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The two-volume set of LNCS 11778 and 11779 constitutes the refereed proceedings of the 18th International Semantic Web Conference, ISWC 2019, held in Auckland, New Zealand, in October 2019. The ISWC conference is the premier international forum for the Semantic Web / Linked Data Community. The total of 74 full papers included in this volume was selected from 283 submissions. The conference is organized in three tracks: for the Research Track 42 full papers were selected from 194 submissions; the Resource Track contains 21 full papers, selected from 64 submissions; and the In-Use Track features 11 full papers which were selected from 25 submissions to this track. The chapter "The SEPSES knowledge graph: An integrated resource for cybersecurity" is open access under a CC BY 4.0 license at link.springer.com.

The scent of oregano immediately conjures the comforts of Italian food, curry is synonymous with Indian flavor, and the fire of chili peppers ignites the cuisine of Latin America. Spices are often the overlooked essentials that define our greatest eating experiences. In this global history of spices, Fred Czarra tracks the path of these fundamental ingredients from the trade routes of the ancient world to the McCormick 's brand 's contemporary domination of the global spice market. Focusing on the five premier spices—black pepper, cinnamon, nutmeg, cloves, and chili pepper—while also relating the story of many others along the way, Czarra describes how spices have been used in cooking throughout history and how their spread has influenced regional cuisines around the world. Chili peppers, for example, migrated west from the Americas with European sailors and spread rapidly in the Philippines and then to India and the rest of Asia, where the spice quickly became essential to local cuisines. The chili pepper also traveled west from India to Hungary, where it eventually became the national spice—paprika. Mixing a wide range of spice fact with fascinating spice fable—such as giant birds building nests of cinnamon—Czarra details how the spice trade opened up the first age of globalization, prompting a cross-cultural exchange of culinary technique and tradition. This savory spice history will enliven any dinner table conversation—and give that meal an unforgettable dash of something extra.

This book constitutes the refereed proceedings of the First International Workshop, IOSec 2018, sponsored by CIPSEC, held in Heraklion, Crete, Greece, in September 2018. The 12 full papers presented were carefully reviewed and selected from 22 submissions. They were organized in topical sections named: Critical Infrastructure Cybersecurity Issues; CyberSecurity Threats, Assessment and Privacy; and Vulnerability and Malware Detection.

Food Toxicology and Forensics presents an overview on these subjects, along with the analytical tools necessary to handle the complexity of the issues at play between them. The book discusses the presence of foreign substances in food despite forensic analysis and supports the scientific community, laboratories and regulatory bodies in their aim to identify food fraud. Topics include the forensic attribution profiling of food by liquid chromatography (LC), contemporary mass spectrometry (MS), tandem mass spectrometry (MS/MS) and liquid chromatography coupled to mass spectrometry (LC-MS), the application of ambient ionization mass spectrometry (AIMS) techniques for the analysis of food samples, and more.

Includes toxicology and analytical methods for the determination of certain toxicants in foods Discusses legal, economic and biological issues of food adulteration and food fraud Presents the latest allergen measurement techniques and post reviews of allergen non-compliance cases Provides methods of validation of DNA biochip for species identification in food forensic science

Information and Operational Technology Security Systems

Principles and Practice

3D QSAR in Drug Design

First International Workshop, IOsec 2018, CIPSEC Project, Heraklion, Crete, Greece, September 13, 2018, Revised Selected Papers

Hybrid Metaheuristics

Macromolecular Protein Complexes II: Structure and Function

Understanding metalloids and the potential impact they can have upon crop success or failure Metalloids have a complex relationship with plant life. Exhibiting a combination of metal and non-metal characteristics, this small group of elements – which includes boron (B), silicon (Si), germanium (Ge), arsenic (As), antimony (Sb), and tellurium (Te) – may hinder or enhance the growth and survival of crops. The causes underlying the effects that different metalloids may have upon certain plants range from genetic variance to anatomical factors, the complexities of which can pose a challenge to botanists and agriculturalists of all backgrounds. With *Metalloids in Plants*, a group of leading plant scientists present a complete guide to the beneficial and adverse impacts of metalloids at morphological, anatomical, biochemical, and molecular levels. Insightful analysis of data on genetic regulation helps to inform the optimization of farming, indicating how one may boost the uptake of beneficial metalloids and reduce the influence of toxic ones. Contained within this essential new text, there are: Expert analyses of the role of metalloids in plants, covering their benefits as well as their adverse effects Explanations of the physiological, biochemical, and genetic factors at play in plant uptake of metalloids Outlines of the breeding and genetic engineering techniques involved in the generation of resistant crops Written for students and professionals in the fields of agriculture, botany, molecular biology, and biotechnology, *Metalloids in Plants* is an invaluable overview of the relationship between crops and these unusual elements.

