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MEDICINE AND HEALTH
Heart failure is an increasingly prevalent syndrome worldwide with a high impact on quality of life and survival. Although there have been great advances in the treatment of this condition that effectively increase survival, mortality remains unacceptably high, exceeding 40% at 5 years, which is worse than a large number of cancers. Furthermore, patients with advanced heart failure are a particular subgroup with higher hospitalizations and mortality, with a short-term survival that can be as low as 50% in the case of cardiogenic shock. Heart transplantation remains the gold standard treatment for these patients when other pharmacological and non-pharmacological interventions have failed, with a 1-year survival of approximately 90%. However, not all patients are suitable candidates for this procedure, and knowing the indications as well as the contraindications for heart transplantation is essential for appropriate patient selection. Heart Transplantation: Indications, Postoperative Management and Long-Term Outcomes is a highly illustrated, didactic book that comprehensively describes the pretransplant assessment of the advanced heart failure patient, the perioperative management of heart transplantation, and the early and late complications of the heart transplant recipient. It also covers special situations in heart transplantation such as Chagas cardiomyopathy, congenital heart disease, hypertrophic/restrictive cardiomyopathy and pediatric heart transplantation. This book is intended for cardiology fellows in training, surgeons, cardiologists, internists, and other health professionals involved in the care of heart transplant patients.
examines the influence of Zhong Yuan Qigong practice on the adaptive mechanisms of the cardiovascular system. Chapter Five relates the function of the myocardial sleeve over the pulmonary vein to cardiac arrhythmias. Chapter Six reviews bioactive peptides from their research to their use in cardiovascular therapy. Chapter Seven explores the role of microRNAs in pulmonary hypertension. Chapter Eight discusses the benefits and limitations of fibrinolytic therapy. Chapter Nine is a review of the use of the CARDIOSIM© Cardiovascular software simulator for the study of ECMO support and mechanical ventilation interaction.

**Pericarditis: From Diagnosis to Treatment**  
*Nicholas Clément*  
In series: *Cardiology Research and Clinical Developments*  
Publication Date: 05/20/2022  
189 pp.  
Softcover: 978-1-68507-764-8. $95.00  
e-book: 978-1-68507-960-4. $95.00  

Pericarditis refers to swelling and irritation of the pericardium, which is the thin, saclike tissues surrounding the heart, usually leading to sharp chest pain. This condition can arise due to viral infections, but the cause is often unknown. In this book, various causes and types of pericarditis are elucidated, and treatment options are outlined across six chapters. Chapter One deals with Dressler syndrome, which is secondary pericarditis that occurs after myocardial injury and is widely purported to be of autoimmune etiology. Chapter Two discusses the treatment of pericarditis and the management of potential complications. Chapter Three addresses the clinical and diagnostic features of purulent pericarditis, which is the presence of suppurative in the pericardium, as well as therapeutic options. Chapter Four emphasizes the emerging adverse events of vaccine-induced pericarditis, summarizing its epidemiology, pathogenesis, clinical presentation, diagnosis, management, and limitation. Chapter Five concerns constrictive pericarditis, which arises due to the scarring and loss of elasticity in post-acute pericarditis. Finally, Chapter Six addresses the clinical and diagnostic features of COVID-19-induced pericarditis, as well as the therapeutic options.

**DENTISTRY**

**Conservative Treatment of Pulp Tissue: Indications, Materials and Techniques**  
*Dr. Francine Benetti Faria, DDS, MSc, PhD (Adjunct Professor, School of Dentistry, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil)*  
In series: *Dentistry and Oral Sciences*  
Publication Date: 09/21/2022  
197 pp.  
Hardcover: 978-1-68507-987-1. $160.00  
e-book: 979-8-88697-182-8. $160.00  

Dental pulp is a loose, vascularized connective tissue located within the walls of dentin. This tissue plays an important role in tooth longevity, whose functions are formative, sensitive, nourishing and defensive. Pulp exposure can be caused by several factors, such as a carious lesion or tooth fracture, leading to inflammation of the pulp tissue, which can result in necrosis if intervention is not performed quickly. Conservative treatments may be indicated when removal of the carious lesion results in pulp exposure in a young primary or permanent tooth, with normal pulp or reversible pulpitis, or after accidental pulp exposure. This book addresses the physiology and pathology of pulp tissue in order to communicate the importance, indications, and techniques of conservative treatments to be performed, especially in young patients, as well as the most suitable biomaterials.
The Biochemical Guide to Hormones
David Aebisher, PhD, DSc (Medical College of The University of Rzeszów, University of Rzeszów, Rzeszów, Poland)
In series: Endocrinology Research and Clinical Developments
Expected Publication Date: 02/15/2023
229 pp.
Hardcover: 979-8-88697-492-8. $160.00
e-book: 979-8-88697-534-5. $160.00
This book aims to provide scientific information about hormones. Hormones are chemical compounds that transmit specific information between organs and thus regulate the body's work. As a group of biologically active signaling molecules, they belong to the four main groups of organic chemical compounds. The 36 chapters present the characteristics of exemplary hormones. The prepared monograph is a description of the most popular hormones. In this volume, one can read about the biochemical pathways of adrenaline, adrenocorticotropic hormone (ACTH), aldosterone, antidiuretic hormone (vasopressin), cholecystokinin, corticotropin releasing hormone (CRH), cortisol, endocrine disorders, endocrine system, epinephrine, erythropoietin, estrogen, follicle-stimulation hormone (FSH), ghrelin, glucagon, gonadotropin releasing hormone (GnRH), growth hormone (GH), growth hormone releasing hormone (GHRH), hepcidin, human chorionic gonadotropin-β, humoral factors, importance of a correct hormonal balance for the psychological well-being of women, insulin, insulin-like growth factor (IGF), luteinizing hormone (LH), insulin, oxytocin, parathyroid hormone (PTH), progesterone, prolactin, thyroid-stimulating hormone (TSH), serotonin, thyroid hormone, thyrotropin releasing hormone (TRH) and prolactin.

Diabetes

Alpinia nigra (Gaertn) Burtt: Prospects in Controlling Diabetes
Biman Bhuyan, PhD (Assistant Professor, Department of Pharmaceutical Sciences, Dibrugarh University, India), Angkita Baruah, M Pharm.(Department of Pharmaceutical Sciences, Dibrugarh University, India) and Prakash Rajak, PhD (Assistant Professor, Department of Pharmaceutical Sciences, Dibrugarh University, India)
In series: Herbs and Herbalism
Publication Date: 09/15/2022
90 pp.
Softcover: 979-8-88697-225-2. $82.00
e-book: 979-8-88697-300-6. $82.00
This book is an illustrative account on the usage of Alpinia nigra (Gaertn) Burtt. in the traditional medicinal system and its subsequent systematic validation and experimental standardization with special emphasis on its prospects in controlling diabetes. It tries to cover the basic aspects regarding the phytocomposition, pharmacopoeial standardization, in vitro and in vivo studies aimed in verification of its use in the traditional system of medicine. The work embedded in the book successfully upheld the folkloric claims by traditional practitioners in the treatment of diabetes.

Metabolic Disorders

Natural Products for Treatment of Metabolic Syndrome
Ajmer Singh Grewal, PhD (Associate Professor, Guru Gobind Singh College of Pharmacy, Yamuna Nagar, Haryana, India) and Ashwani Kumar Dhingra, PhD (Professor, Guru Gobind Singh College of Pharmacy, Yamuna Nagar, Haryana, India)
In series: Endocrinology Research and Clinical Developments
Publication Date: 10/20/2022
390 pp.
Metabolic syndrome (MetS) is a ubiquitous problem that is alarming the world with high prevalence. MetS, also known by other names including syndrome X, insulin resistance syndrome, and dysmetabolic syndrome, constitutes a group of disorders associated with the metabolism of biomolecules and is characterized by hypertension, insulin resistance, cardiovascular diseases, dyslipidemia, obesity, etc. The pathophysiology of MetS is presumed to involve genetic as well as lifestyle factors including dietary habits, physical activity and perhaps interrupted sleep patterns. The lack of effective prevention and treatment has major effects on the health and lifespan of individuals. As a result, the most challenging task for global researchers is to develop potential lead molecules for the management of MetS with minimal side effects. Weight loss, physical exercise, and healthy diet can help prevent or reverse MetS. A variety of natural compounds are indispensable for the effective management and treatment of MetS. For many years, these natural compounds have provided the basis for development of diverse new classes of potent molecules. This book comprises 6 sections containing 27 chapters written by leading researchers in the field, covering a broad range of topics related to the pathophysiology and possible treatment of MetS with natural products.

**Thyroid Disorders**

**Understanding and Managing Hyperthyroidism**

*Dr. K. Poongkodi, MCh*

In series: *Endocrinology Research and Clinical Developments*

Expected Publication Date: 03/20/2023

Hardcover: 979-8-88697-636-6. $160.00

e-book: 979-8-88697-648-9. $160.00

This book is a must-read to obtain a comprehensive understanding of all aspects of hyperthyroidism, and is a useful practical guide in decision-making in the management of hyperthyroidism as it sheds light on all modalities of treatment such as medicine, nuclear medicine, and surgery, including minimally invasive surgery.

**GASTROENTEROLOGY**

**Effects of Healthful Bioactive Compounds on the Gastrointestinal Tract**

*Amir M. Mortazavian, PhD (Professor, Department of Food Science and Technology, Faculty of Nutrition Sciences and Food Technology, National Nutrition and Food Technology Research Institute, Shahid Beheshti University of Medical Sciences, Tehran, Iran), Zahra Yari, PhD (Department of Clinical Nutrition and Dietetics, Faculty of Nutrition and Food Technology, National Nutrition and Food Technology Research Institute Shahid Beheshti University of Medical Sciences, Tehran, Iran) and Nasim Khorshidian, PhD (Assistant Professor, Department of Food Technology Research, Faculty of Nutrition Sciences and Food Technology/National Nutrition and Food Technology Research Institute, Shahid Beheshti University of Medical Sciences, Tehran, Iran)*

In series: *Gastroenterology Research and Clinical Developments*

Publication Date: 05/13/2022

176 pp.

Hardcover: 978-1-68507-624-5. $230.00

e-book: 978-1-68507-871-3. $230.00

Optimal performance of the liver and gastrointestinal tract is vital for general human health. The gastrointestinal system is the main site of nutrient digestion and absorption, and therefore has substantial effects on providing energy and growth for the body. All nutrient and non-nutrient components have an impact on the gastrointestinal system, either locally or systemically. Undeniably, gastrointestinal disorders, with increasing lifetime prevalence, have a profound effect on human health and reduce the quality of life. Nowadays, therapeutic options are limited to medical therapy, including pharmacologic approaches and surgical intervention or lifestyle changes aimed at dietary modifications and increased physical activity. Certainly, dietary modifications can be effective in preventing, treating, and alleviating associated symptoms and complications. In addition to improving whole dietary patterns, the components of foods, collectively or
independently, also have a substantial role in their therapeutic features. These components, particularly bioactive compounds, confer unique health benefits and aid in management of various diseases. Recently, investigators have paid much attention to chemopreventive activity of bioactive dietary compounds in the treatment and prevention of gastrointestinal diseases. Fruits, vegetables and edible plants are the main source of biologically active compounds with anti-inflammatory, antioxidant, and protective properties. Most importantly, no major side effects have been reported for these compounds until now. Therefore, this book offers novel targets for prevention, treatment and management of liver and gastrointestinal diseases by providing evidence of effectiveness of bioactive compounds of functional foods. Furthermore, intracellular and molecular pharmacological mechanisms of action of bioactive compounds will also be discussed. It seems that bioactive compounds bring new hope for patients with gastrointestinal disorders through their anti-inflammatory and anti-oxidative potential. The editors hope that the book will be a useful reference for researchers, product developers, health professionals and students.

Exercise and Diet as Modulators of Cognitive Function through Gut Microbiota
Natalia Arias, PhD (Head of Research and Professor at the Faculty of Life and Nature Sciences, Nebrija University, Hoyo de Manzanares, Madrid, Spain), Ismael Martínez-Guardado, PhD (Associated Professor at the Faculty of Life and Nature Sciences, Nebrija University, Spain) and Francisco J. Grijota Pérez, PhD (Associated Professor at the Faculty of Life and Nature Sciences, Nebrija University, Spain)

In series: Gastroenterology Research and Clinical Developments
Publication Date: 11/03/2022
220 pp.
Hardcover: 979-8-88697-164-4. $160.00
e-book: 979-8-88697-318-1. $160.00

In recent years, the study of the human intestinal microbiota and its relationship with the brain has expanded enormously in the scientific field. It has been shown that changes in nutritional habits, apart from producing changes in the host microbiota, can affect the central nervous system, contributing to the development of neurological pathologies such as Parkinson’s, Alzheimer’s and motor neuron disorders. Several studies have shed light into the role of exercise as a preventive factor against various diseases; however, exercise can also produce stress on the body. This book discusses the relevance of an individual’s health state, type and duration of exercise, and diet as contributing factors to the microbiota-gut-brain axis. Also, this book presents findings regarding the relationships between epigenetic modifications and the gut microbiota as well as between epigenetics and cognitive function.

