

Forthcoming New Titles from Apple Academic Press

April | May | June 2018

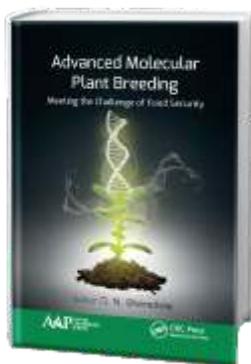
Advanced Molecular Plant Breeding: Meeting the Challenge of Food Security

Editor: D. N. Bharadwaj, PhD

"An outstanding compilation of genetics and genomics that can drive progress in modern plant breeding. The chapters are well designed by several specialist scientists/breeders from diverse specialized areas in the field of plant breeding. A wonderful job in integrating information about traditional and molecular plant breeding approaches. Poised to become a benchmark reference for experienced breeders, researchers, teachers and students alike."

— From the Foreword by M. S. Swaminathan, Founder Chairman, M. S. Swaminathan Research Foundation

595 pages. 6 color and 33 b/w illustrations.
Hardback ISBN: 978-1-77188-664-2. Ebook ISBN: 9780203710654
\$179.95 US. £139.00. May 2018



Bioactive Compounds of Medicinal Plants: Properties and Potential for Human Health

Editors: Megh R. Goyal, PhD, and Ademola O. Ayeleso, PhD

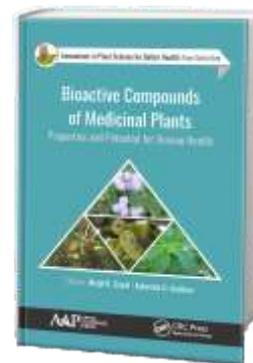
"In this book, an assemblage of recent findings on the therapeutic potentials of several medicinal plants/natural products is presented. The editors have selected chapters of original research and updated reviews from experienced authors who are specialists in the field. Readers are assured of interesting discoveries and an insight into the future position of medicinal plants/natural products in modern therapeutics. I recommend the book."

— Pius Fasinu, PhD, Pharmacologist, National Center for Natural Products Research, School of Pharmacy, University of Mississippi

Shed new light on the immense potential of medicinal plants for human health from different technological aspects. The volume presents new research on bioactive compounds in medicinal plants that provide health benefits, including those that have proven especially effective in treating and managing diabetes mellitus and hypertension. The volume looks at the medicinal properties, antioxidant capacity, and antimicrobial activity of plants and provides scientific evidence on the use of medicinal plants in the treatment of certain diseases.

350 pages. 31 color and 20 b/w illustrations.
Hardback ISBN: 978-1-77188-648-2. Ebook ISBN: 9781315147475
\$159.95 US. £124.00. May 2018

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



Advanced Polymeric Materials for Sustainability and Innovations

Editors: Sajith Thottathil, MTech, Sabu Thomas, PhD, Nandakumar Kalarikkal, PhD, and Didier Rouxel, PhD

The informative volume discusses recent advancements in the research and development of synthesis, characterization, processing, morphology, structure, and properties of advanced polymeric materials, with a special focus on eco-friendly polymers, polymer composites, nanocomposites, and blends and materials for traditional and renewable energy.

370 pages. 34 color and 107 b/w illustrations.
Hardback ISBN: 978-1-77188-633-8.
Ebook ISBN: 9781315102436.
\$159.95 US. £124.00. May 2018

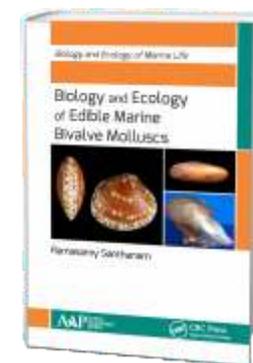


Biology and Ecology of Edible Marine Bivalve Molluscs

Ramasamy Santhanam, PhD

This comprehensive book on the biology and ecology of edible marine bivalve molluscs covers the biology of edible marine bivalves; profiles about 180 species, providing information on their habitat, distribution, morphology, food and feeding, reproduction, conservation status, etc.; discusses their nutritional values; examines their pharmaceutical values; and looks at their diseases and parasites. This abundance of knowledge is presented in an easy-to-read style with informative illustrations.

435 pages. 15 color and 324 b/w illustrations.
Hardback ISBN: 978-1-77188-626-0. Ebook ISBN: 978-1-315-11153-7
\$169.95 US. £131.00. May 2018
Series: Biology and Ecology of Marine Life

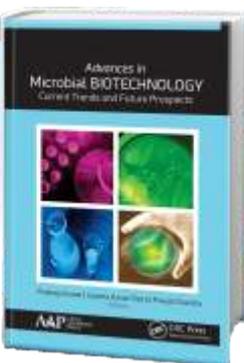


Advances in Microbial Biotechnology: Current Trends and Future Prospects

Editors: Pradeep Kumar, PhD, Jayanta Kumar Patra, PhD, and Pranjal Chandra, PhD

Focuses on the application of microorganisms for several purposes: for plant protection and improvement, for environmental remediation purposes, and for the improvement of human health. Various applications of microorganisms are covered broadly and have been appropriately reflected in depth in different chapters. The book provides insight into the diverse microorganisms that have been explored and exploited in the development of various applications for agricultural improvements. The book also looks at the application of microbes for the removal of pollutants and the recovery of metals and oils. Also discussed is the detection and exploitation of microorganisms in the diagnosis of human diseases, providing possible holistic approaches to health.

650 pages. 5 color and 85 b/w illustrations.
Hardback ISBN: 978-1-77188-667-3. Ebook ISBN: 9781351248914.
\$189.95 US. £147.00. May 2018



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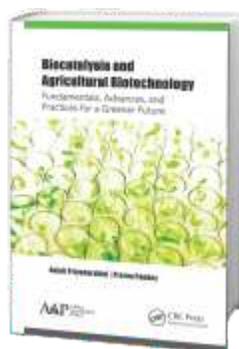


Biocatalysis and Agricultural Biotechnology: Fundamentals, Advances, and Practices for a Greener Future

Anjali Priyadarshini, PhD, and Perna Pandey, PhD

Looks at the application of a variety of technologies, both fundamental and advanced, that are being used for crop improvement, metabolic engineering, and the development of transgenic plants. This volume provides an updated review of the major plant biotechnology procedures and techniques, their impact on novel agricultural development, and crop plant improvement. Also discussed are the use of “white biotechnology” and “metabolic engineering” as prerequisites for a sustainable development. The importance of patenting of plant products, world food safety, and the role of several imminent organizations has also been discussed.

