: \$49.99  
Hb: 978-1-032-60555-5: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032605524](http://www.routledge.com/9781032605524)

## Greening Higher Education in Europe

Institutional Transitions to Sustainable Development



**Magdalena Popowska**

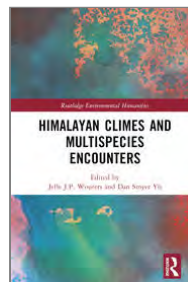
*Series: Routledge Studies in Sustainable Development*

This book provides a comprehensive overview of the developments that have taken place in European higher education institutions (HEIs) in response to the challenges of sustainable development. It explores the key pillars of sustainable development in HEIs: education, research, and campus development, highlighting best practices from a range of European universities, and it also explores the role of HEIs in educating future leaders in sustainable development. The book will be useful for scholars and academics of sustainability, especially in its educative, research, and practical dimensions. It will also be a useful resource for postgraduate students in management and engineering.

Routledge  
August 2024:206  
Hb: 978-1-032-55949-0: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032559490](http://www.routledge.com/9781032559490)

## Himalayan Climes and Multispecies Encounters



*Edited by Jelle J.P. Wouters, Dan Smyer Yu* Yunnan University, China

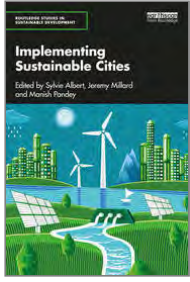
*Series: Routledge Environmental Humanities*

Woven together as a text of humanities-based environmental research outcomes, this book hosts a collection of historical and fieldwork-based case studies and conceptual discussions of climate change in the greater Himalayan region. It affirms climate change as multispecies encounters, as part of multifaceted cultural processes, and as ecologically-specific environmental changes in the more-than-human worlds of the Himalayas. The book offers students, academics, and the interested public fresh approaches to the interdisciplinary field of climate studies and policy debates on climate change and sustainable development.

Routledge  
July 2024:244  
Hb: 978-1-032-77697-2: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032776972](http://www.routledge.com/9781032776972)

## Implementing Sustainable Cities



Edited by **Sylvie Albert** University of Winnipeg, Canada,  
**Jeremy Millard** Third Millennium Governance, Denmark,  
**Manish Pandey**

Series: *Routledge Studies in Sustainable Development*

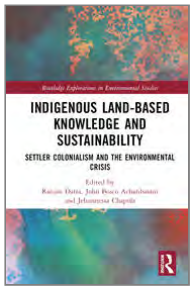
This edited volume brings together international authors to explore how cities around the world are implementing their commitment toward the UN Sustainable Development Goals. It highlights the innovative ways cities can plan their implementation by drawing on comprehensive research and literature reviews. It describes examples of various cities' governance mechanisms, resourcing strategies and implementation strategies. The book will be of great interest to students, researchers, and professionals of urban sustainability, planning, smart cities, and sustainable communities, as well city and government stakeholders including policy makers, economic development corporations and NGOs.

Routledge  
September 2024:274  
Pb: 978-1-032-58768-4: \$49.99  
Hb: 978-1-032-58770-7: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032587684](http://www.routledge.com/9781032587684)

## Indigenous Land-Based Knowledge and Sustainability

Settler Colonialism and the Environmental Crisis



Edited by **Ranjan Datta**, **Jebunessa Chapola**, **John Bosco Acharibasam**

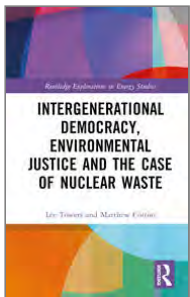
Series: *Routledge Explorations in Environmental Studies*

This edited volume explores the crucial intersections between Indigenous Land-Based Knowledge (ILK), sustainability, settler colonialism, and the ongoing environmental crisis.

Routledge  
October 2024:216  
Hb: 978-1-032-74905-1: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032749051](http://www.routledge.com/9781032749051)

## Intergenerational Democracy, Environmental Justice and the Case of Nuclear Waste



Lee Towers, Matthew Cotton

Series: *Routledge Explorations in Energy Studies*

This book explores the interplay between intergenerational justice and intra-generational justice using nuclear waste management as a consistent case to explore these themes.

Routledge  
October 2024:200  
Hb: 978-1-032-72801-8: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032728018](http://www.routledge.com/9781032728018)

## Literature and Ecotheology

From Chaos to Cosmos



George B. Handley

Series: *Routledge Environmental Humanities*

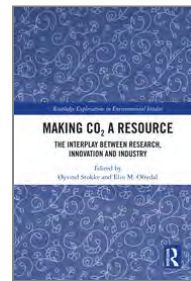
Literature and Ecotheology challenges us in a time of climate crisis to find more common ground between the dual projects of ecocriticism and ecotheology. It argues that in our postsecular age, literature has become an important repository of theological wisdom that can, like formal work in ecotheology, provide the moral grounds for environmental care. The book will be of interest to students, scholars and researchers interested in ecotheology, religious studies, environmental literature, the environmental humanities, and environmental studies more broadly. It offers a needed paradigm shift in how Western societies have tended to misuse both secularity and religion.

Routledge  
July 2024:248  
Hb: 978-1-032-76901-1: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032769011](http://www.routledge.com/9781032769011)

## Making CO<sub>2</sub> a Resource

The Interplay Between Research, Innovation and Industry



Edited by **Øyvind Stokke**, **Elin M. Oftedal**

Series: *Routledge Explorations in Environmental Studies*

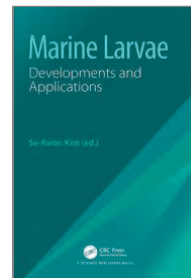
This interdisciplinary book explores how CO<sub>2</sub> can become a resource instead of a waste, and as such, be a tool to meet one of the grandest challenges humanity is facing: climate change.

Routledge  
June 2024:216  
Hb: 978-1-032-48365-8: \$180  
eBook: 978-1-003-38864-7

\* For full contents and more information, visit: [www.routledge.com/9781032483658](http://www.routledge.com/9781032483658)

## Marine Larvae

Developments and Applications



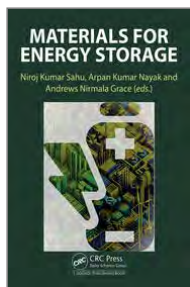
Edited by **Se-Kwon Kim** Dept. of Marine Science & Conv, South Korea

Marine environment is a habitat for several species and significantly plays an essential role in the food cycle and climate regulation. Several species including fish and invertebrates that are used as food for humans. Marine larvae species also contain metabolites and are useful for protection and cure of several diseases. This book provides information on aquaculture production, larval feeding, early stage of marine invertebrate's bioassay and zebrafish model for drug toxicity. This book will interest scientists in the field of marine biotechnology, life sciences, materials scientists, aquaculture companies, and natural product researchers.

CRC Press  
August 2024:294  
Hb: 978-1-032-41712-7: \$170  
eBook: 978-1-003-35938-8

\* For full contents and more information, visit: [www.routledge.com/9781032417127](http://www.routledge.com/9781032417127)

## Materials for Energy Storage



Edited by **Niroj Kumar Sahu** Centre for Nanotechnology RES, India, **Arpan Kumar Nayak**, **Andrews Nirmala Grace**

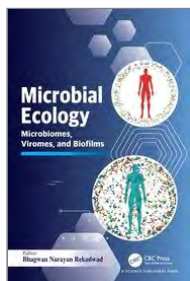
Materials for Energy Storage offers a combinatorial understanding of materials science and electrochemistry in electrochemical energy storage devices with a holistic overview of the status, research gaps, and future opportunities.

CRC Press  
July 2024:318  
Hb: 978-0-367-49512-1: \$180  
eBook: 978-1-003-04640-0

\* For full contents and more information, visit: [www.routledge.com/9780367495121](http://www.routledge.com/9780367495121)

## Microbial Ecology

Microbiomes, Viromes, and Biofilms



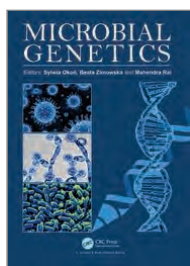
Edited by **Bhagwan Narayan Rekadwad** Yenepoya Research Centre, India

This book highlights the hidden world of microbiomes, viromes, and biofilms on and inside humans. Our bodies have microbiomes, which contain various bacterial communities, and viromes, which contain viruses. These invisible residents are vital to health and sickness. Infections often result from microbiome imbalances.

CRC Press  
July 2024:228  
Hb: 978-1-032-50605-0: \$160  
eBook: 978-1-003-39924-7

\* For full contents and more information, visit: [www.routledge.com/9781032506050](http://www.routledge.com/9781032506050)

## Microbial Genetics



Edited by **Sylwia Okoń** Uni of Life Sci, Poland, **Beata Zimowska** Uni of Life Sci, Poland, **Mahendra Rai** Nicolaus Copernicus Uni, Poland

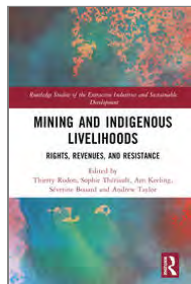
This comprehensive book explores both the fundamental and practical aspects of microbial genetics, shedding light on viroids, viruses, phytoplasma, bacteria, fungi, and protozoa. Unveiling a fresh perspective, the book tackles traditional taxonomical debates by embracing DNA-based taxonomy, offering a novel approach to understanding phylogeny within this microbe realm.

CRC Press  
June 2024:374  
Hb: 978-1-032-35841-3: \$200  
eBook: 978-1-003-32893-3

\* For full contents and more information, visit: [www.routledge.com/9781032358413](http://www.routledge.com/9781032358413)

## Mining and Indigenous Livelihoods

Rights, Revenues, and Resistance



Edited by **Thierry Rodon**, **Sophie Thériault**, **Arn Keeling**, **Séverine Bouard**, **Andrew Taylor**

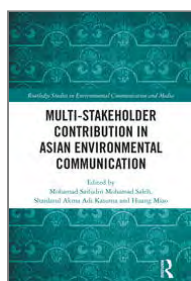
Series: *Routledge Studies of the Extractive Industries and Sustainable Development*

This book maps the encounters between Indigenous Peoples and local communities with mining companies in various post-colonial contexts. Combining comparative and multidisciplinary analysis, it shows how the mining industry might adapt its practices to the political and legal contexts where they operate. By mobilizing fieldwork in five regions—Australia, Canada, Sweden, New Caledonia, and Brazil—it highlights voices often marginalized in mining development studies, including Indigenous Peoples and women. This book will be of great interest to students and scholars of mining and the extractive industries, sustainable development, natural resource management, and Indigenous Peoples.

Routledge  
August 2024:348  
Hb: 978-1-032-51628-8: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032516288](http://www.routledge.com/9781032516288)

## Multi-Stakeholder Contribution in Asian Environmental Communication



Edited by **Mohamad Saifudin Mohamad Saleh**, **Shaidatul Akma Adi Kasuma**, **Huang Miao** Post-doctor Researcher, the Journalism School of Renmin University of China, Beijing

Series: *Routledge Studies in Environmental Communication and Media*

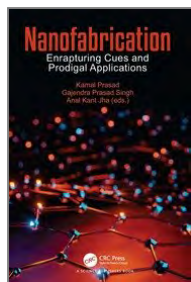
Multi-Stakeholder Contribution in Asian Environmental Communication focuses on how diverse actors can come together to promote sustainable environmental practices.

Routledge  
July 2024:252  
Hb: 978-1-032-63020-5: \$170  
eBook: 978-1-032-67050-8

\* For full contents and more information, visit: [www.routledge.com/9781032630205](http://www.routledge.com/9781032630205)

## Nanofabrication

Enrapturing Cues and Prodigious Applications



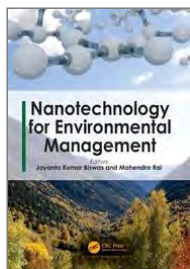
Edited by **Kamal Prasad** Tilka Manjhi Bhagalpur University, India, **Gajendra Prasad Singh** Central University of Jharkhand, Department of Nanoscience and Technology, India, **Anal Kant Jha**

Nature, with its unassuming yet prodigious character, unfolds its assembly and adaptability guided by the principles of thermodynamics and supramolecular chemistry. Every entity in nature, regardless of its form, adheres to these fundamental principles. From individual metabolites to ordinary molecules, each possesses inherent potential for nanomaterial synthesis. This book meticulously compiles diverse green approaches that highlight nature's synthetic prowess and its lavish abundance in nanomaterial synthesis, showcasing potential applications. It unveils the lucrative pathways nature provides for cutting-edge advancements in synthetic methodologies and material applications.

CRC Press  
September 2024:272  
Hb: 978-0-367-53785-2: \$125

\* For full contents and more information, visit: [www.routledge.com/9780367537852](http://www.routledge.com/9780367537852)

## Nanotechnology for Environmental Management



Edited by **Jayanta Kumar Biswas** University of Kalyani, India, **Mahendra Rai** Department of Biotechnology, SGB Amravati University, Amravati, Maharashtra, India

"Nanotechnology for Environmental Management" is your gateway to the latest advancements in environmental science and technology. Edited by leading international scientists, this book delves into the diverse approaches and applications of nanomaterials and nanotechnologies, offering insights into their potential for environmental remediation, energy management, and sustainable development. Each chapter showcases cutting-edge innovations, making this book an essential reference for students, researchers, scientists, technicians, and professionals in environmental management and regulation.

CRC Press  
September 2024:410  
Hb: 978-1-032-39696-5: \$170  
eBook: 978-1-003-35094-1

\* For full contents and more information, visit: [www.routledge.com/9781032396965](http://www.routledge.com/9781032396965)

## Nanotechnology in Plant Health



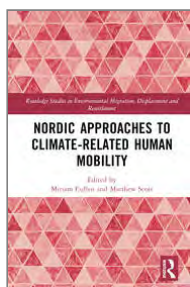
Edited by **Mahendra Rai** Department of Biotechnology, SGB Amravati University, Amravati, Maharashtra, India, **Graciela Avila-Quezada** Universidad Autonoma de Chihuahua, Mexico

The book "Nanotechnology in Plant Health" explores the significance of nanomaterials in plant nutrition, nanofertilizers, and their role in managing plant pathogens, including the most formidable ones like quarantined strains. This unique publication represents a global team of contributors and stands out for its comprehensive coverage of plant nanonutrients, nanofertilizers, and nano-plant protectors.

CRC Press  
April 2024:400  
Hb: 978-1-032-45036-0: \$200  
eBook: 978-1-003-37510-4

\* For full contents and more information, visit: [www.routledge.com/9781032450360](http://www.routledge.com/9781032450360)

## Nordic Approaches to Climate-Related Human Mobility



Edited by **Miriam Cullen**, **Matthew Scott**

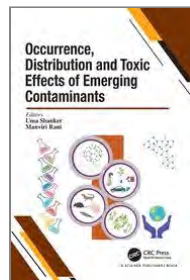
Series: *Routledge Studies in Environmental Migration, Displacement and Resettlement*

This collection will be the first to address climate-related human mobility in the Nordic region.

Routledge  
June 2024:168  
Hb: 978-1-032-60898-3: \$180  
eBook: 978-1-003-46098-5

\* For full contents and more information, visit: [www.routledge.com/9781032608983](http://www.routledge.com/9781032608983)

## Occurrence, Distribution and Toxic Effects of Emerging Contaminants



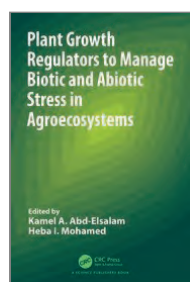
Edited by **Uma Shanker** Dr B R Ambedkar Nat Ins of Tech Jalandhar, India, **Manviri Rani** Department of Chemistry, MNIT Jaipur, JLN MARG, India

This book emphasizes on the comprehensive information on emerging contaminants overview, environmental occurrence, analysis, risk assessment and toxicity assessment. Environmental, legal, health concerns of the ECs have also been covered in this book. The book also features an updated status from the industrial point of view.

CRC Press  
August 2024:318  
Hb: 978-1-032-37187-0: \$210  
eBook: 978-1-003-33575-7

\* For full contents and more information, visit: [www.routledge.com/9781032371870](http://www.routledge.com/9781032371870)

## Plant Growth Regulators to Manage Biotic and Abiotic Stress in Agroecosystems



Edited by **Kamel A. Abd-Elsalam** Plant Pathology Research Institute, Agricultural Research Center (ARC), Egypt, **Heba I. Mohamed** Ain Shams University, Egypt

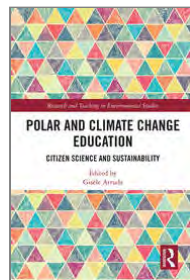
"Plant Growth Regulators to Manage Biotic and Abiotic Stress in Agroecosystems" is a comprehensive book that explores the use of plant growth regulators (PGRs) as effective stress-reduction techniques in agricultural environments. This book investigates the role of PGRs in handling biotic and abiotic stressors, offering useful insights to agriculturalists, researchers, and students. The book provides a comprehensive overview of many PGRs, including their methods of action and impacts on plant growth and development.

CRC Press  
August 2024:444  
Hb: 978-1-032-48530-0: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032485300](http://www.routledge.com/9781032485300)

## Polar and Climate Change Education

Citizen Science and Sustainability



Edited by **Gisele M. Arruda**

Series: *Research and Teaching in Environmental Studies*

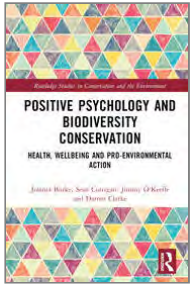
This book presents ideas for strengthening the foundations for transformational change, polar and global education leadership in all stages of the education process.

Routledge  
August 2024:164  
Hb: 978-1-032-78243-0: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032782430](http://www.routledge.com/9781032782430)

## Positive Psychology and Biodiversity Conservation

Health, Wellbeing, and Pro-Environmental Action



**Jolanta Burke , Darren Clarke , Jimmy O'Keeffe , Sean Corrigan**

*Series: Routledge Studies in Conservation and the Environment*

Pro-environmental actions are often viewed as being motivated by anxiety, shame or anger. However, emerging research indicates that they can also become a source of positive affect, life meaning, engagement and other wellbeing outcomes. This book turns the current research and practice of pro-environmental action on its head. Drawing from the field of positive psychology, the book explores new perspectives on how researchers and practitioners can influence engagement in pro-environmental initiatives. It will be essential reading for students and scholars of biodiversity conservation, environmental sustainability, ecosystem services and environmental psychology.

Routledge  
October 2024:204  
Hb: 978-1-032-59039-4: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032590394](http://www.routledge.com/9781032590394)

## Preserving Planet Earth

Changing Human Culture with Lessons from the Past



**Jane Roland Martin** University of Massachusetts Boston, Emerita, USA

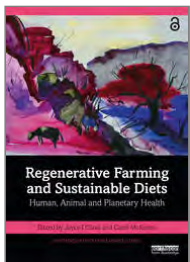
This book encourages readers to acknowledge humanity's contribution to the environmental crisis, proposing a way forward by exploring the power of ordinary people to bring about large-scale cultural change. Internationally acclaimed philosopher of education Jane Roland Martin argues that humanism is a learned affair, and what is learned can be unlearned. She calls on young and old to avert a looming tragedy of Aristotelian proportions—the demise of the Mother Nature that made it possible for our species to flourish. Thoroughly interdisciplinary, it will appeal to students and teachers as well as general readers interested in environmental studies, philosophy, and education.

Routledge  
May 2024:204  
Pb: 978-1-032-66008-0: \$49.99  
Hb: 978-1-032-66011-0: \$180  
eBook: 978-1-032-66013-4

\* For full contents and more information, visit: [www.routledge.com/9781032660080](http://www.routledge.com/9781032660080)

## Regenerative Farming and Sustainable Diets

Human, Animal and Planetary Health



*Edited by* **Joyce D'Silva** Compassion in World Farming, UK, **Carol McKenna**

*Series: Earthscan Food and Agriculture*

This book makes the case for an urgent move away from industrial agriculture towards regenerative farming and the promotion of plant-based diets.

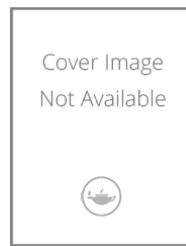
Routledge  
September 2024:294  
Pb: 978-1-032-68432-1: \$44.99  
Hb: 978-1-032-68435-2: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032684321](http://www.routledge.com/9781032684321)

2ND EDITION

## Regreening the Built Environment

Nature, Green Space, and Sustainability



Cover Image  
Not Available



**Michael A. Richards**

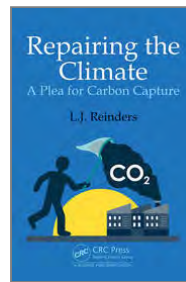
Now in its second volume, *Regreening the Built Environment* provides an overview of physical and social environmental challenges that the planet is facing and presents solutions that restore ecological processes, reclaim open space, foster social equity, and facilitate a green economy. Case studies are presented from a range of locations in the USA, as well as Denmark, Vietnam, Germany, South Korea, Switzerland, France, and the UK, among others. This book will stimulate discussions within the design profession and will be of great interest to students and practitioners of environmental studies, architecture, and urban design.

Routledge  
September 2024:320  
Pb: 978-1-032-66859-8: \$49.99  
Hb: 978-1-032-66865-9: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032668598](http://www.routledge.com/9781032668598)

## Repairing the Climate

A Plea for Carbon Capture



**L.J. Reinders** Leiden University, Netherlands

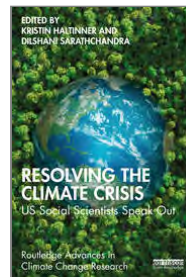
Climate change is triggered by a too high concentration of greenhouse gases in the air, carbon dioxide in particular, primarily originating from fossil fuel-burning. Since such burning will not stop any time soon, the concentration will undoubtedly rise further, exacerbating climate change. There is no escape from this. That is where carbon capture comes in: direct air capture (DAC) scrubs the surplus carbon dioxide out of the air for actually lowering this concentration.

CRC Press  
November 2024:306  
Hb: 978-1-032-68988-3: \$150

\* For full contents and more information, visit: [www.routledge.com/9781032689883](http://www.routledge.com/9781032689883)

## Resolving the Climate Crisis

US Social Scientists Speak Out



*Edited by* **Kristin Haltinner , Dilshani Sarathchandra**

*Series: Routledge Advances in Climate Change Research*

This book brings together a team of renowned social scientists to ask not why climate change is happening, but how we might learn from its human dimensions to raise public and political will to fight against the climate crisis.

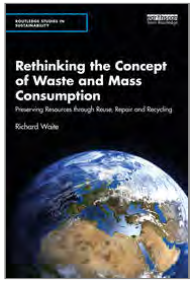
Routledge  
June 2024:258  
Pb: 978-1-032-56739-6: \$66.99  
Hb: 978-1-032-56657-3: \$180  
eBook: 978-1-003-43734-5

\* For full contents and more information, visit: [www.routledge.com/9781032567396](http://www.routledge.com/9781032567396)



## Rethinking the Concept of Waste and Mass Consumption

Preserving Resources through Reuse, Repair and Recycling



**Richard Waite**

Series: *Routledge Studies in Sustainability*

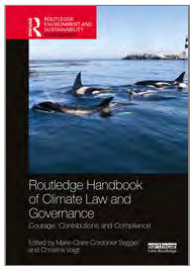
This book presents hard facts, drawn from extensive research, to highlight our unsustainable consumption of the Earth's resources and the limitations of the UK's current management of waste and recycling. It challenges the whole concept of waste, leading to a proposed new strategy for the management of household waste, including a simplified household collection system, the introduction of an incineration tax and the banning of all household waste exports. The book will be of interest to manufacturers, retailers, consumers, local authorities, policy makers, students and professionals looking to reduce our impact on the environment.

Routledge  
July 2024:256  
Pb: 978-1-032-82486-4: \$49.99  
Hb: 978-1-032-82487-1: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032824864](http://www.routledge.com/9781032824864)

## Routledge Handbook of Climate Law and Governance

Courage, Contributions and Compliance



Edited by **Marie-Claire Cordonier Segger , Christina Voigt**

Routledge Handbook of Climate Law and Governance: Courage, Contributions and Compliance recognises UN calls for urgent action reflected in recent reports from the Intergovernmental Panel on Climate Change (IPCC, Aug 2021) and convenes insights from leading legal academic experts and professionals on emerging issues in climate law.

Routledge  
October 2024:440  
Hb: 978-1-032-23300-0: \$280

\* For full contents and more information, visit: [www.routledge.com/9781032233000](http://www.routledge.com/9781032233000)

2ND EDITION

## Routledge Handbook of Forest Ecology



Edited by **Kelvin S.-H. Peh , Richard T. Corlett , Yves Bergeron**

Series: *Routledge Environment and Sustainability Handbooks*

This new edition has fully revised and updated throughout to reflect the profound and unprecedented changes in both forests and climates since the publication of the first edition. The book reflects key developments in the field of forest dynamics and large-scale processes, as well as the changes that are now manifesting in different types of forest across the globe. It covers both natural and managed forests, from boreal, temperate, sub-tropical and tropical regions of the world. In this second edition, the breadth of the handbook has been expanded with new chapters on mountain forests, monodominance, pathogens and invertebrate pests and amphibian and reptiles in forest ecosystems.

Routledge  
October 2024:726  
Hb: 978-1-032-34838-4: \$280

\* For full contents and more information, visit: [www.routledge.com/9781032348384](http://www.routledge.com/9781032348384)

## Routledge Handbook of Gender and Water Governance



Edited by **Tatiana Acevedo-Guerrero , Lisa Bossenbroek , Irene Leonardelli , Margreet Zwartveen** UNESCO-IHE and University of Amsterdam, Netherlands, **Seema Kulkarni**

Series: *Routledge Environment and Sustainability Handbooks*

This handbook provides a comprehensive overview of the field of gender and water governance, exploring how the use, management and knowledge of water resources, services and the water environment are deeply gendered. Building on a rich legacy of feminist water scholarship, this book is a collection of reflections and studies that can be used as a prismatic lens into a thriving and ever proliferating array of feminist water studies. It provides a clear testimony of how hydrofeminism has evolved from rather instrumental gender-and-water studies to scholarship that uses feminist tools to pry open, critically reflect on and formulate alternatives to water development-as-usual.

Routledge  
October 2024:392  
Hb: 978-0-367-60758-6: \$280

\* For full contents and more information, visit: [www.routledge.com/9780367607586](http://www.routledge.com/9780367607586)

## Routledge Handbook of Insect Conservation



Edited by **James S. Pryke , Michael J. Samways , Tim R. New , Pedro Cardoso , René Gaigher**

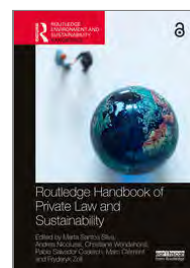
Series: *Routledge Environment and Sustainability Handbooks*

This book is essential reading for students and scholars of biodiversity conservation and entomology as well as professionals and policymakers involved in conservation looking for real-world solutions to the threats facing insects across the globe.

Routledge  
June 2024:586  
Hb: 978-1-032-25950-5: \$280  
eBook: 978-1-003-28579-3

\* For full contents and more information, visit: [www.routledge.com/9781032259505](http://www.routledge.com/9781032259505)

## Routledge Handbook of Private Law and Sustainability



Edited by **Marta Santos Silva , Andrea Nicolussi , Christiane Wendehorst , Pablo Salvador Coderch , Marc Clément , Fryderyk Zoll**

Series: *Routledge Environment and Sustainability Handbooks*

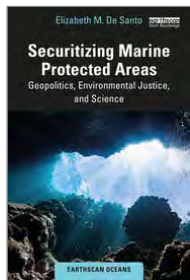
The Routledge Handbook of Private Law and Sustainability reflects on how the law can help tackle the current environmental challenges and make our societies more resilient to future crises.

Routledge  
June 2024:640  
Hb: 978-1-032-66200-8: \$280  
eBook: 978-1-032-66204-6

\* For full contents and more information, visit: [www.routledge.com/9781032662008](http://www.routledge.com/9781032662008)

## Securitizing Marine Protected Areas

Geopolitics, Environmental Justice, and Science



**Elizabeth M. De Santo**

Series: *Earthscan Oceans*

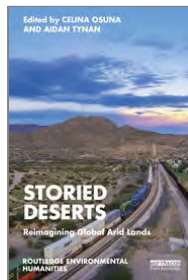
This book will be of great interest to students and scholars of biodiversity conservation, marine studies, political geography, environmental governance, and science-policy studies. It will also be of interest to marine conservation governance professionals and policymakers.

Routledge  
July 2024:214  
Pb: 978-1-032-04096-7: \$54.99  
Hb: 978-1-032-04097-4: \$180  
eBook: 978-1-003-19052-3

\* For full contents and more information, visit: [www.routledge.com/9781032040967](http://www.routledge.com/9781032040967)

## Storied Deserts

Reimagining Global Arid Lands



Edited by **Celina Osuna**, **Aidan Tynan**

Series: *Routledge Environmental Humanities*

Storied Deserts makes a crucial and critical intervention in the field of environmental humanities by showcasing an emerging body of research on desert places from around the world. The volume highlights how the storied matter of the Earth's deserts informs lived realities, environmental histories, cinematic and literary imaginaries, political conflicts, and even intellectual categories such as 'the human' and 'the elemental'. It shows that reimagining desert places can help us to grapple with the epochal challenges of the Anthropocene. It is an important and engaging collection for scholars and students across disciplines that helps establish the value of desert humanities.

Routledge  
June 2024:264  
Pb: 978-1-032-50179-6: \$49.99  
Hb: 978-1-032-50181-9: \$180  
eBook: 978-1-003-39721-2

\* For full contents and more information, visit: [www.routledge.com/9781032501796](http://www.routledge.com/9781032501796)

## Smart Systems in Biotechnology



Edited by **Munishwar Nath Gupta**

This compact volume is focused on an eclectic mix of biotechnological and biomedical applications of stimuli-sensitive polymeric materials. It starts with their chemical synthesis and design strategies. This is followed by discussions of their applications in microfluidics, biosensors, wound healing and anticancer therapy.

CRC Press  
July 2024:266  
Hb: 978-1-032-35808-6: \$180  
eBook: 978-1-003-32891-9

\* For full contents and more information, visit: [www.routledge.com/9781032358086](http://www.routledge.com/9781032358086)

## Submerged Rice

Morphological, Molecular and Genetic Analyses



**Pranab Basuchaudhuri** Indian Council of Agricultural Research (Retired), Kolkata, India

The book analyses different aspects viz. morphology, physiology, biochemistry, and genetics and reviews the suitability of different varieties for better sustainability and reduction of yield loss. It also reviews the different types of floods, and studies biological changes in indigenous and the recently developed rice varieties. There are seven chapters viz. Introduction, History of floods, Diversity of submergence, Adoptive morphology, Physiological aspects, Molecular and genetic aspects and Yield and yield-gaps. It is comprehensive with scientific dogma, findings and reasonings for students at universities and researchers.

CRC Press  
August 2024:238  
Hb: 978-1-032-66053-0: \$160  
eBook: 978-1-032-66343-2

\* For full contents and more information, visit: [www.routledge.com/9781032660530](http://www.routledge.com/9781032660530)

## Solid Waste Management

Volume 2: Biological/Biochemical Approaches



Edited by **Surajbhan Seveda** National Institute of Technology Warangal, India, **Garima Chauhan** University of Alberta, Canada

Waste materials in the solid form tend to be bulky and difficult to handle and transport. Its management could happen through physical, thermal, chemical or biological processing stages, with the exact sequence of and their operational optima being decided by the waste composition.