Gut Microbiome: Simplified! (For Medical, Nursing, Nutrition Students and Practitioners)
Ujjwal Sonika, MD, DM (Associate Professor, Gastroenterology, GB Pant Hospital, Maulana Azad Medical College, New Delhi, India)

In series: Gastroenterology Research and Clinical Developments
Publication Date: 10/27/2022
103 pp.
Softcover: 979-8-88697-340-2. $82.00
e-book: 979-8-88697-379-2. $82.00

If you are a health-care provider or a student who wants to understand the basics of the gut microbiome, this book is for you. If you find the scientific or media content on the gut microbiota confusing and perplexing, this book will provide you with the armamentarium to better understand it, and if you wish to know the current use of gut microbiota therapies in your field of expertise, this book gives you that concisely. All the information provided is based on the latest published scientific literature. This book presents you with a gist of more than 1,000 research publications. This book explains in an easy way the current terminologies used in the field of gut microbiome, the methods to study gut microbiota, and its role in various diseases. Concise but up-to-date sections are also included on the gut fungi and viruses. Each chapter is neatly divided into the subsections of biological plausibility and evidence from animal studies, followed by evidence from human studies and clinical trials. Such an exercise builds a clear picture in the reader’s mind regarding the importance of the gut microbiome in each disorder. The current status of gut microbiota therapies is provided at the end of each chapter. A separate chapter is also included for the microbiota therapies including prebiotics, probiotics, postbiotics, and FMT. It explains and discusses their advantages, shortcomings and clinical applications. Apart from gut microbiota, the reader will develop a better understanding of concepts such as endotoxemia, inflammation, insulin resistance, stress and its biology, atherosclerosis, and immune function. All of these are highly relevant to fully grasping the pathophysiology of various
diseases. A better understanding leads to a better cure. This book is written by a clinician and thus is easier to understand and provides ready-to-use clinically relevant information.

**GENETICS**

**Epigenetics: Beyond the Genetics and Medicine**
Sevgi Durna Daştan (Associate Professor, Faculty of Science, Department of Biology, Division of Molecular Biology, Sivas Cumhuriyet University, Sivas, Turkey) and Nazan Yurtcu (Assistant Professor, Faculty of Medicine, Department of Obstetrics and Gynecology, Sivas Cumhuriyet University, Sivas, Turkey)

In series: Genetics - Research and Issues
Publication Date: 10/27/2022
331 pp.
Hardcover: 979-8-88697-228-3. $230.00
e-book: 979-8-88697-349-5. $230.00

Epigenetics refers to the study of changes in organisms that are caused by modifications of gene expression instead of alteration of the genetic code itself. This volume includes 30 chapters that explore epigenetics from a variety of perspectives, including the role of epigenetics in aging, cancers, fetal brain development, epilepsy, and more.

**GERIATRICS**

**Aging**

**Postmodern Health, Care and Aging**
Jason L. Powell, PhD (The University of Chester, UK)

In series: Social Perspectives in the 21st Century
Expected Publication Date: 03/15/2023
175 pp.
Softcover: 979-8-88697-537-6. $95.00
e-book: 979-8-88697-587-1. $95.00

This book analyses contemporary healthcare and aging developments in the western world through a conceptual lens that is moderated by innovative postmodern tools and differential theories. In the current socio-economic climate in the UK, for example, health and social care are at a crossroads with implications for how service users needs are being met or not, how assessment encroaches on power and surveillance and the extent to which service users “voice” is being translated into the health and social care policy and practices. This book is one of the first to develop new perspectives deriving from postmodernism in the application of health and social care policy, theory and practice. The book draws heavily on novel insights from social gerontology as it is older people predominantly who access health and care services; adding a postmodern perspective to understanding health and care.

**Sages of Aging: A Guide for Changemakers**
Ken Dychtwald, PhD (Psychologist, Gerontologist, and CEO, Age Wave, LLC, CA USA) and Elyse Pellman (President, Age Wave, LLC, CA USA)

In series: Geriatrics, Gerontology and Elderly Issues
Publication Date: 06/28/2022
227 pp.
Hardcover 979-8-88697-155-2. $85.00
Softcover: 978-1-68507-780-8. $58.00
e-book: 979-8-88697-006-7. $85.00
This book is a series of twelve profound conversations with some of the foremost elder changemakers in the fields of aging and longevity, and it captures the essence of their wisdom and perspectives. Subjects include the individual, social, and systemic dimensions of equity and inequity; averting a new era of mass elder poverty; the efficacy of today's healthcare system for the chronic health challenges of older adults and their families; ageism in the media and popular culture; and the purposeful opportunities and obligations of today's and tomorrow's elders. Each leader candidly reflects on their origins, the fields of aging and longevity, and considers their own aging. This book is of high interest to readers young and old, as we all must come to terms with our aging and the legacies we choose to leave behind. It has the potential to change readers' views on the future of their studies, their work, and their lives.

HEALTH CARE

The Future of U.S. Health Care? Corporate Power vs. the Common Good
John Geyman, M.D. (Professor Emeritus of Family Medicine, University of Washington, School of Medicine, Seattle, WA, USA)

In series: Health Care in Transition
Publication Date: 11/17/2022
167 pp.
Softcover: 979-8-88697-338-9. $95.00
e-book: 979-8-88697-382-2. $95.00

Despite spending more for health care than any other country in the world, the U. S. has a health care system that compares poorly with other advanced countries in terms of access, cost, and quality of care. With so many Americans being unable to afford essential care, this problem has reached crisis proportions for much of our population. As a result, health care will continue to be a front burner issue in the forthcoming 2022 and 2024 election cycles. Today we have a corporatized medical-industrial complex that has resisted recurrent reform attempts over the years. It has become too big and complex for responsible government to rein in its excesses. The COVID-19 pandemic has further exposed its fragmentation and barriers to care. The traditional service ethic of health care has been replaced by profiteering of Wall Street corporate interests and investors seeking maximal profits vs the common good. Still controversial in this country is whether health care is a human right or a privilege based on ability to pay. Other advanced countries around the world have long since built their health care systems on the basis of universal coverage ensured by government. The future of health care depends on fundamental reform. It will require winning the battle between Wall Street/corporate America and Main Street that we cannot afford to lose. This book has three goals: (1) to bring historical perspective to how the medical-industrial complex has evolved to its present strangle-hold over health care comprising one-sixth of the nation’s economy; (2) to describe the shortfalls of our supposed system in terms of access, cost, inequities, and unacceptable quality, and how past reform attempts have failed; and (3) to consider two major scenarios for reform, together with political forces for and against each and their projected outcomes. Since present trends are unsustainable, we can only hope for positive moves toward reform, as will be described.

IMMUNOLOGY

Autoimmunity and Cancer
Soner Şahin, PhD (Professor, Faculty of Medicine, Department of Neurosurgery, Nisantasi University, Turkey) and Kenan Demir, MD (Health Sciences University, Samsun Training and Research Hospital, Samsun Eğitim ve Araştırma Hastanesi, İlkadım, Turkey)

In series: New Developments in Medical Research
Publication Date: 08/10/2022
312 pp.
Hardcover: 978-1-68507-937-6. $230.00
e-book: 978-1-68507-077-7. $230.00

The significance of autoimmune diseases increases day by day. Cancer is an important cause of mortality for which no definitive treatment has yet been found. Cancer can occur for many reasons. Studies have shown that autoimmunity underlies some types of cancer. On the contrary, antitumor immune responses may become cross-reactive with their own tissues, resulting in the development of autoimmunity. Further investigation of the relationship between autoimmunity and cancer will open new horizons for diagnosis and
treatment of both groups of disease. This book presents studies of potential mechanisms linking autoimmunity and cancer and the relationship of malignancies with autoimmune disorders.

**Cytokines and Diseases**

Kenan Demir, MD (Health Sciences University, Samsun Training and Research Hospital, Turkey), Selim Görgün, MD (Health Sciences University, Samsun Training and Research Hospital, Turkey) and Bahar Uslu, MD, PhD (Professor, Quinnipiac University, Frank H. Netter MD School of Medicine, USA)

In series: Immunology and Immune System Disorders

Publication Date: 11/10/2022

348 pp.

Hardcover: 979-8-88697-214-6. $230.00

e-book: 979-8-88697-322-8. $230.00

Cytokines and Diseases will contribute to the pathogenesis, follow-up, and treatment processes of different clinical pictures and diseases in the light of current information obtained from the literature. This book aims to describe the type, effects, and kinetics of cytokine production, as well as to summarize the pathophysiology of the cytokine storm that occurs after bacterial sepsis or severe viral infection. It has been a summative review containing the most up-to-date data for academics participating in cytokine-based therapy studies, studies targeting cytokine production or effects, and clinical trials that arouse interest after the Covid-19 pandemic.

**INFECTIOUS DISEASE AND MICROBIOLOGY**

**A Closer Look at the COVID-19 Variants**

Richard D. Hylton

In series: Infectious Diseases and Microbiology

Publication Date: 09/01/2022

207 pp.

Hardcover: 979-8-88697-170-5. $150.00

e-book: 979-8-88697-221-4. $150.00

As viruses spread, small errors - called mutations - arise in the genetic material during replication. Many of these mutations are repaired or die off as the virus continues to move through a population. Mutations that enhance the virus's ability to replicate, transmit, or survive in a host allow the virus to spread more quickly through a population, or become more resistant to immune system defenses, thereby increasing the mutations’ prevalence and creating a new strain of the virus. The purpose of this book is to discuss how variants develop, how researchers identify and sequence variants, and how this information can be utilized by public health officials, government agencies, and medical practitioners to make decisions. The book examines the ways the government can better coordinate its approach to best serve the American people through this pandemic and beyond.

**An Interdisciplinary Approach in the Post-COVID-19 Pandemic Era**

Digvijay Pandey, PhD (Acting Head of Department, Department of Technical Education Kanpur, Government of Uttar Pradesh, Uttar Pradesh, India), Prof. Binay Kumar Pandey (Assistant Professor in Department of Information Technology, of Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, India), Dr. Nidhi Sindhwani, PhD (Assistant Professor, ASETD, Amity University, Noida, India), Dr. Rohit Anand, PhD (Assistant Professor, Department of Electronics & Communication Engineering, G.B. Pant Engineering College (Government of NCT of Delhi), New Delhi, India), Prof. Dr. Vinay Kumar Nassa, PhD
COVID-19 is not only a medical science issue, but it is also a critical issue for other experts such as social scientists, economists, technologists, psychiatrists, statisticians, sociologists, policymakers, politicians, and administrators, among others. Therefore, it is important to make collective efforts to deal with this pandemic. Interdisciplinary research is one of the best ways to achieve this. Interdisciplinary research is capable of bridging traditional divides between disciplines and also combines research excellence with relevant impact. Interdisciplinary research should be treated as policy research. The quality of the interdisciplinary research structure not only provides new ideas and areas of research, but also flexibility and expanded possibilities for traditional disciplines. This manuscript will likely inspire researchers and policymakers to further their interdisciplinary research on the coronavirus pandemic. In the present book, authors from diverse backgrounds have expressed their views on this specific problem. They have contributed their ideas on how the pandemic has affected every aspect of human life, including education, economics, social life, finance, information technology, etc.

**COVID-19 Vaccines: Development, Distribution and Mandates**

*John Schroder*

In series: *Infectious Diseases and Microbiology*

Publication Date: 09/07/2022

331 pp.

Hardcover: 979-8-88697-150-7. $149.00
e-book: 979-8-88697-186-6. $149.00

Vaccines protect people from disease by preparing the body to respond to an infection. Vaccinations are a key part of individual and community health, but vaccine development remains complex and costly. Innovative technologies and approaches may enhance the nation’s ability to respond to infectious diseases. For example, reverse vaccinology and next-generation platforms—combined with existing research—helped researchers develop some COVID-19 vaccines more quickly and effectively.

**COVID-19: Vaccines, Testing and Compensation Programs**

*Mark N. Frierson*

In series: *Infectious Diseases and Microbiology*

Publication Date: 09/07/2022

313 pp.