325 pages. 6 color and 46 b/w illustrations.
Hardback ISBN: 978-1-77188-689-5. Ebook ISBN: 9781351167444
\$159.95 US. £124.00. May 2018

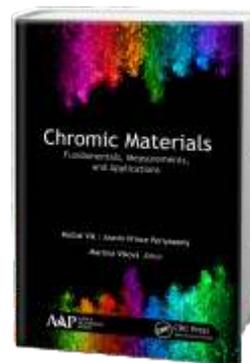


Chromic Materials: Fundamentals, Measurements, and Applications

Michal Vik, PhD, and Aravin Prince Periyasamy
Editor: Martina Visková, PhD

Reflects the state of art in the science of color-changeable materials. The book describes the facts behind the chromic phenomena from the point of application, spectrophotometry of chromic materials, and instrumentation and their testing and provides an abundance of in-depth knowledge about the field of colorimetry. This unique book begins with a short historical overview of the chromic phenomena, chromic materials, and classification of chromic materials. It also provides comprehensive treatises on chromic (or color-changeable) textiles and production techniques. Detailed descriptions of measurement methods that are usable in cases of translucent or opaque materials are provided as well.

398 pages. 37 color and 236 b/w illustrations.
Hardback ISBN: 978-1-77188-680-2. Ebook ISBN: 9781351171007
\$169.95 US. £131.00. May 2018

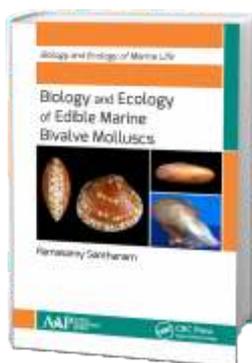


Biology and Ecology of Edible Marine Gastropod Molluscs

Ramasamy Santhanam, PhD

Focuses exclusively on sea snails or gastropods, which are popular food items and occupy an important role as commercial shell craft industry. Familiar examples include conchs (highly sought after due to their mild flavor) as well as escargot, abalone, and periwinkle snails. This book covers the profile (habitat, distribution, morphology, food and feeding, reproduction, conservation status, etc.) of about 180 species of commercial edible marine gastropod molluscs as well as their nutritional values, commercial importance, and pharmaceutical value. Also included is information on their prevalent diseases and parasites. The informative descriptions are presented in an easy-to-read style with neat illustrations.

350 pages. 15 color and 266 b/w illustrations.
Hardback ISBN: 978-1-77188-638-3. Ebook ISBN: 9781315099439
\$159.95 US. £124.00. May 2018
Series: Biology and Ecology of Marine Life

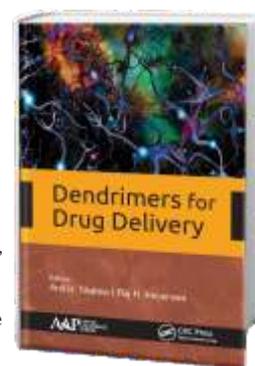


Dendrimers for Drug Delivery

Editors: Anil K. Sharma, MPharm, and Raj K. Keservani, MPharm

Provides an abundance of information on dendrimers and their applications in the field of drug delivery. The volume begins with an introduction to dendrimers, summarizing dendrimer applications and the striking features of dendrimers. It goes on to present the details of usual properties, structure, classification, and methods of synthesis, with relevant examples. The toxicity of dendrimers is also discussed. The chapter authors provide an exhaustive amount of information about dendrimers and their biomedical applications, including biocompatibility and toxicity aspects, a very useful feature.

450 pages. 13 color and 25 b/w illustrations.
Hardback ISBN: 978-1-77188-662-8. Ebook ISBN: 9781315366005
\$169.95 US. £131.00. May 2018

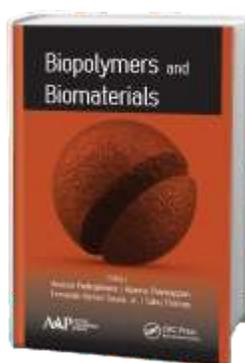


Biopolymers and Biomaterials

Editors: Aneesa Padinjakkara, Aparna Thankappan, PhD, Fernando Gomes Souza, Jr., PhD, and Sabu Thomas, PhD

Presents an array of different studies on biopolymers and biomaterials, along with their results, interpretation, and the conclusions arrived at through investigations. It includes biopolymer synthesis, their characterizations, and their potential applications. The book begins with an explanation of the different biopolymers used in the textile industry, their advantages and disadvantages, and their applications. It goes on to cover an array of issues, including the importance of wood preservation; the development of advanced functional materials from cashew nut shell (CNSL) and CNSL matrix compositions; polyurethane synthesis from renewable resources; and recycling of textile mill (cellulosic) waste into carboxymethyl cellulose (CMC). Additional chapters discuss bamboo/unsaturated polyester composites-based for sustainable noise control materials, properties of chemically treated Bauhinia racemosa/glass fiber polymer composites, and more.

349 pages. 22 color and 138 b/w illustrations.
Hardback ISBN: 978-1-77188-615-4. Ebook ISBN: 978-1-315-16198-3
\$159.95 US. £124.00. May 2018

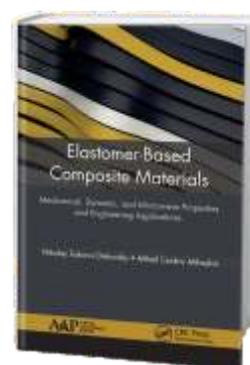


Elastomer-Based Composite Materials: Mechanical, Dynamic, and Microwave Properties and Engineering Applications

Nikolay Dishovsky, PhD, DSc, and Mihail Mihaylov, PhD

Focuses on elastomer-based composite materials comprising different types of reinforcing fillers. The book provides an informative examination of the possibilities for broadening the engineering applications of elastomer composites through using various types of hybrid fillers, ferrites, and ceramics, and also examines their synthesis and characterization. The volume provides an abundance of knowledge on the detailed characterization of these fillers and on the curing, mechanical, dynamic mechanical, and dielectric and microwave properties of the elastomeric composites. The book surveys the most recent research activities of the authors, which will make it a vital reference source for scientists in both the academic and industrial sectors, as well as for individuals who are interested in rubber materials.

450 pages. 7 color and 266 b/w illustrations.
Hardback ISBN: 978-1-77188-620-8. Ebook ISBN: 978-1-315-15958-4
\$169.95 US. £131.00. April 2018

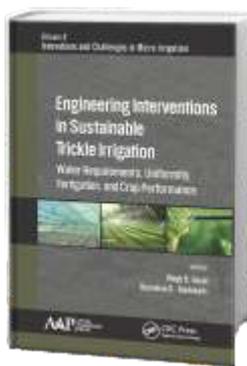


Engineering Interventions in Sustainable Trickle Irrigation: Water Requirements, Uniformity, Fertilization, and Crop Performance

Editors: Megh R. Goyal, PhD, PE, and Basamma K. Aladakatti

Presents valuable research that evaluates crop water and fertigation requirements, examines optimum irrigation and fertigation scheduling, and analyzes the performance of agricultural crops under micro irrigation. With an interdisciplinary perspective, this volume addresses the urgent need to explore and investigates the current shortcomings and challenges of water resources engineering, especially in micro irrigation engineering. The volume discusses crop water requirements, fertigation technology, and performance of agricultural crops under best management practices. The chapter authors present research studies on drip irrigated tomato, chilies, cucumber, eggplant, cabbage, garlic, sugarcane maize, cashew nut, sapota, banana, mango, and blueberries.