CRC Press  
June 2024:256  
Hb: 978-1-032-13568-7: \$200  
eBook: 978-1-003-22991-9

\* For full contents and more information, visit: [www.routledge.com/9781032135687](http://www.routledge.com/9781032135687)

2ND EDITION

## Sustainability at Work

Careers That Make a Difference



**Marilyn Waite** Consultant, USA

Sustainability at Work is a compelling guide for anyone who seeks both a successful career and a career that makes a positive difference in society. In this thoroughly revised new edition, Marilyn Waite builds upon recent career trends to include two all-important themes that are redefining sustainability: justice, equity, diversity, and inclusion and climate-related career pathways. Through inspiring narratives and a structured framework, Sustainability at Work illustrates how sustainability can be incorporated into every imaginable career to impact the quadruple bottom line: environment, economy, society, and future generations.

Routledge  
June 2024:216  
Pb: 978-1-032-61582-0: \$49.99  
Hb: 978-1-032-61583-7: \$180  
eBook: 978-1-032-61584-4

\* For full contents and more information, visit: [www.routledge.com/9781032615820](http://www.routledge.com/9781032615820)

2ND EDITION

## Sustainable Design for the Built Environment



**Rob Fleming, Saglinda H Roberts, Chitsanzo Isaac**

This groundbreaking and transformative textbook introduces sustainable design in a clear, concise, easy-to-read format. This new edition includes fully updated exercises and online resources, an increased focus on diversity, equity and inclusion in design, more international examples, perspectives and approaches, enhanced full colour visuals, and additional resources for further study. Supported by additional resources including additional reading for each chapter and classroom assignments, this book will be essential reading for students of sustainability and sustainable design.

Routledge  
November 2024:292  
Pb: 978-1-032-51082-8: \$52.99  
Hb: 978-1-032-51084-2: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032510828](http://www.routledge.com/9781032510828)

## The Hydrocene

Eco-Aesthetics in the Age of Water



**Bronwyn Bailey-Charteris**

Series: *Routledge Environmental Humanities*

This book challenges conventional notions of the Anthropocene and champions the Hydrocene: the Age of Water. It presents the Hydrocene as disruptive, conceptual epoch and curatorial theory, emphasising water's pivotal role in the climate crisis and contemporary art. It urgently highlights the transformative power of eco-visionary artists in reshaping human-water relations. At the confluence of contemporary art, curatorial theory, climate concerns and environmental humanities, this is essential reading for researchers, curators, artists, students and anyone seeking to reconsider their connection with water and advocate for climate justice.

Routledge  
May 2024:206  
Pb: 978-1-032-50132-1: \$49.99  
Hb: 978-1-032-50194-9: \$180  
eBook: 978-1-003-39730-4

\* For full contents and more information, visit: [www.routledge.com/9781032501321](http://www.routledge.com/9781032501321)

## The Ethics of Design for User Needs



**Turkka Keinonen**

This book explores the ethics of 'human needs capture' for design purposes and draws upon ethical theories and narratives. It presents an extensive ethical analysis of the notion of need and develops a thought-provoking case for a plural reconceptualization of the notion of 'need' as user-based knowledge about product and service improvement opportunities. The book underlines the deliberative nature of applied design ethics and highlights how consciousness challenges designers to solve their moral dilemmas. It will be of interest to students and academics studying product design, industrial design, interaction design, user experience design, design ethics, and sustainable development.

Routledge  
August 2024:174  
Hb: 978-1-032-73192-6: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032731926](http://www.routledge.com/9781032731926)

## The Philosophy of Outer Space

Explorations, Controversies, Speculations



Edited by **Mirko Daniel Garasic, Marcello Di Paola** Luiss University, Italy

Series: *Routledge Research in Anticipation and Futures*

This volume provides a rigorous philosophical investigation of the rationales, challenges and promises of the coming Space Age. It advances outer space philosophy by integrating key scientific and societal debates sparked by recent developments in space research and activities with conceptual, existential, ethical, aesthetic, and political themes and concerns. This book will be a fascinating philosophical and ethical exploration for academics, researchers and students interested in philosophy, space studies, science and technology studies, future studies and sustainability.

Routledge  
May 2024:220  
Pb: 978-1-032-44889-3: \$49.99  
Hb: 978-1-032-44892-3: \$180  
eBook: 978-1-003-37438-1

\* For full contents and more information, visit: [www.routledge.com/9781032448893](http://www.routledge.com/9781032448893)

## The Future Designer

Anthropology Meets Innovation in Search of Sustainable Design



**Michael Leube**

This book adopts a unique approach to Design, blending anthropological perspectives with philosophy and cognitive science, and advocates for a thorough transformation of the existing design curriculum. It book presents a blueprint for fostering more sustainable patterns of production and consumption, grounded in human virtues, and proposes a new curriculum tailored towards prosociality and sustainability. The book will be useful for those studying and teaching design and anthropology, and it will also be an important tool for practicing designers and engineers interested in learning how to design for social and ecological awareness.

Routledge  
June 2024:286  
Pb: 978-1-032-73553-5: \$49.99  
Hb: 978-1-032-73555-9: \$180  
eBook: 978-1-003-46475-4

\* For full contents and more information, visit: [www.routledge.com/9781032735535](http://www.routledge.com/9781032735535)

3RD EDITION

## The Real Cost of Cheap Food



**Michael Carolan** Colorado State University, USA

Series: *Routledge Studies in Food, Society and the Environment*

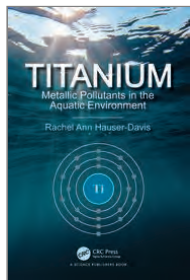
This thought-provoking, accessible book examines the dominant food regime on its own terms, by seriously asking whether we can afford cheap food and by exploring what exactly cheap food affords us. Expanding an innovation introduced in the second edition, case studies of collective mobilization can be found throughout all chapters to support a narrative that balances being critical with being hopeful. The book is essential reading for those interested in critical food studies, food and agriculture and a sustainable and socially just food system.

Routledge  
September 2024:272  
Pb: 978-1-032-56734-1: \$46.95  
Hb: 978-1-032-56777-8: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032567341](http://www.routledge.com/9781032567341)

## Titanium

Metallic Pollutants in the Aquatic Environment



**Rachel Ann Hauser-Davis**

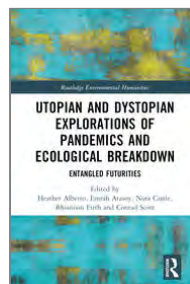
This book engages readers in an integrated and holistic discussion on titanium properties, applications, bioanalytical approaches and toxicity. Key issues include environmental titanium exposure and associated health risk concerns for both humans and aquatic organisms, exploring (eco)toxicological effects. The book delves into the intricate web of (eco)toxicological effects, offering valuable insights for researchers and professionals alike.

CRC Press  
July 2024:112  
Hb: 978-1-032-33344-1: \$160  
eBook: 978-1-003-31924-5

\* For full contents and more information, visit: [www.routledge.com/9781032333441](http://www.routledge.com/9781032333441)

## Utopian and Dystopian Explorations of Pandemics and Ecological Breakdown

Entangled Futurities



Edited by **Heather Alberro**, **Emrah Atasoy**, **Nora Castle**, **Rhiannon Firth** University of Nottingham, UK, **Conrad Scott**

Series: *Routledge Environmental Humanities*

This edited collection, situated within the environmental humanities and environmental social sciences, brings together utopian and dystopian representations of pandemics from across literature, the arts, and social movements. Featuring analyses of literary works, TV and film, theater, politics, and activism, the chapters in this volume home in on critical topics such as posthumanism, multispecies futures, agency, political ecology, environmental justice, and Indigenous and settler-colonial environmental relations. It will appeal to environmentally minded researchers, academics, and students across various disciplines within the humanities and social sciences.

Routledge  
July 2024:256  
Hb: 978-1-032-38591-4: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032385914](http://www.routledge.com/9781032385914)

## Toxicology of Essential and Xenobiotic Metals



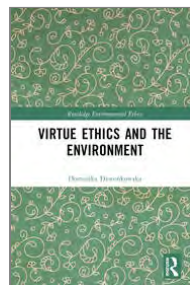
Edited by **João Batista Teixeira da Rocha**, **Michael Aschner**, **Pablo Andrei Nogara**

This book explores how metals like cadmium, mercury, lead, aluminium, manganese, and chromium can harm our health, whether through short-term or long-term exposure. It covers symptoms ranging from immediate nausea to long-term issues like Parkinson's and Alzheimer's diseases. Understanding how these metals interact with our bodies is crucial for identifying their harmful effects. The book, divided into 11 chapters, provides straightforward explanations about how these metals affect our health, making it useful for anyone interested in understanding how metals can impact the environment as well as human and animal health.

CRC Press  
November 2024:256  
Hb: 978-1-032-29228-1: \$160

\* For full contents and more information, visit: [www.routledge.com/9781032292281](http://www.routledge.com/9781032292281)

## Virtue Ethics and the Environment



**Dominika Dzwonkowska**

Series: *Routledge Environmental Ethics*

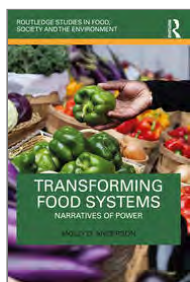
This book addresses one of today's most burning issues, namely the environmental crisis, by offering an insight into the problem from the perspective of virtue ethics. Virtue ethics is an approach to ethics that centralizes the concept of moral virtue, which can be extended to environmental ethics via environmental virtue ethics (EVE). Alongside an analysis of the three most important concepts EVE, the book offers a new concept that is universalistic, positive, and pragmatic. It will be useful for students, scholars and researchers studying environmental ethics, sustainable development, environmental psychology, moral philosophy, and philosophy of education.

Routledge  
August 2024:200  
Hb: 978-1-032-55970-4: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032559704](http://www.routledge.com/9781032559704)

## Transforming Food Systems

Narratives of Power



**Molly D. Anderson** Middlebury College, USA

Series: *Routledge Studies in Food, Society and the Environment*

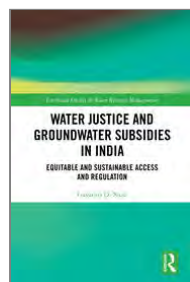
This book will be of great interest to students, scholars and policymakers interested in creating a sustainable food system which will ensure a food secure, socially justice and environmentally sustainable future.

Routledge  
July 2024:282  
Pb: 978-1-032-19667-1: \$49.99  
Hb: 978-1-032-19669-5: \$180  
eBook: 978-1-003-26026-4

\* For full contents and more information, visit: [www.routledge.com/9781032196671](http://www.routledge.com/9781032196671)

## Water Justice and Groundwater Subsidies in India

Equitable and Sustainable Access and Regulation



**Gayathri D. Naik**

Series: *Earthscan Studies in Water Resource Management*

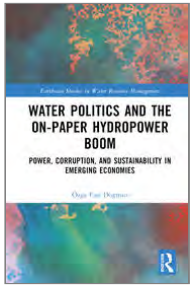
This book examines the impact of water-related subsidies on social, and distributive equity and environmental sustainability in groundwater access and regulation in India. It argues that adopting a water justice framework is essential to ensure equitable and sustainable access to and regulation of groundwater by balancing anthropogenic and ecological water needs. Adopting a socio-legal approach, the book draws on two case studies in India: Kerala, a water-secure state, and Rajasthan, an arid state. This book shall be of great interest to students, scholars and practitioners of water law and policy, environmental law, water and social justice, development studies and political ecology.

Routledge  
July 2024:204  
Hb: 978-1-032-65950-3: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032659503](http://www.routledge.com/9781032659503)

## Water Politics and the On-Paper Hydropower Boom

Power, Corruption, and Sustainability in Emerging Economies



**Özge Can Dogmus**

*Series: Earthscan Studies in Water Resource Management*

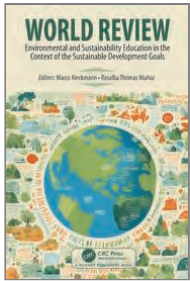
This book will be of great interest to students and scholars of water politics, water governance, political ecology, corruption and environmental economics, as well as sustainable development policymakers.

Routledge  
June 2024:198  
Hb: 978-1-032-28130-8: \$180  
eBook: 978-1-003-29546-4

\* For full contents and more information, visit: [www.routledge.com/9781032281308](http://www.routledge.com/9781032281308)

## World Review

Environmental and Sustainability Education in the Context of the Sustainable Development Goals



*Edited by* **Marco Rieckmann** University of Vechta, Germany, **Rosalba Thomas Muñoz** University of Colima, Mexico

The global landscape of education has been reshaped by the COVID-19 pandemic, revealing the various challenges faced by countries worldwide. This book provides a comprehensive exploration of Environmental and Sustainability Education (ESE) across different countries, offering unique insights into their histories, challenges, achievements, and future ESE needs.

CRC Press  
June 2024:356  
Hb: 978-0-367-70242-7: \$180  
eBook: 978-1-003-14520-2

\* For full contents and more information, visit: [www.routledge.com/9780367702427](http://www.routledge.com/9780367702427)

## Agricultural, Biosystems, and Biological Engineering Education

Global Perspectives and Current Practice



Edited by **Umezuruike Linus Opara** Stellenbosch University, South Africa

Series: *Contemporary Food Engineering*

This book provides the first comprehensive global review and synthesis of different agricultural, biosystems, and biological engineering education approaches, including a detailed exposition of current practices from different regions. With a total of 42 chapters, it covers the historical evolution of agricultural engineering education and discusses the emergence of biological/ biosystems engineering education. This book will appeal to agricultural engineering professionals and education planners, and policy makers in agriculture other biological industries.

CRC Press  
August 2024:528  
Hb: 978-1-032-48877-6: \$250

\* For full contents and more information, visit: [www.routledge.com/9781032488776](http://www.routledge.com/9781032488776)

## Agro-Wastes for Packaging Applications



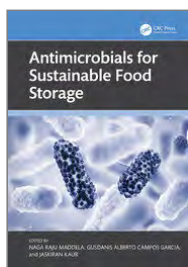
Edited by **Sneh Punia Bangar , Priyanka Kajla**

Agro-Wastes for Packaging Applications provides an update on the strategies for valuing agricultural waste and how these might be used in packaging. It also includes recent research on these approaches and presents an innovative strategy for developing sustainable, green, and biodegradable packaging options. A detailed overview of the packaging application of valorized agricultural waste materials is discussed, and concept clarification is achieved using flowcharts and figures supported by the latest research investigations.

CRC Press  
August 2024:308  
Hb: 978-1-032-58312-9: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032583129](http://www.routledge.com/9781032583129)

## Antimicrobials for Sustainable Food Storage



Edited by **Naga Raju Maddela** UTM, Ecuador, **Gusdanis Alberto Campos Garcia , Jaskiran Kaur**

Finding natural substances is worthwhile in food preservation. The principal motivation behind the collection of this edited volume is to collect widespread knowledge in the domain of sustainable food ingredients with antimicrobial properties. The book consists of two sections. The first section of this volume is about food ingredients as antimicrobials, and the second section discusses the recent advances in the applications of food ingredients.

CRC Press  
July 2024:392  
Hb: 978-1-032-26485-1: \$230

\* For full contents and more information, visit: [www.routledge.com/9781032264851](http://www.routledge.com/9781032264851)

## Aptasensors for Food Safety

Fundamentals and Applications



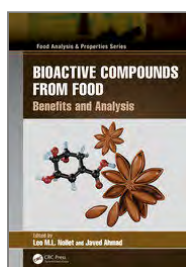
Edited by **Raju Khan** CSIR-AMPRI, Madhya Pradesh, India, **Ayushi Singhal** CSIR-AMPRI Bhopal, **Rajan Sharma , Y S Rajput**

CRC Press  
October 2024:472  
Hb: 978-1-032-41998-5: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032419985](http://www.routledge.com/9781032419985)

## Bioactive Compounds from Food

Benefits and Analysis



Edited by **Leo M.L. Nollet , Javed Ahmad** College of Pharmacy Najran University Najran, Saudi Arabia

Series: *Food Analysis & Properties*

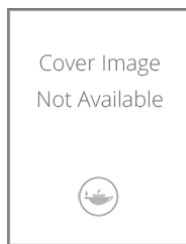
In this book spectrophotometric, fluorometric, chromatographic, enzymatic, and electrophoretic methods that are utilized to analyze the different bioactive compounds of food are comprehensively discussed. In addition, the merits and limitations of the existing methods of analysis for bioactive compounds from food are also highlighted. Further, benefits of these bioactive compounds on human health as anti-oxidative, anti-cancer, anti-diabetic, anti-inflammatory, anti-infective, anti-hyperlipidemic, and anti-hypertensive agents are also discussed with detailed insight and critical analysis of the contemporary research carried out in this domain.

CRC Press  
August 2024:288  
Hb: 978-1-032-46707-8: \$230

\* For full contents and more information, visit: [www.routledge.com/9781032467078](http://www.routledge.com/9781032467078)

## Bioactive Compounds of Edible Oils and Fats

Health Benefits, Risks, and Analysis



Edited by **Leo M.L. Nollet , Javed Ahamad**

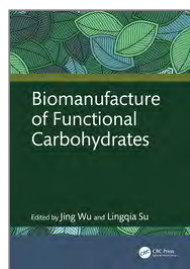
Series: *Food Analysis & Properties*

Edible oils and fats are derived from plants and animals and have been associated with many health benefits. These edible oils and fats are also a rich source of phytosterols, carotene, vitamins, and inorganic compounds. These bioactive compounds present in edible oils and fats may be responsible for beneficial bioactivities in chronic diseases through their antioxidant, anti-inflammatory, neuroprotective, and immunomodulatory activities. This book covers sources, chemistry, health benefits, associated risks, and analytical techniques for qualitative and quantitative analysis of bioactive compounds present in edible oils and fats.

CRC Press  
October 2024:280  
Hb: 978-1-032-57699-2: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032576992](http://www.routledge.com/9781032576992)

## Biom manufacture of Functional Carbohydrates



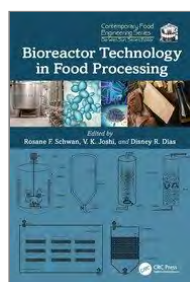
Edited by **Jing Wu, Lingqia Su**

This book provides the systemic introduction of biom manufacture of 10 functional carbohydrates. Each chapter introduces the function and application of a functional carbohydrate, then focuses on the recent advancements of the enzymes and catalytic pathways associated with its biosynthesis. It provides the detailed information of the structure and function, molecular modification, and preparation of the relative enzymes, the strategies of preparation of the functional carbohydrates catalyzed by single or complex enzymes and discusses the characteristics of different strategies.

CRC Press  
June 2024:392  
Hb: 978-1-032-43815-3: \$200  
eBook: 978-1-003-37264-6

\* For full contents and more information, visit: [www.routledge.com/9781032438153](http://www.routledge.com/9781032438153)

## Bioreactor Technology in Food Processing



Edited by **Rosane F. Schwan, V. K. Joshi, Disney R. Dias**

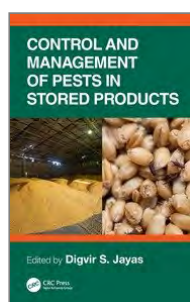
Series: *Contemporary Food Engineering*

Bioreactor Technology in Food Processing brings peculiarities, specificities, and updates on bioreactors and bioprocesses related to food and beverage production. The 26 chapters of this book are the result of the participation of more than 70 professionals, including professors, researchers, and experts from the industrial sector from different countries around the world. The chapters cover such topics as history, classification, scale-up, analytical tools, mathematical and kinetic models for the operation of bioreactors in the food industry.

CRC Press  
October 2024:608  
Hb: 978-1-138-38896-3: \$250

\* For full contents and more information, visit: [www.routledge.com/9781138388963](http://www.routledge.com/9781138388963)

## Control and Management of Pests in Stored Products



Edited by **Digvir S. Jayas**

This book is based on 18 invited presentations by world-renowned experts on topics of relevance to control and manage pests in stored products. Each chapter synthesizes the state-of-art knowledge on the selected topics dealing with fumigation, fumigants, and other methods of controlling insects such as low temperature, diatomaceous earth, integrated pest management and provides recommendations for future research. The contents of the chapters were presented as the keynote addresses at the International Conference on Controlled Atmosphere and Fumigation in Stored Products.

CRC Press  
July 2024:683  
Hb: 978-1-032-31466-2: \$230  
eBook: 978-1-003-30988-8

\* For full contents and more information, visit: [www.routledge.com/9781032314662](http://www.routledge.com/9781032314662)

## Dried Fruit Products



Edited by **Felipe Richter Reis** Federal Institute of Paraná, **Shivanand S. Shirkole** Institute of Chemical Technology Mumbai, ICT-IOC Odisha Campus, Bhubaneswar Bhubaneswar, India

Series: *Advances in Drying Science and Technology*

This book offers a current approach linking the theory and practice of fruit drying, summarizing various techniques, their advantages and limitations, the industrial applications, and simple design methods. Such dried fruit products as fruit pieces, fruit leathers and fruit powders are dealt with in a way to inform their physical, chemical, sensory and nutritional features, along with the characteristics of the process used to obtain them, such as drying method and drying equipment.

CRC Press  
July 2024:264  
Hb: 978-1-032-49575-0: \$230

\* For full contents and more information, visit: [www.routledge.com/9781032495750](http://www.routledge.com/9781032495750)

## Emerging Contaminants in Food and Food Products



Edited by **Sesan Abiodun Aransiola** National Biotechnology Development Agency, Nigeria, **Rasaq Olajide Akinsola** Cedars Sinai Med. Center, USA, **Olabisi Peter Abioye** FUT MINNA, Nigeria, **Naga Raju Maddela** UTM, Ecuador

Emerging Contaminants in Food and Food Products discusses issues around the emerging contaminants in food and food products. Different types of contaminants, such as biological, chemical, organic, inorganic and microbial contaminants in foods, ways of detecting them and regulations surrounding global food safety are all covered. This book serves as an information hub of emerging contaminants for scientists/researchers and professionals globally and is a good collection of independent chapters that present full insights in the study of emerging contamination in food and the effects of these contaminants in humans and animals.

CRC Press  
August 2024:286  
Hb: 978-1-032-55630-7: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032556307](http://www.routledge.com/9781032556307)

## Emerging Methods for Oil Extraction from Food Processing Waste



Edited by **Prem Prakash Srivastav** IIT KGP, **Sangeetha Karunanithi** IIT Kharagpur

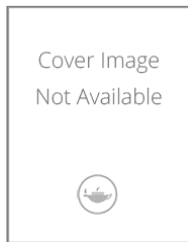
This reference book discusses the benefits and technologies of oil extraction from byproducts generated during food processing. It covers the novel technologies adopted for improving oil production rates to meet oil demand. It further discusses non-thermal methods using enzymes, ultrasound, cold plasma, sub- and supercritical fluid, and high-pressure processing.

CRC Press  
September 2024:548  
Hb: 978-1-032-52503-7: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032525037](http://www.routledge.com/9781032525037)

## Food Allergies

Processing Technologies for Allergenicity Reduction



Edited by **Roua Lajnaf**

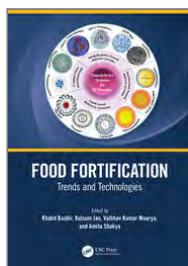
Much has been written about food allergies in scientific journals and in the lay press, but this book approaches the issue of food allergies from an industrial processing rather than a clinical perspective. It provides an authoritative source of information on the relationship between food processing technologies and food allergens with a greater variety of studied allergens, as well as the importance of processing these when producing hypoallergenic foods. It is an indispensable guide for allergic patients, production managers, scientists and nutritionists within the food industry.

CRC Press  
November 2024:344  
Hb: 978-1-032-55696-3: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032556963](http://www.routledge.com/9781032556963)

## Food Fortification

Trends and Technologies



Edited by **Khalid Bashir, Kulsum Jan, Vaibhav Kumar Maurya, Amrita Shakya**

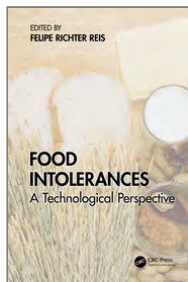
In a world that is constantly evolving, our understanding of nutrition and its impact on human health has grown exponentially. Food, once merely a source of sustenance, is now recognized as a powerful tool for improving public health and well-being. Organized into four sections, this book presents a comprehensive exploration of food fortification – from its historical roots to its modern applications. It delves into the critical realm of fortifying our food supply to address the complex nutritional challenge, and is a tribute to the progress that has been made in food fortification over the past few decades, as well as a call to action for the work that still lies ahead.

CRC Press  
June 2024:422  
Hb: 978-0-367-72392-7: \$230  
eBook: 978-1-003-16066-3

\* For full contents and more information, visit: [www.routledge.com/9780367723927](http://www.routledge.com/9780367723927)

## Food Intolerances

A Technological Perspective



Edited by **Felipe Richter Reis** Federal Institute of Paraná

Food intolerances, usually dealt with from a health perspective, also have technological aspects, especially as one takes into consideration that foods designed for individuals with food intolerances require specific ingredients, formulations, and processing conditions. This book addresses the health and food science aspects of food intolerances from a technological perspective, which is scarcely considered in other books. Valuable data on products and production processes for designing foods for people that have a food intolerance is presented in a way that various types of food industries can benefit from.

CRC Press  
September 2024:232  
Hb: 978-1-032-49578-1: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032495781](http://www.routledge.com/9781032495781)

## Food Nutrition, Science and Technology



Edited by **Neelam Singh, I. S. Singh**

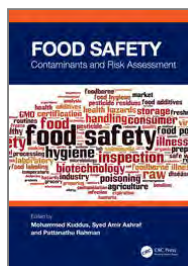
This book explores the nexus of science, technology and nutrition that shapes the way we produce, consume and experience food. It discusses the cutting-edge innovations and timeless principles driving the future of nourishment. The latest scientific information on food nutrition, science and technology are compiled for a better understanding of each division. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan and Bhutan)

CRC Press  
August 2024:572  
Hb: 978-1-032-76061-2: \$200  
eBook: 978-1-003-47689-4

\* For full contents and more information, visit: [www.routledge.com/9781032760612](http://www.routledge.com/9781032760612)

## Food Safety

Contaminants and Risk Assessment



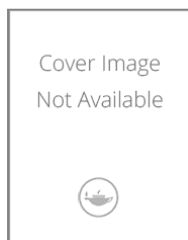
Edited by **Mohammed Kuddus, Syed Amir Ashraf, Pattanathu Rahman**

Food Safety: Contaminants and Risk Assessment is a state-of-art reference on food safety, which is the biggest challenge in the food supply chains worldwide. Despite advancements in hygiene, food treatment, and food processing, food-borne pathogens or food contaminants still represent a significant threat to human health. This book presents comprehensive information about the major food contaminants across food types.

CRC Press  
May 2024:261  
Hb: 978-1-032-36809-2: \$190  
eBook: 978-1-003-33391-3

\* For full contents and more information, visit: [www.routledge.com/9781032368092](http://www.routledge.com/9781032368092)

## Future Crops and Processing Technologies for Sustainability and Nutritional Security



Edited by **Soumya Ranjan Purohit, Vasudha Sharma, Meena Kumari, Kasi Muthukumarappan** South Dakota State University, Brookings, USA, **Joanna Kane-Potaka**

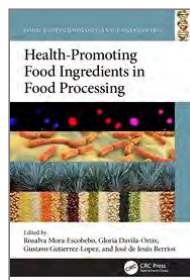
Taking a two-track approach, Future Crops and Processing Technologies for Sustainability and Nutritional Security presents sustainable technologies and emerging crops that are capable of ensuring nutritional security. There are various crops that are nutritious, but under-utilized. Crops covered are those that are climate resilient and exhibit less use of water and zero discharge to environment, such as millets, legumes like chickpea, groundnuts, and pigeon pea. The use of novel technologies like, 3D printing, novel drying method, high pressure processing, high voltage treatments and proper combination of conventional methods are addressed.

CRC Press  
August 2024:312  
Hb: 978-1-032-24800-4: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032248004](http://www.routledge.com/9781032248004)



## Health-Promoting Food Ingredients in Food Processing



Edited by **Rosalva Mora-Escobedo**, **Gloria Dávila-Ortiz**, **Gustavo F. Gutiérrez López**, **Jose De J. Berrios**

Series: *Food Biotechnology and Engineering*

Health-Promoting Food Ingredients in Food Processing presents a comprehensive science-based approach covering the latest naturally occurring bioactive compounds in seeds, dietary fiber, proteins, fermented bio-compounds, agro-industrial waste by-products, and lactic acid bacteria. A volume in the Food Biotechnology and Engineering Series, the book discusses their identification, characterization, biological activities in terms of their bioavailability, bio accessibility and their beneficial effects as inflammatory mediators, probiotics, antioxidants, and hypoglycemic agents, as well as in gastrointestinal digestion and colonic fermentation.

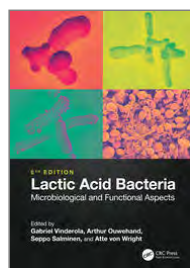
CRC Press  
October 2024:448  
Hb: 978-1-032-36536-7: \$230

\* For full contents and more information, visit: [www.routledge.com/9781032365367](http://www.routledge.com/9781032365367)

6TH EDITION

## Lactic Acid Bacteria

Microbiological and Functional Aspects



Edited by **Gabriel Vinderola**, **Arthur Ouwehand**, **Seppo Salminen**, **Atte von Wright** University of Kuopio, Finland

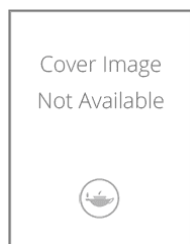
Thoroughly updated (with the current lactobacilli taxonomy) and fully revised, with a re-arrangement of chapters into four sections, the Sixth Edition covers new findings on health effects, properties, production and stability of LAB as well as regulatory aspects globally. This new edition also addresses the technological use of LAB in various fermentations of food, feed and beverage, and their safety considerations. It also includes the raising concept of postbiotics and discusses new targets such as cognitive function, metabolic health and respiratory health.

CRC Press  
August 2024:864  
Hb: 978-1-032-39938-6: \$350

\* For full contents and more information, visit: [www.routledge.com/9781032399386](http://www.routledge.com/9781032399386)

## Microfluidics in Food Processing

Technologies and Applications



Edited by **Ayon Tarafdar**, **Ranjna Sirahi** Korea Uni, **BARJINDER PAL KAUR**, **Ashok Pandey**, **Claude-Gilles Dussap**

Series: *Sustainable Industrial and Environmental Bioprocesses*

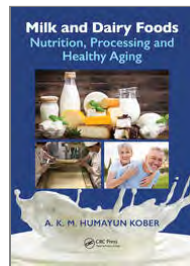
This book provides a comprehensive introduction to microfluidization and explores its applications in the food industry. It reviews the use of microfluidics in processing beverages, milk products, cereals, nuts, and meat and egg-based products. The book also covers microfluidics in food micro- and nano-delivery systems, seed protein isolates, the detection of molecular interactions, synthesis of nanomaterials, and extraction of bioactive ingredients. This book serves as a valuable resource for researchers, scientists, and professionals seeking to understand the applications of microfluidics in food processing and analysis.