Hardcover: 979-8-88697-167-5. $230.00
e-book: 979-8-88697-220-7. $230.00

Over 450,000 Americans have died due to COVID-19 and the deaths continue to climb. We need to be making continuous improvements that will stop this virus. Chapter 1 examines ways to further expand testing, the use of therapeutics, and increasing vaccine confidence while prioritizing quick and efficient distribution of the vaccines. More than 200 million Americans have received one or more doses of a Coronavirus Disease 2019 (COVID-19) vaccine, along with billions of people worldwide. A very small percentage of inoculated individuals experience serious adverse reactions to a COVID-19 vaccine. Chapter 2 reviews the compensation programs available if a serious reaction does occur.
Data Science Applications of Post-COVID-19 Psychological Disorders
Vijayalakshmi Kakulapati, PhD (Professor, Department of Information Technology, Sreenidhi Institute of Science and Technology, Telangana, India)

In series: Infectious Diseases and Microbiology
Publication Date: 10/20/2022
296 pp.
Hardcover: 979-8-88697-165-1. $230.00
e-book: 979-8-88697-316-7. $230.00

The COVID-19 epidemic has thrown the globe into chaos as governments struggle to contain the virus's spread. While considerable attention has been paid to health problems, reports of the social-psychological impacts of this pandemic are on the increase, ranging from mental distress and personal disputes to racial assaults and patriotic behaviors. Moreover, these social-psychological impacts may have long-term repercussions that will likely outlast the epidemic. Globally, the physical impacts of COVID-19 may be felt. The influence of Post-COVID-19 on mental health is a subject that has not been well explored.

The reaction to the Covid-19 pandemic may resemble the response to natural catastrophes or other comparable catastrophic occurrences affecting a community and may create chronic anguish in the afflicted population. The psychological reaction to the Covid-19 epidemic has been immediately recorded; in communities rarely affected, it resembles symptoms of post-traumatic stress disorder (PTSD). The unfavorable psychological effects of COVID-19, such as anxiety and depression, have been widely expected but have not yet been precisely quantified. Data science enables academics to evaluate the past and future consequences of mental diseases on the United States and worldwide populations. When the consequences are defined and substantiated by statistics, the argument for allocating much-needed resources to mental health research and treatment accessibility is strengthened. Using data science approaches, the book contains chapters describing the influence of post-COVID-19 psychological impacts.

Infectious Diseases: From Prevention to Control
Yvette S. Brewer

In series: Infectious Diseases and Microbiology
Expected Publication Date: 03/10/2023
Hardcover: 979-8-88697-657-1. $160.00
e-book: 979-8-88697-664-9. $160.00

This book contains four selected chapters on infectious diseases, covering topics from prevention to control. Chapter One examines the potential of solid lipid nanoparticles to act as innovative treatment and prophylaxis options for infectious diseases. Chapter Two provides an agent-based model of infectious diseases that incorporates the roles of immune cells and antibodies. Chapter Three is an overview of endophytic actinobacteria as a source of novel bioactive metabolites for the treatment of infectious diseases. Chapter Four examines the issue of antibiotic resistance and stewardship that faces humanity at this time.

Interdisciplinary Approaches on Opportunistic Infections and Future Prospects
Jayapradha Ramakrishan, PhD (Senior Assistant Professor, Centre for Research in Infectious Diseases, School of Chemical and Biotechnology, SASTRA Deemed to be University, India) and Ganesh Babu Malli Mohan, PhD (Assistant Professor, Department of Biotechnology, School of Chemical and Biotechnology, SASTRA Deemed to be University, India)

In series: Infectious Diseases and Microbiology
Publication Date: 11/17/2022
160 pp.
Softcover: 978-1-68507-984-0. $95.00
e-book: 979-8-88697-342-6. $95.00

Opportunistic infections (OIs) are the growing concern as the microbe takes advantage when the immune system is weak. Even the microbes that reside in us for many years may cause serious disease when the immune system has weakened. Also, certain microbes get reactivated and cause opportunistic infections. Such common OIs include oral and pharyngeal candidiasis, Tuberculosis, Herpes Zoster, Bacterial pneumonia,
Cryptoccal meningitis, Toxoplasmosis. Such secondary infections are common in immunocompromised and long term hospitalized severely ill patients. Currently, the incidence of secondary infections is increased world-wide in COVID-19 infected patients. The interface of biology, chemistry, computer science and mathematics has shown tremendous innovations in infectious diseases. In this book, such interdisciplinary approaches have been focused for the management of OIs. The edited book would be helpful for scientists, scholars, industrialist to obtain updated key information about interdisciplinary approaches to tackle opportunistic infections.

**Psychological Consequences of the COVID-19 Pandemic on Children, Teenagers and Adults**

*Jean-Pascal Assailly, PhD (Developmental Psychologist, Researcher, University Gustave Eiffel, Paris, France)*

In series: *Infectious Diseases and Microbiology*

Publication Date: 07/15/2022

96 pp.

Softcover: 978-1-68507-963-5. $82.00

e-book: 978-8-88697-072-2. $82.00

The unprecedented health situation and the successive lockdowns that the population has experienced raise questions in many areas, notably for young people. This book examines the effects of the pandemic on schooling, parenting styles, relationships, physical health, mental health, risk-taking, and screen use in people of all ages.

**Racial Inequities Exposed by COVID-19**

*Jamie Isaacson*

In series: *Infectious Diseases and Microbiology*

Publication Date: 09/01/2022

301 pp.

Hardcover: 978-8-88697-153-8. $149.00

e-book: 978-8-88697-188-0. $149.00

This book discusses how the COVID–19 pandemic is exacerbating racial inequalities in education, labor, and health and the steps needed to address these disparities.

**NEUROLOGY**

**A Clinical Guide to Cerebral Palsy**

*Fabrizio Stasolla (Associate Professor, Developmental Psychology, Giustino Fortunato’ University of Benevento, Italy)*

In series: *Neurology - Laboratory and Clinical Research Developments*

Publication Date: 05/06/2022

202 pp.

Hardcover: 978-1-68507-815-7. $160.00

e-book: 978-1-68507-896-6. $160.00

Cerebral Palsy (CP) includes a group of permanent but non-progressive motor disturbances caused by defects in an immature brain. Next to postural abnormalities, movement disorders are commonly acknowledged. Speech deficits, communication delays, challenging behaviors, and locomotion and/or gait inabilities are usually embedded. Furthermore, children and adolescents with CP may have intellectual disabilities. Beside pharmacological approach and surgical interventions, cognitive-behavioral programs and assistive technology-based setups may be implemented. Both clinical practice and applied research may be targeted. The current volume emphasizes a two-decade professional experience of the Editor who works on technological-aided rehabilitative interventions to help people with multiple disabilities in daily settings. The independence, an active role, positive participation and functional
occupation of individuals with severe to profound developmental disabilities were highlighted. The book includes eight chapters and provides the reader with practical guidance in daily circumstances. Chapter One is focused on an orthodontist’s perspective and deals with oral features, diagnostic method, and customized treatment to enhance the safety and the compliance of patients with CP. Chapter Two evaluates support networks of families raising a child with CP. Two different European geographic populations (i.e., Greece and Italy) were systematically compared. Chapter Three describes findings on Cerebral Palsy in Mexican pediatric patients and an experience in a National Institute of Health. Chapter Four presents a short clinical literature review on rehabilitation in CP. The newest empirical contributions were critically discussed. Chapter Five develops an on-track monitoring system to clarify longitudinal trajectories in children with cerebral palsy and systematic comparisons between children with CP were assessed. Chapter Seven details a computerized customized system to enable three children with an independent request and choice process of desired items. Chapter Eight implements a keyboard tailored emulator to get literacy access in a child with cerebral palsy estimated in the normal range of intellectual functioning. A practical and updated guide to daily challenges posed by children and adolescents with cerebral palsy was presented. Both literature reviews and empirical contributions provide the reader with helpful tips on daily use once tackled with cerebral palsy. Clinical features of individuals with cerebral palsy were detailed and practical supervision was explained. That is, daily recommendations were argued with specific examples in different settings. Oral care, academic performance, leisure opportunities, and occupation options were fostered through practical and clinical guidance.

Astrocytes and Their Role in Health and Disease
Tomaz Velnar, MD, PhD (Professor and Specialist Neurosurgeon, Department of Neurosurgery, University Medical Centre Ljubljana, Ljubljana, Slovenia) and Lidija Gradisnik, PhD (Researcher, Institute of biomedical sciences, Medical Faculty Maribor, Maribor, Slovenia)

In series: New Developments in Medical Research
Publication Date: 09/07/2022
144 pp.
Softcover: 978-1-68507-983-3. $82.00
e-book: 978-8-8697-094-4. $82.00

Astrocytes are some of the key cells in the central nervous system with complex, specific and important roles. They are involved in many important functions under both physiological and pathological conditions. This book brings a theoretical overview on astrocytes, their functions, roles and experimental practice. Chapters 1 and 2 discuss the basic astrocyte functions and their connections with other central nervous system cells. Chapter 3 focuses on the blood-brain barrier, Chapter 4 summarises surgical methods for tissue collection, Chapter 5 deals with the laboratory isolation procedure, Chapter 6 describes the sources of astrocyte isolation and troubleshooting during this procedure and Chapter 7 explores the importance of biomaterial research in astrocyte cell models.

Botulinum Toxin: Therapeutic Uses, Procedures and Efficacy
James C. Lark

In series: New Developments in Medical Research
Publication Date: 05/13/2022
210 pp.
Hardcover: 978-1-68507-817-1. $110.00
e-book: 978-1-68507-826-3. $110.00

Botulism is a serious illness whose symptoms include difficulty speaking and paralysis. The disease is caused by botulinum toxin, a neurotoxic protein produced by the bacterium Clostridium botulinum, and while the disease can be fatal, intensive treatment can prevent death in most cases. However, botulinum toxin can also be used as treatment for various illnesses when applied in correct doses. This volume includes four chapters that describe various therapeutic uses of botulinum toxin. Chapter One reviews the mechanism of action, therapeutic uses, best practices, current applications, effectiveness and available evidence of botulinum toxin application in various musculoskeletal disorders. Chapter Two focuses on the technical aspects of botulinum toxin use for treatment of sialorrhea and reported outcomes. Chapter Three describes the use of botulinum toxin as treatment for hyperkinetic movement disorders including blepharospasm, oromandibular dystonia, and hemifacial spasm. Lastly, Chapter Four deals with the use of botulinum toxin for treatment of hemimasticatory and hemifacial spasm in scleroderma.
Rehabilitation in Neurotrauma: Current Concepts, Practices and Recommendations
VD Sinha (Senior Professor, Department of Neurosurgery, S.M.S. Medical College, Jaipur, India), Amit Chakraborty (Senior Consultant and Neurosurgeon, Eternal Hospital, Jaipur, India), Jitin Bajaj (Associate Professor, Department of Neurosurgery, NSCB Medical College, Jabalpur, India), Gaurav Jain (Assistant Professor, Department of Neurosurgery, S.M.S. Medical College, Jaipur India) and Amit Agrawal (Department of Neurosurgery, All India Institute of Medical Sciences, Saket Nagar, Madhya Pradesh, India)

In series: Trauma and Recovery
Publication Date: 07/08/2022
253 pp.
Hardcover: 978-1-68507-787-7. $195.00
e-book: 978-1-68507-956-7. $195.00

Neurorehabilitation is an upcoming area and has become a vital aspect in the management of every neurologic disorder. Neurorehabilitation is a vital aspect in the holistic management of neurological diseases, which includes but is not limited to stroke, trauma, epilepsy, tumors, spine injuries, movement disorders, etc. The book is divided into sections for easy readability. It encompasses all aspects of this modality from basic research to advanced technology and is written by eminent authors working in these fields. The problem-solving approach is a key feature of this book. A special emphasis is given on evaluation and techniques helpful for resource-limited settings. Tables, figures, schemas, and videos are embedded at suitable places for better understanding. Case studies are also included at relevant places. Separate chapters on neurologic problems like cognition, vision, audition, etc. are made for quick and easy grasp. The book is intended for broad academia including neurologists, neurosurgeons, physical therapists, ophthalmologists, otolaryngologists, general practitioners, medical students, paramedical staff, and researchers working in this field. The spectrum includes, but is not limited to, rehabilitation before and after stroke, trauma, tumors, epilepsy, spine injuries, movement disorders, etc. The spectrum is enlarging due to an aging population. Newer advances like robot and automation-assisted rehabilitation, exoskeletons, brain-computer interface, and transcranial magnetic stimulation have added to the armamentarium of this modality. This book is dedicated to basic and advanced aspects of neurorehabilitation. It is intended for a broad academic level including neurologists, neurosurgeons, physical therapists, ophthalmologists, otolaryngologists, general practitioners, paramedical staff, and researchers working in this field. We believe that the book shall benefit neurologists, neurosurgeons, physical therapists, ophthalmologists, otolaryngologists, general practitioners, medical students, paramedical staff, and researchers working in the field of neurorehabilitation.