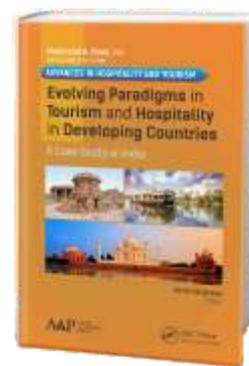
365 pages. 31 color and 26 b/w illustrations.
 Hardback ISBN: 978-1-77188-601-7. Ebook ISBN: 978-1-315-18424-1
 \$159.95 US. £124.00. April 2018
 Series: Innovations and Challenges in Micro Irrigation



Evolving Paradigms in Tourism and Hospitality in Developing Countries: A Case Study of India

Editor: Bindi Varghese, PhD
 Highlights a broad selection of valuable research work by renowned professionals and scientists from academia and the travel industry, providing wide-ranging vision of a multitude of trends in the global travel and tourism industry today and in the future. Adopting an integrated and interdisciplinary approach, the volume looks at the evolving paradigms in the tourism and hospitality segment.

450 pages. 11 color and 30 b/w illustrations.
 Hardback ISBN: 978-1-77188-630-7. Ebook ISBN: 9781315103044
 \$159.95 US. £124.00. May 2018
 Series: Advances in Hospitality and Tourism

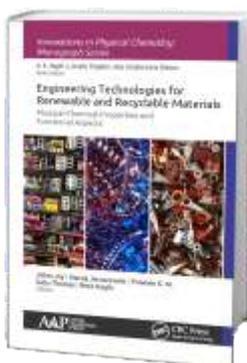


Engineering Technologies for Renewable and Recyclable Materials: Physical-Chemical Properties and Functional Aspects

Editors: Jithin Joy, Maciej Jaroszewski, PhD, Praveen K. M., and Sabu Thomas, PhD, and Reza Haghi, PhD

Focuses on many recent advances in recycling and reuse of materials, outlining basic tools and novel approaches. It covers such important issues as e-waste recycling, biomass recycling, vermotechnology, recovery of metals, polymer recycling, environmental remediation, waste management, recycling of nanostructured materials, and more. Also included is coverage of new research in the use of laser spectroscopy, pyrolysis, and recycled biomaterials for biomedical applications.

325 pages. 20 color and 115 b/w illustrations.
 Hardback ISBN: 978-1-77188-653-6
 Ebook ISBN: 9781315147154
 \$159.95 US. £124.00. June 2018
 Series: Innovations in Physical Chemistry: Monograph Series



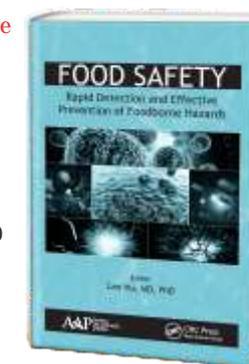
Food Safety: Rapid Detection and Effective Prevention of Foodborne Hazards

Editor: Lan Hu, MD, PhD

Focuses on the general concepts, mechanisms, and new applications of analytical and molecular biology techniques for detecting, removing, and preventing chemical and biological hazards from food. Edited by a microbiologist and medical officer with over 20 years of laboratory and research experience in bacteriology, molecular biology, infectious disease, and food safety, and who has trained with the U.S. Food and Drug Administration (FDA), the volume provides an abundance of valuable information on food safety and foodborne hazards in our food and drink. Written in an easy-to-read and user-friendly style, each chapter introduces a chemical or biological hazard and addresses:

- What kinds of disease does the foodborne hazard cause
- Why is it necessary for us to study it
- What routes does it take to enter our food and how does it cause us to become sick
- How can the current application of new technology be used to detect the foodborne hazards
- How do we prevent the diseases caused by the foodborne hazards

395 pages. 7 color and 3 b/w illustrations.
 Hardback ISBN: 978-1-77188-628-4. Ebook ISBN: 978-1-315-10909-1
 \$159.95 US. £124.00. April 2018

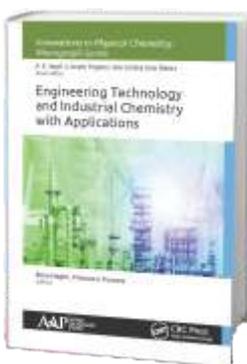


Engineering Technology and Industrial Chemistry with Applications

Editors: Reza Haghi, PhD, and Francisco Torrens, PhD

Brings together innovative research, new concepts, and novel developments in the application of new tools for chemical and materials engineers. It looks at recent significant research and reports on new methodologies and important applications in the fields of chemical engineering as well as provides coverage of chemical databases, bringing together theory and practical applications.

355 pages. 12 color and 86 b/w illustrations.
 Hardback ISBN: 978-1-77188-637-6. Ebook ISBN: 9781315100449
 \$159.95 US. £124.00. May 2018
 Series: Innovations in Physical Chemistry: Monograph Series

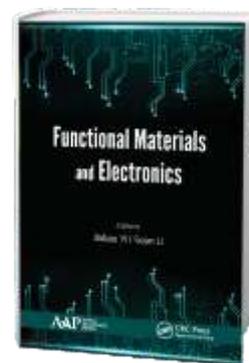


Functional Materials and Electronics

Editors: Jiabao Yi, PhD, and Sean Li, PhD

This edited book focuses on newly developed functional materials and their applications for electronics and spintronics devices. The book covers the topic of oxide materials for electronics devices, new materials, and new properties, especially in newly developed research areas, such as oxide magnetic semiconductors and two-dimensional electron gas.

400 pages. 20 color and 115 b/w illustrations.
 Hardback ISBN: 978-1-77188-610-9
 Ebook ISBN: 978-1-315-16736-7
 \$159.95 US. £124.00. April 2018



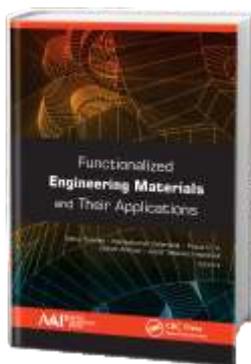
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Functionalized Engineering Materials and Their Applications

Editors: Sabu Thomas, PhD, Nandakumar Kalarikkal, PhD, Pious C. V., Zakiah Ahmad, PhD, and Józef Tadeusz Haponiuk, PhD

Presents a diverse selection of cutting-edge research on the development of polymeric materials and nanomaterials for new and different applications. These include electrical applications, biomedical applications, sensing applications, coating applications, and others. A few chapters dedicated to materials for construction applications are also included. Discussions include the properties, behavior, preparation, processing, and characterization of various polymeric materials, nanomaterials, and their composites. Some of the chapter authors present theoretical studies of these systems, which can help the readers to develop a better understanding in this area.