CRC Press  
November 2024:296  
Hb: 978-1-032-60981-2: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032609812](http://www.routledge.com/9781032609812)

## Milk and Dairy Foods

Nutrition, Processing and Healthy Aging



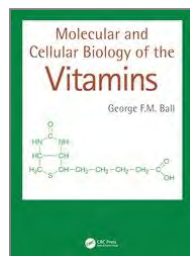
A. K. M. Humayun Kober Chittagong Veterinary and Animal Sc. University

This book focuses on updated knowledge about the effect of milk and dairy foods on healthy aging. This book also covers the milk processing and manufacturing process of value-added dairy foods, production trends, opportunities, and challenges along with the chemistry and microbiology of milk. The book also includes in-depth discussions of the immunomodulation potential of dairy foods particularly probiotics fermented dairy foods. It is meant for undergraduate and postgraduate students in food science, dairy science, nutrition, microbiology, medical, veterinary, biotechnology & allied disciplines, and those involved in formulating and producing dairy foods.

CRC Press  
July 2024:323  
Hb: 978-1-032-50098-0: \$200

\* For full contents and more information, visit: [www.routledge.com/9781032500980](http://www.routledge.com/9781032500980)

## Molecular and Cellular Biology of the Vitamins



George F.M. Ball

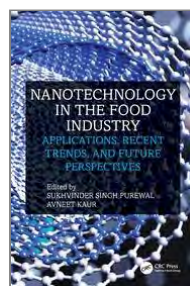
Molecular and Cellular Biology of the Vitamins is a key resource describing how vitamins function as physiologically active molecules at the cellular level. The contents of the book are divided into four sections including a thorough introduction; biological perspectives; fat-soluble vitamins; and water-soluble vitamins.

CRC Press  
September 2024:494  
Hb: 978-1-032-52580-8: \$250

\* For full contents and more information, visit: [www.routledge.com/9781032525808](http://www.routledge.com/9781032525808)

## Nanotechnology in the Food Industry

Applications, Recent Trends, and Future Perspectives



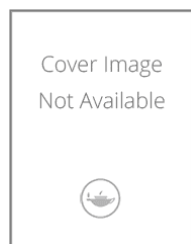
Edited by **Sukhvinder Singh Purewal** Chandigarh University, **Avneet Kaur**

This book gives insights into the fundamental principle behind nanotechnology and nanomaterials and their significant role in the food industry. With a focus on recent advances and future prospects, this book provides detailed discussions on nanosensors, nanoparticles in food formulations, and strategies for shelf life enhancement. It is an indispensable resource for students, researchers, and scientists seeking to deepen their understanding of nanotechnology's role in shaping the future of food.

CRC Press  
October 2024:288  
Hb: 978-1-032-55922-3: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032559223](http://www.routledge.com/9781032559223)

## Non-Thermal Processing of Functional Foods



Edited by **Sudip Kumar Pattanayek**, **Debashis Dutta**, **Ajay Singh** Mata Gujri College

This book compiles the latest non-thermal processing technologies to develop functional foods. Chapters cover non-thermal technologies, such as ultrasounds, high-hydrostatic pressure, high-voltage electrical discharge, and cold plasma. These techniques process food without damaging the nutritional benefits and sensory qualities. It discusses bioactivity, bioaccessibility, and bioavailability related to nutrition and functional food ingredients. It describes methods that reduce processing times, regulate Maillard reactions, enhance the quality and improve usefulness. This book is meant for professionals, post-graduate students, and researchers in food sciences and chemical engineering.

CRC Press  
November 2024:450  
Hb: 978-1-032-55758-8: \$200

\* For full contents and more information, visit: [www.routledge.com/9781032557588](http://www.routledge.com/9781032557588)

## Novel Physical Processing of Starch-Based Products

Strategy for Structure Control



Edited by **Enbo Xu**, **Dandan Li**, **Yang Tao**

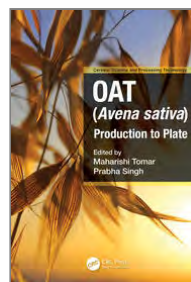
From the perspective of physical action and materials science, the book reviews the structural modification of starch and evaluates novel physical processing of starch-based products. By thoroughly analyzing and summarizing the structural control of starch, the contributors aim to obtain starch-based products with better physicochemical properties and texture. Furthermore, their industrial applications for future food supply are also demonstrated. The book will benefit researchers and graduate students in the fields of starch, starch-based materials, and food and non-food processing.

CRC Press  
July 2024:222  
Hb: 978-1-032-79737-3: \$230  
eBook: 978-1-003-49359-4

\* For full contents and more information, visit: [www.routledge.com/9781032797373](http://www.routledge.com/9781032797373)

## Oat (Avena sativa)

Production to Plate



Edited by **Maharishi Tomar**, **Prabha Singh**

Series: *Cereals*

This book is a groundbreaking exploration of the multifaceted world of oats, offering a holistic journey from historical roots to cutting-edge applications. The book's diverse chapters traverse the genetic and genomic landscape of oats, tracing their origin, domestication, and global spread. From their humble beginnings as animal feed to their evolution into a staple in human diets, the book showcases oats as a pivotal player in sustainable agriculture and nutrition. It is a must-read for anyone seeking a comprehensive and forward-looking guide to the remarkable journey of oats, blending history, agriculture, nutrition, and sustainability into a seamless narrative.

CRC Press  
August 2024:412  
Hb: 978-1-032-19928-3: \$230

\* For full contents and more information, visit: [www.routledge.com/9781032199283](http://www.routledge.com/9781032199283)

## Peppers

Biological, Health, and Postharvest Perspectives



Edited by **Prasad S. Variyar** Ex-Scientist, Bhabha Atomic Research Centre Mumbai, India, **Inder Pal Singh** NIPER SAS Nagar, India, **Vanshika Adiani** Bhabha Atomic Research Centre Mumbai, India, **Penna Suprasanna** Ex-Head, NUCLEAR AGRI-BIOTECHNOLOGY DIVISION, BHABHA ATOMIC RESEARCH CENTRE MUMBA, INDIA

Series: *Functional Foods and Nutraceuticals*

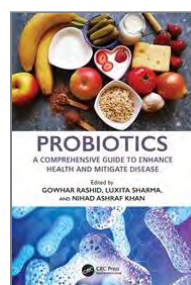
There is an increased awareness world over on the importance of nutraceutical and functional foods as an alternative to harmful synthetic additives used in industry. The importance of different peppers with abundance of bioactive compounds, highlighted in this book provides increased awareness on their importance as nutraceutical and functional foods to all stakeholders in the food and pharmaceutical industry. Peppers: Biological, Health, and Postharvest Perspectives is a valuable addition to the existing knowledge on peppers.

CRC Press  
November 2024:320  
Hb: 978-1-032-45353-8: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032453538](http://www.routledge.com/9781032453538)

## Probiotics

A Comprehensive Guide to Enhance Health and Mitigate Disease



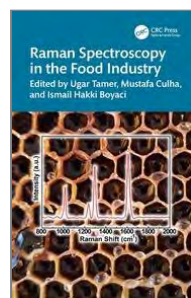
Edited by **Gowhar Rashid**, **Luxita Sharma**, **Nihad Khan**

Probiotics: A Comprehensive Guide to Enhance Health and Mitigate Disease is an indispensable resource for a deeper understanding of the intricate world of probiotics and their profound impact on human health. This book unravels the complex science behind probiotics, providing a comprehensive exploration of their roles in maintaining a healthy microbiome, fortifying the immune system, and mitigating various diseases. It presents insights into how probiotics influence not only digestive health, but also extend their benefits to systemic well-being.

CRC Press  
July 2024:384  
Hb: 978-1-032-58694-6: \$190

\* For full contents and more information, visit: [www.routledge.com/9781032586946](http://www.routledge.com/9781032586946)

## Raman Spectroscopy in the Food Industry



Edited by **Ugur Tamer**, **Mustafa Culha**, **Ismail Hakki Boyaci**

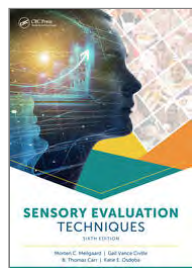
Raman spectroscopy has become one of the most important methods and effectively applied to detect specific analyte in food samples. Raman Spectroscopy in the Food Industry provides a comprehensive overview of the current state-of-the-art and future prospects of Raman spectroscopy in food science. Readers explore the fundamental principles of Raman spectroscopy, its instrumentation, methodologies, and its diverse applications across various food matrices. Real-world case studies and practical examples will underscore the transformative potential of Raman spectroscopy in reshaping our understanding, analysis, and innovation within the realm of food.

CRC Press  
October 2024:262  
Hb: 978-1-032-40574-2: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032405742](http://www.routledge.com/9781032405742)

6TH EDITION

## Sensory Evaluation Techniques



**Gail Vance Civile, B. Thomas Carr, Katie E. Osdoba**

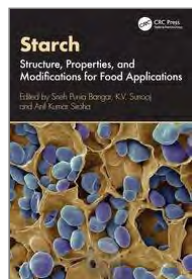
The sixth edition of this classic text brings sensory evaluation to life for new students and experienced professionals alike. A full array of sensory methods is covered – including descriptive techniques, discrimination testing, and consumer research, plus guidance on test design, statistical analysis, and how to translate results into insights for actionable decisions. Like its predecessors, *Sensory Evaluation Techniques, Sixth Edition* gives a clear and concise presentation of practical solutions, accepted methods, and standard practices, in addition to advanced techniques.

CRC Press  
September 2024:562  
Hb: 978-1-032-38908-0: \$150

\* For full contents and more information, visit: [www.routledge.com/9781032389080](http://www.routledge.com/9781032389080)

## Starch

Structure, Properties, and Modifications for Food Applications



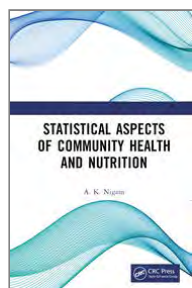
*Edited by* **Sneh Punia Bangar, K.V. Sunooj** Pondicherry University, India, **Anil Kumar Siroha** Chaudhary Devi Lal University

"*Starch: Structure, Properties, and Modifications for Food Applications*" explores the comprehensive overview of the basic structure and properties of starch as well as the modification of starch with physical, chemical, and enzymatic methods. Each chapter presents an in-depth review of a specific research area updated with current research. Chapters of this book provide comprehensive information regarding starch modification, which will help to design new, healthy starch-based food products.

CRC Press  
October 2024:376  
Hb: 978-1-032-64716-6: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032647166](http://www.routledge.com/9781032647166)

## Statistical Aspects of Community Health and Nutrition



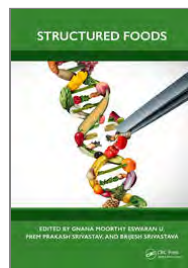
**A. K. Nigam**

This book provides a detailed view of public nutrition and health. It discusses the various statistical tools and their appropriate application in public health and nutrition research, surveys, evaluation and program designing. The subject matter of this book covers a range of topics including statistical issues pertaining to measurement of hunger and food security, hunger mapping, diseases in community clusters, randomized response technique for sensitive characteristics, small area estimation and gender disparity. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan and Bhutan)

CRC Press  
August 2024:284  
Hb: 978-1-032-76069-8: \$200  
eBook: 978-1-003-47694-8

\* For full contents and more information, visit: [www.routledge.com/9781032760698](http://www.routledge.com/9781032760698)

## Structured Foods



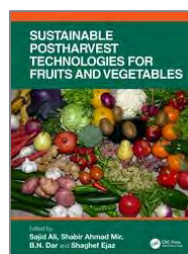
*Edited by* **Gnana Moorthy Eswaran U** IIT KGP, **PREM PRAKASH SRIVASTAV** IIT KGP, **Brijesh Srivastava** Tezpur Uni., Dept of FET

The book provides a comprehensive overview of the recent research trends on structure development in various foods. Focusing on different tools and food engineering techniques like encapsulation, 3D and 4D printing, imaging techniques, and clean meat technology, the book discusses how various foods can be broken down and manipulated at the molecular level to improve their quality, safety, and healthfulness. Further, it describes the structuring of components like starch, proteins, polysaccharides, and the stability and bioavailability of different food structures. This is a useful reference for researchers and industry experts in food technology, food engineering, and food processing.

CRC Press  
September 2026:320  
Pb: 978-1-032-40940-5: \$66.99  
Hb: 978-1-032-39948-5: \$190

\* For full contents and more information, visit: [www.routledge.com/9781032409405](http://www.routledge.com/9781032409405)

## Sustainable Postharvest Technologies for Fruits and Vegetables



*Edited by* **Sajid Ali, Shabir Ahmad Mir** Islamic Univ. of Science & Tech., India, **B.N. Dar** Islamic Univ. of Science & Tech., India, **Shaghef Ejaz**

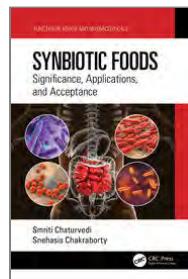
This book covers various sustainable postharvest treatments and technologies that are effective for the delay of postharvest senescence and deterioration. Among the various technologies, the use of controlled atmosphere, dynamic control atmosphere, modified atmosphere and hypobaric conditions has potential for the fruits and vegetables industry. Instead of a scholastic literature review, each chapter encompasses recent developments in each technology, potential health hazards and negative effects (if any) as well as mode of action, major challenges/hindrances in the adoption of each technology and future directions to further advance our knowledge regarding each sustainable application.

CRC Press  
August 2024:488  
Hb: 978-1-032-42601-3: \$250

\* For full contents and more information, visit: [www.routledge.com/9781032426013](http://www.routledge.com/9781032426013)

## Synbiotic Foods

Significance, Applications, and Acceptance



**Smriti Chaturvedi, Snehasis Chakraborty**

*Series: Functional Foods and Nutraceuticals*

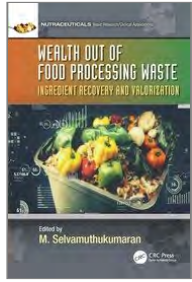
Developed using different matrices such as dairy, cereals, legumes, fruits, and vegetables, synbiotic food products combine the benefits of both probiotics and prebiotics. This book is a clear and comprehensive guide to the core concepts of synbiotic foods, and associated technological advancements and applications across food groups. Using clear, scientific language, this book equips readers with in-depth knowledge of synbiotic products, processing methods, applications, and acceptance. Designed as a one-stop resource, this book particularly appeals to undergraduate and postgraduate students of Food Science, Food Technology, Food Biotechnology and Food Microbiology.

CRC Press  
June 2024:178  
Hb: 978-1-032-29337-0: \$96.99  
eBook: 978-1-003-30410-4

\* For full contents and more information, visit: [www.routledge.com/9781032293370](http://www.routledge.com/9781032293370)

## Wealth out of Food Processing Waste

Ingredient Recovery and Valorization



*Edited by* **M. Selvamuthukumar** Institute of Technology, Haramaya University

*Series:* *Nutraceuticals*

This book identifies and describes the proper protocols to recover valuable ingredients from waste, thereby creating wealth in society. The effective utilization of waste can generate income for the entrepreneur, lead to more employment for society, enhance fertility of soil, reduce environmental pollution, conserve resources, and help to augment national economy to the greater extent. This book provides food industry personnel, scientists, food engineers, biotechnologists, research scholars, and students with strategies for effective utilization of waste from various food processing industries.

CRC Press

April 2024:290

Hb: 978-1-032-21064-3: \$230

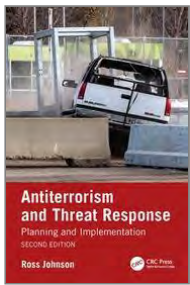
eBook: 978-1-003-26919-9

\* For full contents and more information, visit: [www.routledge.com/9781032210643](http://www.routledge.com/9781032210643)

2ND EDITION

## Antiterrorism and Threat Response

Planning and Implementation



**Ross Johnson** Capital Power Corporation, Edmonton, Alberta, Canada

The major contribution of Antiterrorism and Threat Response: Planning and Implementation, 2e is the detailed instruction and practical advice on how to see the weaknesses and vulnerabilities in physical protection systems and upgrade them to meet the challenges of terrorists and criminals. This is the advanced course in protecting physical assets from terrorists and criminals.

CRC Press

September 2024:464

Pb: 978-1-032-44808-4: \$74.99

Hb: 978-1-032-44734-6: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032448084](http://www.routledge.com/9781032448084)

2ND EDITION

## Counter Terrorism Issues

Case Studies in the Courtroom



**James Ottavio Castagnera**

Counter Terrorism Issues: Case Studies in the Courtroom, Second Edition presents a panoramic view of the American judiciary's handling of domestic terrorism in the last 30 years. Through the words of witnesses, judges, and the attorneys who tried these cases in America's courtrooms, coverage provides important commentary on the historical/political contexts of these events, enabling readers to understand the significance of these infamous attacks on U.S. soil.

CRC Press

August 2024:296

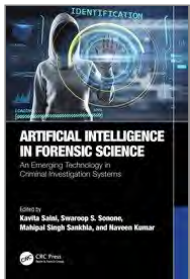
Pb: 978-1-032-75460-4: \$54.95

Hb: 978-1-032-75462-8: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032754604](http://www.routledge.com/9781032754604)

## Artificial Intelligence in Forensic Science

An Emerging Technology in Criminal Investigation Systems



*Edited by* **Kavita Saini** Galgotias University, India, **Swaroop S. Sonone** JSPM University, Pune, India, **Mahipal Singh Sankhla** Chandigarh University, India, **Naveen Kumar**

This book addresses the current and emerging opportunities being utilized to apply modern Artificial Intelligence (AI) technologies to current forensic and investigation practices. The book also showcases the increasing benefits of AI where and when it can be applied to various techniques and forensic disciplines. In the last decade, the use of AI is common in many fields and now is an ideal time to look at the various ways AI can be integrated into judicial, forensic, and criminal cases to better collect and analyze evidence, thereby improving outcomes.

CRC Press

August 2024:200

Pb: 978-1-032-26336-6: \$89.99

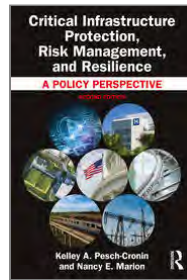
Hb: 978-1-032-26337-3: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032263366](http://www.routledge.com/9781032263366)

2ND EDITION

## Critical Infrastructure Protection, Risk Management, and Resilience

A Policy Perspective



**Kelley A. Pesch-Cronin**, **Nancy E. Marion** University of Akron, USA

This second edition of Critical Infrastructure Protection, Risk Management, and Resilience continues to be an essential resource for understanding and protecting critical infrastructure across the US. Revised and thoroughly updated throughout, the textbook reflects and addresses the many changes that have occurred in critical infrastructure protection and risk management since the publication of the first edition. This new edition retains the book's focus on understudied topics, while also continuing its unique, policy based approach to topics, ensuring that material is presented in a neutral and unbiased manner.

Routledge

June 2024:278

Hb: 978-1-032-56305-3: \$82.99

eBook: 978-1-003-43488-7

\* For full contents and more information, visit: [www.routledge.com/9781032563053](http://www.routledge.com/9781032563053)

2ND EDITION

## Bone Histology

A Biological Anthropological Perspective



*Edited by* **Christian Crowder** Department of the Medical Examiner, New York, New York, USA, **Sam D. Stout**

This book builds on the success of the first edition, recognizing the significant advances that have occurred in bone biology, histology, and histological techniques and methods in subsequent years. Bone Histology: A Biological Anthropological Perspective, Second Edition has assembled a collection of contributing authors, with extensive experience and expertise in various aspects of hard tissue biology, to provide readers with an overview of the current state of research and potential applications of histological analysis in biological anthropology, forensic anthropology, and skeletal biology.

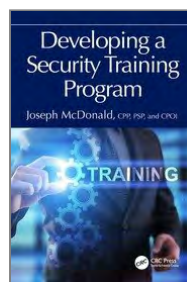
CRC Press

November 2024:688

Hb: 978-1-032-47327-7: \$84.99

\* For full contents and more information, visit: [www.routledge.com/9781032473277](http://www.routledge.com/9781032473277)

## Developing a Security Training Program



**Joseph McDonald**

Developing a Security Training Program focuses on how to establish a comprehensive training program for a security department from the ground up. The book highlights formal curriculum development, consistent and continual training, the organizational benefits including how such security training will be a value-add. This book provides the blueprint and tools for professionals to provide ongoing, targeted, and comprehensive security training at a low, budget-friendly cost.

CRC Press

July 2024:260

Pb: 978-1-032-27403-4: \$66.99

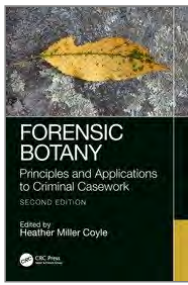
Hb: 978-1-032-27404-1: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032274034](http://www.routledge.com/9781032274034)

2ND EDITION

## Forensic Botany

Principles and Applications to Criminal Casework



Edited by **Heather Miller Coyle**

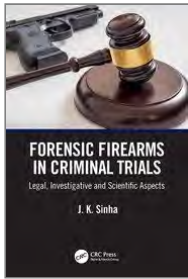
Forensic Botany: Principles and Applications to Criminal Casework, Second Edition updates what, at the time, was the very first book published on the subject. This latest edition offers a concise introduction to plant identification and biology, genetics and how to utilize and apply botanical evidence in criminal cases. This book will provide scientists working with DNA, trace evidence, and botanical evidence—as well as investigators and legal professionals—with a thorough understanding of the latest advances, and current capabilities, in utilizing such evidence in investigating and adjudicating criminal cases.

CRC Press  
August 2024:324  
Hb: 978-1-439-86674-0: \$96.99

\* For full contents and more information, visit: [www.routledge.com/9781439866740](http://www.routledge.com/9781439866740)

## Forensic Firearms in Criminal Trials

Legal, Investigative, and Scientific Aspects



**J. K. Sinha** Central Forensic Laboratory, Chandigarh, India

This book provides a basic understanding of the general make-up of firearms and ammunition, the evidentiary values of commonly used firearms, fired empties, fired bullets and pellets, and scientific investigative leads that result from visual and physical evidence. Chapters cover related topics such as proficiency test, identifying competent experts, admitted firing, and reliable and testable methodology, among other topics. Throughout, the author emphasizes the need for requisite forensic knowledge by the investigator for effective scientific investigation of gunfire crimes such as would aid in the proper presentation of scientific evidence at criminal trial.

CRC Press  
June 2024:146  
Pb: 978-1-032-74546-6: \$89.99  
Hb: 978-1-138-49565-4: \$180  
eBook: 978-1-351-02386-3

\* For full contents and more information, visit: [www.routledge.com/9781032745466](http://www.routledge.com/9781032745466)

## Handbook of Bloodstain Pattern Analysis



Edited by **Toby L. Wolson**

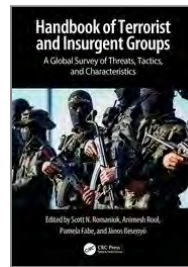
The Handbook of Bloodstain Pattern Analysis captures the latest understanding of the science that supports bloodstain pattern analysis (BPA) and includes the results of numerous research studies using modern technologies not found in previously published books. This book is the most up-to-date resource on BPA currently available, providing a definitive training manual for practitioners, and an essential reference for forensic pathologists, police investigators, crime scene investigators, attorneys, and students enrolled in forensic science university courses.

CRC Press  
October 2024:784  
Hb: 978-0-367-74207-2: \$94.95

\* For full contents and more information, visit: [www.routledge.com/9780367742072](http://www.routledge.com/9780367742072)

## Handbook of Terrorist and Insurgent Groups

A Global Survey of Threats, Tactics, and Characteristics



Edited by **Scott N. Romaniuk** University of South Wales, UK, **Animesh Roul**, **Pamela Fabe**, **János Besenyő**

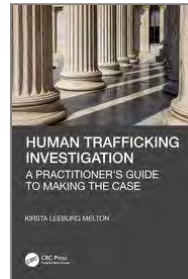
This volume examines the most current and significant terrorist and insurgent groups around the world. It brings the collective expertise and knowledge of more than 50 academics, intelligence and security officials, and professionals together, all of whom are considered subject experts in their respective areas of research and practice. The volume is based on both desk-based and fieldwork conducted by experts in these areas, incorporating analyses of secondary literature but also the use of primary data including first-hand interviews on the various groups' region of operation, their tactics, and how their ideologies motivate their actions.

CRC Press  
September 2024:786  
Pb: 978-1-032-71490-5: \$100  
Hb: 978-1-138-38773-7: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032714905](http://www.routledge.com/9781032714905)

## Human Trafficking Investigation

A Practitioner's Guide to Making the Case



**Kirsta Leeburg Melton**

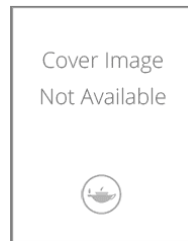
Everything you need to know to seek justice for victims and accountability for traffickers is in this approachable guide written by seasoned anti-trafficking professionals. Honest, direct, and practical, this book is the definitive implementation guide for investigators intent on developing human trafficking cases that can be tried to a successful conclusion in a court of law.

CRC Press  
September 2024:304  
Pb: 978-1-032-17012-1: \$69.95  
Hb: 978-1-032-17015-2: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032170121](http://www.routledge.com/9781032170121)

## Introduction to Forensic Science

The Science of Criminalistics



**James T. Spencer** Syracuse University, USA

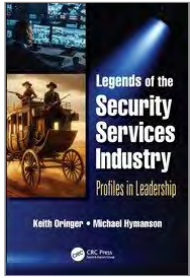
Introduction to Forensic Science: The Science of Criminalistics is a new textbook that takes a unique and holistic approach to forensic science. The book focuses on exploring the underlying scientific concepts as presented at the introductory college and senior high school levels. Chapters introduce readers to each of the important areas of forensic science, grouping chapters together by discipline and following a logical progression and flow between chapters.

CRC Press  
October 2024:1056  
Hb: 978-1-032-02517-9: \$100

\* For full contents and more information, visit: [www.routledge.com/9781032025179](http://www.routledge.com/9781032025179)

## Legends of the Security Services Industry

Profiles in Leadership



**Keith I. Oringer** President of Security ProAdvisors, USA, **Michael P. Hymanson**

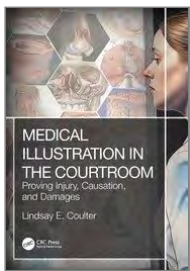
Legends of the Security Services Industry: Profiles in Leadership presents the unique stories of fifteen industry legends, who transformed the industry from early private detective and small night watch companies, into large-scale contract security companies. The large-scale companies including, but not limited to, Pinkerton's, Burns International, The Wackenhut Corporation, Guardsmark, Wells Fargo, and U.S. Security Associates; as well as today's leading security companies, Allied Universal, Securitas, G4S, Prosegur, and GardaWorld.

CRC Press  
July 2024:372  
Hb: 978-1-032-25904-8: \$38.99

\* For full contents and more information, visit: [www.routledge.com/9781032259048](http://www.routledge.com/9781032259048)

## Medical Illustration in the Courtroom

Proving Injury, Causation, and Damages



**Lindsay E. Coulter**

Medical in the Courtroom: Proving Injury, Causation, and Damages educates the reader on how to communicate science visually—in personal injury, medical malpractice, criminal and forensic cases—by creating art that utilizes medical records, radiographs, and computer software. Presenting the myriad services and computer technologies that can be utilized, Medical Illustration in the Courtroom provides demonstrative medical illustrations used in cases that illustrate techniques, the purposes of using a specific technique, and tools and “tricks of the trade” to create an effective image.

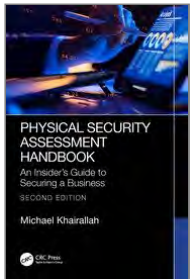
CRC Press  
May 2024:218  
Pb: 978-1-032-37294-5: \$66.99  
Hb: 978-1-032-37298-3: \$180  
eBook: 978-1-003-33631-0

\* For full contents and more information, visit: [www.routledge.com/9781032372945](http://www.routledge.com/9781032372945)

2ND EDITION

## Physical Security Assessment Handbook

An Insider's Guide to Securing a Business



**Michael Khairallah** Security Design Solutions LLC, USA

Physical Security Assessment Handbook: An Insider's Guide to Securing a Business, Second Edition has been fully updated to provide a comprehensive guide to identifying man-made threats to an organization, determining the vulnerabilities to those threats, specifying security upgrades to mitigate those threats, and acquiring and implementing recommended solutions. This book is a valuable resource for security and managers, security consultants, and even experienced industry professionals will find this book helpful in organizing approaches to security assessment projects.

CRC Press  
July 2024:338  
Pb: 978-1-032-79080-0: \$71.99  
Hb: 978-1-032-79077-0: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032790800](http://www.routledge.com/9781032790800)

## Practical Forensic Pathology and Toxicology



**Dorothy E. Dean** Summit County Medical Examiner's Office, Akron, Ohio, USA, **Robert H. Powers** Connecticut Department of Public Safety, Hartford, USA

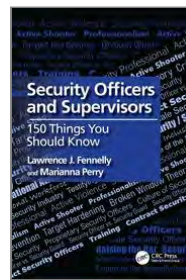
Practical Forensic Pathology and Toxicology is a companion to the authors' original book on the subject, Forensic Pathology and Toxicology: Mechanisms and Pathology. Practical Forensic Pathology and Toxicology is an invaluable resource for practicing pathologists, toxicologists, and those training for those fields. It also serves as a useful reference for lawyers, judges, insurance companies, and other medical professionals who need to know, in light of what drugs are present in a particular case, what such compounds do, and how their presence (or absence thereof) is—or is not—related to an individual's death.

CRC Press  
November 2024:232  
Hb: 978-0-367-63861-0: \$125

\* For full contents and more information, visit: [www.routledge.com/9780367638610](http://www.routledge.com/9780367638610)

## Security Officers and Supervisors

150 Things You Should Know



**Lawrence J. Fennelly**, **Marianna A. Perry**

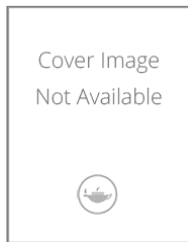
This book presents an array of relevant topics, including addressing “Tips of the Trade” in how to manage a team of professionals and serve as an effective supervisor. Building and leading a trusted team that can set and achieve clearly outlined objectives begins with leadership. Security Officers and Supervisors: 150 Things You Should Know outlines those principles and traits required for professionals to succeed when promoted (though, more often than not, thrust!) into a security supervisory role.

CRC Press  
July 2024:320  
Pb: 978-1-032-51526-7: \$64.95  
Hb: 978-1-032-51534-2: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032515267](http://www.routledge.com/9781032515267)

## Batteries

The Future of Energy Storage



**Subashani Maniam**

This book discusses in detail the important components of battery development, such as electrodes, electrolytes, active materials, and battery construction. It starts with the advantages and limitations of the hallmark lithium-ion batteries, evolving to the introduction of other metal-based batteries such as zinc-, sodium-, metal-air-, and magnesium-based batteries. It specifically reviews lithium-sulfur batteries, which can produce high energy densities. It subsequently discusses the physics behind transport dynamics of solid-state polymer electrolytes.