Horizons in Neuroscience Research. Volume 47
Andres Costa and Eugenio Villalba

In series: Horizons in Neuroscience Research
Publication Date: 05/06/2022
213 pp.
Hardcover: 978-1-68507-832-4. $250.00
e-book: 978-1-68507-918-5. $250.00

This volume includes nine chapters that describe recent advancements in neuroscience research. Chapter One studies the correlation between genes and violence. Chapter Two focuses on the effect of specific Central Nervous System (CNS) drugs and substances on neurotransmission of sleep, particularly at the Rapid Eye Movement (REM) stage. Chapter Three explores the potential of social cognition as a therapeutic target in schizophrenia. Chapter Four describes therapy methods for language neurorehabilitation in a few patients with brain injuries. Chapter Five provides current knowledge about in vitro toxicology studies in neuroblastoma cells for the treatment of neuroblastoma. Chapter Six reviews evidence supporting the bidirectional relationship between kynurenine pathway alterations, induction of activated microglia, and subsequent release of pro-inflammatory cytokines in Huntington’s Disease patients and models. Chapter Seven presents the course of early neurorehabilitation treatment with emphasis on optimizing balance assessment in clinical practice, identifying impairments, informing treatment planning, and maximizing the effectiveness of exercise interventions to improve balance and reduce falls in patients after cerebellopontine angle tumor resection. Chapter Eight provides an update on the molecular
mechanism of cognitive impairment due to REM sleep deprivation in the hippocampus. Finally, Chapter Nine presents the most frequently used evaluation tools and procedures of early neurorehabilitation in the acute hospital.

Horizons in Neuroscience Research. Volume 48
Andres Costa and Eugenio Villalba

The first chapter of this book reviews the main inflammatory processes described for ischemic stroke. In the second chapter, the authors discuss the development, functionality, myelination, pathologies, and molecular regulation of SC motility, further elucidating the significant role that migration plays in the repair of damaged nervous tissue. In Chapter 3, the distal components along with the sensitive receptors and the interconnectivity relevant to the nociception focusing on the modulatory role of the thalamus are examined. In Chapter 4, the origin, development, functionality, physiology, and pathology of astrocytes, further expanding on the significant roles that migration plays in the repair of damaged nervous tissue is looked at. In Chapter 5, the molecular mechanism of the attack of the HSV-1 genome on the cytoskeleton of brain neurons, leading to Alzheimer’s symptoms, and the mechanism of restoration of the cytoskeleton by GMS, are reviewed. Next, the main evidence in literature in order to better understand and define the risks for patients undergoing neurosurgical procedures and taking aspirin is defined. The most common neurosurgical procedures are reviewed, elective or in emergency, summarizing the most important and recent literature evidence about the topic. The authors also try to collect and describe data not only about the hemorrhagic risk, but also about the thrombo-embolic one. In Chapter 7, a case series involving three traumatic brain injury (TBI) participants who underwent resting-state functional MRI scanning and neuropsychological assessments at two-time points is discussed, at one-month and twelve-month post-TBI. Longitudinal studies of TBI can reveal important information regarding the reorganization of the functional aspect of the brain. Untreated head injuries can take a long time to heal, affecting their physical and cognitive activities. The chapter focuses on neuropsychological performance and reorganization in functional connectivity. The authors of Chapter 8 exclusively concentrates on the influence of physical exercise on improvements in cognition and memory. The last chapter reviews the effects of deep breathing exercises on stress reduction.

Neuroscience and Technology Transform the Educational Ecosystem
Franco F. Orsucci (Co-founder and President of Mayfair Academy for Advanced Studies (MAAS), London; Visiting Professor, University College London, NCI University London, UK; Director, Institute for Complexity Studies, Rome) and Nicoletta Sala (Institute for Complexity Studies, Rome, Italy; CERFIM (Research Center for Mathematics and Physics), Locarno, Switzerland; ISSI (Institute for Scientific and Interdisciplinary Studies), Locarno, Switzerland)

Scientists, educationalists and policymakers are increasingly recognizing the relevance of neuroscience to education and its potential impact on pedagogy. Our thoughts, perceptions and actions continuously change the strength of connections between neurons in the brain. These physical connections represent our understanding and knowledge of the world around us, our brain plasticity. Education plays a crucial role in changing brains. Teachers are the professionals changing brain connectivity in young people daily! At the same time, significant neuroscience insights reveal the impact of environmental factors of all human technology interfaces on the brain. This book includes thirteen chapters that provide an overview of how the brain works to generate the mind and how technology can be leveraged to enhance education and learning.
Reticular Concept of Nervous System Physiology

Oleg Sotnikov, PhD (Professor, I. P. Pavlov Institute of Physiology RAS, Saint-Petersburg, Russian Federation)

In series: Neuroscience Research Progress
Publication Date: 11/17/2022
233 pp.
Hardcover: 978-1-68507-996-3. $195.00
e-book: 978-8-88697-350-1. $195.00

The book is devoted to the main discussion of the nervous system. Whether information about nerve details is connected to each other, or whether it is distributed along single nerve fibers and reaches with great accuracy. The generally accepted model is the neuron theory of Ramon y Cajal. His opponent is the histologist Camillo Golgi. According to the theory of Ramon y Cajal, nerve impulses propagate in one direction with the help of chemical synapses. According to the Golgi theory, nerve stimuli are connected to each other and innervate the organs in batches. Connections occur between fibers with the help of electrical synapses and syncytia. Impulses are able to propagate in different directions. The monograph presents a large number of preparations of neuronists, which are evidence of the opposite reticular theory. A technique is presented that makes it possible to unmask the illustrations of Ramon y Cajal and demonstrate a large number of syncytia on his preparations. The same amount is found in the tangled networks of the gastrointestinal tract (“abdominal brain”). Electrical connections have also been established in other parts of the nervous system. Electrophysiologically, a circular interconnection of electrical synapses, spikes in a circle has been established, and multiple variants of feedback of nerve fibers have been identified. The unified neural and reticular theories are unified.

NUTRITION AND DIET

Chlorella and its Health Benefits

Mubarak Marutholi, PhD (Associate Professor and Head, Mechanical Engineering, MEA Engineering College Perinthalmanna, Malappuram, Kerala, India)

In series: Nutrition and Diet Research Progress
Publication Date: 05/25/2022
169 pp.
Softcover: 978-1-68507-887-4. $95.00
e-book: 978-1-68507-911-6. $95.00

The concept of producing different products from chlorella for the benefits of health demands efficient utilization of all the components. The high-value antioxidants such as carotenoids, xanthophylls and unsaturated fatty acids from chlorella have beneficial effects for humans and animals. Even chlorella vulgaris can be used as a fish feed for balanced and increased amount of fish production. The availability of vitamin B12 also increases the importance of chlorella as a food supplement for vegans. The biologically active vitamin B12 present in chlorella products is suitable as a natural B12 source for humans. Chlorella contains pigments like chlorophyll, carotenoids, lutein, astaxanthin, zeaxanthin, canthaxanthin, violaxanthin and antheraxanthin which even play a vital role for producing medicines for cancer treatment. This is to note that this book gives an overview about the different health benefits of chlorella starting from its morphological studies.

Curcumin and Its Role in Health and Disease

Kathryn Wolfer

In series: Nutrition and Diet Research Progress
Expected Publication Date: 03/20/2023
Hardcover: 979-8-88697-491-1. $160.00
e-book: 979-8-88697-629-8. $160.00

This book contains eight chapters discussing curcumin and its role in health and disease. Chapter One evaluates curcumin’s role in cancer prevention. Chapter Two reviews curcumin’s function as a natural systemic disease modulator. Chapter Three looks at the effects of curcumin supplantation and exercise training on Alzheimer’s disease and age-associated cognitive decline. Chapter Four focuses on the antiviral effects of curcumin, with a special emphasis on COVID-19. Chapter Five examines green extraction techniques for curcumin, synthetic approaches, as well as its anti-inflammatory, anti-oxidant, and anti-neoplastic effects. Chapter Six reviews the possible effects of immune responses to the preventive combined effects of exercise training and curcumin supplantation in chronic disease. Chapter Seven is a mini review of
the essential therapeutic effects of curcumin. The eighth and final chapter examines the promises and challenges of curcumin in medical research.

Health Benefits of Phenolic Antioxidants
Aman B. Upaganlawar, PhD (Associate Professor, SNJBs SSDJ College of Pharmacy, Chandwad, Maharashtra, India), Vipin V. Dhole, PhD (Professor and Principal, VNS Group of Institutions, Bhopal, Madhya Pradesh, India) and M. K. Mohan Maruga Raja, PhD (Associate Professor, Department of Pharmacognosy & Physicochemistry, Parul Institute of Pharmacy & Research, Parul University, Gujarat, India)

In series: Natural Products and Therapeutics
Publication Date: 09/07/2022
417 pp.
Hardcover: 979-8-88697-058-6. $230.00
e-book: 979-8-88697-120-0. $230.00

Free radicals are continuously produced in cells as a part of normal cellular function. However, excess generation of free radicals plays a critical role in the pathophysiology of many disease conditions, especially cancer, atherosclerosis, Alzheimer's disease, etc. Oxidation is a major chemical process that produces free radicals and initiates chain reactions that cause cellular damage. Compounds that inhibit oxidation are called antioxidants; phenols are known to possess excellent antioxidant properties. Phenolic compounds are abundant in plants in a wide variety of chemical structures. Natural phenolic compounds include phenolic acids and ester derivatives, flavonoids and benzopyran derivatives, quinones, tannins, lignins, lignans, stilbenes, essential oils, chalcones, etc. Nutraceuticals, in the name of dietary supplements and functional foods, are being consumed as prophylactics for the prevention of many diseases throughout the world. Most of these products are polyphenols; hence, this book provides an insight on therapeutic potentials of natural and synthetic polyphenols, emphasizing their pharmacology.

Fruits, Vegetables and Nuts

Pistachios: Cultivation, Production and Consumption
Shaziya Haseeb Siddiqui, PhD (Assistant Professor, Department of Chemistry, Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad, Uttar Pradesh, India) and Shoaib Alam Siddiqui, PhD (Assistant Professor, Department of Business Studies, Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad, Uttar Pradesh, India)

In series: Agriculture Issues and Policies
Publication Date: 08/10/2022
230 pp.
Hardcover: 978-1-68507-949-9. $160.00
e-book: 979-8-88697-063-0. $160.00

Pistachios: Cultivation, Production and Consumption is designed to help readers working in the fields of agriculture, biology, chemistry and marketing. The book focuses on the pistachio cultivation process, its health benefits, its phytochemical properties and its production processes. The book also deals with the application of pistachio waste as a useful product in various processes such as water treatment, oil extraction, and more.
Ectopic Pregnancy: Endless Challenges
Elisa Picardo, Marco Mitidieri and Saverio Danese (Gynecology and Obstetrics, City of Health and Science of Turin, Sant’Anna Hospital, Italy)

In series: Obstetrics and Gynecology Advances
Publication Date: 12/22/2022
169 pp.
Softcover: 978-1-68507-979-6. $69.00
e-book: 978-8-88697-513-0. $69.00

An ectopic pregnancy occurs when a fertilized egg grows outside of the uterus. Almost all ectopic pregnancies—more than 90%—occur in a fallopian tube. As the pregnancy progresses, it can cause the tube to burst (rupture). A rupture can cause major internal bleeding, leading to a life-threatening emergency. Over the years, treatment options have changed significantly, and mortality has reduced up to 2/1,000 (from 12.3% in 1920). This topic is always very important for the gynecologist community. This text, whose contributions have been promoted by Acto Piemonte Onlus and Ricerca per la Donna (RiDO), aims to provide a practical guide for future research on women’s health.