375 pages. 184 b/w illustrations.
Hardback ISBN: 978-1-77188-523-2. Ebook ISBN: 978-1-315-36554-1
\$159.95 US. £124.00. May 2018



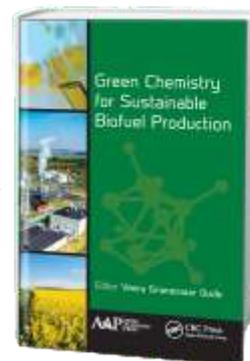
Green Chemistry for Sustainable Biofuel Production

Editor: Veera Gnanaswar Gude, PhD

Emphasizes green chemistry and green engineering principles for sustainable process development. It creates an enriching knowledge base on green chemistry of biofuel production, sustainable process development, and green engineering principles for renewable fuel production. This book is organized into four parts that cover, in detail, topics related to

- biofuel feedstock challenges and potential and renewable fuels from carbon sources
- process intensification and green chemistry through microwave irradiation, hydrodynamic cavitation, hydrothermal processes, and using ionic liquids
- evaluation of nonconventional and emerging sustainable feedstock, such as microalgae, oleaginous microorganisms from wastewater sludge, and biorefinery configurations using bioelectrochemical systems as central technology
- energy-efficiency analyses, techno-economic aspects and life-cycle impacts, and inventories of various biofuel production processes

595 pages. 11 color and 122 b/w illustrations.
Hardback ISBN: 978-1-77188-639-0. Ebook ISBN: 978-1-315-09943-9
\$179.95 US. £139.00. May 2018



The Future of Organizations: Workplace Issues and Practices

Editor: Arvind K. Birdie, PhD

Provides some valuable insights into how organizations are changing and evolving and how human resource personnel, employers, and employees are reacting to these emerging workplace transitions. It provides insights for implications and examines old theories of organizations in the light of changing concepts as well as emerging concepts. It explores many of these trends in conjunction with a focus on work-life balance, globalization, redefining leadership, contingent work force, stress management, telecommuting, work force diversity, ergonomics, life satisfaction/subjective well being, and more.

275 pages. 3 color and 4 b/w illustrations.
Hardback ISBN: 978-1-77188-623-9. Ebook ISBN: 978-1-315-11489-7
\$139.95 US. £108.00. April 2018
Series: 21st Century Business Management

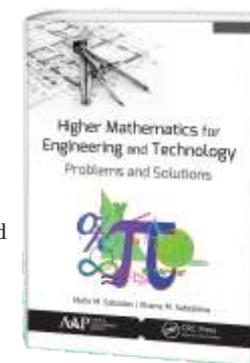


Higher Mathematics for Engineering and Technology: Problems and Solutions

Mahir M. Sabzaliev, PhD, and Ilhama M. Sabzalieva, PhD

Covers the major themes of mathematics in engineering and technical specialties. The book covers the elements of linear algebra and analytic geometry, differential calculus of a function of one variable, and elements of higher algebra. On each theme the authors first present short theoretical overviews and then go on to give problems to be solved. The authors provide the solution of some typical, relatively difficult problems and guidelines for solving them. The authors consider the development of the self-dependent thinking ability of students in the construction of problems and indicate which problems are relatively difficult. The book is geared so that some of the problems presented can be solved in class, and others are meant to be solved independently. An extensive, explanatory solution of at least one typical problem is included, with emphasis on applications, formulas, and rules.

350 pages. Hardback ISBN: 978-1-77188-642-0
Ebook ISBN: 9781351397117. \$159.95 US. £124.00. May 2018



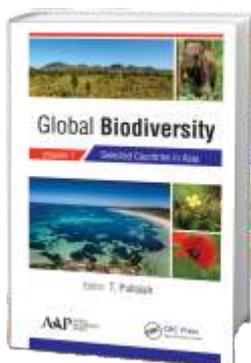
Global Biodiversity, Volume 1: Selected Countries in Asia

Editor: T. Pullaiah, PhD

This is the first volume in the new multi-volume set, Global Biodiversity. Each volume in this series provides insightful information on the biodiversity of selected nations in particular regions. The volumes summarize the available data on both wild and cultivated plants, wild and domesticated animals, and microbes of the different nations.

This volume focuses on selected countries of Asia, providing an abundance of biodiversity information on Afghanistan, Bangladesh, India, Indonesia, Iran, Iraq, Japan, Lebanon, Malaysia, Mongolia, Myanmar, Nepal, and Vietnam. The first chapter in the volume provides an informative overview of what is biodiversity along with biogeographic classifications. It provides explanations of biodiversity patterns and species number; biodiversity conservation, protection, and international commitments and cooperation; biodiversity threats and drivers of change (such as human population growth, climate change, land use change); and the economics of biodiversity as well.

459 pages. 130 color and 2 b/w illustrations.
Hardback ISBN: 978-1-77188-707-6
\$169.95 US. £131.00. June 2018
Part of the 4-volume Global Biodiversity book series

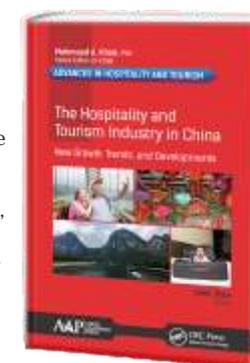


The Hospitality and Tourism Industry in China: New Growth, Trends, and Developments

Editor: Jinlin Zhao, PhD

An insightful look into the great changes in the hospitality and tourism industry in China in recent years. The volume looks at the value drivers that have impacted hotels, restaurants, meetings and conventions, cruise line industries, tourist attractions, and destination developments. With much more money in their pockets, the Chinese are spending more than 60% of their disposable income on food and travel. Hospitality and tourism education is also booming in China, and research in the field is increasing as well. Information technology is also very well applied in the hospitality and tourism industry in China.

400 pages. 20 color and 29 b/w illustrations.
Hardback ISBN: 978-1-77188-652-9. Ebook ISBN: 9781315147420
\$159.95 US. £124.00. May 2018
Series: Advances in Hospitality and Tourism



Innovative Food Science and Emerging Technologies

Editors: Rajakumari Rajendran, Anne George, MD, Nandakumar Kalarikkal, PhD, and Sabu Thomas, PhD

Covers many new trends and developments in food science, including preparation, characterization, morphology, properties, recyclability, and advances and challenging opportunities. The volume considers food quality, shelf life, and manufacture in conjunction with human nutrition, diet, and health as well as the ever-growing demand for the supply and production of healthier foods. The volume discusses food formulations, manufacturing techniques, biodegradably flexible packaging, packages foods, beverages, fruits and vegetable processing, fisheries, milk and milk products, frozen food and thermo processing, grain processing, meat and poultry processing, packaging, rheological characteristics of foods, heat exchangers in the food industry, food and health (including natural cures and food supplements), spice and spice processing, and more.

675 pages. 29 color and 46 b/w illustrations.
Hardback ISBN: 978-1-77188-661-1
Ebook ISBN: 9780203711408
\$179.95 US. £139.00. June 2018

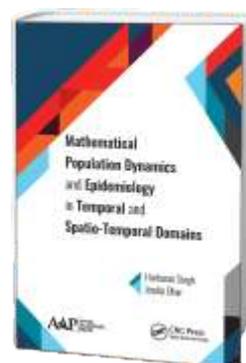


Mathematical Population Dynamics and Epidemiology in Temporal and Spatio-Temporal Domains

Harkaran Singh, PhD, and Joydip Dhar, PhD

Focuses on the study of population dynamics with special emphasis on the migration of populations in a heterogeneous patchy habitat, the human and animal population, and the spreading of epidemics, an important area of research in mathematical biology dealing with the survival of different species. It provides a useful experimental tool in making practical predictions, building and testing theories, answering specific questions, determining sensitivities of the parameters, making control strategies, and much more. The volume also provides the background needed to interpret, construct, and analyze a wide variety of mathematical models.