Jenny Stanford Publishing

August 2024:312

Hb: 978-9-815-12938-0: \$179.95

\* For full contents and more information, visit: [www.routledge.com/9789815129380](http://www.routledge.com/9789815129380)

## Bioinspired Materials Surfaces

Nature-Inspired Micro-/Nanostructures



**Yongmei Zheng**

This book highlights the functions and models of biological surfaces with unique wettability and elucidates the methods to realize bioinspired surfaces. It discusses the theory and mechanism of fabrication that will help researchers to understand the nature of functional surfaces and to design them better for various applications. The book is a good resource for researchers, engineers, scientists, and also students/general readers with innovative ideas for designing novel materials for future scientific works.

Jenny Stanford Publishing

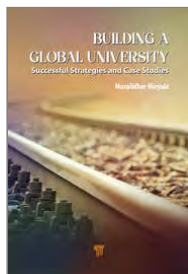
August 2024:436

Hb: 978-9-815-12934-2: \$229.95

\* For full contents and more information, visit: [www.routledge.com/9789815129342](http://www.routledge.com/9789815129342)

## Building a Global University

Successful Strategies and Case Studies



*Edited by* **Muralidhar Miryala**

The book is divided into two parts. The first part delves into the global strategies for establishing successful universities worldwide, highlighted by the vice chancellors and presidents from renowned universities, including the University of Cambridge, UK; TU Ilmenau, Germany; University of Applied Sciences Upper Austria, Austria; and Ahlia University, Bahrain. The second part discusses pilot projects and experiences from Shibaura Institute of Technology (SIT), along with successful case studies contributing to top-tier university development.

Jenny Stanford Publishing

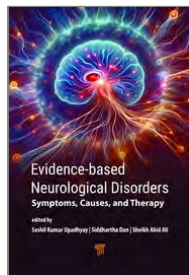
August 2024:240

Hb: 978-9-815-12919-9: \$149.95

\* For full contents and more information, visit: [www.routledge.com/9789815129199](http://www.routledge.com/9789815129199)

## Evidence-Based Neurological Disorders

Symptoms, Causes, and Therapy



**Sushil Kumar Upadhyay, Siddhartha Dan, Sheikh Abid Ali**

This book emphasizes all the conventional and applied divisions associated with neurology in reference to medical physiology and general biology and covers all aspects to integrate the topics of inter-related approaches. It provides complete information on each aspect of neurodegenerative disorders and brain injury, including autonomic nervous system, neuro-oncology, cerebellar ataxias, spinal cord disorders, neuro-ophthalmic disorders, and neuro-otological disorders such as dizziness, vertigo, imbalance, and hearing impairments, in a concise and informative way.

Jenny Stanford Publishing

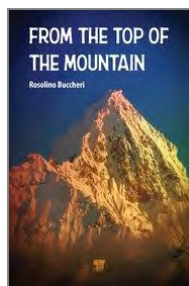
June 2024:552

Hb: 978-9-815-12918-2: \$299.95

eBook: 978-1-003-49634-2

\* For full contents and more information, visit: [www.routledge.com/9789815129182](http://www.routledge.com/9789815129182)

## From the Top of the Mountain



**Rosolino Buccheri**

This book discusses man's derivation from inert matter and disproves the general validity of the Second Principle of Thermodynamics, together with inherent social considerations. This view renders coherent the full history of the universe's evolution with human beings in it, bringing out incoherent hypotheses connected with vaguely religious necessities. At variance with all previous narrations, this new perspective also renders coherent the presence and the future of the human beings on Earth, a vision that enlarges the perspectives even from the religious points of view.

Jenny Stanford Publishing

August 2024:132

Pb: 978-9-815-12922-9: \$39.95

\* For full contents and more information, visit: [www.routledge.com/9789815129229](http://www.routledge.com/9789815129229)

## Handbook of Biodegradable Polymers

Applications in Biomedical Sciences, Industry, and the Environment



**Shakeel Ahmed, Riyaz Ali M. Osmani**

This book presents a comprehensive and authoritative review of the recent developments and advances in biodegradable polymers and their biomedical applications. Following an interdisciplinary approach, it combines the medical and pharmaceutical fields in conjunction with biomedical engineering, polymer science, materials science, and pharmacological aspects of biodegradable polymers.

Jenny Stanford Publishing

August 2024:806

Hb: 978-9-814-96884-3: \$349.95

eBook: 978-1-032-69330-9

\* For full contents and more information, visit: [www.routledge.com/9789814968843](http://www.routledge.com/9789814968843)



## Handel's Messiah

The Creative Process



**Amanda Babington**

This book seeks to redress this imbalance by providing a thorough investigation of the work's creative process. Beginning with the creation of the libretto, it examines the earliest sketches, Handel's use of pre-existent material, alterations made to the autograph score, and the latest versions of movements. Each stage of composition is examined via primary source material, with particular reference to the autograph score and conducting score. Each chapter is formed as a case study and contains related discussion points for use in teaching or study settings.

Jenny Stanford Publishing

June 2024:336

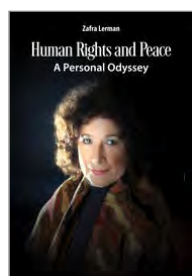
Hb: 978-9-815-12904-5: \$79.95

eBook: 978-1-003-49399-0

\* For full contents and more information, visit: [www.routledge.com/9789815129045](http://www.routledge.com/9789815129045)

## Human Rights and Peace

A Personal Odyssey



**Zafra Lerman**

This book is a genre-busting first-person narrative in which Prof. Lerman recounts her remarkable life—a life that has led her all around the world from the Soviet Union to Peru, from China to Cuba, and beyond where she fought for dissidents who were being denied basic human rights. The book is an inspiring call to action showing how the author's life and work has led to the innovative use of science as diplomacy in the fight for human rights and peace. It is an inspiration to educators, scientists, policymakers, and the general readers. There is no equivalent, competing work.

Jenny Stanford Publishing

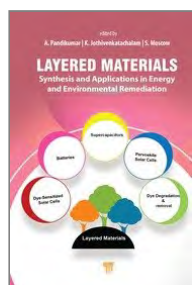
August 2024:206

Hb: 978-9-815-12924-3: \$59.95

\* For full contents and more information, visit: [www.routledge.com/9789815129243](http://www.routledge.com/9789815129243)

## Layered Materials

Synthesis and Applications in Energy and Environmental Remediation



**A. Pandikumar, S. Moscow, K. Jothivenkatachalam**

This book offers the state of the art of research on the synthesis, properties, characterization, and electrochemical applications of layered materials and highlights the present challenges related to environmental issues. It provides fundamental, experimental, and theoretical knowledge about layered materials, including graphene, graphitic carbon nitride, boron nitride, and MoS<sub>2</sub>-, Li-, and Mn-rich oxide materials and MXenes, and elaborates their synthesis, physicochemical properties, and structure-property-electrochemical performance.

Jenny Stanford Publishing

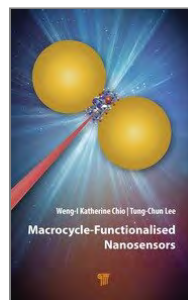
August 2024:298

Hb: 978-9-815-12917-5: \$179.95

eBook: 978-1-003-50831-1

\* For full contents and more information, visit: [www.routledge.com/9789815129175](http://www.routledge.com/9789815129175)

## Macrocycle-Functionalised Nanosensors



**Weng-I Katherine Chio, Tung-Chun Lee**

Self-assembly of nanoparticles mediated by macrocyclic molecules provides a facile method to fabricate nanosubstrates with precise interparticle spacings, leading to very strong and reproducible signals. This introductory book is designed to offer fundamental insights into the nanosensing platforms based on macrocycle-functionalised nanoparticles, including nanoparticle synthesis and functionalisation, host-guest chemistry, and optical spectroscopies. It also explores potential applications of these nanosensing platforms in biological and chemical sensing.

Jenny Stanford Publishing

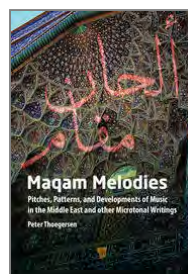
August 2024:272

Hb: 978-9-815-12933-5: \$179.95

\* For full contents and more information, visit: [www.routledge.com/9789815129335](http://www.routledge.com/9789815129335)

## Maqam Melodies

Pitches, Patterns, and Developments of Music in the Middle East and other Microtonal Writings



**Peter Thoegersen**

This book discusses microtonal tunings in the Arabic maqam, prevalent in the Middle East and Central Asia, which employs microtonal intervals from Pythagorean tuning by perfect fifths. This book is accessible to the beginners in the field and will be beneficial to musical analyses in colleges and universities also by showing detailed analysis of Bach chorales in their original modes, and how their tuning presented complete character shifts by the microtones they contained by mean-tone temperament, an offshoot of Pythagorean tuning during the Baroque.

Jenny Stanford Publishing

August 2024:148

Hb: 978-9-815-12905-2: \$79.95

eBook: 978-1-003-49285-6

\* For full contents and more information, visit: [www.routledge.com/9789815129052](http://www.routledge.com/9789815129052)

## Megaliths, Music, and the Mind

A Transdisciplinary Exploration of Archaeoacoustics



**Linda Eneix**

With original photos and illustrations, Megaliths, Music and the Mind assembles content from the worlds of archaeology, architecture, anthropology, ethnomusicology, genetics, neuroscience, physics and more. Fascinating pieces of evidence are set side by side, resulting in a stunning premise. This book is a core overview focused on rediscovery of an ill-understood sensory element of developing culture, with hope for therapeutic application in the modern world.

Jenny Stanford Publishing

May 2024:280

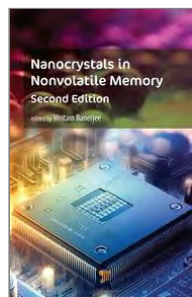
Hb: 978-9-815-12925-0: \$79.95

eBook: 978-1-003-46823-3

\* For full contents and more information, visit: [www.routledge.com/9789815129250](http://www.routledge.com/9789815129250)

2ND EDITION

## Nanocrystals in Nonvolatile Memory



**Writam Banerjee**

Nanocrystals are the driving elements that have helped nonvolatile flash memory technology reach its distinguished height but new approaches are still needed to strengthen nanocrystal-based nonvolatile technology for future applications. This book presents comprehensive knowledge on nanocrystal fabrication methods and applications of nanocrystals in baseline NVM and emerging NVM technologies as the chapters are written by experts in the field from all over the globe. The book is a valuable tool for researchers and developers from the fields of electronics, semiconductors, nanotechnology, materials science, and solid-state memories.

Jenny Stanford Publishing  
August 2024:682  
Hb: 978-9-815-12935-9: **\$349.95**

\* For full contents and more information, visit: [www.routledge.com/9789815129359](http://www.routledge.com/9789815129359)

## Nanotemplating

Engineering Nanocomposite Materials for the Future



*Edited by* **Humphrey H. P. Yiu**

This book offers a comprehensive account on the recent development of several key classes of nanomaterials and their applications in various scientific areas. It summarizes the synthesis, development and characterization for each type of materials. The six chapters start with the simplest "zero"-dimensional nanoparticles and then gradually increase in complexity of the materials towards synthesis using biological templates. Researchers in materials science, nanotechnology and chemistry, especially those interested in functional materials, can use this book as a useful reference.

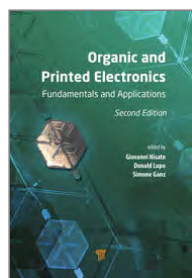
Jenny Stanford Publishing  
August 2024:288  
Hb: 978-9-814-31692-7: **\$179.95**

\* For full contents and more information, visit: [www.routledge.com/9789814316927](http://www.routledge.com/9789814316927)

2ND EDITION

## Organic and Printed Electronics

Fundamentals and Applications



*Edited by* **Giovanni Nisato, Donald Lupo, Simone Rudolf**

This book provides a comprehensive introduction to organic flexible and printed electronics, their fundamental aspects, core technologies, and applications and is authored by international expert practitioners in the field. As a key reference resource, it is specifically designed to address students in their final undergraduate or beginning graduate studies, as well as engineers and general readers interested in approaching this field from an application perspective.

Jenny Stanford Publishing  
May 2024:776  
Hb: 978-9-815-12914-4: **\$169.95**  
eBook: 978-1-003-48441-7

\* For full contents and more information, visit: [www.routledge.com/9789815129144](http://www.routledge.com/9789815129144)

## Outlooking beyond Nanoelectronics and Nanosystems

Ultra Scaling, Pervasiveness, Sustainable Integration, and Biotic Cross-Inspiration



*Edited by* **Simon Deleonibus**

*Series:* *Jenny Stanford Series on Intelligent Nanosystems*

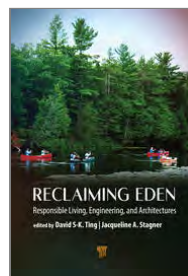
The fifth volume in Jenny Stanford Series on Intelligent Nanosystems, entitled Outlooking Beyond Nanoelectronics and Nanosystems: Ultra Scaling, Pervasiveness, Sustainable Integration, and Biotic Cross-Inspiration, collects global reviews on (1) the evolution of nanoelectronic and nanosystem components and their sustainability; (2) new materials, techniques, and pervasive applications out of mainstream; and (3) memristor foundation and new bioengineering developments.

Jenny Stanford Publishing  
August 2024:418  
Hb: 978-9-815-12932-8: **\$199.95**

\* For full contents and more information, visit: [www.routledge.com/9789815129328](http://www.routledge.com/9789815129328)

## Reclaiming Eden

Responsible Living, Engineering, and Architectures



*Edited by* **David S.-K. Ting, Jacqueline A. Stagner**

Life on Earth is both challenging and beautiful. Reclaiming Eden is about responsible living, engineering and architectures, aiming to mitigate environmental deterioration by reclaiming land around the world to an ecologically sustainable stage. These endeavors will enable us to pass forward a beautiful tomorrow for our grandchildren in the long run, and our children and ourselves in the immediate future. Eco-friendliness is key, and this includes waste reduction, sustainable development, furthering renewables, nature and biomimicry, and coral reef restoration. This book stands as a latest update on these fronts in beautifying tomorrow.

Jenny Stanford Publishing  
June 2024:304  
Hb: 978-9-815-12931-1: **\$129.95**  
eBook: 978-1-003-49612-0

\* For full contents and more information, visit: [www.routledge.com/9789815129311](http://www.routledge.com/9789815129311)

## The Chemistry of Ynamides

Development, Syntheses, and Applications in Organic Synthesis



**Gwilherm Evano, Junfeng Zhao**

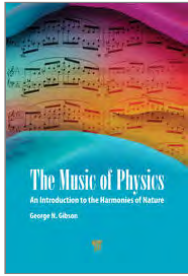
Ynamides contain a triple bond directly connected to a nitrogen atom that bears an electron-withdrawing group. This book covers all aspects of ynamide chemistry, including their discovery, their syntheses, their application in heterocyclic chemistry, natural product synthesis, and organometallic chemistry, and their use as coupling reagents. It provides a systematic and comprehensive overview on ynamide chemistry for the researchers in this field, general readers interested in synthesis, and those who want to enter this field and need a comprehensive and up-to-date overview.

Jenny Stanford Publishing  
June 2024:720  
Hb: 978-9-814-96867-6: **\$349.95**  
eBook: 978-1-032-67099-7

\* For full contents and more information, visit: [www.routledge.com/9789814968676](http://www.routledge.com/9789814968676)

## The Music of Physics

An Introduction to the Harmonies of Nature



**George N. Gibson**

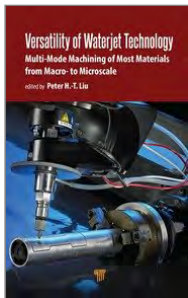
This textbook is written for a very specific purpose and audience: It serves as a breadth requirement for a general education program at the college level for non-science majors. It is intended to satisfy a science-and-technology, quantitative-reasoning, and, optionally, a lab requirement. It is also suitable for an introductory course at the high school level. Music is an excellent medium to introduce physics to novice scientists, as it provides an intuitive understanding of the physics of waves, unlike standard approaches to physics, which can be quite unintuitive and, hence, frustrating.

Jenny Stanford Publishing  
August 2024:318  
Hb: 978-9-814-96899-7: \$99.95  
eBook: 978-1-003-48481-3

\* For full contents and more information, visit: [www.routledge.com/9789814968997](http://www.routledge.com/9789814968997)

## Versatility of Waterjet Technology

Machining Materials from Macro- to Microscale



**Peter H.-T. Liu**

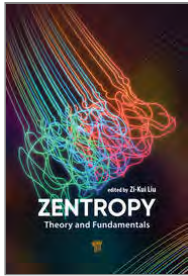
This book is a collection of papers published by the author and his colleagues on waterjet technology while working at Flow Industries, Inc. and OMAX Corp., Washington DC, USA. It represents the author's nearly 30 years of R&D experience and contribution in advancing waterjet/fluidjet technology. The book comprises 32 chapters grouped in 10 topical parts. It presents physical experiments showcasing novel methods as R&D tools and uses high-resolution photographs and micrographs extensively to help visualize details of fine features such as surface roughness and edge qualities of machined parts.

Jenny Stanford Publishing  
August 2024:1002  
Hb: 978-9-814-96896-6: \$500

\* For full contents and more information, visit: [www.routledge.com/9789814968966](http://www.routledge.com/9789814968966)

## Zentropy

Theory and Fundamentals



*Edited by* **Zi-Kui Liu**

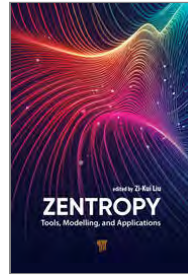
This book compiles selected publications authored or co-authored by the editor to present a comprehensive understanding of following topics: (1) fundamentals of thermodynamics, Materials Genome<sup>®</sup>, and zentropy theory; (2) zentropy theory for prediction of positive and negative thermal expansions; (3) density functional theory and CALPHAD modeling; (4) computational tools; and (5) applications of computational thermodynamics. It is noted that while entropy at one scale is well represented by standard statistical mechanics in terms of probability of individual configurations at that scale, the theory capable of counting total entropy of a system from different scales is lacking.

Jenny Stanford Publishing  
August 2024:754  
Hb: 978-9-814-96894-2: \$500

\* For full contents and more information, visit: [www.routledge.com/9789814968942](http://www.routledge.com/9789814968942)

## Zentropy

Tools, Modelling, and Applications



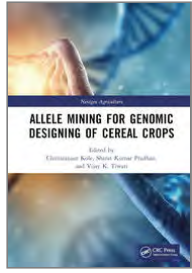
*Edited by* **Zi-Kui Liu**

This book compiles selected publications authored or co-authored by the editor to present a comprehensive understanding of following topics: (1) fundamentals of thermodynamics, Materials Genome<sup>®</sup>, and zentropy theory; (2) zentropy theory for prediction of positive and negative thermal expansions; (3) density functional theory and CALPHAD modeling; (4) computational tools; and (5) applications of computational thermodynamics. It is noted that while entropy at one scale is well represented by standard statistical mechanics in terms of probability of individual configurations at that scale, the theory capable of counting total entropy of a system from different scales is lacking.

Jenny Stanford Publishing  
August 2024:854  
Hb: 978-9-815-12944-1: \$500

\* For full contents and more information, visit: [www.routledge.com/9789815129441](http://www.routledge.com/9789815129441)

## Allele Mining for Genomic Designing of Cereal Crops



Edited by **Chittaranjan Kole , Sharat Kumar Pradhan , Vijay K. Tiwari**

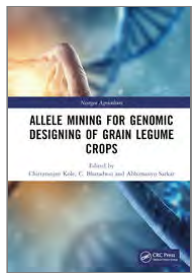
Series: *Nextgen Agriculture*

This book deliberates on the concept, strategies, tools, and techniques of allele mining in cereal crops and its application potential in genome elucidation and improvement including studying allele evolution, discovery of superior alleles, discerning new haplotypes, assessment of intra- and interspecific similarity, and studies of gene expression and gene prediction. Available gene-pools in global germplasm collections specifically consisting of wild allied species and local landraces for almost all major crops have facilitated allele mining.

CRC Press  
May 2024:272  
Hb: 978-1-032-47190-7: \$200  
eBook: 978-1-003-38500-4

\* For full contents and more information, visit: [www.routledge.com/9781032471907](http://www.routledge.com/9781032471907)

## Allele Mining for Genomic Designing of Grain Legume Crops



Edited by **Chittaranjan Kole , C. Bharadwaj , Abhimanyu Sarkar**

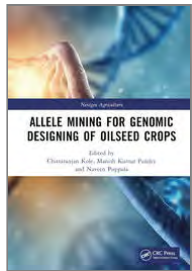
Series: *Nextgen Agriculture*

This book deliberates on the concept, strategies, tools, and techniques of allele mining in grain legume crops and its application potential in genome elucidation and improvement including studying allele evolution, discovery of superior alleles, discerning new haplotypes, assessment of intra- and interspecific similarity, and also studies of gene expression and gene prediction. Available gene pools in global germplasm collections specifically consisting of wild allied species and local landraces for almost all major crops have facilitated allele mining.

CRC Press  
September 2024:248  
Hb: 978-1-032-47198-3: \$190

\* For full contents and more information, visit: [www.routledge.com/9781032471983](http://www.routledge.com/9781032471983)

## Allele Mining for Genomic Designing of Oilseed Crops



Edited by **Chittaranjan Kole , Manish Kumar Pandey , Naveen Puppala**

Series: *Nextgen Agriculture*

This book deliberates on the concept, strategies, tools, and techniques of allele mining in oilseed crops and its application potential in genome elucidation and improvement including studying allele evolution, discovery of superior alleles, discerning new haplotypes, assessment of intra- and interspecific similarity, and studies of gene expression and gene prediction.

CRC Press  
September 2024:352  
Hb: 978-1-032-47194-5: \$190

\* For full contents and more information, visit: [www.routledge.com/9781032471945](http://www.routledge.com/9781032471945)

## Allele Mining for Genomic Designing of Vegetable Crops



Edited by **Chittaranjan Kole , Tusar Kanti Behera , Prashant Kaushik**

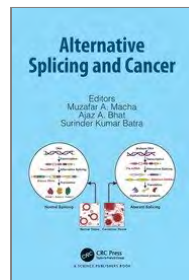
Series: *Nextgen Agriculture*

This book deliberates on the concept, strategies, tools, and techniques of allele mining in vegetable crops and its application potential in genome elucidation and improvement including studying allele evolution, discovery of superior alleles, discerning new haplotypes, assessment of intra- and interspecific similarity, and studies of gene expression and gene prediction.

CRC Press  
June 2024:296  
Hb: 978-1-032-45318-7: \$200  
eBook: 978-1-003-37643-9

\* For full contents and more information, visit: [www.routledge.com/9781032453187](http://www.routledge.com/9781032453187)

## Alternative Splicing and Cancer



Edited by **Muzafar A. Macha IUST,J&K, Ajaz A. Bhat opc ,Ieve 6, sidra medicine, Surinder Kumar Batra UNMC,USA**

This book "Alternative Splicing and Cancer" explores the crucial role alternative splicing, a post-transcriptional process, plays in human health and diseases, particularly cancer. Diving deep into the complexities of gene expression and protein diversity, the book illuminates how abnormal splicing contributes to aggressive tumor formation, affecting cellular functions such as proliferation, survival, and immune evasion.

CRC Press  
May 2024:210  
Hb: 978-1-032-19659-6: \$180  
eBook: 978-1-003-26039-4

\* For full contents and more information, visit: [www.routledge.com/9781032196596](http://www.routledge.com/9781032196596)

## Antimicrobial Resistance of the Human Eye



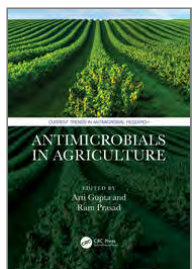
Edited by **S. Shivaji**

The book covers antimicrobial resistance in ocular diseases, including the microbiology of the ocular surface, the history and origin of antimicrobials, methods to detect antimicrobial resistance and antimicrobial resistance genes, and the impact of antimicrobial resistance on a variety of ocular diseases. The inclusion of chapters covers bacterial keratitis, fungal keratitis, viral keratitis, acanthamoeba keratitis, endophthalmitis, dry eye disease, post fever retinitis, and uveitis including management and prevention of antimicrobial resistance.

CRC Press  
July 2024:488  
Hb: 978-1-032-58349-5: \$250  
eBook: 978-1-003-45110-5

\* For full contents and more information, visit: [www.routledge.com/9781032583495](http://www.routledge.com/9781032583495)

## Antimicrobials in Agriculture



Edited by **Arti Gupta , Ram Prasad**

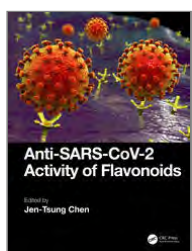
Series: *Current Trends in Antimicrobial Research*

This book offers comprehensive coverage of all manifestations of resistance in combating infectious diseases and explores advances in antimicrobials in agriculture and their applications in the fight against microbes. According to the World Health Organization, antimicrobial resistance is a major threat to global health because the number of alternative antibiotics is very limited.

CRC Press  
June 2024:166  
Hb: 978-1-032-21542-6: \$150  
eBook: 978-1-003-26889-5

\* For full contents and more information, visit: [www.routledge.com/9781032215426](http://www.routledge.com/9781032215426)

## Anti-SARS-CoV-2 Activity of Flavonoids



Edited by **Jen-Tsung Chen**

In the past years, COVID-19 caused millions of deaths and severely damaged not only public health, but also the global economy. New variants continue to threaten human health. Thus, natural compounds for retarding infection are in high demand. This book summarizes the emerging research with flavonoids, whose application holds great promise of anti-virus, anti-inflammation, antioxidative stress, and immunomodulatory. Topics include the role of flavonoids in preventing an inflammatory storm and how flavonoids interact with critical protein targets that are involved in the infection stages of COVID-19.

CRC Press  
July 2024:268  
Hb: 978-1-032-55621-5: \$140  
eBook: 978-1-003-43320-0

\* For full contents and more information, visit: [www.routledge.com/9781032556215](http://www.routledge.com/9781032556215)

## Aquatic Ecosystems and Microbial Biofilms

Significance, Dynamics, Prevention and Control



Edited by **Siddhardha Busi** Pondicherry University, India, **Ram Prasad**

Aquatic Ecosystems and Microbial Biofilms: Significance, Dynamics, Prevention and Control provide a systematic introduction and review of state-of-the-art information on microbial biofilms in aquatic ecosystems and their control. The book is designed and developed to understand the microbial biofilms in aquatic ecosystems, their role, and the control strategies.

CRC Press  
October 2024:360  
Hb: 978-1-032-78241-6: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032782416](http://www.routledge.com/9781032782416)

## Aquatic Ecosystems Monitoring

Conventional Assessment to Advanced Remote Sensing



Edited by **Prem Chandra Pandey , Prashant K.**

**Srivastava** ESSIC/NASA Goddard Space Flight Center, Greenbelt, Maryland, USA, **Sanjeev Kumar Srivastava**

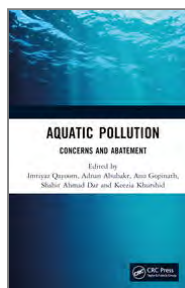
This reference book collates traditional and modern applications of remote sensing in aquatic ecosystem monitoring. It covers conventional assessment methods like sampling, surveying, and chlorophyll estimation. Advanced remote sensing technology provides timely spectral information for quantitative and qualitative assessment of water changes, volume, and vegetation. The book discusses space-borne, airborne, and drone geospatial data. The five sections broadly cover aquatic ecosystem monitoring, vegetation management, advanced modeling practices, and challenges. It is meant for scientists, professionals, and policymakers working in environmental sciences, remote sensing, and geology.

CRC Press  
November 2024:338  
Hb: 978-1-032-39112-0: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032391120](http://www.routledge.com/9781032391120)

## Aquatic Pollution

Concerns and Abatement



Edited by **Imtiaz Qayoom , Adnan Abubakr , Anu Gopinath , Shabir Ahmad Dar , Keezia Khurshid**

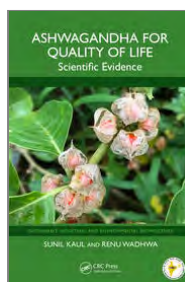
This book discusses the sources, mechanism, impact and abatement of pollution in waterbodies and lays a base foundation for further research. In this book, readers will also get acquainted with the methods of decontamination of lakes by phytoremediation, pesticide removal techniques from lakes, toxic site reclamation and environmental sustainability using microbial aspects associated with clean-up of wastes. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan and Bhutan)

CRC Press  
August 2024:314  
Hb: 978-1-032-82256-3: \$200  
eBook: 978-1-003-50370-5

\* For full contents and more information, visit: [www.routledge.com/9781032822563](http://www.routledge.com/9781032822563)

## Ashwagandha for Quality of Life

Scientific Evidence



**Sunil Kaul** NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE & TECHNOLOGY (AIST), **Renu Wadhwa** NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE & TECHNOLOGY (AIST)

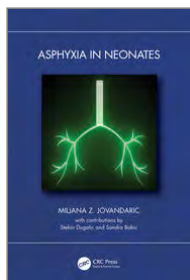
Series: *Sustainable Industrial and Environmental Bioprocesses*

This book provides a scientific overview of Ashwagandha's diverse health benefits, including stress management, cognitive function, immune support, sleep quality, and hormonal balance. With evidence-based research, it bridges traditional wisdom and modern understanding, showcasing Ashwagandha as a promising herb for enhancing quality of life. It also explores Ashwagandha's potential role in preventing and treating COVID-19. Emphasizing the importance of quality and chemotyping of Ashwagandha for optimal results, this book is intended for general readership, herbalists, naturopaths, alternative medicine practitioners and lifescience/medical students and researchers

CRC Press  
September 2024:118  
Hb: 978-1-032-70567-5: \$100

\* For full contents and more information, visit: [www.routledge.com/9781032705675](http://www.routledge.com/9781032705675)

## Asphyxia in Neonates



**Miljana Z. Jovandaric**

In severe asphyxia, lipid peroxidation occurs. Neonatal lipid concentration may indicate the severity of asphyxia and be an additional parameter of cooling therapy. This book describes the results of research into the impact oxygen deficits in neonates. The physiological consequences of asphyxiated newborn infants include changes in the pH of plasma and changes in lipid concentrations. These changes can result in apoptosis, loss of cell membrane integrity, and damage to the brain.

CRC Press  
April 2024:167  
Hb: 978-1-032-38771-0: \$200  
eBook: 978-1-003-34669-2

\* For full contents and more information, visit: [www.routledge.com/9781032387710](http://www.routledge.com/9781032387710)

## Bacillus Probiotics for Sustainable Aquaculture



*Edited by Mehdi Soltani, Preetham Elumalai* Cochin Uni of S&T, *Koushik Ghosh, Einar Ringø* Norwegian College of Fishery Science, University of Norway, Norway

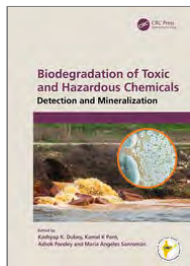
This book reviews the role of Bacillus bacteria in aquaculture, particularly focusing on finfish and shellfish. It presents the anatomy and physiology of these aquatic species, their immune systems, and the biology of Bacillus bacteria. It discusses specific interactions between Bacillus and the gastrointestinal tracts of fish and shellfish, examining the production and effects of Bacillus-derived exoenzymes and bacteriocins and their role in enhancing aquatic health and water quality. It is intended for professionals and practitioners in the aquaculture industry and researchers, academicians, and students of microbiology, marine biology, and aquaculture.