Endometrial Cancer: Current Epidemiology, Detection and Management (Second Edition)
Samir A. Farghaly, M.D., PhD (Professor, New York Presbyterian Hospital, Cornell University Medical Center, Cornell University, New York, NY, USA)

In series: Obstetrics and Gynecology Advances
Publication Date: 12/01/2022
383 pp.
Hardcover: 978-1-68507-964-2. $230.00
e-book: 978-8-88697-405-8. $230.00

The purpose of this book is to provide a broad background of several aspects of basic sciences, clinical, therapeutic aspects, and management of endometrial cancer. It provides state-of-the-art information on the molecular genetics, biology, and clinical aspects of premalignant lesions of the endometrium and endometrial cancer. Also, the book chapters provide better understanding of the molecular and cellular events that underlie endometrial cancer. The descriptive and analytical epidemiology of endometrial cancer are presented in Chapter 1. The pathology and molecular diagnosis of endometrial cancer are discussed in Chapter 2. The molecular pathology of endometrial cancer is detailed in Chapter 3. The hereditary aspect of endometrial cancer is highlighted in Chapter 4. Precancerous lesions of the endometrium are reviewed in detail in Chapter 5. Endometrial biomarkers are detailed in Chapter 6. Lymphatic mapping of endometrial cancer is discussed in Chapter 7. Sentinel lymph nodes in endometrial cancer are highlighted in Chapter 8. The current strategies and approaches to treat patients with endometrial cancer are detailed in Chapter 9. Surgical techniques for endometrial cancer are reviewed in Chapter 10. The current treatment of advanced endometrial cancer is discussed in Chapter 11. Adjuvant medical therapeutic modalities are reviewed in Chapter 12. Targeted therapies for advanced endometrial cancer are presented in Chapter 13. The role of ErbB targeted therapy in treating endometrial cancer is discussed in Chapter 14. Finally, the quality of life of women with endometrial cancer is reviewed in Chapter 15. This book is intended for all clinicians and basic medical scientists caring for women with endometrial cancer, including attending surgeons and physicians, clinical fellows, and residents in the disciplines of gynecologic oncology, medical oncology, and surgical oncology, as well as PhD students and post-doctoral fellows in the basic medical sciences.
Hormonal Treatments in Gynaecology
Maria Teresa Gómez García, PhD (Obstetrics and Gynecology Department, University and Hospital Complex of Albacete, Spain; Medical Science Department, School of Medicine of Albacete Spain) and Jose Miguel García Cebrián, MD (Obstetrics and Gynecology Department, University and Hospital Complex of Albacete, Spain)
In series: Obstetrics and Gynecology Advances
Publication Date: 05/06/2022
304 pp.
Hardcover: 978-1-68507-784-6. $230.00
e-book: 978-1-68507-876-8. $230.00
Hormonal Treatments in Gynaecology provides a detailed review of all the hormones used in gynaecology. It contains overall information and specific information of each hormone which could be very interesting in real practice.

Oncology

Horizons in Cancer Research. Volume 83
Hiroto S. Watanabe
In series: Horizons in Cancer Research
Publication Date: 07/15/2022
226 pp.
Hardcover: 978-1-68507-884-3. $250.00
e-book: 978-8-88697-017-3. $250.00
This volume includes seven chapters that present some of the latest advancements in cancer research. Chapter One studies the correlation between smoking and cancer using the sequenced human genome. Chapter Two discusses glucose-regulated protein 78-mediated regulation of epithelial-mesenchymal transition, the apoptotic and autophagic signaling pathways, and how it can be used as a therapeutic against cancer. Chapter Three discusses new approaches in the treatment of Hodgkin lymphoma. Chapter Four includes a review of the etiology, diagnosis and therapeutic management of rare pancreatic tumors. Chapter Five introduces recent progress on the mechanism of action and predictive biomarkers of mitomycin C using a genome-scale CRISPR/Cas9 knockout screening approach. Chapter Six discusses ultrasonography, endometrial sampling, magnetic resonance imaging, and computed tomography in the context of endometrial cancers. Finally, Chapter Seven discusses treatment options for papillary thyroid carcinoma.

Horizons in Cancer Research. Volume 84
Hiroto S. Watanabe
In series: Horizons in Cancer Research
Publication Date: 08/10/2022
215 pp.
Hardcover: 979-8-88697-148-4. $250.00
e-book: 979-8-88697-177-4. $250.00
This volume includes eight chapters that describe recent updates in cancer research. Chapter One highlights the benefits of ancillary/consulting care services within pediatric oncology, including social work, psychology, neuropsychology, expressive therapies, child life, chaplaincy, teachers/school liaisons, rehabilitation therapies, nutrition, and palliative care. Chapter Two discusses various generations of chimeric antigen receptors (CAR) and recent efforts in manufacturing CAR T-cells as a therapy for cancer treatment. Chapter Three explores alternative target pathways for putative therapeutic approaches affecting chronic myeloid leukemia cells. Chapter Four reviews research done on the role of epigenetics in the initiation and progression of thyroid cancer. Chapter Five summarizes the literature that implicates the underlying molecular mechanisms of paclitaxel resistance and the potential therapeutic targets to overcome this resistance. Chapter Six deals with the inhibition of autophagy for instigating temozolomide for increasing induction of apoptosis in glioblastoma. Chapter Seven studies the use of vitamin E for leukemic stem cells reprogramming. Finally, Chapter Eight describes new molecular studies for approaches affecting chronic myeloid leukemia cells.
Platinum-Based Chemotherapy: Clinical Uses, Efficacy and Side Effects
Kulmira Nurgali, PhD (Associate Professor, College of Health and Biomedicine, Institute for Health and Sport, Victoria University, Australia; Honorary Associate Professor, Department of Medicine, University of Melbourne, Australia; Head of the Enteric Neuropathy Laboratory, Centre for Health, Research & Education, Sunshine Hospital, Melbourne, Australia; Director, Stem Cells and Regenerative Medicine Program, Australian Institute for Musculoskeletal Science) and Raquel Abalo Delgado, PhD (Full Professor, Department of Pharmacology and Nutrition, Universidad Rey Juan Carlos, Madrid, Spain)

In series: Cancer Etiology, Diagnosis and Treatments
Publication Date: 10/20/2022
Hardcover: 978-1-68507-972-7. $230.00
e-book: 978-8-88697-262-7. $230.00

According to the Global Cancer Observatory, in 2020 the number of new cases of cancer was 19.3 million people in the whole world, with breast, lung, and colorectal cancer comprising 10-11% each of these figures. In the same year, there were almost 10 million deaths from cancer, with lung cancer being the one leading to more deaths (18%). Unfortunately, these figures are only expected to increase, with an estimated incidence of 30.2 million cases in 2040. Thus, cancer is a worldwide public health priority, with a high socio-economic impact. Chemotherapy stands out among the available cancer treatments. Platinum-based chemotherapy is one of the earliest chemotherapeutics introduced to the clinics and it is still the first-line treatment, used alone or in combination with other anti-neoplastic therapy and/or radiation, for many types of cancer in both adults and children. The book Platinum-Based Chemotherapy: Clinical Uses, Efficacy and Side Effects offers the reader a general overview of this therapy, as well as an update on some of the most relevant issues specific to this therapy.

Precision Cancer Immunotherapy
Andrey S. Bryukhovetskiy, MD, PhD, Hari Shanker Sharma and Aruna Sharma

In series: Cancer Etiology, Diagnosis and Treatments
Expected Publication Date: 03/20/2023
Hardcover: 978-8-88697-573-4. $230.00
e-book: 978-8-88697-624-3. $230.00

This book reviews the history of immunotherapy and the available therapies including the ones applied in Russia and described in Russian journals, which is frequently unavailable for western readers. The book offers a new standing point towards cancer therapy in general and cancer immunotherapy in particular. It gives special attention to the specific and general mechanisms the cancer cells engage in to evade the surveillance of the immune system and discloses the notion of precision immunotherapy. The term immune insufficiency and its development is discussed in detail. A unique and original inter-disciplinary viewpoint relies on authorial research and three-decade experience in using stem cell therapy for different nosologies.

Retinoblastoma: Diagnosis to Management
Sonal P. Yadav MS, FACS (Department of Ophthalmic Plastic Surgery, Orbit and Ocular Oncology, PBMA’s H V Desai Eye Hospital, Maharashtra, India)

In series: Eye and Vision Research Developments
Publication Date: 09/21/2022
363 pp.
Hardcover: 978-1-68507-969-7. $230.00
e-book: 978-8-88697-136-1. $230.00

Retinoblastoma is a unique malignancy. Unlike most of the solid tumors of the human body, retinoblastoma tumors can be directly visualized and examined. In-depth understanding of the clinical features, indications for appropriate imaging and protocol-
based treatment for retinoblastoma have proven to be valuable in managing this intraocular malignancy. The treatment options for retinoblastoma have evolved significantly and now strive for better globe and visual function salvage. There is, however, an undeniable disparity in presentation, accessibility of care, patient compliance and outcomes seen between the developed world and developing or under-developed parts of the world. This book has been designed keeping in mind the current world-wide scenario on retinoblastoma. Experienced contributors from different parts of the world have been invited to address the important aspects of retinoblastoma, namely epidemiology, tumor biology and genetics, clinical diagnosis, treatment options and recent advances in research. Each chapter is aimed at providing evidence-based knowledge via text and illustrations.

ORTHOPEDICS

Multidisciplinary Approach to Trauma
Mehmet Cenk Turgut, MD (Medial Faculty, Department of Orthopedics and Traumatology, Ataturk University, Erzurum, Turkey) and Asli Turgut, MD (Radiology Specialist, Erzurum City Hospital, Erzurum, Turkey)

In series: Emergency and Intensive Care Medicine
Publication Date: 05/17/2022
406 pp.
Hardcover: 978-1-68507-761-7. $230.00
e-book: 978-1-68507-915-4. $230.00

Trauma is a health problem that causes death or serious disability worldwide and is the leading cause of death in healthy young adults aged 1-44 years. The most common causes of trauma are traffic accidents, falls from height, and gunshot wounds. Approximately 50% of deaths in accidents occur within seconds and minutes. During this period, deaths occur due to laceration of the brain, brain stem, spinal cord, heart, aorta and great vessels. About 30% of deaths occur within minutes and the first few hours (the golden hour) after injury. About 30% of deaths occur during this period due to epidural or subdural hemorrhages, hemopneumothorax, splenic rupture, liver laceration, pelvic fractures, or other injuries that cause significant blood loss. The hours when the health personnel working in the emergency departments or ambulances can be most helpful to the patients are those who are brought in during the golden hour. For this reason, it is essential to know the approach to trauma as holistic and to conduct research on this subject. Our book offers a multidisciplinary approach to trauma patients. Our publication has covered the subject of trauma in a very wide area and was created by combining the latest developments with the experiences of specialist physicians. We think that it is a book that physicians and health personnel will often benefit from.

OTOLARYNGOLOGY

Fundamentals of Vestibular Evoked Myogenic Potentials
Sujeet Kumar Sinha, PhD(Associate Professor, Department of Audiology, All India Institute of Speech and Hearing, Manasagangothri, Mysore, India), Niraj Kumar Singh, PhD (Associate Professor, Department of Audiology, All India Institute of Speech and Hearing, Manasagangothri, Mysore, India) and Animesh Barman, PhD (Professor, Department of Audiology, All India Institute of Speech and Hearing, Manasagangothri, Mysore, India)

In series: Otolaryngology Research Advances
Publication Date: 07/27/2022
303 pp.
Hardcover: 978-1-68507-980-2. $230.00
e-book: 978-8-88697-075-3. $230.00

Vestibular-evoked myogenic potentials (VEMPs) are essential in assessing the otolith function in individuals with various vestibular disorders. There are three types of vestibular evoked myogenic potentials: cervical vestibular evoked myogenic potentials, oculi vestibular evoked myogenic potentials, and masseter vestibular evoked myogenic potentials are recorded in various clinical settings. The book Fundamentals of Vestibular Evoked Myogenic Potentials covers all the information related to all three types of VEMPs. The book has eighteen chapters.
containing information on recording, factors affecting and applications of VEMPs in various vestibular pathologies such as Meniere’s disease, Labyrinthitis, BPPV, NIHL, vestibular neuritis, third window syndrome, congenital sensorineural hearing loss, ototoxicity, vestibular Schwannoma and diseases of the central nervous system.

**Pathology**

Pathogenesis of Neurotrauma and Stroke: New Directions for Neuroprotective and Neuroregenerative Treatments

Jacek M. Kwiecien, DVM, MSc, PhD (Associate Professor, Department of Pathology and Molecular Medicine, McMaster University, Hamilton, Ontario, Canada)

In series: Pathology and Laboratory Medicine

Publication Date: 12/08/2022

117 pp.

Softcover: 979-8-88697-365-5. $82.00

e-book: 979-8-88697-429-4. $82.00

This book was written by a veterinary pathologist with an unlimited curiosity directed at the mechanisms of a disease studied in animal models. Despite its evidently ancient origin and distinct presentation; the paralysis, urinary incontinence, and the lack of improvement in motor and sensory deficits, the pathogenesis of the spinal cord injury (SCI) remained poorly understood. This unacceptable ignorance persisted despite vigorous research efforts in the field of SCI mandated by increased public awareness in the last few decades. The lack of understanding of the pathogenesis of SCI, the traumatic brain injury (TBI) and stroke has maintained a peculiar conundrum where the most important group of incurable diseases in medicine combined with a very high cost of medical care persisted well into the 21st century. This book seeks to open the door for the medical and scientific fields to a better understanding of the pathogenesis of neurotrauma and stroke with anticipated effective treatments for tens of millions of patients every year.