350 pages. 44 color and 5 b/w illustrations.
Hardback ISBN: 978-1-77188-671-0. Ebook ISBN: 9781351251709
\$159.95 US. £124.00. May 2018



Innovative Packaging of Fruits and Vegetables: Strategies for Safety and Quality Maintenance

Editors: Mohammed Wasim Siddiqui, PhD, Mohammad Shafiur Rahman, PhD, and Ali Abas Wani, PhD

Addresses the challenges of the short shelf-life of fruits and vegetables. It provides a host of sustainable packaging solutions that deliver protection, branding, consumer attractiveness, and speed to market in a competitive retail environment.

435 pages. 24 color and 107 b/w illustrations.
Hardback ISBN: 978-1-77188-597-3
Ebook ISBN: 978-1-315-14306-4
\$169.95 US. £131.00. May 2018
Series: Postharvest Biology and Technology

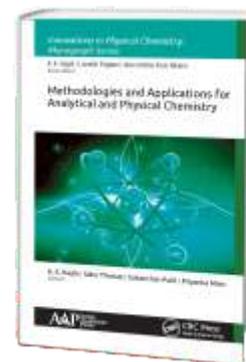


Methodologies and Applications for Analytical and Physical Chemistry

Editors: A. K. Haghi, PhD, Sabu Thomas, PhD, Sukanchan Palit, and Priyanka Main

Presents an up-to-date review of modern materials and physical chemistry concepts, issues, and recent advances in analytical and physical chemistry. The chapters discuss the composition and properties of complex materials as well as mixtures, processes, and the need for new and improved analytical technology to better understand physical chemistry concepts and processes.

370 pages. 29 color and 87 b/w illustrations.
Hardback ISBN: 978-1-77188-621-5. Ebook ISBN: 978-1-315-15953-9
\$159.95 US. £124.00. May 2018
Series: Innovations in Physical Chemistry: Monograph Series

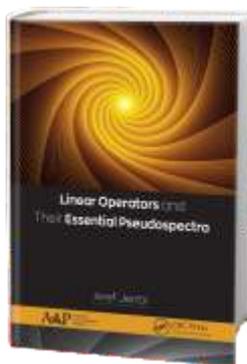


Linear Operators and Their Essential Pseudospectra

Aref Jeribi, PhD

Provides a comprehensive study of spectral theory of linear operators defined on Banach spaces. The central items of interest in the volume include various essential spectra, but the author also considers some of the generalizations that have been studied. This volume presents a survey of results concerning various types of essential spectra and pseudospectra in a unified, axiomatic way and also discusses several topics that are new but which relate to the concepts and methods emanating from the book. The main topics include essential spectra, essential pseudospectra, structured essential pseudospectra, and their relative sets.

334 pages. Hardback ISBN: 978-1-77188-699-4
Ebook ISBN: 9781351046275
\$159.95 US. £124.00. May 2018

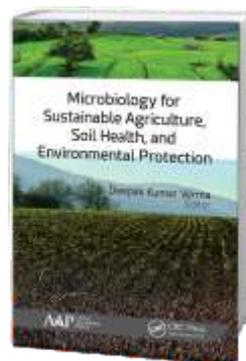


Microbiology for Sustainable Agriculture, Soil Health, and Environmental Protection

Editor: Deepak Kumar Verma

Focuses on important areas of microbiology related to soil and environmental microbiology associated with agricultural importance. The information and research on soil and environmental microbiology presented here acts as a gateway to sustaining and improving agriculture and environmental security. Part I focuses on soil microbiology, dealing extensively with studies on the isolation, culture, and use of *Rhizobium* spp. and mycorrhizae to improve soil fertility, plant growth, and yield. Part 2 goes on to focus on microbiology for crop disease management and pathogenic control in sustainable environment, and Part 3 features a chapter on the activity and mechanism of nitrogenase enzyme in soil, which is very important for soil health and crop production and productivity. Part 4 presents two chapters entirely devoted to the environmental pollution and its control, looking at the interaction of microbes in aqueous environments and eco-friendly approaches.

504 pages. 15 color and 24 b/w illustrations.
Hardback ISBN: 978-1-77188-669-7. Ebook ISBN: 9781351247061
\$179.95 US. £139.00. June 2018

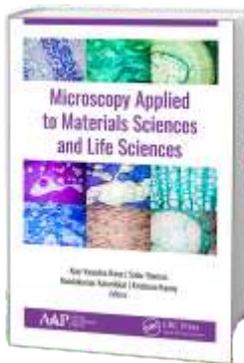


Microscopy Applied to Materials Sciences and Life Sciences

Editors: Ajay Vasudeo Rane, Sabu Thomas, PhD, Nandakumar Kalarikkal, PhD, and Krishnan Kannu, PhD

Focuses on recent theoretical and practical advances in polymers and their blends, composites, and nanocomposites related to their microscopic characterization. It highlights recent accomplishments and trends in the field of polymer nanocomposites and filled polymers related to microstructural characterization. This book gives an insight and better understanding into the development in microscopy as a tool for characterization.

529 pages. 16 color and 251 b/w illustrations. Hardback ISBN: 978-1-77188-672-7. Ebook ISBN: 9781351251587 \$179.95 US. £139.00. June 2018

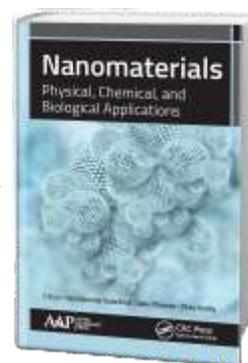


Nanomaterials: Physical, Chemical, and Biological Applications

Editors: Nandakumar Kalarikkal, PhD, Sabu Thomas, PhD, and Obey Koshy, PhD

The book deals with recent developments in the synthesis and characterization of nanomaterial as well as its incorporation into polymer matrixes. The biological applications of nanomaterials are also discussed in detail, along with new approaches in nanostructured materials and nanocomposites. Highlights include a detailed discussion on synthesis of nanostructured materials and nanocomposites; reviews of biodiesel production; green nanostructured materials; and nanosensors, nanomedicines, and biomedical applications of nanostructured materials.

410 pages. 78 color and 98 b/w illustrations. Hardback ISBN: 978-1-77188-461-7. Ebook ISBN: 978-1-315-36590-9 \$159.95 US. £124.00. April 2018

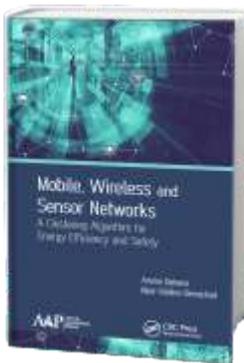


Mobile, Wireless and Sensor Networks: A Clustering Algorithm for Energy Efficiency and Safety

Amine Dahane, PhD, and Nasr-Eddine Berrached, PhD

In this volume, the authors use an approach based on computing of the weight of each node in the network as the proposed technique to deal with this problem. They present a virtual laboratory platform of baptized mercury, allowing readers to make practical work on different aspects of mobile wireless sensor networks. The platform presented here aims to show the feasibility, the flexibility, and the reduced cost using the authors' approach.