CRC Press  
November 2024:280  
Hb: 978-1-032-82273-0: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032822730](http://www.routledge.com/9781032822730)

## Biodegradation of Toxic and Hazardous Chemicals

Detection and Mineralization



*Edited by Kashyap K. Dubey, Kamal K. Pant, Ashok Pandey, Maria Ángeles Sanromán*

*Series: Sustainable Industrial and Environmental Bioprocesses*

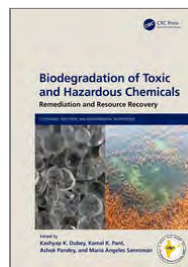
This reference book discusses the applications of microorganisms as a crucial solution for the sustainable management of toxic pollutants. It describes the microbial remediation of different kinds of pollutants like wastewater, antibiotics, and toxic chemicals. It highlights the technical, scientific, regulatory, safety, and societal impacts of various sustainable biodegradation approaches. The book describes various sensors in environmental pollution monitoring and pollutant detection.

CRC Press  
April 2024:204  
Hb: 978-1-032-45370-5: \$190  
eBook: 978-1-003-39149-4

\* For full contents and more information, visit: [www.routledge.com/9781032453705](http://www.routledge.com/9781032453705)

## Biodegradation of Toxic and Hazardous Chemicals

Remediation and Resource Recovery



*Edited by Kashyap K Dubey, Kamal K Pant, Ashok Pandey, Maria Angeles Sanromán*

*Series: Sustainable Industrial and Environmental Bioprocesses*

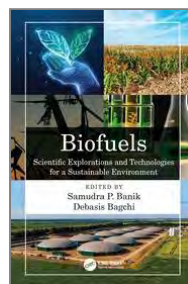
This timely reference book discusses the biotechnological applications of microorganisms as a crucial solution for the sustainable management of different types of toxic pollutants. It reviews the sustainable biodegradation approach and resource recovery for different kinds of pollutants like plastic wastes, pharmaceutical wastes, pesticides, and textile industry wastes. The book provides an understanding of biotechnology-based interventions toward a zero-waste route.

CRC Press  
April 2024:198  
Hb: 978-1-032-45369-9: \$190  
eBook: 978-1-003-39148-7

\* For full contents and more information, visit: [www.routledge.com/9781032453699](http://www.routledge.com/9781032453699)

## Biofuels

Scientific Explorations and Technologies for a Sustainable Environment



*Edited by Samudra Prosad Banik, Debasis Bagchi*

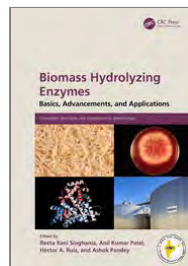
Biofuels are promising eco-friendly renewable energy alternatives, simultaneously curbing the dependence on depleting fossil fuel reserves, reducing the global carbon footprint. However, there have been technological constraints deterring the global-wide scale adoption of biofuel. *Biofuels: Scientific Explorations and Technologies for a Sustainable Environment* presents a comprehensive analysis of different types of biofuels.

CRC Press  
May 2024:614  
Hb: 978-1-032-39626-2: \$230  
eBook: 978-1-003-35060-6

\* For full contents and more information, visit: [www.routledge.com/9781032396262](http://www.routledge.com/9781032396262)

## Biomass Hydrolyzing Enzymes

Basics, Advancements, and Applications



*Edited by Reeta Rani Singhania, Anil Kumar Patel* Nat. Kaohsiung Univ., *Héctor A. Ruiz* The Autonomous University of Coahuila, Mexico, *Ashok Pandey*

*Series: Sustainable Industrial and Environmental Bioprocesses*

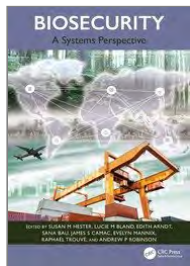
This reference book provides advanced knowledge about lignocellulosic biomass production and its application in biomass hydrolysis. Lignocellulosic biomass is the most abundant ubiquitous and renewable raw material in the world. Though biomass can be deconstructed by other means, biological ways through enzymes are eco-friendly and sustainable. This book discusses the different enzymes used for degrading biomass into its monomeric components. It covers important topics like biorefineries, hydrolysis of algal mass, kinetic modelling for hydrolysis, inhibitory effects, etc.

CRC Press  
May 2024:196  
Hb: 978-1-032-37097-2: \$190  
eBook: 978-1-003-33531-3

\* For full contents and more information, visit: [www.routledge.com/9781032370972](http://www.routledge.com/9781032370972)

## Biosecurity

A Systems Perspective



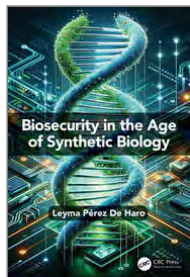
Edited by **Susan M Hester** UNE Business School, University of New England, Australia, **Lucie M Bland**, **Edith Arndt** University of Melbourne, Parkville, Australia, **Sana Bau**, **James S Camac** University of Melbourne, Australia, **Evelyn Mannix**, **Raphael Trouve**, **Andrew P Robinson**

Biosecurity: A Systems Perspective provides an overview of biosecurity as a system of related components, actors and risks. This book — directed to the biosecurity practitioner, generalist scientist and student — introduces overall features of the biosecurity system while walking the reader through the most up-to-date research on each step of the continuum (i.e. pre-border, border and post-border activities). This book, which explicitly incorporates economic and social dimensions as well as varied decision-making contexts, paves the way for a more systemic approach to biosecurity risk management.

CRC Press  
July 2024:278  
Pb: 978-1-032-18169-1: \$82.99  
Hb: 978-1-032-18168-4: \$200

\* For full contents and more information, visit: [www.routledge.com/9781032181691](http://www.routledge.com/9781032181691)

## Biosecurity in the Age of Synthetic Biology



**Leyma Pérez De Haro**

Biosecurity in the Age of Synthetic Biology is a comprehensive review of the biosecurity issues faced by the innovative and rapidly evolving field of synthetic biology. The book provides an in-depth examination of the ethical, legal, and societal dimensions shaping the future of synthetic biology research, in addition to a practical protocol for biosecurity risk assessment. This essential guide illuminates scientific and technological frontiers and advocates for a proactive approach ensuring the responsible development and use of synthetic biology.

CRC Press  
September 2024:288  
Pb: 978-1-032-72536-9: \$79.95  
Hb: 978-1-032-72947-3: \$200

\* For full contents and more information, visit: [www.routledge.com/9781032725369](http://www.routledge.com/9781032725369)

## Biotechnological Advances in Horticultural Crops



Cover Image  
Not Available

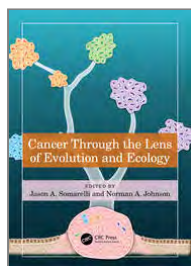
Edited by **Ajay Kumar Thakur** ICAR-DRMR, India, **Pankaj Kumar** Uni of Horticulture and Forestry, India, **Dinesh Kumar Srivastava** Dr YS Parmar UHF Nauni, India

The field of Horticultural Biotechnology has witnessed remarkable growth in recent years, offering profound insights and innovations that are reshaping agriculture's future. "Biotechnological Advances in Horticultural Crops" serves as a comprehensive guide to the latest innovations and applications. This meticulously curated volume bridges the gap between fundamental knowledge and cutting-edge advancements. From plant tissue culture to genomic approaches, this book spans a diverse array of topics, catering to a broad audience of students, researchers, and academics.

CRC Press  
December 2024:272  
Hb: 978-1-032-38134-3: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032381343](http://www.routledge.com/9781032381343)

## Cancer through the Lens of Evolution and Ecology



Edited by **Jason A. Somarelli**, **Norman A. Johnson**

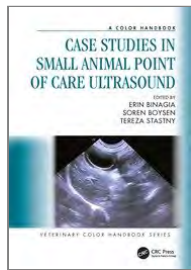
Cancer cells exist in an ever-changing "ecology" and are subject to evolutionary pressures just like any species in nature. This edited book explores the following themes: 1) how the dynamics of mutation, epigenetics, and gene expression noise are sources of genetic diversity; 2) how scarce resources influence cancer therapy resistance; 3) how predator-prey dynamics are mirrored in immune-cancer cross-talk; 4) how cancer cells parallel niche construction theory; 5) how changing fitness landscapes enable cancer growth; and 6) how cancer cells interact within the body. The book is a resource for understanding cancer as a disease of multicellularity grounded in evolutionary principles.

CRC Press  
May 2024:214  
Pb: 978-1-032-31077-0: \$71.99  
Hb: 978-1-032-31078-7: \$180  
eBook: 978-1-003-30792-1

\* For full contents and more information, visit: [www.routledge.com/9781032310770](http://www.routledge.com/9781032310770)

## Case Studies in Small Animal Point of Care Ultrasound

A Color Handbook



Edited by **Erin Binaglia** Michigan State Univ., **Soren Boysen** Calgary Univ., **Tereza Stastny** Arizona Veterinary, Emergency and Critical Care Centre

Series: *Veterinary Color Handbook Series*

This illustrated practical guide covers the many facets of small animal point of care ultrasound (POCUS) using clinical cases commonly seen in practice. It details specific point of care ultrasound techniques, views, interpretations, pitfalls and knowledge gaps, highlighting the utility initial and serial point of care ultrasound for both diagnostic and patient management purposes. Focusing on commonly asked questions and applications, the authors take a binary question approach to veterinary POCUS, shown to decrease errors in human POCUS. This is the ideal reference for small animal and mixed practitioners and students.

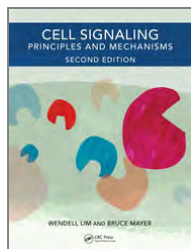
CRC Press  
August 2024:340  
Pb: 978-0-367-54725-7: \$115  
Hb: 978-1-032-56656-6: \$290

\* For full contents and more information, visit: [www.routledge.com/9780367547257](http://www.routledge.com/9780367547257)

2ND EDITION

## Cell Signaling, 2nd edition

Principles and Mechanisms



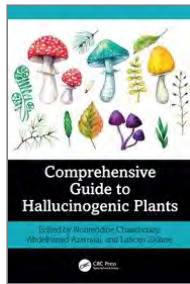
**Wendell A. Lim** University of California, San Francisco, USA, **Bruce J. Mayer**

Extensively updated, this 2nd edition of Cell Signaling provides undergrads and graduates with the conceptual tools needed to make sense of the array of pathways that cells use to detect, process, and respond to signals from the environment. By emphasizing the common design principles and molecular processes that underlie all signaling mechanisms, the book develops a broad conceptual framework through which students can understand diverse signaling pathways. It first examines the common currencies of cellular information processing and the core components of the signaling machinery and then shows how these components link together into networks.

CRC Press  
September 2024:458  
Pb: 978-0-367-27937-0: \$115  
Hb: 978-0-367-27942-4: \$290

\* For full contents and more information, visit: [www.routledge.com/9780367279370](http://www.routledge.com/9780367279370)

## Comprehensive Guide to Hallucinogenic Plants



Edited by **Noureddine Chaachouay , Abdelhamid Azeroual , Lahcen Zidane**

Comprehensive Guide to Hallucinogenic Plants focuses on ethnobotanical aspects of hallucinogenic plant species, featuring history on how they were used in ancient societies, identifying chemical compounds, and explaining modern medicinal uses, as well as conservation initiatives. The book emphasizes the importance of understanding the cultural, country-wide, environmental, and scientific importance of these medicinal plants.

CRC Press  
October 2024:448  
Hb: 978-1-032-59180-3: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032591803](http://www.routledge.com/9781032591803)

## Conceptual Agricultural Microbiology



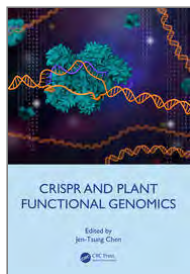
Yogesh Kumar , R. K. Naresh , P.K. Singh , Mukesh Kumar , S. P. Singh , Deepak Chaudhari , Himanshu Tiwari

Modern soil microbiology represents an integration of microbiology with the concepts of soil science, chemistry, and ecology to understand the functions of microorganisms in the soil environment. The aim of this book is to torch the current status and application of microbiology in modern agriculture. Ideally designed for farmers, agriculturalists, product managers, farm holders, manufactures, governmental professionals, researchers, academicians, and students. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan and Bhutan)

CRC Press  
June 2024:254  
Hb: 978-1-032-78811-1: \$105

\* For full contents and more information, visit: [www.routledge.com/9781032788111](http://www.routledge.com/9781032788111)

## CRISPR and Plant Functional Genomics



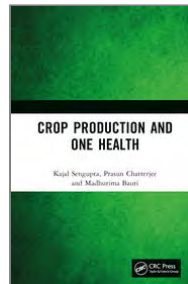
Edited by **Jen-Tsung Chen**

CRISPR and Plant Functional Genomics explores how to release the potential of plant functional genomics, one of the prevailing topics in plant biology and the critical technology for speed and precision crop breeding.

CRC Press  
May 2024:387  
Hb: 978-1-032-46949-2: \$230  
eBook: 978-1-003-38706-0

\* For full contents and more information, visit: [www.routledge.com/9781032469492](http://www.routledge.com/9781032469492)

## Crop Production and One Health



Kajal Sengupta , Prasun Chatterjee , Madhurima Bauri

The subject matter of this book focuses on recognizing the relationship between humans, animals, plants, and their environment to attain optimum health results. The key objectives of 'One Health' are to identify and track the numerous risk factors to promote eco-friendly and more sustainable choices. This book also discusses the four key components of 'One Health', which are – the geographical component, the ecological component, the human activities component and the food and agricultural component. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan and Bhutan)

CRC Press  
August 2024:114  
Hb: 978-1-032-82260-0: \$100  
eBook: 978-1-003-50372-9

\* For full contents and more information, visit: [www.routledge.com/9781032822600](http://www.routledge.com/9781032822600)

## Cryo-Electron Microscopy in Structural Biology

From Structural Insights to Tomography and Drug Discovery



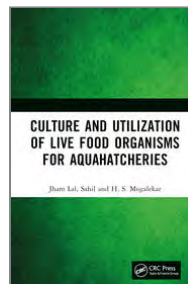
Edited by **Krishnarao Appasani**

Cryo-Electron Microscopy, in combination with Tomography, has emerged as a new technology for visualizing molecular structures at a resolution beyond even 1 Å. Using this technology has revealed the native molecular details of membranes, viruses, and cells. This comprehensive, volume brings together authoritative overviews of these methods from structural and biological perspective. It is a must-have for researchers and graduate students, as well as those working in industry, primarily in the areas of biophysics, structural biology, crystallography and genomics.

CRC Press  
October 2024:464  
Hb: 978-1-032-35253-4: \$240

\* For full contents and more information, visit: [www.routledge.com/9781032352534](http://www.routledge.com/9781032352534)

## Culture and Utilization of Live Food Organisms for Aquahatcheries



Jham Lal , Sahil , H. S. Mogalekar

This book discusses fisheries and aquaculture as crucial contributors to nutritional security and the need for sustainable practices to meet the growing demand. The subject matter of this book includes: Recycling of Waste Through Tubifex Culture and Used as Live Food in Aquahatcheries Culture Techniques of Daphnia Mosquito Larval Control Through the Larvivorous Fish Chlorella Live Food: Cultivation and Applications Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan and Bhutan)

CRC Press  
August 2024:182  
Hb: 978-1-032-82266-2: \$200  
eBook: 978-1-003-50375-0

\* For full contents and more information, visit: [www.routledge.com/9781032822662](http://www.routledge.com/9781032822662)



## Eco-Restoration of Polluted Environment

A Biological Perspective



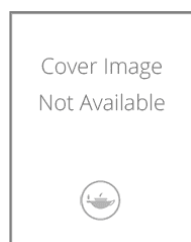
Edited by **Sandip V. Rathod**

The book "Eco-Restoration of Polluted Environment: A Biological Perspective" explores recent advances in the field of biological strategies for the remediation of polluted environments including soil, water, and air. The book covers chapters on bioremediation of heavy metals, radioactive waste, and waste gases, which are believed to be bottleneck problems of researchers working in the field of bioremediation. The book provides deep insight into biotechnological advances in the field of eco-restoration of polluted environments with separate chapters on Genetic Engineering technology for enhancement of the bioremediation potential of bioresources.

CRC Press  
August 2024:328  
Hb: 978-1-032-72997-8: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032729978](http://www.routledge.com/9781032729978)

## Emerging Role of Nanocarrier in Cancer Therapy



**Rishabha Malviya** Galgotias Uni., **Arun Kumar Singh**, **Sonali Sundram**

The book discusses combination therapy with polymer conjugates, and delivery of siRNA, and describes the targeting mechanism of nanoparticle-based drug delivery as well as its function in reversing drug resistance. It summarizes the theranostic applications of immunomodulatory nanomaterials in treating cancers. The text covers important topics such as imaging biomarkers, biomarkers in cancer nanomedicine, polymeric nanoparticles, and hyperbaric oxygen therapy. It is primarily written for graduate students, and academic researchers in the fields of biotechnology, nanotechnology, pharmaceutical science, and pharmacology.

CRC Press  
September 2024:224  
Hb: 978-1-032-58352-5: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032583525](http://www.routledge.com/9781032583525)

## Environmental Health and Occupational Safety



**Pankaj Gupta** HPU Shimla, India

Environmental Health and Occupational Safety is a quick, easy-to-consult comprehensive overview of the issues pertaining to environmental health, OSH. This book equips readers with occupational health risks and hazardous environments encountered at various industrial and workplace settings besides providing basic information on issues related to technology, management, regulatory compliance, and important topics like air, water, and vector-borne diseases.

CRC Press  
June 2024:276  
Hb: 978-1-032-73560-3: \$150  
eBook: 978-1-003-46478-5

\* For full contents and more information, visit: [www.routledge.com/9781032735603](http://www.routledge.com/9781032735603)

## Exploring the Blue Bioeconomy

Marine Bioresources and Sustainable Applications



**Sanjeeva KKA** University of Sri Jayewardenepura, Sri Lanka

This book provides an overview of marine bioresources in the blue bioeconomy for readers curious about the blue bioeconomy. It delivers potential applications of marine macro and microorganisms in different industries such as biomedical, functional food, pharmaceutical, cosmeceutical, ecotourism, industrially important minerals, and enzymes. Besides the potential industrial applications, the book gives the readers an overview of conversion and sustainable utilization techniques for marine bioresources.

CRC Press  
August 2024:184  
Hb: 978-1-032-76166-4: \$99.99

\* For full contents and more information, visit: [www.routledge.com/9781032761664](http://www.routledge.com/9781032761664)

## Exploring the Gut Microbiome in Cancer

From Biomarkers to Personalized Therapies



Edited by **Zodwa Dlamini** SAMRC Precision Oncology Research Unit (PORU), DSI/NRF SARChI Chair in Precision Oncology and Cancer Prevention (POCP), Pan African Cancer Research Institute (PACRI), University of Pretoria, SA.

This book explores the relationship between the gut microbiome and cancer, illuminating various facets from fundamental roles to personalized therapies. It provides an overview of the impact of the microbiome on cancer development, offering potential for novel diagnostic and treatment approaches. The book discusses the role of dysbiosis in cancer development, the influence of the microbiome on treatment responses, and strategies to modulate the microbiome for enhanced therapies. It also reviews the influence of the gut microbiome on immunotherapy resistance and chemoresistance. This book is intended for cancer researchers, medical oncologists, clinicians, and pharmacologists.

CRC Press  
October 2024:280  
Hb: 978-1-032-70642-9: \$160

\* For full contents and more information, visit: [www.routledge.com/9781032706429](http://www.routledge.com/9781032706429)

## Exploring Traditional Wild Edible Plants



Edited by **Vibhor Agarwal**, **Sachidanand Singh**, **Rahul Datta**

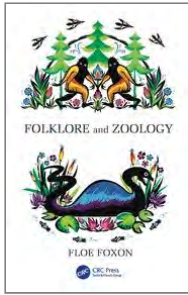
Series: *Exploring Medicinal Plants*

Wild edible plants are native species that grow and reproduce naturally in their natural habitats without domestication. These plants can serve as a healthier alternative to farmed crops that may be heavily laden with pesticides and other poisonous substances. This book focuses on assessment of the nutritional value, potential health benefits, and mechanisms of action of various wild edible plants. It presents information on nutrients and bioactive ingredients that can have health advantages, including antioxidant properties, antimicrobial, anti-inflammatory, and antidiabetic effects.

CRC Press  
September 2024:352  
Hb: 978-1-032-49886-7: \$200

\* For full contents and more information, visit: [www.routledge.com/9781032498867](http://www.routledge.com/9781032498867)

## Folklore and Zoology



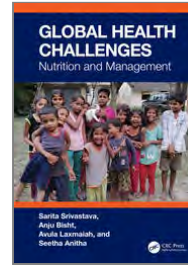
**Floe Foxon** Folk Zoology Soc., PA

Folklore & Zoology accessibly reviews the science of DNA samples; film and photograph analysis; hair and footprint examination; and the statistics behind such alleged animals as Sasquatch and the Yeti, Nessie and Champ, the Griffin and the Thunderbirds, and the possible survival of the thylacine, ivory-billed woodpecker, eastern cougar, and others. With over 400 references, Folklore & Zoology is among the most complete scientific reviews of cryptozoology to date offering a fresh synthesis of a highly interdisciplinary literature. This book is ideal reading for students and academics interested in and studying zoology, palaeontology, and folklore courses.

CRC Press  
September 2024:136  
Hb: 978-1-032-75767-4: \$39.95  
\* For full contents and more information, visit: [www.routledge.com/9781032757674](http://www.routledge.com/9781032757674)

## Global Health Challenges

Nutrition and Management



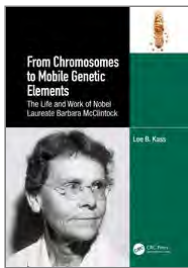
**Sarita Srivastava , Anju Bisht , Avula Laxmaiah , Anitha Seetha**

This book is a reference on some of the major global health issues and the role of nutrition in their prevention and management. The book covers undernutrition, degenerative diseases, mental health disorders and COVID-19. Every chapter covers health issues, diet, prevention and management. It reviews feeding and eating disorders like anorexia, bulimia, binge-eating, and delineates the risk factors and management. The book addresses the gaps in tackling these health problems and proposes comprehensive models and frameworks to manage them.

CRC Press  
June 2024:178  
Hb: 978-1-032-37846-6: \$120  
eBook: 978-1-003-35402-4  
\* For full contents and more information, visit: [www.routledge.com/9781032378466](http://www.routledge.com/9781032378466)

## From Chromosomes to Mobile Genetic Elements

The Life and Work of Nobel Laureate Barbara McClintock



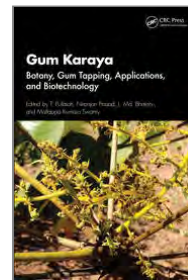
**Lee B. Kass**

This biography of Nobel Laureate Barbara McClintock (1902-1992) places her life and work in its social, scientific and personal context. The author examines the development of Barbara McClintock's scientific work and her influence upon individuals and upon the fields of cytogenetics and evolutionary biology in the period from 1902 to the present. The history documents years of McClintock's notable and lauded scientific work long before she discovered Transposable Elements in the mid-1940s for which she ultimately received the Nobel Prize. The biography employs documented evidence to expose, demystify, and provide clarity for legends and misinterpretations of McClintock's life and work.

CRC Press  
June 2024:282  
Hb: 978-1-032-36532-9: \$120  
eBook: 978-1-003-33252-7  
\* For full contents and more information, visit: [www.routledge.com/9781032365329](http://www.routledge.com/9781032365329)

## Gum Karaya

Botany, Gum Tapping, Applications, and Biotechnology



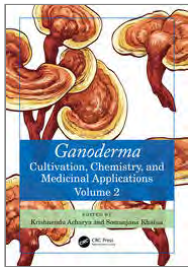
*Edited by* **T. Pullaiah** Sri Krishnadevaraya University, India, **Niranjana Prasad , L. Md. Bhakshu PVKN** Government Col (Autonomous), India, **Mallappa Kumara Swamy**

Polysaccharide gums have a wide range of applications due to their hydrophilic properties. They have been used as a gelling agent, encapsulating agent, thickener, emulsifier, and stabilizer. Sourcing natural gums from botanical and plant sources have become an important focus to produce acceptable food ingredients in liquids and semi-solid forms. This is mainly because of the positive attitude of consumers toward plant-based gums rather than other gums from animal and microbial sources.

CRC Press  
August 2024:200  
Hb: 978-1-032-57343-4: \$140  
\* For full contents and more information, visit: [www.routledge.com/9781032573434](http://www.routledge.com/9781032573434)

## Ganoderma

Cultivation, Chemistry, and Medicinal Applications, Volume 2

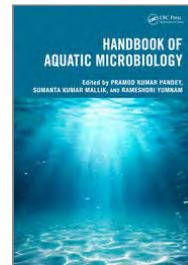


*Edited by* **Krishnendu Acharya , Somanjana Khatua**

For the past two millennia, Ganoderma has been prized as the "mushroom of immortality" in ancient Asian cultures, owing to its health benefits. Currently, the Ganoderma-based industry is witnessing a significant surge, offering a plethora of dietary and medicinal products. Recognizing the impact of these developments, the book, "Ganoderma: Cultivation, Chemistry, and Medicinal Applications Volume 2," aims to consolidate the latest information on the macrofungi, emphasizing its bioactive compounds, diverse therapeutic effects, and industrial applications.

CRC Press  
August 2024:244  
Hb: 978-1-032-79033-6: \$160  
\* For full contents and more information, visit: [www.routledge.com/9781032790336](http://www.routledge.com/9781032790336)

## Handbook of Aquatic Microbiology



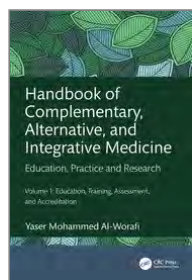
*Edited by* **Pramod Kumar Pandey** ICAR, UK, India, **Sumanta Kumar Mallik , Rameshori Yumnam**

This comprehensive handbook covers the different aspects of the aquatic environment, microbiology, and microbial applications. The world's aquatic environment faces a serious threat due to inappropriate planning, implementation, and management. This book compiles effective strategies for managing the aquatic environment and highlights the role of microorganisms as pollution indicators in bioremediation, and as bio-control agents. The book also covers the impact of pollution on microorganisms, biofilms, cyanobacterial blooms, and the metagenomics approach to isolate microbes. This book is essential for students and researchers of Microbiology, Environmental Sciences, and Biotechnology.

CRC Press  
September 2024:400  
Hb: 978-1-032-52680-5: \$180  
\* For full contents and more information, visit: [www.routledge.com/9781032526805](http://www.routledge.com/9781032526805)

## Handbook of Complementary, Alternative, and Integrative Medicine

Education, Practice, and Research Volume 1: Education, Training, Assessment, and Accreditation



**Yaser Mohammed Al-Worafi** University of Science and Technology of Fujairah, United Arab Emirates

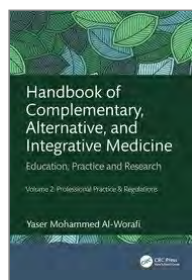
Volume 1 focuses on complementary, alternative, and integrative medicine (CAM) education. Its 20 chapters cover CAM education history, needed competencies, and curriculum reform, among other topics. It is Volume 1 of six that describe the education, practice and research related issues and the efficacy and safety of CAM in treating various conditions. The purpose of these six volumes (sold individually or as a set) is to explain how complementary, alternative, and integrative medicine is practiced around the world; to share in terms of education, practice and research; and identify the challenges and suggest recommendations to overcome the identified challenges.

CRC Press  
September 2024:304  
Hb: 978-1-032-34682-3: \$99.95

\* For full contents and more information, visit: [www.routledge.com/9781032346823](http://www.routledge.com/9781032346823)

## Handbook of Complementary, Alternative, and Integrative Medicine

Education, Practice, and Research Volume 2: Professional Practice & Regulations



**Yaser Mohammed Al-Worafi** University of Science and Technology of Fujairah, United Arab Emirates

Six volumes combine to make up the Handbook of Complementary, Alternative, and Integrative medicine: Education, Practice and Research, which describes the education, practice, and research related issues of complementary, alternative, and integrative medicine; and its efficacy and safety in treating diseases and health conditions. Further the volumes review integrative medicine around the world to share the best practice and experiences in terms of education, practice and research; and identify the challenges and suggest recommendations to overcome the identified challenges.

CRC Press  
October 2024:336  
Hb: 978-1-032-34683-0: \$99.95

\* For full contents and more information, visit: [www.routledge.com/9781032346830](http://www.routledge.com/9781032346830)

## Handbook of Complementary, Alternative, and Integrative Medicine

Education, Practice, and Research Volume 3: Research Evidence Based Clinical Practice



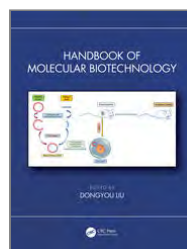
**Yaser Mohammed Al-Worafi** University of Science and Technology of Fujairah, United Arab Emirates

The 20 chapters of Volume 3 focus on complementary, alternative, and integrative medicine research related issues. It begins with a history of complementary, alternative, and integrative alternative medicine research and continues with coverage of the different research issues such as Complementary and Alternative Medicine (CAM) research importance, plan, proposal, fund, ethical issues, Study designs, methods, advantages and disadvantages for each method, best practices in CAM research, publications.

CRC Press  
November 2024:336  
Hb: 978-1-032-34684-7: \$99.99

\* For full contents and more information, visit: [www.routledge.com/9781032346847](http://www.routledge.com/9781032346847)

## Handbook of Molecular Biotechnology



*Edited by* **Dongyou Liu** Royal College of Pathologists of Australasia, St. Leonards, New South Wales, Australia

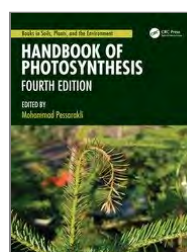
With a history that dates back to the dawn of human civilization more than 10,000 years ago, and a record that includes the domestication and selective breeding of plants and animals, the harnessing of fermentation process for bread, cheese and brewage production, and the development of vaccines against infectious diseases, biotechnology has acquired a molecular focus during the 20th century, and transformed our practices in disease diagnosis, treatment and prevention, pharmaceutical and industrial manufacturing, animal and plant industry, and food processing.

CRC Press  
August 2024:762  
Hb: 978-0-367-51787-8: \$425

\* For full contents and more information, visit: [www.routledge.com/9780367517878](http://www.routledge.com/9780367517878)

4TH EDITION

## Handbook of Photosynthesis



*Edited by* **Mohammad Pessaraki** The University of Arizona, Tucson, USA

*Series: Books in Soils, Plants, and the Environment*

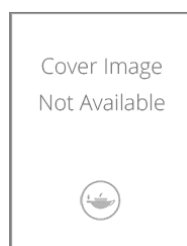
The fourth edition of the Handbook of Photosynthesis will be a compilation of recent discoveries and progresses made in photosynthesis, improving photosynthesis functioning under challenging environments. The volume is about the most important physiological aspects of plant growth, development, and production that is photosynthesis, the food manufacturing process of plants/crops that is required for sustain of life in the universe

CRC Press  
July 2024:826  
Hb: 978-1-032-28033-2: \$250

\* For full contents and more information, visit: [www.routledge.com/9781032280332](http://www.routledge.com/9781032280332)

## Handbook of Proteases in Cancer

Cellular and Molecular Aspects



*Edited by* **Sajal Chakraborti**

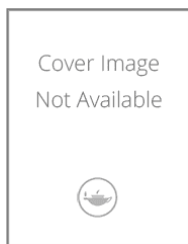
This handbook provides comprehensive coverage of the role of proteases and the associated biochemical pathways in cancer development and metastasis. Proteases make up to two percent of the human genome and play a critical role in the tumor microenvironment. The book introduces the major classes of proteases and the signal transduction mechanisms associated with cancer initiation and progression. It discusses the role of inflammation and immune responses in proteases-induced cancer. The book covers cancer-induced gene expression and apoptotic and necrotic pathways in cancer. The text is useful for researchers and professionals in cancer research, biochemistry, and physiology.