Recent changes in the pattern of agricultural practices from use of hazardous pesticides to natural (organic) cultivation has brought into focus the use of agriculturally important microorganisms for carrying out analogous functions. The reputation of plant growth promoting rhizomicroorganisms (PGPRs) is due to their antagonistic mechanisms against most of the fungal and bacterial phytopathogens. The biocontrol potential of agriculturally important microorganisms is mostly attributed to their bioactive secondary metabolites. However, low shelf life of many potential agriculturally important microorganisms impairs their use in agriculture and adoption by farmers. The focal theme of this book is to highlight the potential of employing biosynthesized secondary metabolites (SMs) from agriculturally important microorganisms for management of notorious phytopathogens, as a substitute of the currently available whole organism formulations and also as alternatives to hazardous synthetic pesticides. Accordingly, we have incorporated a comprehensive rundown of sections which particularly examine the SMs synthesized, secreted and induced by various agriculturally important microorganisms and their applications in agriculture. Section 1 includes discussion on biosynthesized antimicrobial

secondary metabolites from fungal biocontrol agents. This section will cover the various issues such as development of formulation of secondary metabolites, genomic basis of metabolic diversity, metabolomic profiling of fungal biocontrol agents, novel classes of antimicrobial peptides. The section 1 will also cover the role of these secondary metabolites in antagonist-host interaction and application of biosynthesized antimicrobial secondary metabolites for management of plant diseases. Section 2 will discuss the biosynthesized secondary metabolites from bacterial PGPRs, strain dependent effects on plant metabolome profile, bio-prospecting various isolates of bacterial PGPRs for potential secondary metabolites and non-target effects of PGPR on microbial community structure and functions. Section 3 encompasses synthesis of antimicrobial secondary metabolites from beneficial endophytes, bio-prospecting medicinal and aromatic hosts and effect of endophytic SMs on plants under biotic and biotic stress conditions. This book constitutes the refereed proceedings of the 11th International Workshop on Hybrid Metaheuristics, HM 2019, held in Concepción, Chile, in January 2019. The 11 revised full papers and 5 short papers presented were carefully reviewed and selected from 23 submissions. The papers present hybridization strategies and explore the integration of new techniques coming from other areas of expertise. They cover a variety of topics such as low-level hybridization, high-level hybridization, portfolio techniques, cooperative search, and theoretical aspects of hybridization.

Human well-being depends in many ways on maintaining the stock of natural resources which deliver the services from which human's benefit. However, these resources and flows of services are increasingly threatened by unsustainable and competing land uses. Particular threats exist to those public goods whose values are not well-represented in markets or whose deterioration will only affect future generations. As market forces alone are not sufficient, effective means for local and regional planning are needed in order to safeguard scarce natural resources, coordinate land uses and create sustainable landscape structures. This book argues that a solution to such challenges in Europe can be found by merging the landscape planning tradition with ecosystem services concepts. Landscape planning has strengths in recognition of public benefits and implementation mechanisms, while the ecosystem services approach makes the connection between the status of natural assets and human well-being more explicit. It can also provide an economic perspective, focused on individual preferences and benefits, which helps validate the acceptability of environmental planning goals. Thus linking landscape planning and ecosystem services provides a two-way benefit, creating a usable science to meet the needs of local and regional decision making. The book is structured around the Driving forces-Pressures-States-Impacts-Responses framework, providing an introduction to relevant concepts, methodologies and techniques. It presents a new, ecosystem services-informed, approach to landscape planning that constitutes both a framework and toolbox for students and practitioners to address the environmental and landscape challenges of 21st century Europe.