265 pages. 6 color and 126 b/w illustrations. Hardback ISBN: 978-1-77188-679-6. Ebook ISBN: 9781351190756 \$159.95 US. £124.00. June 2018

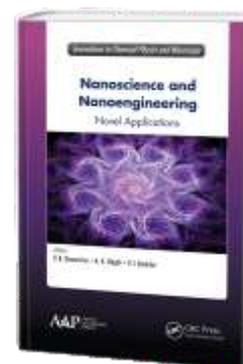


Nanoscience and Nanoengineering: Novel Applications

Editors: V. B. Dement'ev, DSc, A. K. Haghi, PhD, and V. I. Kodolov, DSc

Presents important information on the new scientific trend of chemical mesoscopics and sheds new knowledge on the science of nanomaterials, processes of nanochemistry, and nanoengineering. The volume explores nanomaterial development as well as investigations of processes and modeling. It provides new perspectives on processes, while also discussing new methods of treatment polymeric materials and different material modification, including by super small quantities of metal/carbon nanocomposites.

400 pages. 12 color and 64 b/w illustrations. Hardback ISBN: 978-1-77188-696-3. Ebook ISBN: 9781351138789 \$159.95 US. £124.00. May 2018
Series: Innovations in Chemical Physics and Mesoscopy

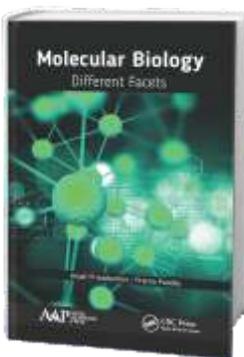


Molecular Biology: Different Facets

Anjali Priyadarshini, PhD, and Purna Pandey, PhD

Provides a comprehensive description of the basic tenets of molecular biology, from mechanisms to its elaborate role in gene regulation. The initial sections cover the history of genetics and molecular biology. The book then goes on to highlight the significance of molecular approaches for all biological processes in both simple and complex cells.

335 pages. 106 b/w illustrations. Hardback ISBN: 978-1-77188-641-3. Ebook ISBN: 9781315099279. \$149.95 US. £116.00. April 2018



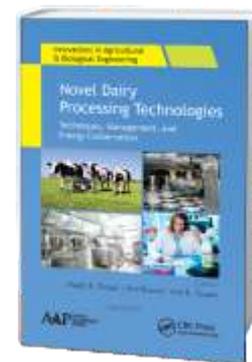
Novel Dairy Processing Technologies: Techniques, Management, and Energy Conservation

Editors: Megh R. Goyal, PhD, Anit Kumar, PhD, and Anil K. Gupta, PhD

Focuses on the processing of milk by novel techniques, emphasizing the conservation of energy and effective methods. This book covers:

- applications of novel processing technologies in the dairy industry
- novel drying techniques in the dairy industry
- management systems and hurdles in the dairy industry
- energy conservation and opportunities in the dairy industry

325 pages. 15 color and 26 b/w illustrations. Hardback ISBN: 978-1-77188-612-3. Ebook ISBN: 978-1-315-16712-1 \$159.95 US. £124.00. April 2018
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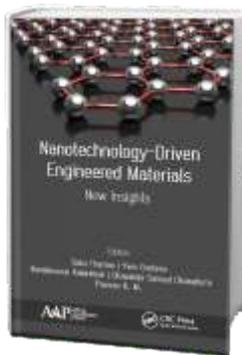


Nanotechnology-Driven Engineered Materials: New Insights

Editors: Sabu Thomas, PhD, Yves Grohens, PhD, Nandakumar Kalarikkal, PhD, Oluwatobi Samuel Oluwafemi, PhD, and Praveen K. M.

Discusses novel architectures at the nano-level with an emphasis on new synthesis and characterization methods. Special emphasis is given to new applications of nanostructures and nanocomposites in various fields, such as nano-electronics, energy conversion, catalysis, drug delivery and nano-medicine.

350 pages. 23 color and 102 b/w illustrations. Hardback ISBN: 978-1-77188-634-5. Ebook ISBN: 9781315102603 \$159.95 US. £124.00. May 2018



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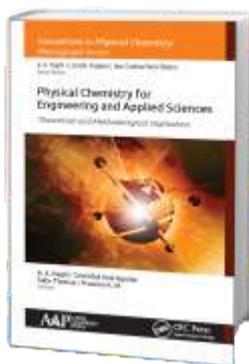
Physical Chemistry for Engineering and Applied Sciences: Theoretical and Methodological Implication

Editors: A. K. Haghi, PhD, Cristóbal Noé Aguilar, PhD, Sabu Thomas, PhD, and Praveen K. M.

Introduces readers to some of the latest research applications of physical chemistry. It reflects the huge breadth and diversity in research and the applications in physical chemistry and physical chemistry techniques, providing case studies that are tailored to particular research interests. It examines the industrial processes for emerging materials, determines practical use under a wide range of conditions, and establishes what is needed to produce a new generation of materials. The chapters in the volume are divided into several areas, covering

- developments in physical chemistry of modern materials
- polymer science and engineering
- nanoscience and nanotechnology

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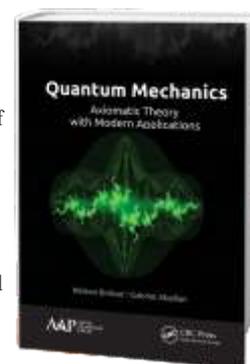


Quantum Mechanics: Axiomatic Theory with Modern Applications

Nelson Bolivar, PhD, and Gabriel Abellan

Acts as a guide through the various aspects of quantum mechanics. It not only involves the basics but also addresses new themes developed in the field in recent years. These include quantum mechanics in relation to electronics, as in quantum dots, spintronics, cryptography, and other more theoretical aspects such as path integral formulation and supersymmetric quantum mechanics. The volume presents a number of mathematical tools and physical consequences derived from quantum mechanics axiomatic. The starting point of the volume is a very brief review of the phenomenology associated with the origins of quantum theory, as the branch of science was understood in the beginning of the 20th century, leading to an interpretation of the results at that time.

350 pages. 35 color and 40 b/w illustrations.
 Hardback ISBN: 978-1-77188-691-8. Ebook ISBN: 9781351166287.
 \$159.95 US. £124.00. May 2018

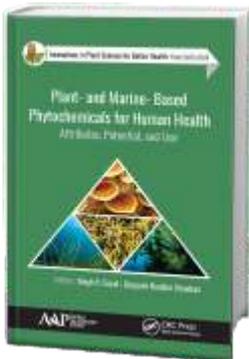


Plant- and Marine- Based Phytochemicals for Human Health: Attributes, Potential, and Use

Editors: Megh R. Goyal, PhD, and Durgesh Nandini Chauhan, Mpharm

Provides insight with scientific evidence on the use of medicinal plants in the treatment of certain diseases. It describes bioactive compounds of marine and plant origin that have been discovered to be advantageous for human health, shedding new light on the potential of phytochemicals and contributing to the ocean of knowledge on phytochemistry and pharmaceutical biology. In addition, the role of plant-based pharmaceuticals is also discussed as an example of innovative uses of plant product.