**Pediatrics**

Approaches to Pediatric Neurosurgical Emergencies

Virendra Deo Sinha (Senior Professor, Department of Neurosurgery, S.M.S. Medical College, Jaipur India), Rakesh Kumar Mishra (Assistant Professor, Dept. of Neurosurgery, Institute of Medical Services, Trauma Centre and Mahamana Centenary Superspeciality Hospital, Banaras Hindu University, Varanas, India) and Amit Agrawal (Professor, All India Institute of Medical Sciences, Bhopal, Madhya Pradesh, India)

In series: Emergency and Intensive Care Medicine

Publication Date: 12/08/2022

306 pp.

Hardcover: 979-8-88697-403-4. $230.00

e-book: 979-8-88697-447-8. $230.00

Neurosurgical emergencies, both traumatic and non-traumatic, may progress rapidly and if timely emergency management is not offered, these can lead to permanent neurological damage and disabilities. The spectrum of pediatric neurosurgical emergencies can range from traumatic brain injuries, infection, vascular lesions, acute hydrocephalus, and so on. Pediatric neurosurgical emergencies represent a challenging situation in the emergency room as in children it may be difficult to differentiate the etiology. This book provides an overview of pediatric neurosurgical emergencies, emergency room management and resuscitation, neurocritical care and fluid resuscitation in children. It covers the spectrum of common acute pediatric neurosurgical disorders that may be encountered in the emergency room and require urgent neurosurgical intervention.
Essence of Clinical Pharmacy
Majid Khan, M.Phil (Lecturer, Faculty of Pharmaceutical Sciences, Abasyn University, Peshawar, Pakistan)
In series: Pharmacology - Research, Safety Testing and Regulation
Publication Date: 10/06/2022
433 pp.
Hardcover: 979-8-88697-056-2. $230.00
E-book: 979-8-88697-240-5. $230.00
This book is written for undergraduates of PharmD programs. However, other allied health sciences students may benefit from this work on clinical pharmacy. It provides insights ranging from basic concepts of clinical pharmacy to systemic disease management with an easy-to-understand approach.

Pharmaceuticals: Boon or Bane
Neha Agarwal, PhD (Head of the Department of Chemistry, Navyug Kanya Mahavidyalaya, Lucknow, Uttar Pradesh, India)
In series: Environmental Remediation Technologies, Regulations and Safety
Publication Date: 01/19/2023
261 pp.
Hardcover: 979-8-88697-487-4. $195.00
E-book: 979-8-88697-517-8. $195.00
In recent years, pharmaceuticals have come into focus as one of the major contaminants of the environment from various anthropogenic sources which are distributed widely throughout global environmental matrices. The objective of this book is to comprehend and discuss the effects associated with long-term usage of various categories of drugs like analgesics, antipyretics, antibiotics, non-steroidal anti-inflammatory drugs and their metabolites on human health, the environment and ecology. This book will address all the issues of urgent concern and will be dealing with this important topic in a simple manner. Furthermore, it also aims to improve the knowledge of the possible ways to degrade these compounds after their release into the environment and obtain robust and cost efficient techniques and measures to be applied in the removal of hazardous pharmaceutical contaminants from the environment.

The Biochemical Guide to Antibiotics
David Aebisher and Dorota Bartusik-Aebisher (Medical College of The University of Rzeszów, University of Rzeszów, Rzeszów, Poland)
In series: Pharmacology - Research, Safety Testing and Regulation
Publication Date: 09/29/2022
161 pp.
Softcover: 979-8-88697-193-4. $95.00
E-book: 979-8-88697-242-9. $95.00
In this book, The Biochemical Guide to Antibiotics, the authors tried to demonstrate the high degree of antibiotics used in pharmacology. The mechanism of their action is provided and is often based on the inhibition of the synthesis of microbial proteins, which are necessary for their functioning. The book presents the history, discovery, chemical structure of the drugs, the spectrum of antibacterial activity and the mechanisms of these antibiotics. The mechanisms of bacterial resistance, pharmacodynamics and pharmacokinetics are also described.
Positive Youth Development: The Tin Ka Ping P.A.T.H.S. Project in Mainland China

Daniel T.L. Shek, PhD (Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong, PRC. Public Policy Research Institute, The Hong Kong Polytechnic University, Hong Kong, PRC. Department of Social Work, East China Normal University, Shanghai, PRC. Kiang Wu Nursing College of Macau, Macau, PRC and Division of Adolescent Medicine, Department of Pediatrics, Kentucky Children’s Hospital, University of Kentucky College of Medicine, Lexington, Kentucky, United States of America), Moon YM Law (Department of Social Work, The Chinese University of Hong Kong, Hong Kong, PR China), Xiaoqin Zhu, PhD (Research Assistant Professor, Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hung hom, Hong Kong, PR China) and Joav Merrick, MD, MMedSci, DMSc (Division of Adolescent Medicine, KY Children’s Hospital, Department of Pediatrics, Lexington, Kentucky, USA National Institute of Child Health and Human Development, Jerusalem, Israel Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel School of Public Health, Georgia State University, Atlanta, Georgia, USA)

In series: Public Health: Practices, Methods and Policies

Starting out, the history and development of Tin Ka Ping P.A.T.H.S. Program is outlined and its achievement. For the pilot studies from 2011 to 2014, the Editors found that students joining the program performed better in the developmental outcomes as compared to the control participants. For the training programs conducted in the project, subjective outcome evaluation findings are also very positive. Finally, the Editors conducted evaluation for the programs launched from 2015 to 2018. Basically, the findings showed that students benefitted from the program. Furthermore, how Tin Ka Ping P.A.T.H.S. Program is aligned with the education reform taking place in China is discussed, where holistic development and student-centered intervention are emphasized. Then the publications arising from Tin Ka Ping P.A.T.H.S. Project. This is important because most of the publications are in Chinese and this book can definitely help non-Chinese speaking colleagues understand what work has been done. As mentioned, to understand further the views of the teachers regarding the development and impact of Tin Ka Ping P.A.T.H.S. Project, the Editors conducted a qualitative study based on individual interviews with nine teachers of Tin Ka Ping P.A.T.H.S. Program participating in the study. In Chapter 5, they presented findings on the perceived benefits of the program to students. Generally speaking, the findings clearly show that the program benefitted the students in different domains, including intrapersonal and interpersonal competences. These findings corroborated with the findings obtained in Hong Kong and the earlier studies in Tin Ka Ping P.A.T.H.S. Project. In Chapter 6, findings on the benefits to the teachers and other stakeholders were presented. Overall speaking, the findings suggest that Tin Ka Ping P.A.T.H.S. Program created many benefits for the teachers. In particular, the program helped teachers to be better teachers and better parents. As not many papers have been written on how positive youth development programs benefit the implementers, the related findings are very valuable. In the final paper, the views of the teachers are examined on the training programs and the related benefits. The findings showed that the teachers were very positive about the training programs and they found the training programs to be very helpful. These findings are consistent with the previous findings on the value and positive impact of the training programs.
Understanding Psychotic Disorders
Charles L. Burgess

In series: Psychiatry - Theory, Applications and Treatments
Publication Date: 10/27/2022
202 pp.
Hardcover: 979-8-8697-336-5, $59.00
e-book: 979-8-8697-359-4, $59.00

Psychotic disorders are severe mental disorders as defined by the current edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V). The first chapter of this book reviews the most recent advances and research findings on the spectrum of negative symptoms across schizophrenia and affective psychosis. The second chapter is a review of literature that contributes to the rationale, development and evaluation of a program for a group approach, as considered according to the propriety of PoC (Propriety of Proof of Concept) for the treatment of schizophrenia. Chapter Three focuses on psychotic disorders and contributing factors in adolescence. In the fourth and final chapter of this book, the authors examine narcissistic wounds in music therapists, as well as the appropriate mechanisms to prevent them from appearing, such as personal therapy and supervision of the music therapist.

Child and Adolescent Psychiatry

Donald E. Greydanus, MD, Dr HC (Athens), FAAP, FIAP (HON) (Professor & Founding Chair, Department of Pediatric & Adolescent Medicine, Western Michigan University Homer Stryker MD School of Medicine, Kalamazoo, MI, USA), Dilip R. Patel, MD, MPH, MBA (Professor & Chair, Department of Pediatric & Adolescent Medicine, Western Michigan University, Homer Stryker MD School of Medicine, Kalamazoo, MI), Ahsan Nazeer, MD (Professor, Division Chief, Child and Adolescent Psychiatry, Sidra Medical and Research Center, Qatar Foundation, Doha, Qatar), Roger W. Apple, PhD (Director, Division of Pediatric Psychology, Department of Pediatric and Adolescent Medicine, Homer Stryker MD School of Medicine, Western Michigan University, Kalamazoo, MI USA) and Joav Merrick, MD, MMedSci, DMSc (Professor of Pediatrics at the Division of Pediatrics, Hadassah Hebrew University Medical Center, Mt Scopus Campus, Jerusalem, Israel, Kentucky Children’s Hospital, University of Kentucky, Lexington, United States and Professor of Public Health at the Center for Healthy Development, School of Public Health, Georgia State University, Atlanta, United States, the former Medical Director of the Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem and the Founder and Director of the National Institute of Child Health and Human Development, Israel)

In series: Pediatrics, Child and Adolescent Health
Publication Date: 08/10/2022
405 pp.
Hardcover: 978-1-68507-999-4, $230.00
e-book: 979-8-8697-089-0, $230.00

Behavioral pediatrics is a multidisciplinary field that involves many healthcare specialists revolving around the practicing pediatrician and primary care clinician; also, various additional, associated fields of training have developed such as developmental-behavioral pediatrics, neurodevelopmental pediatrics, pediatric psychodermatology and medical care for those of all ages with developmental disabilities. Experts in psychiatry and psychology work closely with pediatric clinicians in a variety of professional relationships, including co-located and non-co-located mental health settings. Pediatricians can provide a wide variety of care to children and adolescents with complex disorders, depending on their training as well as interests, and this book seeks to provide au courant perspectives in behavioral pediatrics. Behavioral health screening remains an important task of pediatricians and behavioral pediatricians as they evaluate their pediatric patients.
Behavioral Pediatrics II: Neuropsychiatry, Sexuality and Eating Disorders. Fifth Edition
Donald E. Greydanus, MD, Dr HC (Athens), FAAP, FIAP (HON) (Professor & Founding Chair, Department of Pediatric & Adolescent Medicine, Western Michigan University Homer Stryker MD School of Medicine, Kalamazoo, MI, USA), Dilip R. Patel, MD, MPH, MBA (Professor & Chair, Department of Pediatric & Adolescent Medicine, Western Michigan University, Homer Stryker MD School of Medicine, Kalamazoo, MI), Ahsan Nazeer, MD (Professor, Division Chief, Child and Adolescent Psychiatry, Sidra Medical and Research Center, Qatar Foundation, Doha, Qatar), Roger W. Apple, PhD (Director, Division of Pediatric Psychology, Department of Pediatric and Adolescent Medicine, Homer Stryker MD School of Medicine, Western Michigan University, Kalamazoo, MI USA) and Joav Merrick, MD, MMedSci, DMSc (Professor of Pediatrics at the Division of Pediatrics, Hadassah Hebrew University Medical Center, Mt Scopus Campus, Jerusalem, Israel, Kentucky Children’s Hospital, University of Kentucky, Lexington, United States and Professor of Public Health at the Center for Healthy Development, School of Public Health, Georgia State University, Atlanta, United States, the former Medical Director of the Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem and the Founder and Director of the National Institute of Child Health and Human Development, Israel)
In series: Pediatrics, Child and Adolescent Health
Publication Date: 09/07/2022
324 pp.
Hardcover: 979-8-88697-019-7. $230.00
e-book: 979-8-88697-105-7. $230.00
Professionals in psychiatry and psychology work closely with pediatric clinicians in a variety of professional relationships. In this book we provide perspectives in behavioral pediatrics, neuropsychiatric conditions, issues of sexuality and the complex field of eating disorders. In the first section, various neuropsychiatric conditions are considered; after a discussion of concepts of psychosomatic conditions, topics covered are pediatric sleep disorders, tic disorders, enuresis and encopresis. Section two selects aspects of pediatric sexuality with discussions on an overview of child/teen sexuality, child/teen gender identity and sexually transmitted diseases/infections. In section three, the editors provide perspectives on eating disorders: psychiatric perspectives in pediatric obesity, motivational interviewing and childhood obesity, pediatric obesity psychopharmacology, malnutrition, anorexia nervosa in adolescence, and gynecologic/behavioral features of eating disorders.