Dietary Supplements, Botanicals and Herbs at The Interface of Food and Medicine
Ligand-Protein Interactions and Molecular Similarity

Monographs on Fragrance Raw Materials
Advanced Processes and Technologies
The FFT in the 21st Century
Nanoparticles and Their Impact on Plants

This book addresses various aspects of how smart healthcare can be used to detect and analyze diseases, the underlying methodologies, and related security concerns. Healthcare is a multidisciplinary field that involves a range of factors like the financial system, social factors, health technologies, and organizational structures that affect the healthcare provided to individuals, families, institutions, organizations, and populations. The goals of healthcare services include patient safety, timeliness, effectiveness, efficiency, and equity. Smart healthcare consists of m-health, e-health, electronic resource management, smart and intelligent home services, and medical devices. The Internet of Things (IoT) is a system comprising real-world things that interact and communicate with each other via networking technologies. The wide range of potential applications of IoT includes healthcare services. IoT-enabled healthcare technologies are suitable for remote health monitoring, including rehabilitation, assisted ambient living, etc. In turn, healthcare analytics can be applied to the data gathered from different areas to improve healthcare at minimum expense.

Examines the scientific facts behind claims about the safety or dangers of organic and commercial foods, natural herbs, modern medicine, and the environment.

Monographs on Fragrance Raw Materials contains a collection of monographs originally appearing in Food and Cosmetics Toxicology from the first issues in 1973 to the last ones in 1978. The monographs are organized in alphabetical order, as a regular feature of Food and Cosmetics Toxicology. This monograph will prove valuable to many readers of Food and Cosmetics Toxicology, as well as to the wider community of scientists and interested consumers.

Syzygium is a well-known source of the globally traded clove as well as the widely cultivated jambolan, water apple, rose apple, wax apple, mountain apple, and several other underutilized species. These plants have multiple uses as edible fruits, medicine,

spice, food colorants, and flavorings. The Genus Syzygium: Syzygium cumini and Other Underutilized Species provides an updated, comprehensive account of S. cumini and other underutilized species from a multidisciplinary perspective. This book covers all relevant aspects including the botany, systematics, phylogeny, life history, traditional medicinal uses, phytochemical constituents, pharmacology, pharmacopeia standards, horticulture, genetic resource conservation, biocontrol, and bioremediation values. It demonstrates how Syzygium cumini and other underutilized species hold great prospect for global pharmaceutical and horticultural trade. The Genus Syzygium will serve as the standard reference for a broad range of researchers interested in the various uses of S. cumini and eight underutilized Indo-Malaysian and Australasian species of Syzygium.

Select Proceedings of ICFSSST 2019

An Artificial Intelligence Approach

Health and Safety Aspects of Food Processing Technologies

11th International Workshop, HM 2019, Concepción, Chile, January 16–18, 2019, Proceedings

Discovery and Applications

Landscape Planning with Ecosystem Services

Rhizosphere Engineering is a guide to applying environmentally sound agronomic practices to improve crop yield while also protecting soil resources. Focusing on the potential and positive impacts of appropriate practices, the book includes the use of beneficial microbes, nanotechnology and metagenomics. Developing and applying techniques that not only enhance yield, but also restore the quality of soil and water using beneficial microbes such as Bacillus, Pseudomonas, vesicular-arbuscular mycorrhiza (VAM) fungi and others are covered, along with new information on utilizing nanotechnology, quorum sensing and other technologies to further advance the science. Designed to fill the gap between research and application, this book is written for advanced students, researchers and those seeking real-world insights for improving agricultural production. Explores the potential benefits of optimized rhizosphere Includes metagenomics and their emerging importance Presents insights into the use of biosurfactants

This second edition laboratory manual was written to accompany Food Analysis, Fourth Edition, ISBN

978-1-4419-1477-4, by the same author. The 21 laboratory exercises in the manual cover 20 of the 32 chapters in the textbook. Many of the laboratory exercises have multiple sections to cover several methods of analysis for a particular food component of characteristic. Most of the laboratory exercises include the following: introduction, reading

assignment, objective, principle of method, chemicals, reagents, precautions and waste disposal, supplies, equipment, procedure, data and calculations, questions, and references. This laboratory manual is ideal for the laboratory portion of undergraduate courses in food analysis.