CRC Press  
December 2024:716  
Hb: 978-1-032-48953-7: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032489537](http://www.routledge.com/9781032489537)

## Healing Plants of South Asia

A Handbook of the Medicinal Flora of the Indian Subcontinent.  
Volume 1



**John A. Parrotta**

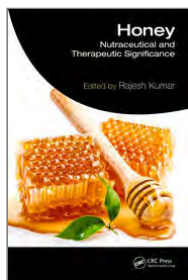
South Asia is rich in cultural traditions and biodiversity, home to 2.1 billion people with deep knowledge of native and introduced plant species. Plant-based medicines are vital to traditional healthcare systems in India and neighboring countries. However, forest degradation threatens this wealth. Conservation efforts need current data on medicinal plant resources and their importance for health and livelihoods. *Healing Plants of South Asia: A Handbook of the Medicinal Flora of the Indian Subcontinent* helps to address this need.

CRC Press  
August 2024:2098  
Hb: 978-1-138-03605-5: \$825

\* For full contents and more information, visit: [www.routledge.com/9781138036055](http://www.routledge.com/9781138036055)

## Honey

Nutraceutical and Therapeutic Significance



*Edited by Rajesh Kumar* Himachal Pradesh University, India

This book volume shall offer the readers state-of-the-art records on the proposed topic and established research in the area. Each chapter shall integrate semantic and pragmatic facts about honey and its connection with animal physiology. Emphasis shall be placed on exploring and correlating all possible physiological disorders/diseases that can be controlled/or cured using honey. This book shall benefit scholars, students, and professionals especially those working in the area of food science/industry, taste physiology, pharmacology, folk medicine, and Ayurveda. With a compelling blend of scientific insights and practical applications.

CRC Press  
September 2024:240  
Hb: 978-1-032-79015-2: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032790152](http://www.routledge.com/9781032790152)

## Human Fungal Diseases

Diagnostics, Pathogenesis, Drug Resistance and Therapeutics



*Edited by Saif Hameed* Amity Institute of Biotechnology, Manesar, Haryana

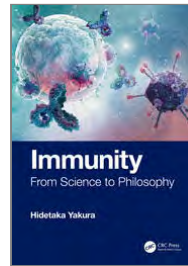
This reference book reviews the latest advancements in the fungal infections and their impact on human health. It presents epidemiology, diagnosis, pathogenesis, risk factors, virulence mechanisms, treatment strategies, disease management, and prevention of fungal infections. The book further reviews host-pathogen interactions, biofilm formation, and quorum sensing. The chapter presents the latest advancements in diagnostic methods and therapeutic strategies against fungal infections. This book is useful for researchers, students, and health professionals working in the fields of mycology, microbiology, infectious diseases, immunology, dermatology, and pulmonology.

CRC Press  
September 2024:216  
Hb: 978-1-032-63302-2: \$120

\* For full contents and more information, visit: [www.routledge.com/9781032633022](http://www.routledge.com/9781032633022)

## Immunity

From Science to Philosophy



**Hidetaka Yakura**

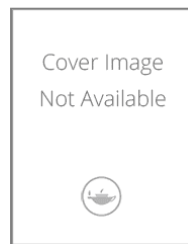
This book explores the essence of immunity. After an initial review of hypotheses, models, and theories proposed to explain immune phenomena in humans and mice, it summarizes the results from synchronic organism-level analyses and diachronic analyses tracing phylogeny. These results suggest that immunity is coextensive with life and is equipped with functions similar to the nervous system. Approaching the essence of any phenomenon in this way is called "metaphysicalization of science." This book demonstrates the potential of this approach and contributes to a richer understanding of nature.

CRC Press  
August 2024:176  
Hb: 978-1-032-77659-0: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032776590](http://www.routledge.com/9781032776590)

## Intellectual Property Issues in Life Sciences

Disputes and Controversies



*Edited by Chetan Keswani* Institute of Science, Banaras Hindu University, India, **Cristina Possas** Oswaldo Cruz Foundation, Brazil

*Intellectual Property Issues in Life Sciences: Disputes and Controversies* highlight emerging legal, social, and regulatory issues pertaining to various areas of life sciences. Patents occupy a prominent position in the innovation systems in the life sciences; but to what extent they support, or hinder innovation is widely disputed. Life Science is a broad subject including agriculture, ecology, microbiology, plant and animal sciences, health and diseases, biotechnology, etc.

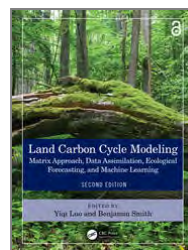
CRC Press  
December 2024:304  
Hb: 978-1-032-52231-9: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032522319](http://www.routledge.com/9781032522319)

2ND EDITION

## Land Carbon Cycle Modeling

Matrix Approach, Data Assimilation, Ecological Forecasting, and Machine Learning



*Edited by Yiqi Luo* Regents Professor, Center for Ecosystem Science and Society (EcoSS), Department of Biological Sciences, Northern Arizona University, **Benjamin Smith** Hawkesbury Institute for the Environment, Western Sydney University.

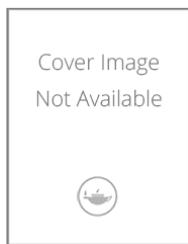
This book addresses the crucial question of how to assess the potential impact of the additional carbon to the land carbon cycle. The contributors describe a set of new approaches to land carbon cycle modeling for better exploring ecological questions regarding changes in carbon cycling; employing data assimilation techniques for model improvement; doing real- or near-time ecological forecasting for decision support; combining newly available machine learning techniques with process-based models to improve prediction of land carbon cycle under climate change.

CRC Press  
June 2024:312  
Hb: 978-1-032-69849-6: \$240

\* For full contents and more information, visit: [www.routledge.com/9781032698496](http://www.routledge.com/9781032698496)

## Legume Crop Wild Relatives

Their Role in Improving Climate Resilient Legumes



Edited by **Uday Chand Jha** Indian Ins of Pulses Res India, **Harsh Nayyar** Panjab Uni, India, **Kamal Dev Sharma** CSK HP Agricultural Uni, India, **Eric J Bishop-von Wettberg** Uni of Vermont, U.S.A, **Kadambot H. M. Siddique** The Uni of Western Australia

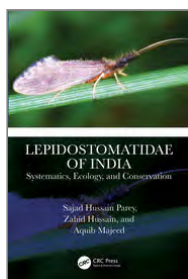
In the proposed edited book, we will highlight the importance of various potential traits of crop wild relatives which are yet to be properly harnessed for designing future climate-resilient grain legumes. We also update how advances in molecular genetics and genomics have enabled underpinning the several candidate gene(s)/genomic regions in various crop wild relatives harbouring adaptive traits that confer climate resilience in grain legumes.

CRC Press  
October 2024:240  
Hb: 978-1-032-56223-0: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032562230](http://www.routledge.com/9781032562230)

## Lepidostomatidae of India

Systematics, Ecology, and Conservation



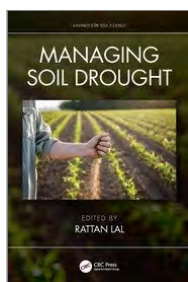
Sajad Hussain Parey Department of Zoology, Baha Ghulam Shah Badshah University Rajouri (J&K) India, **Zahid Hussain , Aqub Majeed**

This comprehensive reference book delves into the various aspects of the Lepidostomatidae (Trichoptera) in India, including systematics, taxonomy, morphology, ecology, and behaviour. It also offers valuable insights into the morphological and molecular techniques utilized for the identification of caddisflies. The book addresses the threats faced by Trichoptera, with a particular focus on the Lepidostomatidae family, shedding light on the challenges that endanger their survival. This book serves as essential reference for upper undergraduate and graduate students, academicians, and researchers specializing in entomology, zoology, and environmental sciences.

CRC Press  
September 2024:136  
Hb: 978-1-032-61323-9: \$100

\* For full contents and more information, visit: [www.routledge.com/9781032613239](http://www.routledge.com/9781032613239)

## Managing Soil Drought



Edited by **Rattan Lal** Ohio State University

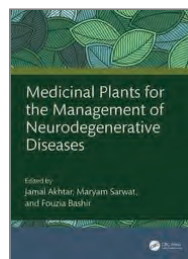
Series: *Advances in Soil Science*

Managing Soil Drought addresses basic processes and provides specific case studies throughout covering protection, restoration, and sustainable management goals of global drylands under changing and harsh climatic conditions, including fragile and vulnerable ecosystems. The book is written by numerous researchers, academicians, practitioners, advocates, land managers, and policy makers involved in bringing about transformation in these regions important to human and nature.

CRC Press  
June 2024:440  
Hb: 978-1-032-35240-4: \$230  
eBook: 978-1-003-32600-7

\* For full contents and more information, visit: [www.routledge.com/9781032352404](http://www.routledge.com/9781032352404)

## Medicinal Plants for the Management of Neurodegenerative Diseases



Edited by **Jamal Akhtar , Maryam Sarwat , Fouzia Bashir**

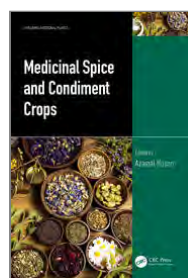
Series: *Exploring Medicinal Plants*

This book aims to provide some important and evidence-based information on the plants used for neurodegenerative diseases in the elderly especially AD and PD in a planned manner, so that the academicians, researchers, and students working in the field of medicinal plants, plant science, chemistry, biotechnology, pharmacognosy, pharmaceuticals, biochemistry, and many others interdisciplinary subjects may be benefitted.

CRC Press  
June 2024:254  
Hb: 978-1-032-49275-9: \$150  
eBook: 978-1-003-39294-1

\* For full contents and more information, visit: [www.routledge.com/9781032492759](http://www.routledge.com/9781032492759)

## Medicinal Spice and Condiment Crops



Edited by **Azamal Husen** Wolaita Sodo University, Ethiopia

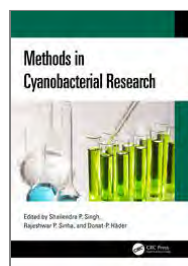
Series: *Exploring Medicinal Plants*

Medicinal Spice and Condiment Crops presents information on distribution, conservation, ethnobotany, chemistry, harvesting and storage, ecology, and genetic improvement of spices and condiments-producing plant species. It focuses on bioactive compounds obtained from spices and condiments plants used in various herbal drug formulations and uses as antimicrobials, anti-inflammatories, antiallergics, and other health-related efforts.

CRC Press  
April 2024:401  
Hb: 978-1-032-46947-8: \$180  
eBook: 978-1-003-38704-6

\* For full contents and more information, visit: [www.routledge.com/9781032469478](http://www.routledge.com/9781032469478)

## Methods in Cyanobacterial Research



Edited by **Shailendra Pratap Singh , Rajeshwar P. Sinha , Donat-P. Häder**

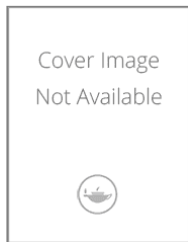
This laboratory reference compiles the essential protocols used in cyanobacterial research. Cyanobacteria is a model system for biofuel production and sequestration of carbon dioxide to tackle global climate change due to increasing levels of greenhouse gases. Topics range from identification and growth parameters to biomolecule estimation and isolation. It also covers genome analysis and bioengineering of cyanobacteria for novel products. This collection is useful to students and researchers in life sciences.

CRC Press  
June 2024:251  
Hb: 978-1-032-49834-8: \$140  
eBook: 978-1-003-39838-7

\* For full contents and more information, visit: [www.routledge.com/9781032498348](http://www.routledge.com/9781032498348)

## Microbiome Engineering

The New Dimension of Biotechnology



Edited by **Nimmy Srivastava**, **Salam A. Ibrahim**, **Mohamed Hussein Arbab Nasr**

This reference book compiles the latest techniques and applications of microbiome engineering. Microbial communities interact dynamically with their hosts, creating a considerable impact on the host and their ecosystem. This book introduces readers to microbiomes and microbiome engineering. It covers topics like omics tools in microbial research, strategies to engineer human microbiomes, the application of synthetic biology to build smart microbes, and the future of microbiome engineering. It includes the application of microbiome engineering on improving human health, livestock, and agricultural productivity.

CRC Press  
November 2024:328  
Hb: 978-1-032-47960-6: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032479606](http://www.routledge.com/9781032479606)

## miRNAomics and stress management in plants



Edited by **Peerzada Yasir Yousof** Government Degree College Pulwama, India, **Peerzada Arshid Shabir** Government Degree College Sopore, India, **Khalid Rehman Hakeem** King Abdulaziz University, Saudi Arabia

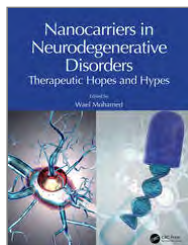
Plants, being sessile, are negatively affected by the biotic and abiotic (environmental) stresses, reducing plant growth, productivity, and quality to a larger extent. Plant have evolved different physiological, biochemical, and molecular mechanisms to combat these stress conditions to maintain their growth, development, and productivity. Understanding the mechanisms involved in the plant response to stress conditions is the foremost step in the development of stress-tolerant plants. One of the important adaptations to stress conditions is the precise and fine regulation of gene expression in both time and space.

CRC Press  
October 2024:200  
Hb: 978-1-032-16417-5: \$120

\* For full contents and more information, visit: [www.routledge.com/9781032164175](http://www.routledge.com/9781032164175)

## Nanocarriers in Neurodegenerative Disorders

Therapeutic Hopes and Hypes



Edited by **Wael Mohamed**

This book aims to furnish readers with a thorough understanding of the clinical application of nanocarrier systems for treating neurodegenerative disorders, encompassing the latest developments, challenges, safety concerns, toxicity issues, regulatory considerations, future prospects, and limitations. Individuals in academia, the scientific community, business, and education seeking a more effective approach to target the brain would find valuable insights in this resource.

CRC Press  
September 2024:392  
Hb: 978-1-032-46795-5: \$210

\* For full contents and more information, visit: [www.routledge.com/9781032467955](http://www.routledge.com/9781032467955)

## Nanoparticles in Cancer Theranostics

Current Progress in Cancer Management



Edited by **Prudhvi Lal Bhukya**, **Neelam Thakur**

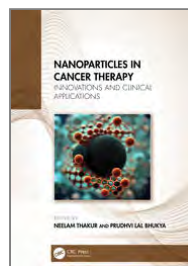
This book explores the applications of nanoparticles in cancer diagnosis and treatment. It presents the role of nanoparticles in precise cancer detection, improved imaging, and HTLV-1 retrovirus detection. It covers lipid-based nanoparticles, monoclonal antibodies, and advanced nanotherapeutics for targeted cancer treatments. Additionally, the book examines the role of nanopnanotechnology in radiotherapy, phototherapy modalities, and strategies to overcome drug resistance. The book also discusses ongoing clinical trials, challenges, and future prospects, making it a useful resource for researchers, clinicians, and students in oncology and nanotechnology.

CRC Press  
October 2024:340  
Hb: 978-1-032-73228-2: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032732282](http://www.routledge.com/9781032732282)

## Nanoparticles in Cancer Therapy

Innovations and Clinical Applications



Edited by **Neelam Thakur**, **Bhukya Prudhvi Lal**

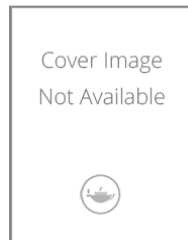
This book reviews the role of nanoparticles in cancer therapy, including their application in cancer vaccines, gene therapy, and advanced nanomedicine approaches. It highlights the development of innovative strategies for diagnosis, treatment, and therapeutic advancements, including the use of chemodynamic nanoparticles, low-dimensional materials, and approaches to overcome drug resistance. It also examines genotoxicity, immunotoxicity, cytotoxicity assessments, safety profiles, targeted drug delivery, and their role in viral oncogenesis. This book is a useful resource for researchers, clinicians, and students in the fields of oncology and nanotechnology.

CRC Press  
November 2024:400  
Hb: 978-1-032-84917-1: \$220

\* For full contents and more information, visit: [www.routledge.com/9781032849171](http://www.routledge.com/9781032849171)

## Nano-phytoremediation and Environmental Pollution

Strategies and Mechanisms



Edited by **Fernanda Maria Policarpo Tonelli**, **Rouf Ahmad Bhat**, **Gowhar Hamid Dar** Cluster University Srinagar, India, **Khalid Rehman Hakeem** King Abdulaziz University, Saudi Arabia

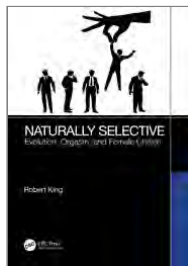
The book discusses nano-phytoremediation: the use of nanotechnology in combination with phytoremediation to restore polluted environs. The potentiality of plants in association with nanomaterials effectively remediate polluted areas has been elaborated meritoriously in this book. The new strategies are necessary because anthropogenic actions represent a serious threat to life on Earth. This book has given enough space for innovative and efficient technologies to restore damaged environs primarily focused on nano-phytoremediation.

CRC Press  
September 2024:352  
Hb: 978-1-032-03023-4: \$120

\* For full contents and more information, visit: [www.routledge.com/9781032030234](http://www.routledge.com/9781032030234)

## Naturally Selective

Evolution, Orgasm, and Female Choice



**Robert King**

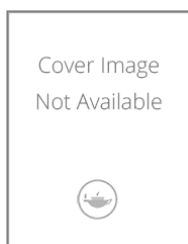
Researchers of human behaviour have identified an 'orgasm gap': Men usually orgasm during intercourse, whereas women often do not. The two leading explanations are either that women are "psychologically broken" - Freud's theory - or badly designed - the "by-product theory." However, evolutionary biology, anatomy, physiology, and direct sex research suggest women have evolved under their own selection pressures and orgasm is a fitness increasing consequence such selective factors. This is revealed in their patterns of orgasmic response, which is not random, nor inexplicable.

CRC Press  
March 2024:216  
Pb: 978-1-032-44475-8: \$61.99  
Hb: 978-1-032-44476-5: \$160  
eBook: 978-1-003-37235-6

\* For full contents and more information, visit: [www.routledge.com/9781032444758](http://www.routledge.com/9781032444758)

## Neurodegenerative Diseases

Translational Model, Mechanism and Therapeutics



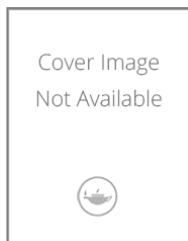
*Edited by Sachchida Nand Rai , Sandeep Singh , Santosh Kumar Singh*

This reference book provides a comprehensive overview of models and therapeutic approaches against neurodegenerative diseases, including Parkinson's disease, Alzheimer's disease, Huntington's disease, and Amyotrophic lateral sclerosis. It explores models based on the chemical, induced, cellular, genetic, transgenic, 3D organoids in neurodegenerative diseases. The book also reviews advantages and limitations of these models in designing the treatment strategies.

CRC Press  
December 2024:280  
Hb: 978-1-032-61324-6: \$155

\* For full contents and more information, visit: [www.routledge.com/9781032613246](http://www.routledge.com/9781032613246)

## Neuroimmune System



*Edited by Arpit Kumar Pradhan , Ashwin K. Jainarayanan , Shyamasree Ghosh*

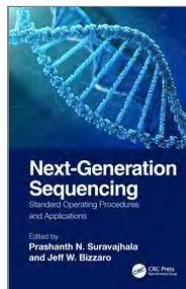
The book explores the intricate connections between the nervous and immune systems in the context of neurodegenerative disorders, offering a comprehensive overview of the bidirectional communication between these systems and their implications for disease progression and therapeutic interventions.

CRC Press  
October 2024:176  
Hb: 978-1-032-28140-7: \$150

\* For full contents and more information, visit: [www.routledge.com/9781032281407](http://www.routledge.com/9781032281407)

## Next-Generation Sequencing

Standard Operating Procedures and Applications



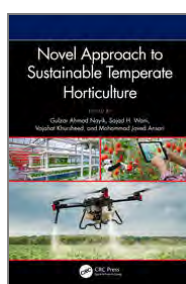
*Edited by Prashanth N Suravajhala , Jeff W Bizzaro*

This cutting-edge reference book compiles standard operating procedures, protocols, and applications of Next-Generation Sequencing (NGS). It discusses genomic testing applications through NGS. It pays special focus on the protocols for cataloging variants of uncertain significance. Over the years, NGS and advanced bioinformatics approaches have allowed the transition of genomic assays into translational practices. The book covers visualization of NGS data sets, investigation of early development impairment, and metagenome protocols. It also discusses the challenges in NGS methods.

CRC Press  
November 2024:320  
Hb: 978-1-032-39262-2: \$150

\* For full contents and more information, visit: [www.routledge.com/9781032392622](http://www.routledge.com/9781032392622)

## Novel Approach to Sustainable Temperate Horticulture



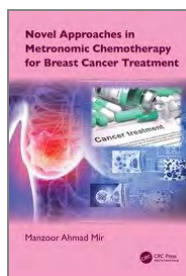
*Edited by Gulzar Ahmad Nayik Govt. Deg Col Shopian, Sajad H. Wani Govt. Degree college Shopian, India, Vajahat Khursheed Government Degree College Shopian, India, Mohammad Javed Ansari Hindu College, India*

This book is poised to be a valuable resource for horticultural scientists operating in universities, government agencies, and research centers, offering insights into achieving sustainable cultivation practices for fruits. It stands out as the first of its kind, providing in-depth knowledge on environmentally friendly methods for cultivating temperate fruit crops, with the aim of reducing harmful emissions and pollution. The book will delve into the application of Geographic Information System (GIS) for estimating horticulture area expansion and crop yield.

CRC Press  
September 2024:314  
Hb: 978-1-032-53524-1: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032535241](http://www.routledge.com/9781032535241)

## Novel Approaches in Metronomic Chemotherapy for Breast Cancer Treatment



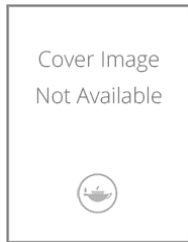
*Edited by Manzoor Ahmad Mir*

This book provides latest research and developments in the field of metronomic chemotherapy for breast cancer. It presents the principles and mechanisms of metronomic chemotherapy, preclinical and clinical studies, and the latest developments in drug delivery systems and nano formulations. The clinical pharmacology of metronomic chemotherapy including pharmacokinetics, pharmacogenetics, pharmacoeconomics, and adverse drug reactions are also examined.

CRC Press  
May 2024:208  
Hb: 978-1-032-62045-9: \$180  
eBook: 978-1-032-63267-4

\* For full contents and more information, visit: [www.routledge.com/9781032620459](http://www.routledge.com/9781032620459)

## Novel Phytopharmaceutical for Management of Disorders



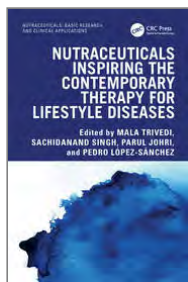
Edited by **Durgesh Nandini Chauhan** Ishita Research Organisation, Raipur, **Madhu Gupta**, **Vikas Sharma**, **Nagendra Singh Chauhan**

Novel phytopharmaceutical for the management of disorders will cover the recent advances surrounding phytopharmaceuticals and their potential uses in the management of several disorders as well as in cosmetic benefits. Sections cover the concepts of phytopharmaceuticals and current highlights in disease management. This book will also emphasize phytopharmaceutical drug delivery studies in vivo-invitro study to various target organs like lungs, liver, brain, etc.

CRC Press  
November 2024:384  
Hb: 978-1-032-27422-5: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032274225](http://www.routledge.com/9781032274225)

## Nutraceuticals Inspiring the Contemporary Therapy for Lifestyle Diseases



Edited by **Mala Trivedi** Amity University, Lucknow, India, **Sachidanand Singh**, **Parul Johri** Dr. Ambedkar Inst of Tech for Handicapped Kanpur, India, **Pedro Lopez-Sanchez**

Series: *Nutraceuticals*

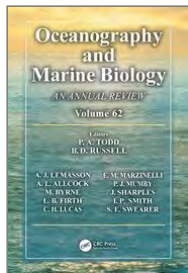
Recognizing the urgent need to address this global health crisis, this book, titled "Nutraceuticals for Management of Lifestyle Diseases," delves into a realm of science that offers immense potential for improving our health and well-being. Nutraceuticals, which combine "nutrition" with "pharmaceuticals," offer a promising strategy for treating certain conditions caused by a particular way of life.

CRC Press  
June 2024:224  
Hb: 978-1-032-49270-4: \$150  
eBook: 978-1-003-39293-4

\* For full contents and more information, visit: [www.routledge.com/9781032492704](http://www.routledge.com/9781032492704)

## Oceanography and Marine Biology

An Annual Review, Volume 62



Edited by **P. A. Todd** NUS, Singapore, **B.D. Russell** Univ. of Hong Kong

Series: *Oceanography and Marine Biology - An Annual Review*

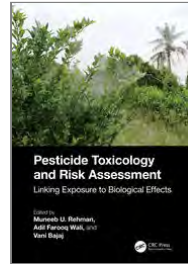
Oceanography and Marine Biology: An Annual Review remains one of the most cited sources in marine science and oceanography. The ever-increasing interest in work in oceanography and marine biology and its relevance to global environmental issues, especially global climate change and its impacts, creates a demand for authoritative refereed reviews summarizing and synthesizing the results of both historical and recent research. An international Editorial Board ensures global relevance and expert peer review, with editors from Australia, Canada, Hong Kong, Ireland, Singapore and the UK.

CRC Press  
September 2024:408  
Hb: 978-1-032-76196-1: \$240

\* For full contents and more information, visit: [www.routledge.com/9781032761961](http://www.routledge.com/9781032761961)

## Pesticide Toxicology and Risk Assessment

Linking Exposure to Biological Effects



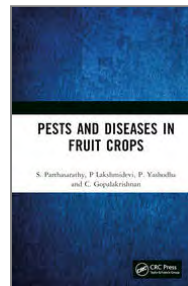
Edited by **Muneeb U. Rehman**, **Adil Farooq Wali**, **Vani Bajaj**

This book focuses on the need and strategies for safely and efficiently using pesticides. It offers insights from toxicogenomics, enabling an understanding of the genetic and epigenetic factors influencing human susceptibility to chemical toxicity, thereby quantifying their impacts. It facilitates the evaluation of risks linked to both established and innovative pesticides, promoting informed decisions on usage by integrating risk reduction approaches. It serves as a guide for pesticide manufacturers, offering insights into using risk assessment tools to develop secure and effective pesticide blends.

CRC Press  
May 2024:296  
Hb: 978-1-032-10265-8: \$230  
eBook: 978-1-003-22257-6

\* For full contents and more information, visit: [www.routledge.com/9781032102658](http://www.routledge.com/9781032102658)

## Pests and Diseases in Fruit Crops



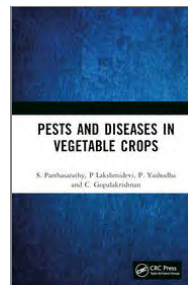
**S. Parthasarathy**, **P Lakshmidevi**, **P. Yashodha**, **C. Gopalakrishnan**

This book provides information about the major diseases of horticultural crops in India and discusses the significant pest, disease, and nematode issues affecting essential fruit crops in the country. It also addresses the management of pests in vegetable crops through several methods such as regulatory, physical, cultural, chemical, and biological approaches, host resistance, and integrated pest management strategies. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan and Bhutan).

CRC Press  
August 2024:272  
Hb: 978-1-032-82366-9: \$100  
eBook: 978-1-003-50414-6

\* For full contents and more information, visit: [www.routledge.com/9781032823669](http://www.routledge.com/9781032823669)

## Pests and Diseases in Vegetable Crops



**S. Parthasarathy**, **P Lakshmidevi**, **P. Yashodha**, **C. Gopalakrishnan**

This book provides information about the major diseases of horticultural crops in India. It discusses the pest, disease, and nematode issues affecting essential vegetable crops in the country. The management of pests in vegetable crops has been addressed through many methods, including regulatory, physical, cultural, chemical, and biological approaches, host resistance, and integrated pest management strategies. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan and Bhutan).

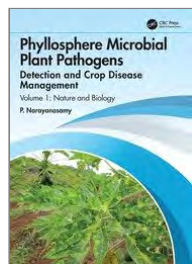
CRC Press  
August 2024:298  
Hb: 978-1-032-82368-3: \$100  
eBook: 978-1-003-50415-3

\* For full contents and more information, visit: [www.routledge.com/9781032823683](http://www.routledge.com/9781032823683)



## Phyllosphere Microbial Plant Pathogens: Detection and Crop Disease Management

Volume 1 Nature and Biology



**P. Narayanasamy** Tamil Nadu Agricultural University, India

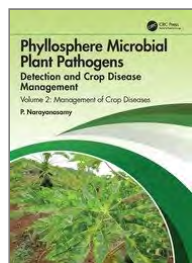
This book provides comprehensive knowledge on the methods of detection and identification of phyllosphere microbial pathogens and the management of different kinds of diseases caused by them in various crops. Interactions between pathogens and host plants result in the induction of defense responses expressed via molecular signals from initiation of infection till systemic progression of pathogen invasion in susceptible plants and contrasting signals in resistant plants leading to inhibition of pathogen development through activation of pre- and post-infectious defense responses are critically discussed.

CRC Press  
August 2024:284  
Hb: 978-1-032-59918-2: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032599182](http://www.routledge.com/9781032599182)

## Phyllosphere Microbial Plant Pathogens: Detection and Crop Disease Management

Volume 2 Management of Crop Diseases



**P. Narayanasamy** Tamil Nadu Agricultural University, India

This book provides comprehensive knowledge of the methods of detection and identification of phyllosphere microbial pathogens and the management of different kinds of diseases caused by them in various crops. Interactions between pathogens and host plants result in the induction of defense responses expressed via molecular signals from initiation of infection till systemic progression of pathogen invasion in susceptible plants and contrasting signals in resistant plants leading to inhibition of pathogen development through activation of pre- and post-infectious defense responses are critically discussed.

CRC Press  
August 2024:188  
Hb: 978-1-032-59921-2: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032599212](http://www.routledge.com/9781032599212)

## Physiology of Growth and Development in Horticultural Plants



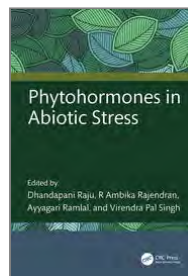
**N. R. Bhat, Arvind Bhatt, M. K. Suleiman**

Physiology of Growth and Development in Horticultural Plants contains 22 chapters organized into six sections, beginning with an introduction on basic concepts of plant growth and development; followed by genetic basis of plant development; quantification of growth; and sensing and response of plants to various environmental signals. It also explores plant growth hormones and their role either singly or in combination in controlling various aspects of plant growth and development, and hormonal regulation of physiological and developmental processes.