418 pages. 20 color and 17 b/w illustrations.
 Hardback ISBN: 978-1-77188-670-3. Ebook ISBN: 9781351251983
 \$169.95 US. £131.00. June 2018
 Series: Innovations in Plant Science for Better Health: From Soil to Fork

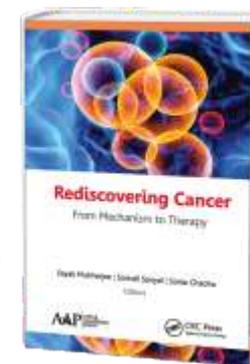


Rediscovering Cancer: From Mechanism to Therapy

Editors: Sayali Mukherjee, PhD, Somali Sanyal, PhD, and Sonia Chadha, PhD

Presents a snapshot of some of the most important ongoing research in cancer and brings together new research on molecular mechanism and cancer therapeutics in one place. Emphasis has been given to the intricate mechanism behind the deregulation of cell division, disruption of cell cycle check points, mutation in oncogenes and tumor suppressor genes, apoptosis, and erratic cell signaling. The book discusses in detail topics such as angiogenesis and tumor microenvironment, which are increasingly receiving attention, especially in the field of neoplastic vascularization and metastasis. The book also includes chapters detailing the current understanding and the future perspective of cancer stem cells.

625 pages. 40 b/w illustrations.
 Hardback ISBN: 978-1-77188-690-1
 Ebook ISBN: 9781351166560. \$199.95 US. £154.00. May 2018

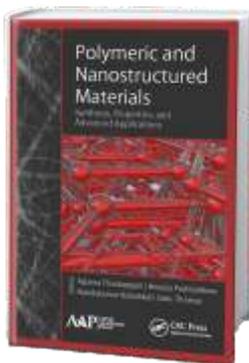


Polymeric and Nanostructured Materials: Synthesis, Properties, and Advanced Applications

Editors: Aparna Thankappan, PhD, Nandakumar Kalarikkal, PhD, Sabu Thomas, PhD, and Aneesa Padinjakkara

Provides in-depth knowledge and recent research on polymers and nanostructured materials from synthesis to advanced applications. Without a doubt, the editors state, hybrid materials will soon generate smart materials and will play a major role in the development of advanced functional materials. The goal of this book is to coordinate many smart nanomaterials and their recent developments in science and technology.

356 pages. 27 color and 112 b/w illustrations.
 Hardback ISBN: 978-1-77188-644-4. Ebook ISBN: 9781315147499
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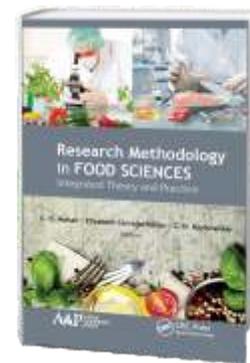


Research Methodology in Food Sciences: Integrated Theory and Practice

Editors: C. O. Mohan, PhD, Elizabeth Carvajal-Millan, PhD, and C. N. Ravishankar, PhD

A rich resource on recent research innovations in the field of food processing and food engineering. The book looks at the latest nanotechnology aspects for the detection of foodborne pathogens to ensure safety with respect to these pathogens. It provides detailed kinetics of quality and safety aspects of food and goes on to discuss the characteristics of edible films prepared from plasticized guar gum. Other topics include the production of novel biomolecules and their characterization, the microstructural properties of arabinoxylan aerogels, the antioxidant activity of oats harvested from draught area, the effect of quercetin isolated from *Encostemma littorale* against cancer targets, the latest trends in production of ethanol and fructo-oligosaccharides, and much more.

500 pages. 14 color and 44 b/w illustrations.
 Hardback ISBN: 978-1-77188-624-6. Ebook ISBN: 978-1-315-11435-4
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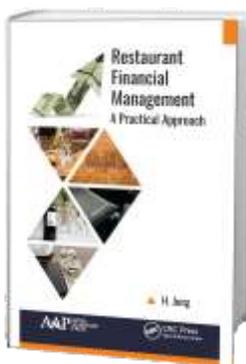


**Restaurant Financial Management:
A Practical Approach**

H. Jung, PhD

Provides valuable guidance on how to apply the concepts of accounting and finance to real-life restaurant business activities. This book is unique because it provides an understandable framework that breaks it down into three clear steps of applying techniques of accounting and finance to evaluate a restaurant business: It introduces how to consolidate major activities of a restaurant business into useful accounting information. It explains how accounting information is analyzed and then used to forecast the future. And it introduces the methods of projecting the future and determining the current value of a restaurant business. Using this approach, readers can develop useful knowledge on how to relate accounting and finance to a real-life restaurant business.

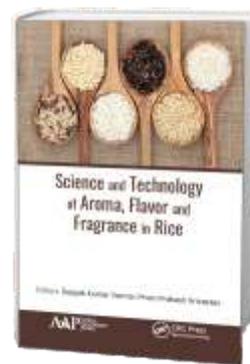
350 pages. 17 b/w illustrations.
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\$149.95 US. £116.00. May 2018



**Science and Technology of Aroma,
Flavor, and Fragrance in Rice**

Editors: Deepak Kumar Verma and Prem Prakash Srivastav, PhD
Focuses on advances and innovations in rice aroma, flavor, and fragrance research. This new volume helps to fill a void in the research by focusing solely on aroma, flavor, and fragrance of rice, helping to meet an important need in rice research and production.

350 pages. 10 color and 30 b/w illustrations.
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Ebook ISBN: 9780203711453. \$159.95 US.
£124.00. May 2018

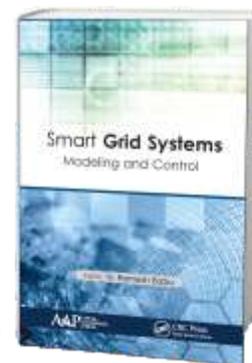


**Smart Grid Systems:
Modeling and Control**

Editor: N. Ramesh Babu, PhD

Advances the basic understanding of smart grids and focuses on recent technological advancements in the field. This book provides a comprehensive discussion from a number of experts and practitioners and describes the challenges and the future scope of the technologies related to smart grid. The book covers a wide range of topics on smart grids, including renewable energy (solar/wind) penetration to the grid, energy storage, control techniques, energy management, and modeling of smart devices/techniques. The volume will be valuable to academicians, researchers, and practitioners in the field of power system, as well as to students entering this field.