ASIA CCS '17: ACM Asia Conference on Computer and Communications Security Apr 02, 2017-Apr 06, 2017 Abu Dhabi, United Arab Emirates. You can view more information about this proceeding and all of ACMs other published conference proceedings from the ACM Digital Library: <http://www.acm.org/dl>.

This book illustrates the currently available strategies for managing phytonematodes. It discusses the latest findings on plant-pathogen-microbiome interactions and their impacts on ecosystems, and provides extensive information on the application of microorganisms in the sustainable management of phytonematodes. This is followed by an in-depth discussion of the application of potential strains of biocontrol fungi, endophytes and actinomycetes to enhance plants' ability to fend off phytonematode attacks, leading to improved plant health. In conclusion, the book addresses new aspects like the biofabrication of nanoparticles and their application in plant disease management, and presents an extensive list for further reading.

Advances in Smart System Technologies

The Genus Syzygium

Advances in the Dyeing and Finishing of Technical Textiles

Phytochemical Techniques

Proceedings of the 4th International Congress of Automotive and Transport Engineering (AMMA 2018)

Food Conservation

Significant progress has been made in the study of three-dimensional quantitative structure-activity relationships (3D QSAR) since the first publication by Richard Cramer in 1988 and the first volume in the series. 3D QSAR in Drug Design. Theory, Methods and Applications, published in 1993. The aim of that early book was to contribute to the understanding and the further application of CoMFA and related approaches and to facilitate the appropriate use of these methods. Since then, hundreds of papers have appeared using the quickly developing techniques of both 3D QSAR and computational sciences to study a broad variety of biological problems. Again the editor(s) felt that the time had come to solicit reviews on published and new viewpoints to document the state of the art of 3D QSAR in its broadest definition and to provide visions of where new techniques will emerge or new applications may be found. The intention is not only to highlight new ideas but also to show the shortcomings, inaccuracies, and abuses of the methods. We hope this book

will enable others to separate trivial from visionary approaches and me-too methodology from innovative techniques. These concerns guided our choice of contributors. To our delight, our call for papers elicited a great many manuscripts.

This volume includes selected and reviewed papers from the 4th International Congress of Automotive and Transport Engineering, held in Cluj, Romania, in September 2018. Authors are experts from research, industry and universities coming from 14 countries worldwide. The papers are covering the latest developments in automotive vehicles and environment, advanced transport systems and road traffic, heavy and special vehicles, new materials, manufacturing technologies and logistics, accident research and analysis and innovative solutions for automotive vehicles. The conference is organized by SIAR (Society of Automotive Engineers from Romania) in cooperation with FISITA.

This book was undertaken to provide a text and reference on the theory and practice of the FFT and its common usage. This book is organized in only four chapters, and is intended as a tutorial on the use of the FFT and its trade space. The trade space of the FFT is the parameters in its usage and the relationships between them - the sample rate, the total number of points or the interval over which processing occurs in a single FFT, the selectivity of tuning to a given frequency over signals out-of-band, and the bandwidth over which a signal appears. The examples given in this text are in FORTRAN 95/2003. FORTRAN 2003 was frozen as a standard while this work was in progress. The listings given here are intended as an aid in understanding the FFT and associated algorithms such as spectral window weightings, with the goal of making the best of them more accessible to the reader. The code I use here provides a simple bridge between the material in the text and implementation in FORTRAN 2003, C++, Java, MATLAB ©, and other modern languages. The examples are sufficiently simple to be translated into older languages such as C and FORTRAN 77 if desired.

This text outlines the principles underlying the choice and use of pest control systems and illustrates how far these can be applied in practical situations. It shows that, ultimately, choice must be based on a compromise between theory and the demands of practice.