Behavioral Pediatrics: Mental Health and Management. Fifth Edition
Donald E. Greydanus, MD, Dr HC (Athens), FAAP, FIAP (HON) (Professor & Founding Chair, Department of Pediatric & Adolescent Medicine, Western Michigan University Homer Stryker MD School of Medicine, Kalamazoo, MI, USA), Dilip R. Patel, MD, MPH, MBA (Professor & Chair, Department of Pediatric & Adolescent Medicine, Western Michigan University, Homer Stryker MD School of Medicine, Kalamazoo, MI), Ahsan Nazeer, MD (Professor, Division Chief, Child and Adolescent Psychiatry, Sidra Medical and Research Center, Qatar Foundation, Doha, Qatar), Roger W. Apple, PhD (Director, Division of Pediatric Psychology, Department of Pediatric and Adolescent Medicine, Homer Stryker MD School of Medicine, Western Michigan University, Kalamazoo, MI USA) and Joav Merrick, MD, MMedSci, DMSc (Professor of Pediatrics at the Division of Pediatrics, Hadassah Hebrew University Medical Center, Mt Scopus Campus, Jerusalem, Israel, Kentucky Children’s Hospital, University of
Kentucky, Lexington, United States and Professor of Public Health at the Center for Healthy Development, School of Public Health, Georgia State University, Atlanta, United States, the former Medical Director of the Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem and the Founder and Director of the National Institute of Child Health and Human Development, Israel)

In series: Pediatrics, Child and Adolescent Health
Publication Date: 09/07/2022
331 pp.
Hardcover: 979-8-88697-060-9. $230.00
e-book: 979-8-88697-106-4. $230.00

Pediatricians can provide a wide variety of care to children and adolescents with complex disorders, depending on their training as well as interests, but they need to work closely with professionals in psychiatry and psychology when dealing with complex issues in mental health disorders. Behavioral health screening is therefore an important task of pediatricians and behavioral pediatricians as they evaluate their pediatric patients. Section one looks at what is called special issues in mental health that include suicide/self-harm in pediatrics, childhood-onset schizophrenia, child abuse/maltreatment, mental health issues of chronic disorders (i.e., diseases of the cardiovascular system, the kidneys and the liver), and behavioral/emotional effects of COVID-19 on children/adolescents. Section two covers various aspects of substance use disorders (SUD) that include SUD neurobiology, substance use/abuse in adolescents, an overview on cannabis, psychosocial treatments of SUDs, pharmacologic management of SUDs, and pharmacology of tobacco abuse. Section three provides a critical look at mental health management that includes psychotherapeutic interventions (i.e., children, adolescents and families), behavioral/cognitive behavioral therapies and principles of psychopharmacologic management in pediatric persons.

PUBLIC HEALTH

Barakoa (Masks) During COVID-19: Malevolent Pathogens and Pandemic Responses in Kenya After 600 Days
Stephen M. Magu, PhD (Assistant Professor of Political Science, Department of Political Science, Norfolk State University, Norfolk, VA, USA)

In series: Public Health in the 21st Century
Publication Date: 06/24/2022
196 pp.
Hardcover: 978-1-68507-798-3. $160.00
e-book: 979-8-88697-014-2. $160.00

On 2nd November, 2021, Kenya marked 600 days since the first COVID-19 case was identified and diagnosed in the country, ‘imported’ by a returning traveler from the US by way of London, UK. Since then, Kenya progressively took steps and implemented strategies at the individual, governmental, public health, societal and international levels to combat the pandemic. Some of the strategies mirrored those adopted elsewhere: curfews, lockdowns, masking, social-distancing, closure of high-contact areas such as educational and religious institutions, and political activity, banned by the government but still widely practised. This book examines the trajectory of COVID-19 in the country, the various responses that the government and the public have undertaken, how socio-cultural, political and religious beliefs and practices have affected contagion and constrained stopping its spread and assesses the impact of the pandemic on different constituencies. It focuses on the peculiar circumstances of the Kenyan society, such as high dependence on public transportation, religious affiliation, boarding educational institutions and political rallies in the context of the 2022 general elections in August 2022, and the superficiality of the responses. It also examines the progress and the setbacks that have manifested as a result of the gendered nature of the pandemic, work and societal beliefs, practices and strategies. This book illustrates one of the most peculiar habits adopted by Kenyans: the government mandated masks, but Kenyans, either disbelieving their effectiveness or unconcerned with the pandemic’s seriousness, took to hanging a mask around the chin only so as to comply with the rules (and not potentially part with a bribe if caught by the police without a mask), or borrowing masks from others at the sight of police. The book also highlights the challenges of a vaccine-skeptic public and overreactions by government, implementing very little testing and requiring vaccinations in order for citizens to access government services, despite the availability being marginal.
RADIOLOGY AND IMAGING

Frontiers in Intensity-Modulated Radiotherapy Research
Dr. Sibel Karaca, PhD (Assistant Professor, Department of Radiation Oncology, Akdeniz University Faculty of Medicine, Antalya, Turkey)
In series: Radiation Oncology: Clinical, Translational and Laboratory Research
Publication Date: 10/06/2022
361 pp.
Hardcover: 979-8-88697-252-8. $230.00
e-book: 979-8-88697-264-1. $230.00
Effective application of tumour treatment with high-dose radiation in radiotherapy provides an increase in the treatment rate and quality of life. Intensity-modulated radiotherapy (IMRT) can conform the radiation dose to the target while minimising the dose given to the surrounding healthy tissue. IMRT was started to be used in radiotherapy about 40 years ago and it is applied in almost all radiotherapy centers today. The IMRT technique, which has been strengthened with new software and applications (such as image-guided radiotherapy and adaptive radiotherapy) has increased the advantages of treatment. This book consists of 18 chapters covering important topics of IMRT.

RESPIRATORY AND PULMONARY

Chronic Obstructive Pulmonary Disease: From Diagnosis to Treatment
Jaber S. Alqahtani, PhD (Senior Specialist & Assistant Professor, Department of Respiratory Care, Prince Sultan Military College of Health Sciences, Dammam, Saudi Arabia)
In series: Pulmonary and Respiratory Diseases and Disorders
Publication Date: 12/15/2022
385 pp.
Hardcover: 979-8-88697-333-4. $230.00
e-book: 979-8-88697-396-9. $230.00
Chronic obstructive pulmonary disease (often known as COPD) is a respiratory disease that affects more than 400 million people worldwide. In 2019, COPD was responsible for 3.23 million deaths globally. This makes COPD the third greatest cause of mortality worldwide. People with COPD frequently experience increasing levels of breathlessness as the disease advances. This can cause a significant financial burden due to the limitations on workplace and home productivity, and costs of medical treatment. Therefore, delivering comprehensive management for people living with COPD is important to lessen such a burden. This book intends to provide comprehensive expert review chapters on the most significant aspects in the management of COPD from diagnosis to treatment through clear insights and explanations. It offers thorough evaluations that provide clinicians involved in COPD management at all levels with a brief, all-encompassing reference to symptoms, diagnosis, and treatment. This book covers four major areas in COPD management, including disease physiology and pathophysiology, diagnosis tools, disease burden, and management of stable and non-stable COPD.

Interstitial Lung Disease: From Diagnosis to Treatment
Roberto G. Carbone, MD, FCCP (Professor, Consultant, Department of Internal Medicine, University of Genoa, Italy), Francesco Puppo, MD (Full Professor, Department of Internal Medicine, University of Genoa, Italy), Keith Wille, MD, MSPH (Professor of Medicine, University of Birmingham, AL USA) and Pallav Shah, MD (Professor of Medicine, National Heart & Lung Institute, Imperial College, London, UK)
This book highlights recent advances in the understanding of interstitial lung disease (ILD) from diagnosis to treatment. The first part of the book discusses general aspects of ILD, such as genetics, epidemiology, classification, pathophysiology, pathology, imaging, and clinical approach including management of ILD comorbidities such as gastroesophageal reflux and pulmonary hypertension. The second part describes common ILDs like idiopathic interstitial pneumonias, sarcoidosis, and hypersensitivity pneumonitis as well as ILDs associated with connective tissue diseases or induced by exposure to environmental agents, drugs, and radiation. Lastly, the third part of the book is devoted to rare ILDs including eosinophilic lung disease and reports on current therapy guidelines.

Understanding and Treating Acute Pulmonary Embolism
James K. Edwards

This book contains five chapters, each focusing on an aspect of understanding and treating acute pulmonary embolism. Chapter One is an overview of the state of the science regarding the treatment of acute pulmonary embolism, and provides modern insights into recent developments. The second chapter reviews a novel technology for the detection and diagnosis of pulmonary embolism which may provide benefits over currently used technologies. The third chapter is a wide ranging review of the state of clinical practice in diagnosing pulmonary embolism prior to the COVID-19 pandemic in Southern Spain. Chapter Four provides a systematic review of the use of ultrasound-assisted catheter-directed thrombolysis in treating acute pulmonary embolism. The final chapter discusses the issue of subsegmental pulmonary embolism, and whether it should be treated directly.

A Literature Review on the Benefits of Propolis
Erik G. Martin

Propolis is a natural aromatic and sticky substance collected by bees from plant resins. These plant sources mainly consist of plant exudates from bark and buds that contain various health care compounds forming the main active ingredients of propolis. These compounds result in propolis exhibiting diverse biological activities, making them popular remedies worldwide. The first chapter of this book aims to review the plant material, chemical composition, and antimicrobial activities of European propolis and to compare it with others from similar geographical regions. The relevance of this review chapter is based on its specific aim - to find the similarities between the chemical composition and properties of plant sources and propolis. The second chapter focuses on propolis as an adjunct therapy in many chronic diseases with inflammatory and oxidative backgrounds such as CVDs, NAFLD, MetS, and diabetes and gastrointestinal disorders. The third chapter provides an overview of the chemical compositions, biological properties of propolis of different stingless bee species and its geographical origins, and recent advances in therapeutic and pharmacological research. In this respect, advanced biological research related to the chemical diversity of propolis is highlighted. The fourth chapter summarizes the extraction methods utilized in the commercial production of propolis. These methods, to name a few, are the commonly used maceration, ultrasonication, microwave extraction, supercritical extraction, and accelerated solvent extraction. The advantages and disadvantages of classical and modern extraction methods in their application for large-scale commercial applications are discussed. In Chapter Five, recent studies of propolis and its potential pharmaceutical and cosmetic applications are examined. In Chapter Six, the antioxidant capacity of several commercially available bee propolis products are reviewed.
Results showed a direct correlation between phenolic content and antioxidant capabilities. The last chapter discusses the different assays performed in determining the antioxidant properties of propolis samples collected from around the world.

**Advances in Health and Disease. Volume 53**

*Lowell T. Duncan*

In series: *Advances in Health and Disease*  
Publication Date: 06/03/2022  
218 pp.  
Hardcover: 978-1-68507-820-1. $250.00  
e-book: 978-1-68507-905-5. $250.00  
This volume includes eight chapters that detail recent advancements in the field of health and disease. Chapter One investigates the interaction of molybdenum complexes and polyoxometalates with DNA models. Chapter Two discusses the role of superoxide dismutase in sperm capacitation. Chapter Three details various imaging techniques for diagnosis of hepatic steatosis. Chapter Four compares and contrasts dietary recommendations for pregnancy from different countries around the world. Chapter Five reviews common electrolyte abnormalities in critically ill patients and provides advice regarding their management. Chapter Six explores the heterogeneity across the spectrum of HDL cholesterol subpopulations and the main components of HDL that participate in the biological activities of HDL. Chapter Seven discusses strategies for the optimization of umbilical cord blood banking. Finally, Chapter Eight concerns the involvement of the breast in granulomatosis with polyangiitis.

**Advances in Health and Disease. Volume 54**

*Lowell T. Duncan*

In series: *Advances in Health and Disease*  
Publication Date: 06/03/2022  
234 pp.  
Hardcover: 978-1-68507-868-3. $250.00  
e-book: 979-8-88697-034-0. $250.00  
This book presents some recent updates in health and disease. Chapter One provides an overview of facioscapulohumeral muscular dystrophy. Chapter Two summarizes the recent research findings related to the pathogenesis of E. histolytica. Chapter Three summarizes the literature concerning the role of fluoride in osteogenesis. Chapter Four investigates the utility of ultrasound elastography in detection of liver disease. Chapter Five evaluates the efficiency of health services of some countries during the COVID-19 pandemic. Chapter Six describes treatment options for petroclival meningiomas. Chapter Seven explains the uses, mechanisms of actions and clinical outcomes of ibuprofen. Chapter Eight defines and describes limb-girdle muscular dystrophies, including its clinical manifestations, diagnostic strategies, and treatment options. Finally, Chapter Nine discusses the diagnosis of methamphetamine-related poisoning and death, including pathophysiological and toxicological findings, in forensic practices.