350 pages. 25 color and 92 b/w illustrations.
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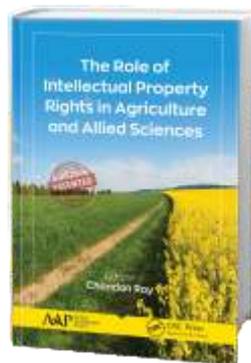


**The Role of Intellectual Property
Rights in Agriculture and Allied
Sciences**

Editor: Chandan Roy, PhD

Provides a basic understanding of the different forms of intellectual property rights in agricultural science. It provides an abundance of information on the use of IP laws in agriculture and allied subjects and their proper implementation in real-life practice. The chapter authors discuss different kinds of IP laws and their current status in developed as well as developing countries throughout the world. The book also looks at new trends and developments in the field involving new IP strategies and the application of IP laws in agriculture and biotechnology and in the management of plant genetic resources.

350 pages. 5 color and 18 b/w illustrations.
Hardback ISBN: 978-1-77188-698-7.
Ebook ISBN: 9781351125284. \$149.95 US. £116.00. June 2018

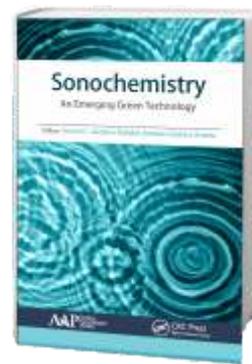


**Sonochemistry:
An Emerging Green Technology**

Editors: Suresh C. Ameta, PhD, Rakshit Ameta, PhD, and Garima Ameta, PhD

Presents a complete picture of ultrasound-assisted reactions and technologies that can be used in organic synthesis, polymer synthesis and degradation, nanomaterials, wastewater treatment, food ingredients and products, pharmaceutical applications, bioenergy applications, and more. This volume sheds light on the diversified applications of ultrasound and its significant role as a green chemical pathway. The book also briefly discusses some areas that utilize ultrasounds of different frequencies. These include food products and their processing; anaerobic digestion of waste; and medical applications such as ultrasonography, sonodynamic therapy, drug delivery, etc.

450 pages. 6 color and 42 b/w illustrations.
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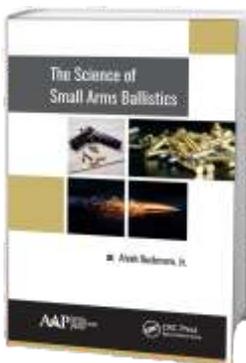


The Science of Small Arms Ballistics

Alvah Buckmore, Jr.

This very unique and very different book is a comprehensive study of the science of small arm ballistics—from interior and exterior ballistics to terminal ballistics. The science of small arms ballistics is seriously underdeveloped and underappreciated. The volume provides a complete grasp of the entire subject and serves as a manual for both members of academia and members of the recreational shooting community throughout the world. Though it contains extensive mathematical formulas (58 of them), the book demonstrates the relationships between the physical variables and their real-world engineering applications. The author defines the science of ballistics by breaking it down into its major and logical categories and then explaining the basic patterns and relationships in a way the reader can understand and use toward the solution of problems, either to design ammunition for a particular gun or a gun for any particular ammunition.

200 pages. 14 color and 41 b/w illustrations.
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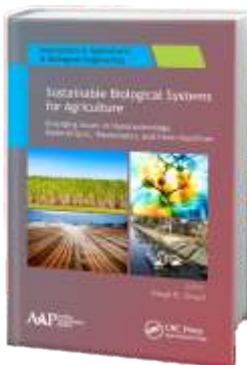
Sustainable Biological Systems for Agriculture: Emerging Issues in Nanotechnology, Biofertilizers, Wastewater, and Farm Machines

Editor: Megh R. Goyal, PhD, PE

Explores and introduces the use of nanotechnology, biofertilizers, and design of farm machines in agriculture. With contributions from India, Africa and the USA, the chapters emphasize sustainable solutions for the enhancement of agriculture processes. The volume provides a wealth of information on

- Potential Applications of Nanotechnology in Biological Systems
- Emerging Issues, Challenges and Specific Examples of Nanotechnology for Sustainable Biological Systems
- Potential of Nano- and Biofertilizers in Sustainable Agriculture
- Emerging Focus Areas in Biological Systems
- Performance of Farm Machines for Sustainable Agriculture

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 Series Innovations in Agricultural & Biological Engineering

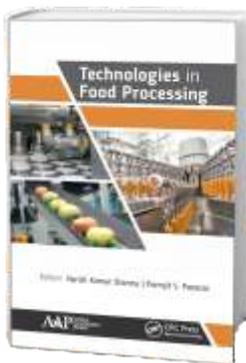


Technologies in Food Processing

Editors: Harish Kumar Sharma, PhD, and Parmjit S. Panesar, PhD

Addresses the use of different technologies to process foods with ways to preserve the nutrients, eliminate anti-nutrients and toxins, add vitamins and minerals, and reduce waste.

375 pages. 6 color and 43 b/w illustrations.
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 £124.00. May 2018



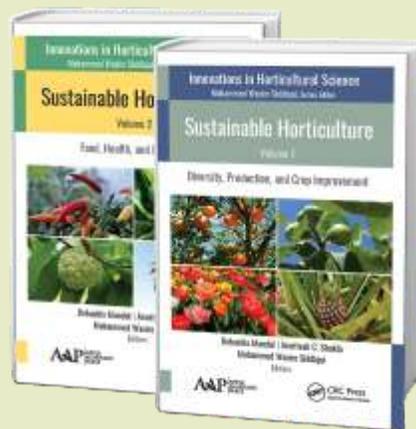
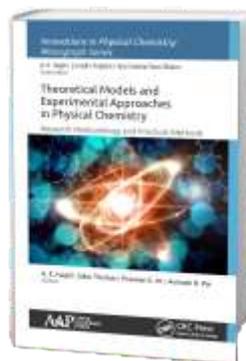
Theoretical Models and Experimental Approaches in Physical Chemistry: Research Methodology and Practical Methods

Editors: A. K. Haghi, PhD, Sabu Thomas, PhD, Praveen K. M., and Avinash R. Pai

Presents an up-to-date review of modern materials and physical chemistry concepts, issues, and recent advances in the field. The volume discusses the developments of advanced chemical products and respective tools to characterize and predict the chemical material properties and behavior.

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**Sustainable Horticulture, 2-volume set:
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 Volume 2: Food, Health, and Nutrition**

Editors: Debashis Mandal, PhD, Amrithesh C. Shukla, PhD, and Mohammed Wasim Siddiqui, PhD

This timely two-volume compendium addresses the most important topics facing horticulture around the world today.

These volumes discuss the latest and most promising technology and methods for sustainable horticulture. Volume 1, on Diversity, Production, and Crop Improvement, outlines the contemporary trends in sustainable horticulture research in particular, covering topics on crop diversity, species variability and conservation strategies, production technology, tree architecture management, plant propagation and nutrition management, organic farming, and new dynamics in breeding and marketing of horticulture crops.

Volume 2, on Food, Health, and Nutrition, covers research trends in sustainable horticulture that include postharvest management and processed food production from horticulture crops, crop protection and plant health management, and horticulture for human health and nutrition.

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