Naturally Dangerous

A Collection of Monographs Originally Appearing in Food and Cosmetics Toxicology

Role of Volatiles in Agro-ecosystems

Pesticide Application

A Global History

High-Performance Materials and Engineered Chemistry

The use of distinctive colourants and finishes has a significant impact on the aesthetic appeal and functionality of technical textiles. Advances in the textile chemical industry facilitate production of diverse desirable properties, and are therefore of great interest in the production of textile products with enhanced performance characteristics. Drawing on key research, *Advances in the dyeing and finishing of technical textiles* details important advances in this field and outlines their development for a range of applications. Part one reviews advances in dyes and colourants, including chromic materials, optical effect pigments and microencapsulated colourants for technical textile applications. Other types of functional dyes considered include UV- absorbent, anti-microbial and water-repellent dyes. Regulations relating to the use of textile dyes are discussed before part two goes on to investigate such advances in finishing techniques as mechanical finishing, softening treatments and the use of enzymes. Surfactants, Inkjet printing of technical textiles and functional finishes to improve the comfort and protection of apparel are also explored. The use of nanotechnology in producing hydrophobic, super-hydrophobic and antimicrobial finishes is dealt with alongside coating and lamination techniques, before the book concludes with a discussion of speciality polymers for the finishing of technical textiles. With its distinguished editor and international team of expert contributors, *Advances in the dyeing and finishing of technical textiles* is a comprehensive guide for all those involved in the development, production and application of technical textiles, including textile chemists, colour technologists, colour quality inspectors, product developers and textile finishers. Discusses important advances in the textile chemical industry Considers developments in various dyes and colourants used in the industry, including water repellent, functional and anti-microbial dyes Chapters also examine advances in finishing techniques, the use of nanotechnology and speciality polymers in technical textiles

This volume brings together innovative research, new concepts, and novel developments in the application of new tools for chemical and materials engineers. It contains significant research, reporting new methodologies and important applications in the fields of chemical engineering as well as the latest coverage of chemical databases and the development of new methods and efficient approaches for chemists. This authoritative reference source provides the latest scholarly research on the use of applied concepts to enhance the current trends and productivity in chemical engineering. Highlighting theoretical foundations, real-world cases, and future directions, this book is ideally designed for researchers, practitioners, professionals, and

students of materials chemistry and chemical engineering. The volume explains and discusses new theories and presents case studies concerning material and chemical engineering. The book is divided into several sections, covering: Advanced Materials Chemoinformatics, Computational Chemistry, and Smart Technologies Analytical and Experimental Techniques

Due to the heterogeneous nature of water streams from diverse domestic and industrial sources, and the equally diverse nature of pollutants that can be physical, chemical, and biological in nature, their treatment methods also must be varied in nature. Responding to this complex situation, Wastewater Treatment: Advanced Processes and Technologies p

This book examines theoretical and applied aspects of wavelet analysis in neurophysics, describing in detail different practical applications of the wavelet theory in the areas of neurodynamics and neurophysiology and providing a review of fundamental work that has been carried out in these fields over the last decade. Chapters 1 and 2 introduce and review the relevant foundations of neurophysics and wavelet theory, respectively, pointing on one hand to the various current challenges in neuroscience and introducing on the other the mathematical techniques of the wavelet transform in its two variants (discrete and continuous) as a powerful and versatile tool for investigating the relevant neuronal dynamics. Chapter 3 then analyzes results from examining individual neuron dynamics and intracellular processes. The principles for recognizing neuronal spikes from extracellular recordings and the advantages of using wavelets to address these issues are described and combined with approaches based on wavelet neural networks (chapter 4). The features of time-frequency organization of EEG signals are then extensively discussed, from theory to practical applications (chapters 5 and 6). Lastly, the technical details of automatic diagnostics and processing of EEG signals using wavelets are examined (chapter 7). The book will be a useful resource for neurophysiologists and physicists familiar with nonlinear dynamical systems and data processing, as well as for graduate students specializing in the corresponding areas.