CRC Press  
September 2024:344  
Hb: 978-1-032-42958-8: \$200

\* For full contents and more information, visit: [www.routledge.com/9781032429588](http://www.routledge.com/9781032429588)

## Phytohormones in Abiotic Stress



**Edited by Dhandapani Raju** ICAR-IARI, India, **R Ambika Rajendran** ICAR-IARI, India, **Ayyagari Ramlal** Banaras Hindu University, India, **Virendra Pal Singh** ICAR-IARI, India

This book aims to highlight these issues and provide scope for the development of resistance in crops against abiotic stresses to maximize yield for the growing population. There is an urgent need for the development of strategies, methods, and tools for the broad-spectrum resistance in plants supporting sustainable crop production under hostile environmental conditions.

CRC Press  
June 2024:234  
Hb: 978-1-032-37193-1: \$150  
eBook: 978-1-003-33578-8

\* For full contents and more information, visit: [www.routledge.com/9781032371931](http://www.routledge.com/9781032371931)

## Plant Derived Bioactive Compounds in Human Health and Disease



**Edited by Surajit Pathak, Antara Banerjee**

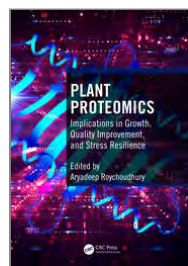
This book explores the diverse role of phytochemicals in promoting human health and combating diseases. It introduces phytochemicals and their foundational understanding, highlighting their formidable defense against oxidative stress, along with their therapeutic potential in combating multi-drug-resistant bacterial infections and modulating pathways in inflammation and cancer. The book addresses treatment strategies for amyloidosis, the connection between natural compounds and biogenic nanoparticles in polycystic ovarian syndrome, and in ethanopharmacology for age-related brain disorders. This book is intended for researchers and students of health sciences and natural products.

CRC Press  
November 2024:360  
Hb: 978-1-032-78076-4: \$210

\* For full contents and more information, visit: [www.routledge.com/9781032780764](http://www.routledge.com/9781032780764)

## Plant Proteomics

Implications in Growth, Quality Improvement, and Stress Resilience



**Edited by Aryadeep Roychoudhury**

Plant Proteomics: Implications in Growth, Quality Improvement, and Stress Resilience introduces readers to techniques and methodologies of proteomics and explains different physiological phenomena in plants and their responses to various environmental cues and defense mechanisms against pathogens. The main emphasis is on research involving applications of proteomics to understand different aspects of the life cycle of plant species including dormancy, flowering, photosynthetic efficiency, nitrogen assimilation, accumulation of nutritional parameters, secondary metabolite production, reproduction and grain yield as well as signalling responses during abiotic and biotic stresses.

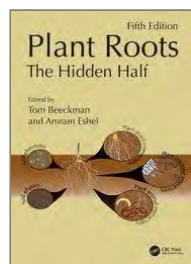
CRC Press  
June 2024:308  
Pb: 978-1-032-39592-0: \$58.99  
Hb: 978-1-032-39585-2: \$230  
eBook: 978-1-003-35045-3

\* For full contents and more information, visit: [www.routledge.com/9781032395920](http://www.routledge.com/9781032395920)

5TH EDITION

## Plant Roots

The Hidden Half, Fifth Edition



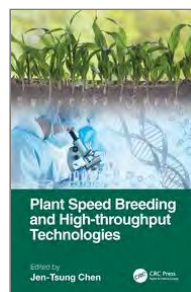
Edited by **Tom Beekman** Ghent University, Belgium, **Amram Eshel**

Following its predecessors, *Plant Roots: The Hidden Half*, Fifth Edition, is thoroughly updated and reports the major changes that have taken place in root research since the last edition published over 10 years ago. Considered a widely acclaimed book in the field of plant sciences, this edition includes a broad array of topics reflecting progress being made in the subdomains of root biology, featuring chapters on modern topics, while retained chapters are fully updated to demonstrate significant developments made in our understanding of root biology, and in fast-evolving research methodologies and techniques.

CRC Press  
September 2024:548  
Hb: 978-1-032-35031-8: \$230

\* For full contents and more information, visit: [www.routledge.com/9781032350318](http://www.routledge.com/9781032350318)

## Plant Speed Breeding and High-throughput Technologies



Edited by **Jen-Tsung Chen**

The book integrates achievements of plant speed breeding technologies with an emphasis on the fundamental and advanced systems for genome editing, functional genomics, controlled-environment growth chambers, genomic and phenotypic selection methods, and high-throughput technologies. It examines the applications of technologies across major model plants and key crops such as cereals, vegetables, and fruit trees. The book explores high-throughput genotyping using next-generation sequencing (NGS) systems, enabling precise single nucleotide polymorphism (SNP) markers, quantitative trait loci (QTL) mapping, and genome-wide association studies (GWAS).

CRC Press  
August 2024:396  
Hb: 978-1-032-55327-6: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032553276](http://www.routledge.com/9781032553276)

## Plant Techniques

Theory and Practice



S.M. Khasim , K. Thammasiri , S. Rama Rao , M. Rahamtulla

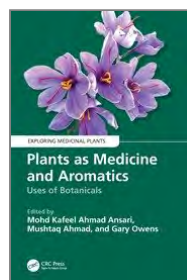
This book deals with the basic concepts of Plant Science including botanical micro technique and microtomy, staining techniques, molecular techniques, plant tissue culture, electron microscopy, and cryopreservation and germplasm storage. It is the outcome of several decades of research and teaching in plant biology to undergraduate and postgraduate students of Plant Science, Horticulture, Microbiology, and Biotechnology. Print edition not for sale in Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka.

CRC Press  
August 2024:494  
Hb: 978-1-032-80513-9: \$240  
eBook: 978-1-003-50368-2

\* For full contents and more information, visit: [www.routledge.com/9781032805139](http://www.routledge.com/9781032805139)

## Plants as Medicine and Aromatics

Uses of Botanicals



Edited by **Mohd Kafeel Ahmad Ansari** Faculty of Natural Sciences, Uni of Guyana, South America., **Mushtaq Ahmad** , **Gary Owens** University of South Australia, Australia

Series: *Exploring Medicinal Plants*

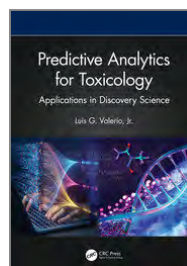
Plant-based medicines and aromatics are increasingly in demand in the healthcare sector all over the globe, where they are used, not only for the treatment of various diseases, but also for maintaining good human health. *Plants as Medicine and Aromatics: Uses of Botanicals* reviews modern uses of ancient botanicals as medicine and aromatics, including chapters on both traditional usage to modern drug discovery development, as well as clinical research and development in ancient medicinal herbs.

CRC Press  
November 2024:416  
Hb: 978-1-032-51790-2: \$200

\* For full contents and more information, visit: [www.routledge.com/9781032517902](http://www.routledge.com/9781032517902)

## Predictive Analytics for Toxicology

Applications in Discovery Science



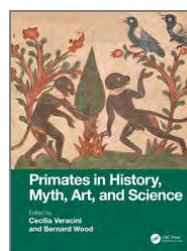
**Luis G. Valerio, Jr.**

Predictive data science is already in use in many fields, but its application in toxicology is new and sought after by non-animal alternative testing initiatives. *Predictive Analytics for Toxicology: Applications in Discovery Science* provides a comprehensive overview of the application of predictive analytics in the field of toxicology, highlighting its role and applications in discovery science. This book addresses the challenges of accurately predicting high-level endpoints of toxicity and explores the use of computational and artificial intelligence research to automate predictive toxicology.

CRC Press  
August 2024:248  
Hb: 978-0-367-77554-4: \$220

\* For full contents and more information, visit: [www.routledge.com/9780367775544](http://www.routledge.com/9780367775544)

## Primates in History, Myth, Art, and Science



Edited by **Cecilia Veracini** , **Bernard Wood**

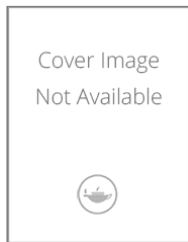
Primates play a special role in human societies, especially in regions where modern humans and non-human primates co-exist. Non-human primates feature in myths and legends and in traditional indigenous knowledge. Explorers observed them in the wild, and brought them, at great cost, to Europe. There they were valued as pets and for display, and where they were literally teased apart by scientists. The book will be of interest to undergraduate and graduate students as well as scholars in disciplines ranging from anthropology to art history.

CRC Press  
October 2025:344  
Pb: 978-1-138-19839-5: \$59.95  
Hb: 978-1-032-71087-7: \$160  
eBook: 978-1-315-27037-1

\* For full contents and more information, visit: [www.routledge.com/9781138198395](http://www.routledge.com/9781138198395)

## Propagation to Pharmacopeia

Modern Approaches in Medicinal Plants



Edited by **Abha Manohar K** Centurion Uni of Tech and Management, India, **Gopal Shukla** UBKV, India, **Saikat Gantait**, **A P Das**, **Sumit Chakravarty** Uttar Banga Krishi Viswavidyalaya, India

Series: *Exploring Medicinal Plants*

Propagation to Pharmacopeia: Modern Approaches in Medicinal Plants explores various aspects of medicinal and herbal plants, including cultivation, biotechnological aspects, diversity, bioprospecting, sustainable utilization of medicinal plants, extension, ethnobotany/modern and traditional uses, and conservation of medicinal plants.

CRC Press

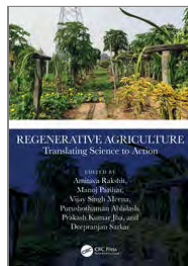
November 2024:440

Hb: 978-1-032-72999-2: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032729992](http://www.routledge.com/9781032729992)

## Regenerative Agriculture

Translating Science to Action



Edited by **Amitava Rakshit** Banaras Hindu University, Department of Soil Science, Utta Pradesh, **Manoj Parihar**, **Vijay Singh Meena**, **Purushothaman Abhilash**, **Prakash Kumar Jha**, **Deepranjan Sarkar**

Regenerative farming promotes health of degraded soils by restoring their organic carbon by sequestering atmospheric carbon dioxide, reversing industrial agriculture contributions to climate change. It reduces soil erosion and water pollution and reverses climate change by rebuilding soil organic matter and restoring degraded soil biodiversity. This book aims to focus on the current state of knowledge and scientific advances about the innovations in agriculture that will equip farmers to cope with the competing challenges of addressing food and nutrition security, improving livelihoods, combatting climate change and sustainably managing natural resources.

CRC Press

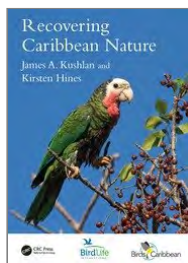
May 2024:300

Hb: 978-1-032-31405-1: \$120

eBook: 978-1-003-30958-1

\* For full contents and more information, visit: [www.routledge.com/9781032314051](http://www.routledge.com/9781032314051)

## Recovering Caribbean Nature



**James A. Kushlan**, **Kirsten Hines**

This book uniquely provides both a theoretical background and practical applications to modify and expand to the tropical Caribbean temperate-zone concepts of restoring nature. Packed with beautiful color photographs, it offers unifying principles that can be applied across the tropics. It also provides explicit guidance on establishing sustainable and more naturalistic landscapes, from large public lands to private yards and gardens. The book is essential reading for academics and researchers studying the Caribbean environment, resource management professionals, and scientists and educators from non-governmental organizations.

CRC Press

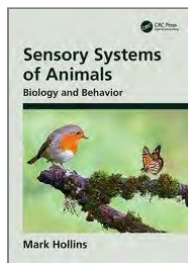
August 2024:300

Hb: 978-1-032-48983-4: \$200

\* For full contents and more information, visit: [www.routledge.com/9781032489834](http://www.routledge.com/9781032489834)

## Sensory Systems of Animals

Biology and Behavior



**Mark Hollins**

The aim of this book is to provide a knowledge base and unifying perspective on the field that will enable beginning researchers to chart their own course within it. The emphasis throughout is on research, in both the behavioral/ethological and neuroscientific traditions, that has led to important discoveries. With over 500 references and 80 illustrations, this textbook is primary reading intended for advanced undergraduates and beginning graduate students of veterinary science, lab animal science, and zoology. It would also be of great interest to professionals and academics working with animals such as veterinary professionals and zookeepers.

CRC Press

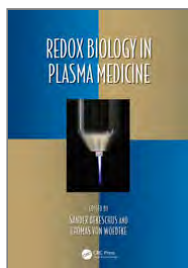
September 2024:304

Pb: 978-1-032-42328-9: \$66.99

Hb: 978-1-032-42331-9: \$170

\* For full contents and more information, visit: [www.routledge.com/9781032423289](http://www.routledge.com/9781032423289)

## Redox Biology in Plasma Medicine



Edited by **Sander Bekeschus**, **Thomas von Woedtke**

Series: *Oxidative Stress and Disease*

Plasma medicine uses non-equilibrium plasmas generated under atmospheric-pressure conditions. Therapeutical plasmas can stimulate tissue regeneration or inactivate cancer cells. This book reviews the interrelation between plasma chemistry and biochemistry complemented by discussion of the ways plasmas inactivate various pathogens. Focus is on the plasma effects on mammalian cells, subsequent consequences for cell-biological processes, and plasma applicability specific medical therapies. Contributions illustrate the ways cold atmospheric-pressure plasma can be used as a controllable source of redox-active species and as a useful tool for research in redox biology.

CRC Press

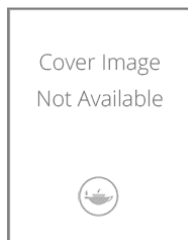
July 2024:234

Hb: 978-1-032-35692-1: \$200

\* For full contents and more information, visit: [www.routledge.com/9781032356921](http://www.routledge.com/9781032356921)

## Signal Analysis in Pharmacovigilance

Principles and Processes



Edited by **Anoop Kumar**

This book provides detailed concept and information on principles and processes of signal analysis in pharmacovigilance along with case studies. It covers the fundamental concepts and principles of pharmacovigilance, emphasizing the need for robust signal detection and analysis methods. reviews the diverse array of databases and tools employed for signal detection, including electronic health records (EHRs), social media mining, claims data, and distributed data networks. This book is useful for graduate, post graduate students of pharmaceutical sciences, and scientists in pharmacology research and drug development.

CRC Press

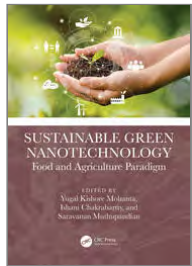
September 2024:304

Hb: 978-1-032-62970-4: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032629704](http://www.routledge.com/9781032629704)

## Sustainable Green Nanotechnology

Food and Agriculture Paradigm



Edited by **Yugal Kishore Mohanta , Ishani Chakrabartty , Saravanan Muthupandian**

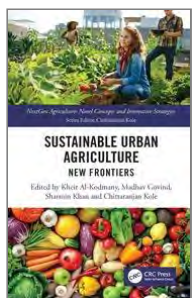
The book places a strong emphasis on the significance of synthesizing nanomaterials and explores various methods of achieving this, with particular attention given to the production of environmentally friendly or "green" nanomaterials. This book illustrates the current gaps in the agriculture and food industry, as well as explore the potential applications of nanomaterials within this field. This book comprehensively explores the various facets of design, utilization, and implementation of green nanomaterials within the agriculture and food industry.

CRC Press  
August 2024:348  
Hb: 978-1-032-48507-2: \$140

\* For full contents and more information, visit: [www.routledge.com/9781032485072](http://www.routledge.com/9781032485072)

## Sustainable Urban Agriculture

New Frontiers



Edited by **Kheir Al-Kodmany , Madhav Govind , Sharmin Khan , Chittaranjan Kole**

Series: *Nextgen Agriculture*

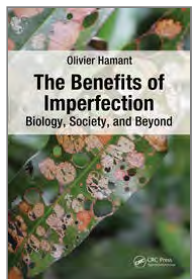
Offers multiple services and functions to address many challenges and enhance urban sustainability and resilience while helping build inclusive cities. It contains case studies presented from across the globe and lessons learned from past to future prospects. Climate change, reducing food travel and carbon footprint, securing healthy food, and social equity are core concerns.

CRC Press  
September 2024:264  
Pb: 978-1-032-41716-5: \$39.95  
Hb: 978-1-032-41721-9: \$89.95

\* For full contents and more information, visit: [www.routledge.com/9781032417165](http://www.routledge.com/9781032417165)

## The Benefits of Imperfection

Biology, Society, and Beyond



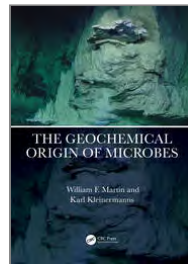
**Olivier Hamant** RDP ENS Lyon, France

The cult of performance leads our society to emphasise the values of success and continuous optimisation in all areas. Slowness, redundancy and randomness are therefore negatively perceived. What can we learn from life sciences? While some biological mechanisms certainly boast formidable efficiency, recent advances instead highlight the fundamental role of errors, incoherence and slowness in the development and the robustness of living organisms. In the face of pessimistic observations and environmental alerts, the author outlines solutions for a future that is viable and reconciled with nature.

CRC Press  
September 2024:208  
Hb: 978-1-032-83220-3: \$130

\* For full contents and more information, visit: [www.routledge.com/9781032832203](http://www.routledge.com/9781032832203)

## The Geochemical Origin of Microbes



**William F. Martin , Karl Kleinermanns**

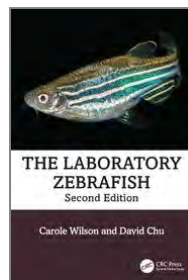
This textbook covers the transition from energy releasing reactions on the early Earth to energy releasing reactions that fueled growth in the first microbial cells, and is intended for teachers and college students with an interest in microbiology, biochemistry, or evolution. The scope of the book is a quantum departure from existing "origin of life" books in that it starts with basic chemistry and links energy-releasing geochemical processes to the reactions of microbial metabolism.

CRC Press  
June 2024:248  
Pb: 978-1-032-45767-3: \$96.99  
Hb: 978-1-032-45772-7: \$200  
eBook: 978-1-003-37861-7

\* For full contents and more information, visit: [www.routledge.com/9781032457673](http://www.routledge.com/9781032457673)

2ND EDITION

## The Laboratory Zebrafish



**Carole Wilson** University College London, **David Chu** Stanford University

Series: *Laboratory Animal Pocket Reference*

This guide covers all aspects pertaining to the use of zebrafish with the goal to provide managers, veterinarians, investigators, technicians, and regulatory personnel with a concise yet thorough reference on zebrafish biology, care, husbandry, and management. The new edition includes more figures, tables and bullet points, a wealth of new full-colour images, major updates on health and welfare (including colony health surveillance and viruses) and a complete overhaul of the compliance section to address more international concerns.

CRC Press  
November 2024:376  
Pb: 978-0-367-62807-9: \$79.99  
Hb: 978-0-367-62808-6: \$200

\* For full contents and more information, visit: [www.routledge.com/9780367628079](http://www.routledge.com/9780367628079)

## The Spinal Cord during the First and Early Second Trimesters 4- to 108-mm Crown-Rump Lengths

Atlas of Human Central Nervous System Development, Volume 14



**Shirley A. Bayer , Joseph Altman**

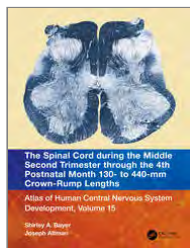
This fourteenth of 15 short atlases reimagines the classic 5 volume Atlas of Human Central Nervous System Development. A handy paperback edition focuses on the spinal cord during the first and second trimester and are illustrated and annotated in great detail, together with 3D reconstructions. An introduction and glossary summarize these earliest stages of human CNS development.

CRC Press  
June 2024:149  
Pb: 978-1-032-22904-1: \$58.99  
Hb: 978-1-032-22905-8: \$150  
eBook: 978-1-003-27470-4

\* For full contents and more information, visit: [www.routledge.com/9781032229041](http://www.routledge.com/9781032229041)

## The Spinal Cord during the Middle Second Trimester through the 4th Postnatal Month 130- to 440-mm Crown-Rump Lengths

Atlas of Human Central Nervous System Development, Volume 15



**Shirley A. Bayer, Joseph Altman**

This last of 15 short atlases reimagines the classic 5 volume Atlas of Human Central Nervous System Development. A handy paperback edition focuses on the spinal cord during the third trimester and early postnatal period are illustrated and annotated in great detail, together with 3D reconstructions. An introduction and glossary summarize these earliest stages of human CNS development.

CRC Press

June 2024:179

Pb: 978-1-032-22910-2: \$58.99

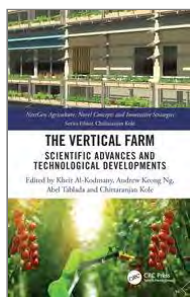
Hb: 978-1-032-22913-3: \$150

eBook: 978-1-003-27475-9

\* For full contents and more information, visit: [www.routledge.com/9781032229102](http://www.routledge.com/9781032229102)

## The Vertical Farm

Scientific Advances and Technological Developments



**Edited by Kheir Al-Kodmany, Andrew Ng, Abel Tablada, Chittaranjan Kole** University of Nebraska, USA

Series: *Nextgen Agriculture*

Amid economic uncertainties, fluctuating oil prices, and a rising environmental consciousness, the need for sustainable and efficient food production is urgent. The Vertical Farm: Scientific Advances and Technological Developments systematically navigates the realm of vertical farming (VF), rooted in a robust, scientific foundation. Unveiling the intricate convergence of plant biology, environmental science, and agronomy, it provides a profound understanding of contemporary agriculture.

CRC Press

October 2024:240

Pb: 978-1-032-43721-7: \$59.95

Hb: 978-1-032-43722-4: \$180

\* For full contents and more information, visit: [www.routledge.com/9781032437217](http://www.routledge.com/9781032437217)

## Theoretical Neuroscience

Understanding Cognition



**Xiao-Jing Wang**

This textbook synthesizes neuroscience and cognitive science and is grounded in recent experimental advances in cognitive functioning using mathematical modeling. Cognition and intelligence arise from neural circuits endowed with an abundance of feedback loops. Their behavior is difficult to understand by intuition alone. Thus, when considering interacting brain areas, prediction isn't straightforward. Furthermore, connectome and neurophysiology are presently undergoing a great upheaval with tremendous advances in both fields. The core of the book covers the basics of computational neuroscience required for discussions of the brain mechanisms and computational principles of cognition.

CRC Press

November 2024:570

Pb: 978-1-032-60481-7: \$110

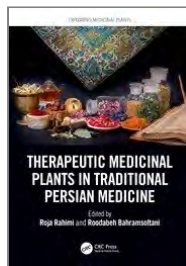
Hb: 978-1-032-60482-4: \$280

\* For full contents and more information, visit: [www.routledge.com/9781032604817](http://www.routledge.com/9781032604817)

## Therapeutic Medicinal Plants in Traditional Persian Medicine

*Edited by Roja Rahimi, Roodabeh Bahramsoltani*

Series: *Exploring Medicinal Plants*



This book presents an overview of the most important and useful medicinal plants in Traditional Persian Medicine along with pre-clinical and clinical evidence on their therapeutic activities and safety concerns.

CRC Press

June 2023:326

Hb: 978-1-032-29546-6: \$190

eBook: 978-1-003-30210-0

\* For full contents and more information, visit: [www.routledge.com/9781032295466](http://www.routledge.com/9781032295466)

## Waste Management in Climate Change and Sustainability Perspectives

Organic and Medical Waste



*Edited by Sunita Varjani, Izharul Haq, Ashok Pandey, Vijai Kumar Gupta, Xuan-Thanh Bui*

Series: *Sustainable Industrial and Environmental Bioprocesses*

This handbook discusses the relationships and effects of climate change on waste treatment and its sustainable management. The waste management sector is in a unique position to transition from a minor source of global greenhouse gas (GHG) emissions to a major contributor to reducing GHG emissions. This book compiles the potential impacts and benefits of various waste management systems in terms of climate impact.

CRC Press

May 2024:178

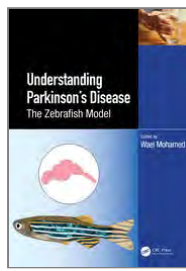
Hb: 978-1-032-43907-5: \$150

eBook: 978-1-003-38690-2

\* For full contents and more information, visit: [www.routledge.com/9781032439075](http://www.routledge.com/9781032439075)

## Zebrafish as a Model for Parkinson's Disease

*Edited by Wael Mohamed*



The increasing demand for innovative techniques arises from the lack of safe, effective, and patient-friendly therapies for neurodegenerative disorders. This book aims to present readers with a comprehensive understanding of the clinical application of the ZF model in treating PD, encompassing the latest developments, challenges, safety considerations, toxicity issues, regulatory aspects, future potential, and limitations. Individuals in academia, the scientific community, business, and education seeking a more effective approach to target the brain stand to benefit from this resource.

CRC Press

September 2024:320

Hb: 978-1-032-51577-9: \$240

\* For full contents and more information, visit: [www.routledge.com/9781032515779](http://www.routledge.com/9781032515779)

- 3.** .....  
3D Printing for Construction in the Transformation of the Building Industry . . . . . 12
- A.** .....  
Advanced Nanomaterials for Biological, Nutraceutical, and Medicinal Applications . . . . . 2  
Advanced Research in Electronic Devices for Biomedical and mHealth . . . . . 2  
Advancements in Chemical Enhanced Oil Recovery . . . . . 2  
Advances in Manufacturing and Processing of Materials . . . . . 2  
Advances in Medicinal and Aromatic Plants . . . . . 2  
Advances in Plant Microbiome Research for Climate-Resilient Agriculture . . . . . 2  
A Global Environmental History of Coastal Dunes 12  
Agricultural, Biosystems, and Biological Engineering Education . . . . . 28  
Agro-Wastes for Packaging Applications . . . . . 28  
Allele Mining for Genomic Designing of Cereal Crops . . . . . 42  
Allele Mining for Genomic Designing of Grain Legume Crops . . . . . 42  
Allele Mining for Genomic Designing of Oilseed Crops . . . . . 42  
Allele Mining for Genomic Designing of Vegetable Crops . . . . . 42  
Alternative Splicing and Cancer . . . . . 42  
American Farming Culture and the History of Technology . . . . . 12  
An Introduction to Severe Storms and Hazardous Weather . . . . . 12  
Anti-SARS-CoV-2 Activity of Flavonoids . . . . . 43  
Antimicrobial Resistance of the Human Eye . . . . . 42  
Antimicrobials for Sustainable Food Storage . . . . . 28  
Antimicrobials in Agriculture . . . . . 43  
Antiterrorism and Threat Response . . . . . 35  
Application of Engineering Principles and Practices In Biotechnology . . . . . 3  
Applied Intelligence for Medical Image Analysis . 3  
Aptasensors for Food Safety . . . . . 28  
Aquatic Ecosystems and Microbial Biofilms . . . . . 43  
Aquatic Ecosystems Monitoring . . . . . 43  
Aquatic Pollution . . . . . 43  
Artificial Intelligence for Smart Technology in the Hospitality and Tourism Industry . . . . . 3  
Artificial Intelligence in Forensic Science . . . . . 35  
Ashwagandha for Quality of Life . . . . . 43  
Asphyxia in Neonates . . . . . 44  
A Theory of Uncertainty . . . . . 12  
A Toolkit for Effective Everyday Activism . . . . . 12
- B.** .....  
Bacillus Probiotics for Sustainable Aquaculture . 44  
Basics of CRISPR/Cas Mediated Plant Genome Editing . . . . . 13
- Batteries . . . . . 38  
Bio-Based Polymers and Composites . . . . . 3  
Bio-Inspired Technologies for the Modern World . . . . . 4  
Bioactive Compounds and Nutraceuticals from Dairy, Marine, and Nonconventional Sources . . 3  
Bioactive Compounds and Nutraceuticals from Plant Sources . . . . . 3  
Bioactive Compounds from Food . . . . . 28  
Bioactive Compounds of Edible Oils and Fats . . 28  
Biochar for Environmental Management . . . . . 13  
Biodegradation of Toxic and Hazardous Chemicals . . . . . 44  
Biodegradation of Toxic and Hazardous Chemicals . . . . . 44  
Biodiversity Hotspot of the Himalaya . . . . . 4  
Biofuels . . . . . 44  
Bioinspired Materials Surfaces . . . . . 38  
Biology and Ecology of the Venomous Catfishes . 4  
Biomannufacture of Functional Carbohydrates . . 29  
Biomass Hydrolyzing Enzymes . . . . . 44  
Bioprospecting of Ethnomedicinal Plant Resources . . . . . 4  
Bioreactor Technology in Food Processing . . . . 29  
Biosecurity . . . . . 45  
Biosecurity in the Age of Synthetic Biology . . . 45  
Biotechnological Advances in Horticultural Crops . . . . . 45  
Bone Histology . . . . . 35  
Building a Global University . . . . . 38  
Building the Critical Anthropology of Climate Change . . . . . 13
- C.** .....  
Cancer through the Lens of Evolution and Ecolog45  
Case Studies in Small Animal Point of Care Ultrasound . . . . . 45  
Cell Signaling, 2nd edition . . . . . 45  
Children's Vegetarian Culture in the Victorian Era . . . . . 13  
Children in Tourism Communities . . . . . 13  
Circular Economy Realities . . . . . 13  
Climate-Just Behavior . . . . . 14  
Climate-Resilient Agriculture . . . . . 4  
Climate Change and Eye Disease . . . . . 14  
Climate Perspectives from the Congo Basin . . . . 14  
Comprehensive Guide to Hallucinogenic Plants . 46  
Computational Biology in Drug Discovery and Repurposing . . . . . 4  
Computational Imaging and Analytics in Biomedical Engineering . . . . . 5  
Conceptual Agricultural Microbiology . . . . . 46  
Constitutional Discussions on Nuclear Energy in Germany . . . . . 14
- Consuming the Environment . . . . . 14  
Control and Management of Pests in Stored Products . . . . . 29  
Corporate Social Responsibility in the Global Business World . . . . . 5  
Counter Terrorism Issues . . . . . 35  
CRISPR and Plant Functional Genomics . . . . . 46  
Critical Approaches to the Australian Blue Humanities . . . . . 14  
Critical Infrastructure Protection, Risk Management, and Resilience . . . . . 35  
Crop Production and One Health . . . . . 46  
Cryo-Electron Microscopy in Structural Biology . . . . . 46  
Cryobiology for South American Neotropical Fish Species . . . . . 15  
Culinary Man and the Kitchen Brigade . . . . . 15  
Cultural Flows in High-End Cuisine . . . . . 15  
Culture and Utilization of Live Food Organisms for Aquahatcheries . . . . . 46
- D.** .....  
Degrowth, Depth and Hope in Sustainable Business . . . . . 15  
Delivering a Climate Neutral Europe . . . . . 15  
Design for Dementia, Mental Health and Wellbeing . . . . . 15  
Design for Education . . . . . 16  
Developing a Security Training Program . . . . . 35  
Digital Analytics Applications for Sustainable Training and Education . . . . . 5  
Digital Communication for Agricultural and Rural Development . . . . . 16  
Digital Technologies for Sustainable Futures . . 16  
Dried Fruit Products . . . . . 29
- E.** .....  
Eco-Restoration of Polluted Environment . . . . 47  
Ecological Ethics and the Philosophy of Simone Weil . . . . . 16  
Ecology of Wild Bird Diseases . . . . . 16  
Economic Trends and Sustainable Environmental Assessment . . . . . 16  
Ecophenomenology and the Environmental Crisis in the Sundarbans . . . . . 17  
Electric Cars and the Resource Challenge . . . . 17  
Emerging Contaminants in Food and Food Products . . . . . 29  
Emerging Methods for Oil Extraction from Food Processing Waste . . . . . 29  
Emerging Role of Nanocarrier in Cancer Therapy . 47  
Environmental Crime in the United States . . . . 17  
Environmental Health and Occupational Safety . 47  
Environmental Sociology and Social Transformation . . . . . 17  
European Forest Policy and Governance . . . . . 17  
Everyday Agri-Environmental Governance . . . . 17  
Evidence-Based Neurological Disorders . . . . . 38  
Exploration and Valorization of Natural Resources from Arid Zones . . . . . 5
- Exploring Climate Change Related Systems and Scenarios . . . . . 18  
Exploring the Blue Bioeconomy . . . . . 47  
Exploring the Gut Microbiome in Cancer . . . . . 47  
Exploring Traditional Wild Edible Plants . . . . . 47
- F.** .....  
Federated Learning . . . . . 5  
Folklore and Zoology . . . . . 48  
Food Allergies . . . . . 30  
Food Fortification . . . . . 30  
Food Intolerances . . . . . 30  
Food Nutrition, Science and Technology . . . . . 30  
Food Safety . . . . . 30  
Forensic Botany . . . . . 36  
Forensic Firearms in Criminal Trials . . . . . 36  
Formulations, Regulations, and Challenges of Nutraceuticals . . . . . 5  
From Chromosomes to Mobile Genetic Elements . . . . . 48  
From the Top of the Mountain . . . . . 38  
Frontier Thinking and Human-Nature Relations . 18  
Functional Nanocomposites and Their Applications . . . . . 6  
Future Autonomous Road Vehicles . . . . . 18  
Future Crops and Processing Technologies for Sustainability and Nutritional Security . . . . . 30
- G.** .....  
Ganoderma . . . . . 48  
Global Health Challenges . . . . . 48  
Governing the Palm Oil Industry . . . . . 18  
Greening Higher Education in Europe . . . . . 18  
Gum Karaya . . . . . 48
- H.** .....  
Handbook of Aquatic Microbiology . . . . . 48  
Handbook of Biodegradable Polymers . . . . . 38  
Handbook of Bloodstain Pattern Analysis . . . . 36  
Handbook of Complementary, Alternative, and Integrative Medicine . . . . . 49  
Handbook of Complementary, Alternative, and Integrative Medicine . . . . . 49  
Handbook of Complementary, Alternative, and Integrative Medicine . . . . . 49  
Handbook of Industrial Food Microbiology . . . . 6  
Handbook of Molecular Biotechnology . . . . . 49  
Handbook of Photosynthesis . . . . . 49  
Handbook of Proteases in Cancer . . . . . 49  
Handbook of Terrorist and Insurgent Groups . . . 36  
Handel's Messiah . . . . . 39