Management of Phytonematodes: Recent Advances and Future Challenges
Food Analysis Laboratory Manual

Secondary Metabolites of Plant Growth Promoting Rhizomicroorganisms

Food Toxicology and Forensics

The Complete New Herbal

Nanotechnology and Plant Sciences

Microorganisms for Sustainable Environment and Health covers hazardous pollutants released from natural as well as anthropogenic activities and implications on environmental and human health. This book serves as a valuable source of basic knowledge and recent developments in the clean technologies and pollution-associated diseases and abnormalities in the context of microorganisms. Focused on current solutions to various environmental problems in the field of bioremediation, it provides a detailed knowledge on the various types of toxic environmental pollutants discharged from different sources, their toxicological effects in environments, humans, animals and plants as well as their biodegradation and bioremediation approaches. This book helps environmental scientists and microbiologists learn about existing environmental problems and suggests ways to control or contain their effects by employing various treatment approaches. Provides information on waste treatment approaches using microbes Includes applications in biofuel and bioenergy production Covers green belt development, hydroponics, phytoremediation, wetland treatment technology, and common effluent treatment plants (CETPs) Discusses dissemination of antibiotic resistance among pathogenic microbes and strategies to combat multi-drug resistance (MDR)

The term “ stringology ” is a popular nickname for text algorithms, or algorithms on strings. This book deals with the most basic algorithms in the area. Most of them can be viewed as “ algorithmic jewels ” and deserve reader-friendly presentation. One of the main aims of the book is to present several of the most celebrated algorithms in a simple way by omitting obscuring details and separating algorithmic structure from combinatorial theoretical background. The book reflects the relationships between applications of text-algorithmic techniques and the classification of algorithms according to the measures of complexity considered. The text can be viewed as a parade of algorithms in which the main purpose is to discuss the foundations of the algorithms and their interconnections. One can partition the algorithmic problems discussed into practical and theoretical problems. Certainly, string matching and data compression are in the former class, while most problems related to symmetries and repetitions in texts are in the latter. However, all the problems are interesting from an algorithmic point of view and enable the reader to appreciate the importance of combinatorics on words as a tool in the design of efficient text algorithms. In most textbooks on algorithms and data structures, the presentation of efficient algorithms on words is quite short as compared to issues in graph theory, sorting, searching, and some other areas. At the same time, there are many presentations of interesting algorithms on words accessible only in journals and in a form directed mainly at specialists. This book fills the gap in the book literature on algorithms on words, and brings together the many results presently dispersed in the masses of journal articles. The presentation is reader-friendly; many examples and about two hundred figures illustrate nicely the behaviour of otherwise very complex algorithms.

The subject of the Seventh International Conference on Ethnological Food Research, held at Sogndal, Norway in 1987. Phytochemicals are the individual chemicals from which the plants are made and plants are the key sources of raw material for both pharmaceutical and aromatic industries. the improved methods for higher yield of active compounds will be the major incentive in these industries. To help those who are involved in the isolation of compounds from plants, some of the essential phytochemical techniques are included in this book. The theoretical principles of various instruments, handling of samples and interpretation of spectra are given in detail. Adequate chemical formulas are included to support and explain various structures of compounds and techniques. The book will prove useful to students, researchers, professionals in the field of Plant

Physiology and Pathology, Pharmaceutical and Chemical Engineering, Biotechnology, Medicinal and Aromatic Plants and Horticulture.

Advances and Future Prospects

Climate Change and Food Security with Emphasis on Wheat

Rhizosphere Engineering

18th International Semantic Web Conference, Auckland, New Zealand, October 26 – 30, 2019, Proceedings, Part II

Theories and Methods for Application in Europe

Jewels Of Stringology: Text Algorithms

This edited book is focused on antioxidant compounds and their biosynthesis, up-regulation, mechanism of action for selective bioactivity, targeted role and the advancement of their bioactive potential during plant-microbe interaction and other stress conditions. This book also emphasizes on the role of antioxidants in recruiting beneficial microbes in plant surroundings. Antioxidants have multiple biological roles in plants especially in the signalling pathway. These compounds are secondary metabolites produced besides the primary biosynthetic pathway and are associated with growth and development. Besides they also have special role to play during oxidative stress produced via abiotic stimulants or pathogen attack. This understanding of the biosynthesis, signaling and function of antioxidant compounds in plants during stress condition is helpful in restoring plant ecosystem productivity and improve plant responses to a wide range of stress conditions. This book is a useful compilation for researchers and academicians in botany, plant physiology, plant biochemistry and stress physiology. Also the book serves as reading material for undergraduate and graduate students of environmental sciences, agricultural sciences and other plant science courses.

Food processing is expected to affect content, activity and bioavailability of nutrients; the health-promoting capacity of food products depends on their processing history. Traditional technologies, such as the use of antimicrobials and thermal processing, are efficient in increasing nutritional value to an extent, though they may not be effective at addressing food safety, particularly when it comes to maintaining the food's molecular structure. Modern food processing plants improve the quality of life for people with allergies, diabetics, and others who cannot consume some common food elements. Food processing can also add extra nutrients, such as vitamins. Processed foods are often less susceptible to early spoilage than fresh foods and are better suited for long-distance transportation from the source to the consumer. However, food processing can also decrease the nutritional value of foods and introduce hazards not encountered with

naturally occurring products. Processed foods often include food additives, such as flavourings and texture-enhancing agents, which may have little or no nutritive value, and may in fact be unhealthy. This book deals with the subject of food processing in a unique way, providing an overview not only of current techniques in food processing and preservation (i.e., dairy, meat, cereal, vegetables, fruits and juice processing, etc.) but also the health and safety aspects: food technologies that improve nutritional quality of foods, functional foods, and nanotechnology in the food and agriculture industry. The text also looks into the future by defining current bottlenecks and future research goals. This work will serve as a ready reference for the subject matter to students and researchers alike.

Climate Change and Food Security with Emphasis on Wheat is the first book to present the full scope of research in wheat improvement, revealing the correlations to global issues including climate change and global warming which contribute to food security issues. Wheat plays a key role in the health of the global economy. As the world population continuously increases, economies modernize, and incomes rise, wheat production will have to increase dramatically to secure it as a reliable and sustainable food source. Since covering more land area with wheat crops is not a sustainable option, future wheat crops must have consistently higher yields and be able to resist and/or tolerate biotic and abiotic stresses that result from climate change. Addressing the biophysical and socioeconomic constraints of producing high-yielding, disease-resistant, and good quality wheat, this book will aid in research efforts to increase and stabilize wheat production worldwide. Written by an international team of experts, Climate Change and Food Security with Emphasis on Wheat is an excellent resource for academics, researchers, and students interested in wheat and grain research, especially as it is relevant to food security. Covers a wide range of disciplines, including plant breeding, genetics, agronomy, physiology, pathology, quantitative genetics and genomics, biotechnology and gene editing Explores the effect of climate change on biotic stresses (stripe rust, stem rust, leaf rust, Karnal bunt, spot blotch) on wheat production and utilization of biotechnology Focuses on whole genome sequencing and next-generation sequencing technologies to improve wheat quality and address the issue of malnutrition in developing world

This book follows on from Volume 83 in the SCBI series (“ Macromolecular Protein Complexes ”), and addresses several important topics (such as the Proteasome, Anaphase Promoting Complex, Ribosome and Apoptosome) that were not previously included, together with a number of additional exciting topics in this rapidly expanding field of study. Although the first SCBI Protein Complex book focused on soluble protein

complexes, the second (Vol. 87) addressed Membrane Complexes, and the third (Vol. 88) put the spotlight on Viral Protein and Nucleoprotein Complexes, a number of membrane, virus and even fibrillar protein complexes have been be considered for inclusion in the present book. A further book is also under preparation that follows the same pattern, in an attempt to provide a thorough coverage of the subject. Chapter 9 is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

Antioxidants in Plant-Microbe Interaction

Antimicrobials in Food

Spices

Guide to Vulnerability Analysis for Computer Networks and Systems

Volatiles and Food Security

Syzygium cumini and Other Underutilized Species

This book presents select peer-reviewed proceedings of the International Conference on Frontiers in Smart Systems Technologies (ICFSST 2019). It focuses on latest research and cutting-edge technologies in smart systems and intelligent autonomous systems with advanced functionality. Comprising topics related to diverse aspects of smart technologies such as high security, reliability, miniaturization, energy consumption, and intelligent data processing, the book contains contributions from academics as well as industry. Given the range of the topics covered, this book will prove useful for students, researchers, and professionals alike.