- Healing Plants of South Asia . . . . . 50  
 Health-Promoting Food Ingredients in Food Processing . . . . . 31  
 Himalayan Climes and Multispecies Encounters . 18  
 Honey . . . . . 50  
 HR 4.0 Practices in the Post-COVID-19 Scenario . 6  
 Human Fungal Diseases . . . . . 50  
 Human Rights and Peace . . . . . 39  
 Human Trafficking Investigation . . . . . 36
- I . . . . .**
- Immunity . . . . . 50  
 Implementing Sustainable Cities . . . . . 19  
 Indigenous Land-Based Knowledge and Sustainability . . . . . 19  
 Industry 4.0 and People Analytics . . . . . 6  
 Insect Diversity and Ecosystem Services . . . . 7  
 Insect Diversity and Ecosystem Services . . . . 6  
 Intellectual Property Issues in Life Sciences . . 50  
 Intergenerational Democracy, Environmental Justice and the Case of Nuclear Waste . . . . 19  
 Introduction to Forensic Science . . . . . 36
- L . . . . .**
- Lactic Acid Bacteria . . . . . 31  
 Land Carbon Cycle Modeling . . . . . 50  
 Layered Materials . . . . . 39  
 Legends of the Security Services Industry . . . 37  
 Legume Crop Wild Relatives . . . . . 51  
 Lepidostomatidae of India . . . . . 51  
 Literature and Ecotheology . . . . . 19
- M . . . . .**
- Macrocyclic-Functionalised Nanosensors . . . 39  
 Making CO<sub>2</sub> a Resource . . . . . 19  
 Managing Soil Drought . . . . . 51  
 Maqam Melodies . . . . . 39  
 Marine Larvae . . . . . 19  
 Materials for Energy Storage . . . . . 20  
 Mechanics and Physics of Porous Materials . . 7  
 Medical Illustration in the Courtroom . . . . 37  
 Medicinal Plants for the Management of Neurodegenerative Diseases . . . . . 51  
 Medicinal Spice and Condiment Crops . . . . 51  
 Megaliths, Music, and the Mind . . . . . 39
- Methods in Cyanobacterial Research . . . . . 51  
 Microbial Ecology . . . . . 20  
 Microbial Genetics . . . . . 20  
 Microbiome Engineering . . . . . 52  
 Microfluidics in Food Processing . . . . . 31  
 Milk and Dairy Foods . . . . . 31  
 Mining and Indigenous Livelihoods . . . . . 20  
 miRNAomics and stress management in plants . . . . . 52  
 Molecular and Cellular Biology of the Vitamins . . . . . 31  
 Multi-Stakeholder Contribution in Asian Environmental Communication . . . . . 20
- N . . . . .**
- Nano-Bioremediation for Water and Soil Treatment . . . . . 7  
 Nano-phytoremediation and Environmental Pollution . . . . . 52  
 Nanocarriers in Neurodegenerative Disorders . 52  
 Nanocrystals in Nonvolatile Memory . . . . . 40  
 Nanofabrication . . . . . 20  
 Nanoparticles in Cancer Therapeutics . . . . 52  
 Nanoparticles in Cancer Therapy . . . . . 52  
 Nanotechnology for Environmental Management . . . . . 21  
 Nanotechnology in Plant Health . . . . . 21  
 Nanotechnology in the Food Industry . . . . 31  
 Nanotemplating . . . . . 40  
 Naturally Selective . . . . . 53  
 Neurodegenerative Diseases . . . . . 53  
 Neuroimmune System . . . . . 53  
 New Advances in Materials Technologies . . . 7  
 New Forms of Carbon . . . . . 7  
 Next-Generation Sequencing . . . . . 53  
 Non-Thermal Processing of Functional Foods . 32  
 Nordic Approaches to Climate-Related Human Mobility . . . . . 21  
 Novel Approaches in Metronomic Chemotherapy for Breast Cancer Treatment . 53  
 Novel Approach to Sustainable Temperate Horticulture . . . . . 53  
 Novel Packaging Systems for Fruits and Vegetables . . . . . 7  
 Novel Physical Processing of Starch-Based Products . . . . . 32  
 Novel Phytopharmaceutical for Management of Disorders . . . . . 54  
 Nutraceuticals Inspiring the Contemporary Therapy for Lifestyle Diseases . . . . . 54  
 Nutrigenomics and Nutraceuticals . . . . . 8
- O . . . . .**
- Oat (*Avena sativa*) . . . . . 32  
 Occurrence, Distribution and Toxic Effects of Emerging Contaminants . . . . . 21
- Oceanography and Marine Biology . . . . . 54  
 Organic and Printed Electronics . . . . . 40  
 Outlooking beyond Nanoelectronics and Nanosystems . . . . . 40
- P . . . . .**
- Peppers . . . . . 32  
 Pesticide Toxicology and Risk Assessment . . 54  
 Pests and Diseases in Fruit Crops . . . . . 54  
 Pests and Diseases in Vegetable Crops . . . . 54  
 Phyllosphere Microbial Plant Pathogens: Detection and Crop Disease Management . . 55  
 Phyllosphere Microbial Plant Pathogens: Detection and Crop Disease Management . . 55  
 Physical Security Assessment Handbook . . . 37  
 Physiology of Growth and Development in Horticultural Plants . . . . . 55  
 Phytochemical and Pharmacological Investigation of the Family Rutaceae . . . . . 8  
 Phytohormones in Abiotic Stress . . . . . 55  
 Plant Derived Bioactive Compounds in Human Health and Disease . . . . . 55  
 Plant Growth Regulators to Manage Biotic and Abiotic Stress in Agroecosystems . . . . . 21  
 Plant Metabolites and Vegetables as Nutraceuticals . . . . . 8  
 Plant Proteomics . . . . . 55  
 Plant Roots . . . . . 56  
 Plants as Medicine and Aromatics . . . . . 56  
 Plant Speed Breeding and High-throughput Technologies . . . . . 56  
 Plant Techniques . . . . . 56  
 Polar and Climate Change Education . . . . 21  
 Positive Psychology and Biodiversity Conservation . . . . . 22  
 Practical Forensic Pathology and Toxicology . 37  
 Predictive Analytics for Toxicology . . . . . 56  
 Preserving Planet Earth . . . . . 22  
 Primates in History, Myth, Art, and Science . . 56  
 Probiotics . . . . . 32  
 Propagation to Pharmacopeia . . . . . 57
- R . . . . .**
- Raman Spectroscopy in the Food Industry . . 32  
 Reclaiming Eden . . . . . 40  
 Recovering Caribbean Nature . . . . . 57  
 Redox Biology in Plasma Medicine . . . . . 57  
 Regenerative Agriculture . . . . . 57  
 Regenerative Farming and Sustainable Diets . 22  
 Regreening the Built Environment . . . . . 22  
 Repairing the Climate . . . . . 22  
 Resolving the Climate Crisis . . . . . 22
- Rethinking the Concept of Waste and Mass Consumption . . . . . 23  
 Revolutionary Challenges and Opportunities of Fintech . . . . . 8  
 Robotics and Automation in Healthcare . . . . 8  
 Routledge Handbook of Climate Law and Governance . . . . . 23  
 Routledge Handbook of Forest Ecology . . . . 23  
 Routledge Handbook of Gender and Water Governance . . . . . 23  
 Routledge Handbook of Insect Conservation . . 23  
 Routledge Handbook of Private Law and Sustainability . . . . . 23
- S . . . . .**
- SARS-CoV-2 Variants and Global Population Vulnerability . . . . . 8  
 Securitized Marine Protected Areas . . . . . 24  
 Security Officers and Supervisors . . . . . 37  
 Sensory Evaluation Techniques . . . . . 33  
 Sensory Systems of Animals . . . . . 57  
 Signal Analysis in Pharmacovigilance . . . . 57  
 Smart Systems in Biotechnology . . . . . 24  
 Solid Waste Management . . . . . 24  
 Starch . . . . . 33  
 Statistical Aspects of Community Health and Nutrition . . . . . 33  
 Stori Desert . . . . . 24  
 Strategizing the Russian Gas Industry . . . . . 9  
 Structured Foods . . . . . 33  
 Submerged Rice . . . . . 24  
 Supply Chain Performance Measurement in Textile Enterprises . . . . . 9  
 Sustainability at Work . . . . . 24  
 Sustainability in Marketing Practice . . . . . 9  
 Sustainable and Functional Foods from Plants . 9  
 Sustainable Design for the Built Environment . 25  
 Sustainable Green Nanotechnology . . . . . 58  
 Sustainable Postharvest Technologies for Fruits and Vegetables . . . . . 33  
 Sustainable Supply Chain Management in the Mining Industry . . . . . 9  
 Sustainable Urban Agriculture . . . . . 58  
 Sustainable Water Treatment and Ecosystem Protection Strategies . . . . . 9  
 Synbiotic Foods . . . . . 33
- T . . . . .**
- Technological Advancement in Clean Energy Production . . . . . 10  
 The Benefits of Imperfection . . . . . 58  
 The Chemistry of Ynamides . . . . . 40  
 The Ethics of Design for User Needs . . . . . 25  
 The Functional Foods . . . . . 10

The Fusion of Artificial Intelligence and Soft Computing Techniques for Cybersecurity . . . . .	10
The Future Designer . . . . .	25
The Geochemical Origin of Microbes . . . . .	58
The Hydrocene . . . . .	25
The Laboratory Zebrafish . . . . .	58
The Music of Physics . . . . .	41
Theoretical Neuroscience . . . . .	59
Theory of Experience in Architecture and Urban Design . . . . .	10
The Philosophy of Outer Space . . . . .	25
Therapeutic Medicinal Plants in Traditional Persian Medicine . . . . .	59
The Real Cost of Cheap Food . . . . .	25
The South Asian Energy Corridor . . . . .	10
The Spinal Cord during the First and Early Second Trimesters 4- to 108-mm Crown-Rump Lengths . . . . .	58
The Spinal Cord during the Middle Second Trimester through the 4th Postnatal Month 130- to 440-mm Crown-Rump Lengths . . . . .	59
The Vertical Farm . . . . .	59
Titanium . . . . .	26
Toxicology of Essential and Xenobiotic Metals . . . . .	26
Transforming Food Systems . . . . .	26
<b>U . . . . .</b>	
Utopian and Dystopian Explorations of Pandemics and Ecological Breakdown . . . . .	26
<b>V . . . . .</b>	
Versatility of Waterjet Technology . . . . .	41
Virtue Ethics and the Environment . . . . .	26
<b>W . . . . .</b>	
Waste Biorefineries . . . . .	10
Waste Management in Climate Change and Sustainability Perspectives . . . . .	59
Water Justice and Groundwater Subsidies in India . . . . .	26
Water Politics and the On-Paper Hydropower Boom . . . . .	27
Wealth out of Food Processing Waste . . . . .	34
Whole-Cell Biocatalysis . . . . .	11
World Review . . . . .	27
<b>Z . . . . .</b>	
Zebrafish as a Model for Parkinson's Disease . . . . .	59
Zentropy . . . . .	41
Zentropy . . . . .	41



- A.** .....  
Aarti, Pal, Saraswat, Mittal . . . . . 3  
Abd-El salam, Mohamed . . . . . 21  
Abraham, Torre, Tatrishvili, Haghi . . . . . 3  
Acevedo-Guerrero, Bossenbroek, Leonardelli, Zwarteven, Kulkarni . . . . . 23  
Acharya, Khatua . . . . . 48  
Adewale Alola, Victor Bekun, Violet Alola . . . . . 16  
Agarwal, Singh, Datta . . . . . 47  
Aggestam . . . . . 17  
Aguilar, Meléndez-Renteria, Ramirez-Guzman . . . . . 5  
Ahmed, Ali M. Osmani . . . . . 38  
Akhtar, Sanwat, Bashir . . . . . 51  
Al-Kodmany, Govind, Khan, Kole . . . . . 58  
Al-Kodmany, Ng, Tablada, Kole . . . . . 59  
Al-Worafi . . . . . 49  
Al-Worafi . . . . . 49  
Al-Worafi . . . . . 49  
Alberro, Atasoy, Castle, Firth, Scott . . . . . 26  
Albert, Millard, Pandey . . . . . 19  
Ali, Mir, Dar, Ejaz . . . . . 33  
Alok, Kumar, Shekhawat . . . . . 13  
Anand, Srivastav, Garg, Garg . . . . . 8  
Anderson . . . . . 26  
Ansari, Ahmad, Owens . . . . . 56  
Appasani . . . . . 46  
Aransiola, Akinsola, Abioye, Maddela . . . . . 29  
Aruda . . . . . 21  
Asli, Pourhashemi, Abraham, Haghi . . . . . 7  
Asli, Tatrishvili, Abraham, Haghi . . . . . 9
- B.** .....  
Babington . . . . . 39  
Babu, Saravanakumar, Pattanaik . . . . . 5  
Baer, Singer . . . . . 13  
Bailey-Charteris . . . . . 25  
Ball . . . . . 31  
Banerjee . . . . . 40  
Bangar, Kajla . . . . . 28  
Bangar, Sunooj, Kumar Siroha . . . . . 33  
Banik, Bagchi . . . . . 44
- Bashir, Jan, Maurya, Shakya . . . . . 30  
Basuchaudhuri . . . . . 24  
Bayer, Altman . . . . . 59  
Bayer, Altman . . . . . 58  
Beeckman, Eshel . . . . . 56  
Bekeschus, von Woedtke . . . . . 57  
Bhar Paul . . . . . 17  
Bhat, Bhatt, Suleiman . . . . . 55  
Bhukya, Thakur . . . . . 52  
Binagia, Boysen, Stastny . . . . . 45  
Biswas, Rai . . . . . 21  
Boström, Lidskog . . . . . 17  
Brinkman . . . . . 12  
Buccheri . . . . . 38  
Burke, Clarke, O'Keeffe, Corrigan . . . . . 22  
Busi, Prasad . . . . . 43
- C.** .....  
Carolan . . . . . 25  
Castagnera . . . . . 35  
Certomà, Iapaolo, Martellozzo . . . . . 16  
Chaachouay, Azeroual, Zidane . . . . . 46  
Chakraborti . . . . . 49  
Chand Jha, Nayyar, Dev Sharma, Bishop-von Wettberg, H. M. Siddique . . . . . 51  
Charkha, Jaju, Chatterjee . . . . . 9  
Chattopadhyay, Chawla . . . . . 9  
Chaturvedi, Chakraborty . . . . . 33  
Chavda, Uversky . . . . . 8  
Chen . . . . . 56  
Chen . . . . . 43  
Chen . . . . . 46  
Chia, Tatrishvili, Abraham, Haghi . . . . . 7  
Chio, Lee . . . . . 39  
Chowdhury, Gow . . . . . 16  
Christel Lane, M. Pilar Opazo . . . . . 15  
Civille, Carr, Osdoba . . . . . 33  
Clark . . . . . 17  
Costa, Cooper . . . . . 16  
Coulter . . . . . 37  
Crowder, Stout . . . . . 35  
Cullen, Scott . . . . . 21
- D.** .....  
D'Silva, McKenna . . . . . 22  
D. V. N. Pamidimarri, Chauhan, Velramar . . . . . 11  
Datta, Chapola, Acharibasam . . . . . 19  
Dean, Powers . . . . . 37  
de Freitas . . . . . 12  
De Haro . . . . . 45  
Delbeke . . . . . 15  
Deleonibus . . . . . 40  
De Santo . . . . . 24  
Deutz, Vermeulen, Baumgartner, Ramos, Raggi . . . . . 13  
Dlamini . . . . . 47  
Dogmus . . . . . 27  
Dubey, Pant, Pandey, Sanromán . . . . . 44  
Dubey, Pant, Pandey, Sanromán . . . . . 44  
Dzwonkowska . . . . . 26
- E.** .....  
Eneix . . . . . 39  
Eswaran U, SRIVASTAV, Srivastava . . . . . 33  
Evano, Zhao . . . . . 40
- F.** .....  
Fallon . . . . . 15  
Fennelly, Perry . . . . . 37  
Fereidouni . . . . . 16  
Fleming, Roberts, Isaac . . . . . 25  
Forney, Bentia, Dwiartama . . . . . 17  
Foxon . . . . . 48  
Fraser . . . . . 14
- G.** .....  
Gaikwad, Singh . . . . . 7  
Garasic, Di Paola . . . . . 25  
Giacomin . . . . . 18  
Gibson . . . . . 41  
Gopi, Amalraj, Sreeraj . . . . . 2  
Goyal, Malik, Kumari . . . . . 10  
Goyal, Nath, Kovács . . . . . 9  
Gueye, Thomas, Kalarikkal, Fall . . . . . 3  
Gupta . . . . . 47  
Gupta . . . . . 24  
Gupta, Prasad . . . . . 43
- H.** .....  
Hajam, Parey, Bhat . . . . . 6  
Hajam, Parey, Bhat . . . . . 6  
Hajam, Parey, Bhat . . . . . 7  
Haltinner, Sarathchandra . . . . . 22  
Halverson . . . . . 12  
Hamant . . . . . 58  
Hameed . . . . . 50  
Handley . . . . . 19  
Hauser-Davis . . . . . 26  
Henckens . . . . . 17  
Hester, Bland, Arndt, Bau, Camac, Mannix, Trouve, Robinson . . . . . 45  
Hird . . . . . 14  
Hollins . . . . . 57  
Husen . . . . . 51
- I.** .....  
Inogwabini . . . . . 14
- J.** .....  
Jabbar, Tiwari, Pani, Huang . . . . . 10  
Jayas . . . . . 29  
Johnson . . . . . 35  
Jovandaric . . . . . 44
- K.** .....  
K. R., P. S., Thomas, Kalarikkal . . . . . 6  
Kass . . . . . 48  
Kaul, Wadhwa . . . . . 43  
Keinonen . . . . . 25  
Keservani, Ahire, Khairnar, Kshirsagar, Kesharwani . . . . . 8  
Keservani, Tung, Kesharwani, Ahire . . . . . 8  
Kesharwani, Kumar, Keservani . . . . . 2  
Keskitalo . . . . . 18  
Keswani, Possas . . . . . 50  
Khairallah . . . . . 37  
Khan, Singhal, Sharma, Rajput . . . . . 28  
Khasim, Thammasiri, Rao, Rahamtulla . . . . . 56  
Kim . . . . . 19  
King . . . . . 53  
KKA . . . . . 47  
Klinke . . . . . 12  
Kober . . . . . 31

- Kole, Behera, Kaushik . . . . . 42  
Kole, Bharadwaj, Sarkar . . . . . 42  
Kole, Kumar Pandey, Puppala . . . . . 42  
Kole, Pradhan, Tiwari . . . . . 42  
Koščak, Knežević, O'Rourke, Šegota . . . . . 13  
Kubisz . . . . . 13  
Kuddus, Ashraf, Rahman . . . . . 30  
Kumar . . . . . 2  
Kumar . . . . . 57  
Kumar . . . . . 50  
Kumar, Naresh, Singh, Kumar, Singh, Chaudhari, Tiwari . . . . . 46  
Kumar, Tyagi, Panchal, Singh . . . . . 2  
Kumar Pradhan, K. Jainarayanan, Ghosh . . . . . 53  
Kushlan, Hines . . . . . 57
- L** . . . . .
- Lajnaf . . . . . 30  
Lal . . . . . 51  
Lal, Sahil, Mogalekar . . . . . 46  
Lawson . . . . . 16  
Leeburg Melton . . . . . 36  
Lehmann, Joseph . . . . . 13  
Lerman . . . . . 39  
Leube . . . . . 25  
Lim, Mayer . . . . . 45  
Liu . . . . . 41  
Liu . . . . . 49  
Liu . . . . . 41  
Liu . . . . . 41  
Luo, Smith . . . . . 50
- M** . . . . .
- Macha, A. Bhat, Batra . . . . . 42  
Maddela, Campos Garcia, Kaur . . . . . 28  
Maheshwari, Gupta, Gaur, Tiwari, Goyal . . . . . 5  
Malviya, Singh, Sundram . . . . . 47  
Maniam . . . . . 38  
Manohar K. Shukla, Gantait, Das, Chakravarty . . . . . 57  
Maria Policarpo Tonelli, Ahmad Bhat, Hamid Dar, Hakeem . . . . . 52  
Martin . . . . . 22  
Martin, Kleinermanns . . . . . 58
- McDonald . . . . . 35  
Miller Coyle . . . . . 36  
Mir . . . . . 53  
Miryala . . . . . 38  
Mohamed . . . . . 59  
Mohamed . . . . . 52  
Mohan Rao, Kesharwani, Keservani, Sharma . . . . . 5  
Mohanta, Chakrabarty, Muthupandian . . . . . 58  
Mora-Escobedo, Dávila-Ortiz, Gutiérrez López, Berrios . . . . . 31
- N** . . . . .
- Naik . . . . . 26  
Nandini Chauhan, Gupta, Sharma, Singh Chauhan . . . . . 54  
Narayanasamy . . . . . 55  
Narayanasamy . . . . . 55  
Narayan Rekadwad . . . . . 20  
Narváez Tijerina, Ochoa . . . . . 10  
Nayik, H. Wani, Khursheed, Ansari . . . . . 53  
Nehra, Nain . . . . . 6  
Nesterova . . . . . 15  
Newlands, Hansen . . . . . 14  
Niedderer, Ludden, Dening, Holthoff-Detto . . . . . 15  
Nigam . . . . . 33  
Nisato, Lupo, Rudolf . . . . . 40  
Nollet, Ahamad . . . . . 28  
Nollet, Ahmad . . . . . 28
- O** . . . . .
- O'Reilly, Varkkey . . . . . 18  
Okon, Zimowska, Rai . . . . . 20  
Opara . . . . . 28  
Oringer, Hymanson . . . . . 37  
Osuna, Tynan . . . . . 24
- P** . . . . .
- Pandey, Mallik, Yumnam . . . . . 48  
Pandey, Srivastava, Srivastava . . . . . 43  
Pandikumar, Moscow, Jothivenkatachalam . . . . . 39  
Parey, Hussain, Majeed . . . . . 51  
Parrotta . . . . . 50  
Parthasarathy, Lakshmi Devi, Yashodha, Gopalakrishnan . . . . . 54  
Parthasarathy, Lakshmi Devi, Yashodha, Gopalakrishnan . . . . . 54  
Pathak, Banerjee . . . . . 55
- Pattanayek, Dutta, Singh . . . . . 32  
Peh, Corlett, Bergeron . . . . . 23  
Pesch-Cronin, Marion . . . . . 35  
Pessaraki . . . . . 49  
Popowska . . . . . 18  
Prasad, Singh, Jha . . . . . 20  
Pryke, Samways, New, Cardoso, Gaigher . . . . . 23  
Pullaiah . . . . . 4  
Pullaiah, Prasad, Md. Bhakshu, Swamy . . . . . 48
- Q** . . . . .
- Qayoom, Abubakr, Gopinath, Dar, Khurshid . . . . . 43
- R** . . . . .
- Rahimi, Bahramsoltani . . . . . 59  
Rai, Avila-Quezada . . . . . 21  
Rai, Singh, Singh . . . . . 53  
Rajput, Kumari, Minkina . . . . . 7  
Raju, Rajendran, Ramlal, Singh . . . . . 55  
Rakshit, Parihar, Singh Meena, Abhilash, Jha, Sarkar . . . . . 57  
Rangel, Guimarães, Teixeira . . . . . 12  
Ranjan Purohit, Sharma, Kumari, Muthukumarappan, Kane-Potaka . . . . . 30  
Rashid, Sharma, Khan . . . . . 32  
Rauf, Rasul Suleria, Mukarram Shah . . . . . 8  
Reddy, Pullaiah . . . . . 4  
Rehman, Wali, Bajaj . . . . . 54  
Reinders . . . . . 22  
Riar, Panesar . . . . . 3  
Riar, Panesar . . . . . 3  
Richards . . . . . 22  
Richter Reis . . . . . 30  
Richter Reis, Shirkole . . . . . 29  
Rieckmann, Muñoz . . . . . 27  
Rocha, Aschner, Nogara . . . . . 26  
Rodon, Thériault, Keeling, Bouard, Taylor . . . . . 20  
Rogers, Kelly . . . . . 12  
Romaniuk, Roul, Fabe, Besenyő . . . . . 36  
Roychoudhury . . . . . 55  
Rybski . . . . . 14
- S** . . . . .
- Sahoo, Ouaisa, Nair . . . . . 5  
Sahu, Nayak, Grace . . . . . 20
- Saini, Sonone, Sankhla, Kumar . . . . . 35  
Saleh, Kasuma, Miao . . . . . 20  
Samantara, Ratha . . . . . 7  
Santhanam . . . . . 4  
Sasaev, Darkin, Kvint . . . . . 9  
Satapathy, Chauhan . . . . . 9  
Schwan, Joshi, Dias . . . . . 29  
Segger, Voigt . . . . . 23  
Selvamuthukumaran . . . . . 34  
Sengupta, Chatterjee, Bauri . . . . . 46  
Sevda, Chauhan . . . . . 24  
Shanker, Rani . . . . . 21  
Sharma, Chaturvedi, Ganat, Ali . . . . . 2  
Sharma, Kumar, Kumar . . . . . 4  
Shivaji . . . . . 42  
Shukla, Asli, Rawat, Abraham, Haghi . . . . . 10  
Shukla, Bhat, Das, Chakravarty . . . . . 4  
Shukla, Facknath, Mandal, Montanari . . . . . 2  
Shukla, Kulkarni, Gaur, N. G. Lacap, Omrane . . . . . 6  
Shukla, Shama, Mishra . . . . . 10  
Shukla, Verma, Lacap . . . . . 3  
Silva, Nicolussi, Wendehorst, Salvador Coderch, Clément, Zoll . . . . . 23  
Singh, Pandey . . . . . 4  
Singh, Sharma, Dhanny, Garg . . . . . 6  
Singh, Singh . . . . . 30  
Singh, Sinha, Häder . . . . . 51  
Singhania, Patel, Ruiz, Pandey . . . . . 44  
Singh Purewal, Kaur . . . . . 31  
Sinha . . . . . 36  
Soltani, Elumalai, Ghosh, Ringø . . . . . 44  
Somarelli, Johnson . . . . . 45  
Sood, Kalia, Grima, Chaudhary . . . . . 5  
Spencer . . . . . 36  
Srivastav, Karunanithi . . . . . 29  
Srivastava, Bisht, Laxmaiah, Seetha . . . . . 48  
Srivastava, Ibrahim, Nasr . . . . . 52  
Stokke, Oftedal . . . . . 19  
Stoll-Kleemann, Nicolai . . . . . 14  
Streit Jr., Zhang, Rosendo . . . . . 15  
Suravajhala, Bizzaro . . . . . 53

<b>T.</b> .....	
Tamer, Culha, Boyaci . . . . .	32
Tarafdar, Sirohi, KAUR, Pandey, Dussap . . . . .	31
Thakur, Kumar, Kumar Srivastava . . . . .	45
Thakur, Lal . . . . .	52
Thanigaivelan, Singh, Christy Deepak C. . . . .	8
Thoegersen . . . . .	39
Ting, Stagner . . . . .	40
Todd, Russell . . . . .	54
Tomar, Singh . . . . .	32
Towers, Cotton . . . . .	19
Trivedi, Singh, Johri, Lopez-Sanchez . . . . .	54
<b>U.</b> .....	
Upadhyay, Dan, Ali . . . . .	38
<b>V.</b> .....	
V. Rathod . . . . .	47
Valerio, Jr. . . . .	56
Variyar, Pal Singh, Adiani, Suprasanna . . . . .	32
Varjani, Haq, Pandey, Gupta, Bui . . . . .	59
Veracini, Wood . . . . .	56
Vinderola, Ouweland, Salminen, von Wright . . . . .	31
<b>W.</b> .....	
Waite . . . . .	23
Waite . . . . .	24
Wang . . . . .	59
Webb . . . . .	18
Wilson, Chu . . . . .	58
Wolson . . . . .	36
Wouters, Smyer Yü . . . . .	18
Wu, Su . . . . .	29
<b>X.</b> .....	
Xu, Li, Tao . . . . .	32
<b>Y.</b> .....	
Yakura . . . . .	50
Yaser, Chin, Torre, Haghi . . . . .	10
Yü . . . . .	40
Yousuf, Shabir, Hakeem . . . . .	52
<b>Z.</b> .....	
Zheng . . . . .	38