Twelve years have passed since its last edition - making Antimicrobials in Foods, Third Edition the must-have resource for those interested in the latest information on food antimicrobials. During that time, complex issues regarding food preservation and safety have emerged. A dozen years ago, major outbreaks of *Escherichia coli* O157:H7 and *Listeria*

This book presents a holistic view of the complex and dynamic responses of plants to nanoparticles, the signal transduction mechanisms involved, and the regulation of gene expression. Further, it addresses the phyto-synthesis of nanoparticles, the role of nanoparticles in the antioxidant systems of plants and agriculture, the beneficial and harmful effects of nanoparticles on plants, and the application of nanoparticles and nanotubes to mass spectrometry, aiming ultimately at an analysis of the metabolomics of plants. The growing numbers of inventions in the field of nanotechnology are producing novel applications in the fields of biotechnology and agriculture. Nanoparticles have received much attention because of the unique physico-chemical properties of these compounds. In the life sciences, nanoparticles are used as “ smart ” delivery systems, prompting the Nobel Prize winner P. Ehrlich to refer to these compounds as “ magic bullets. ” Nanoparticles also play an important role in agriculture as compound fertilizers and nano-pesticides, acting as chemical delivery agents that target molecules to specific cellular organelles in plants. The influence of nanoparticles on plant growth and development, however, remains to be investigated. Lastly, this book reveals the research gaps that must be bridged in the years to come in order to achieve larger goals

concerning the applications of nanotechnology in the plants sciences. In the 21st century, nanotechnology has become a rapidly emerging branch of science. In the world of physical sciences, nanotechnological tools have been exploited for a broad range of applications. In recent years, nanoparticles have also proven useful in several branches of the life sciences. In particular, nanotechnology has been employed in drug delivery and related applications in medicine.

This professional guide and reference examines the challenges of assessing security vulnerabilities in computing infrastructure. Various aspects of vulnerability assessment are covered in detail, including recent advancements in reducing the requirement for expert knowledge through novel applications of artificial intelligence. The work also offers a series of case studies on how to develop and perform vulnerability assessment techniques using start-of-the-art intelligent mechanisms. Topics and features: provides tutorial activities and thought-provoking questions in each chapter, together with numerous case studies; introduces the fundamentals of vulnerability assessment, and reviews the state of the art of research in this area; discusses vulnerability assessment frameworks, including frameworks for industrial control and cloud systems; examines a range of applications that make use of artificial intelligence to enhance the vulnerability assessment processes; presents visualisation techniques that can be used to assist the vulnerability assessment process. In addition to serving the needs of security practitioners and researchers, this accessible volume is also ideal for students and instructors seeking a primer on artificial intelligence for vulnerability assessment, or a supplementary text for courses on computer security, networking, and artificial intelligence.

Eigenspace Processing

Proceedings of the ACM Workshop on Blockchain, Cryptocurrencies and Contracts

Metalloids in Plants

Microorganisms for Sustainable Environment and Health

Surprising Facts About Food, Health and the Environment

Wastewater Treatment

This book presents research on volatiles produced by microbes and plants along with their biotechnological implications for sustainable agriculture. A greater understanding of how plants and microbes live together and benefit each other can provide new strategies to improve plant productivity, while at the same time helping to protect the environment and maintain global biodiversity. To date, the use of chemicals to enhance plant growth or induced resistance in plants has been limited due to the negative effects and the difficulty in determining the optimal concentrations to benefit the plant. The book discusses extensive studies on biological alternatives that avoid these problems, and the research presented suggests that these compounds could offer an environmentally sound means to better grow and protect plants under greenhouse or field conditions. To understand the nature of VOCs and gene expression profiling of plant genes responding against these compounds can be conducted. It is possible that VOCs produced by microbes while colonizing roots are generated at sufficient concentrations to trigger plant responses. In conclusion, positive or negative effects of VOCs on plant productivity will be dependent on upon specific VOCs

microbial strain, plant genotype, and presence/absence of abiotic/biotic stresses

Wavelets in Neuroscience

The Semantic Web – ISWC 2019

A Practical Guide to Herbal Living

Smart Healthcare Analytics in IoT Enabled Environment