**Advances in Health and Disease. Volume 55**

*Lowell T. Duncan*

In series: *Advances in Health and Disease*  
Publication Date: 07/15/2022  
248 pp.  
Hardcover: 978-1-68507-998-7. $250.00  
e-book: 979-8-88697-082-1. $250.00  
This book includes nine chapters that describe recent advances in health and disease. Chapter One discusses controversies regarding the use of intraoperative cell salvage during surgery involving bacterial contamination or malignancy. Chapter Two presents an overview of clinical applications of all-trans retinoic acid. Chapter Three explores the role of angiotensin-converting enzyme 2 receptors in COVID-19 infection. Chapter Four describes potentially beneficial sports supplements for endurance athletes. Chapter Five studies the influence of low-impact aerobic physical activity on Berger's disease. Chapter Six evaluates the effects and toxicity features of paclitaxel nanoformulations. Chapter Seven examines a potential link between methamphetamine abuse and glycogen synthase kinase-3. Chapter Eight investigates the health-promoting potential of tryptophan-derived betalin. Finally, Chapter Nine deals with the role of glucagon in exploring the corticotropic pituitary reserve.
Advances in Health and Disease. Volume 56
Lowell T. Duncan
In series: Advances in Health and Disease
Publication Date: 07/22/2022
230 pp.
Hardcover: 979-8-88697-079-1. $250.00
e-book: 979-8-88697-090-6. $250.00
This book includes eight chapters describing recent advances in health and disease. Chapter One describes the use and risk management of opioids in pain management. Chapter Two deals with the current status and future challenges of paclitaxel, an anti-cancer drug. Chapter Three describes common suprascapular nerve blockade techniques for management of chronic shoulder pain. Chapter Four investigates the experimental and theoretical techniques used to assess the antiradical potency of neurotransmitters, especially norepinephrine. Chapter Five explores how mathematics and physics apply to epidemics and pandemics and how they are connected to the current COVID-19 pandemic. Chapter Seven describes a case of a melanocytic tumor of unknown malignant potential with the Meyerson phenomenon. Finally, Chapter Eight studies whether Propolis-coated pillows with a rough surface could serve as a treatment for facial wrinkles.

Advances in Health and Disease. Volume 57
Lowell T. Duncan
In series: Advances in Health and Disease
Publication Date: 08/10/2022
234 pp.
Hardcover: 979-8-88697-098-2. $250.00
e-book: 979-8-88697-143-9. $250.00
This volume includes ten chapters that present recent research advances in health and disease. Chapter One reviews the importance of 5alpha-reductase inhibitors, with focus on oxidized steroidal derivatives, for treatment of prostatic diseases. Chapter Two examines inflammation in chronic obstructive pulmonary disease. Chapter Three indicates plausible mechanistic insights of binding of vitamin B12 and its precursor cobinamide. Chapter Four summarizes fluid therapy for treatment of traumatic brain injury. Chapter Five explores the healthcare response to COVID-19 in Bhutan and Nepal. Chapter Six examines changes in immune function associated with aging. Chapter Seven discusses the epidemiology, clinical features, investigations, and management of pyogenic spondylodiscitis. Chapter Eight describes the characterization of vitamin B12 compounds in food. Chapter Nine discusses the use of tryptophan to manage biofilms. Finally, Chapter Ten discusses targeting nuclear factor erythroid 2-related factor 2 by synthetic and natural agents and its impact on multiple sclerosis.

Advances in Health and Disease. Volume 58
Lowell T. Duncan
In series: Advances in Health and Disease
Publication Date: 09/07/2022
201 pp.
Hardcover: 979-8-88697-192-7. $250.00
e-book: 979-8-88697-236-8. $250.00
This volume includes seven chapters that describe recent advances in health and disease. Chapter One discusses the distribution and functions of toll-like receptors with a focus on the signaling pathways and interaction with different receptors in response to bacterial ligands. Chapter Two examines the relationship between oral health and nutrition of Arab refugees in Greece. Chapter Three summarizes the present data regarding the role of toll-like receptors, their endogenous ligands and receptor signaling pathways in the initiation and development of acute kidney injury. Chapter Four addresses the role of the NOD-like receptor pyrin containing 3 inflammasome in the pathogenesis of major depressive disorder and the potential therapeutic strategies targeting the negative modulation of this complex. Chapter Five describes types of laparoscopic approaches for the treatment of abdominal wall hernias. Chapter Six deals with the synthesis and characterization of aptine-lysine co crystals for the enhanced dissolution rate of aspirin. Finally, Chapter Seven presents the optimal surgical management of goiter.
Calcium hydroxide has been widely used in dentistry since the 1920s due to its several properties, including antimicrobial action, induction of hard tissue deposition and inhibition of tooth reabsorption. Chapter 1 describes the different uses of calcium hydroxide in dentistry discussing its properties and its importance in dentistry. Chapter Two focuses on the role of hyperhomocysteinemia in diabetes, osteoporosis, dyslipidemia, and other endocrine disorders. The various pathophysiological mechanisms, current evidence, therapeutic options, and future directions of targeting Hcy metabolism for lower Hcy levels are also discussed. Chapter Three provides evidence for the formation of β-structured protein aggregates (β-SPAs) in a number of diseases associated with the formation of abnormal tissues. β-SPA formation is of considerable interest since their properties lead to the impairment of the normal physiological processes in adjacent tissues, thereby ensuring the chronic course of the pathology. The mechanisms and causes of such complications are discussed. Next, clinical data on how high levels of homocysteine impact the onset and progression of dementia and stroke are reviewed. Preclinical data was also assessed and discussed in terms of mechanisms of how elevated levels of homocysteine impact brain function in stroke and dementia. Chapter 5 discusses the effects of chirality on drugs as well as its impacts on drug research and development processes in the context of national and international guidelines. Chapter 6 addresses the therapeutic potential of taurine. Chapter 7 summarizes mechanisms by which homocysteine (Hcy) affects cellular metabolism, delivers a broad account of the biological chemistry of pathophysiological consequences and clinical implications of Hcy. Chapter 8 reviews the control of milk secretion at the mammary gland level during stress conditions. The final chapter, Chapter 9, aims to review the management of candida infection in neonates.

This book is a volume of eight collected chapters on advances in the sciences of health and disease research. The first chapter is a review of vaccines and immunotherapies against the Human Papillomavirus and the Epstein-Barr virus. The second chapter discusses the implications of plasminogen derangements on health and disease, especially in the onset of infections, neuroinflammatory disorders, and cancer progression. The third chapter reviews the pathogenesis, clinical profiles, and therapeutic approaches for treating Alzheimer’s and Parkinson’s Disease. The fourth chapter examines the role of lysine 63 linked ubiquitination in health and disease in the body. The fifth chapter explores a new and innovative approach to controlling and treating canine periodontal disease using a substance known as Nisin. The sixth chapter is an overview of the condition of artefactual hyperprolactinemia. The seventh chapter is an introduction to the novel concept of electronic noses and their potential role in the science of urology. The eighth chapter is a review of causes, pathogenesis, and approaches to patients suffering from lymphocytosis. The ninth and final chapter discusses the use of antimicrobial peptides in coping with pseudomonas aeruginosa.
course and pathological features. Chapter Four is a broad overview of issues related to antimicrobial drugs. Chapter Five looks at alternative pharmaceutical options that are, eponymously, "better than Xanax." Chapters Six and Seven are overviews of overweightness and obesity amongst Saudi and Bahraini adolescents, respectively. Finally, Chapter Eight is a review of muscarinic cholinergic receptor antagonism as a potential method of treating major depressive disorder.

Advances in Health and Disease. Volume 62
Lowell T. Duncan
In series: Advances in Health and Disease
Publication Date: 01/05/2023
294 pp.
Hardcover: 979-8-88697-469-0. $250.00
e-book: 979-8-88697-511-6. $250.00
This book contains seven selected chapters covering advances in health and disease. Chapter One reviews the properties of plasmids and their role in human diseases. Chapter Two examines chronic kidney disease and its disturbances on the gastrointestinal system. Chapter Three reviews ginsenosides and their health benefits as well as their role in disease prevention. Chapter Four discusses how first-generation somatostatin analogues changes the outcome of acromegaly. Chapter Five is an overview of the pathophysiology of diabetes mellitus and its impact on the gastrointestinal system. Chapter Six is a narrative review of superior mesenteric venous thrombosis. Chapter Seven is an overview of hub genes and their role in myocardial ischemia, additionally it is discussed how exercise can modulate, improve, and reverse these pathways.

Advances in Health and Disease. Volume 63
Lowell T. Duncan
In series: Advances in Health and Disease
Publication Date: 01/12/2023
245 pp.
Hardcover: 979-8-88697-544-4. $250.00
e-book: 979-8-88697-571-0. $250.00
This book contains nine chapters highlighting advances in health and disease. Chapter One reviews ubiquitin-dependent proteolysis as a therapeutic strategy. Chapter Two is a review of the analytical methodology of ginsenosides and their bioactive properties. Chapter Three explores the management of latent tuberculosis in pregnant, HIV-positive women. Chapter Four focuses on melioidosis pneumonia. Chapter Five explains the importance of DNA methylation in the body. Chapter Six examines the structural pharmacology of antiarrhythmic drug interaction with voltage-gated sodium channels. Chapter Seven explores chemical fractionation and the health risks of heavy metals in PM2.5. Chapter Eight reviews attempts to establish a local diagnostic reference level for adult computed tomography scans in hospitals and diagnostic centers in Addis Ababa, Ethiopia. Finally, Chapter Nine explores theory-based educational and behavioral interventions to improve oral anticoagulant adherence.

Advances in Health and Disease. Volume 64
Lowell T. Duncan
In series: Advances in Health and Disease
Publication Date: 02/09/2023
213 pp.
Hardcover: 979-8-88697-575-8. $250.00
e-book: 979-8-88697-666-3. $250.00
This book is comprised of twelve selected chapters on advances in health and disease. Chapter one covers applications of nano-formulations in drug delivery for skin disease treatments. Chapter Two examines the use of dipeptidyl peptidase-4 inhibitors in the clinical management of diabetes mellitus. Chapter Three reviews the role of sex hormones in asthma therapy. Chapter Four looks at therapies for critically ill COVID-19 patients. Chapter Five examines resistance plasmids; the key to the adaptation of pathogenic microorganisms in hospital environments. Chapter Six shows how oleic acid prevents oxidative stress by inhibiting metabolic pathways in clinical disorders. Chapter Seven reviews the question of post-COVID-19 reactive arthritis, and whether it is a myth or reality. Chapter Eight examines the diagnosis and treatment of dermoid ovarian cysts in children and adolescents. Chapter Nine explores the beneficial effects of testosterone replacement therapy in older individuals. Chapter Ten covers the state of the art in difficult to treat rheumatoid arthritis. Chapter Eleven provides
therapeutic updates on the condition of juvenile psoriatic arthritis. Chapter Twelve examines the underdiagnosed pathology of sinus tarsi syndrome.

An Essential Guide to Occupational Exposure
Marta Madalena Marques de Oliveira, PhD, Simone Barreira Morais, PhD, Francisca Pinto Lisboa Martins Rodrigues, PhD (Researchers, REQUIMTE-LAQV, Instituto Superior de Engenharia do Porto, Instituto Politécnico do Porto, Porto, Portugal)

In series: Safety and Risk in Society
Publication Date: 05/13/2022
194 pp.
Hardcover: 978-1-68507-819-5. $160.00
e-book: 978-1-68507-922-2. $160.00
The World Health Organization estimates that about 2.9 billion workers around the world are regularly exposed to risks at their workplace. Therefore, a significant fraction of the world’s working force, principally in low- and middle-income countries, is at an increased risk of occupational hazards with direct implications on occupational safety and health. Occupational injuries and illness lead to (short/long) workers’ absences with significant economic costs for both employees and employers. Also, the quality of life and wellbeing of active workers are profoundly affected. This book – An Essential Guide to Occupational Exposure – will attract the attention of people that want to know more about occupational exposure and its implications on hygiene, safety, and health in work environments. This work aims to highlight the predominant occupational risks that all working groups can be exposed to. Also, it informs readers about emerging health surveillance tools, namely cytogenetic and human biomonitoring assays, that are being used in the assessment of occupational exposure and health risk assessment. This book is aimed at the active and working civil society, occupational safety and hygiene technicians among other related occupations (e.g., health professionals), scientific community, and stakeholders. This reading will promote a reflection on the topic of occupational exposure and its implications on the safety and health of workers from different occupations.

Bioprinting the Human
Soner Şahin, MD (Professor, Faculty of Medicine, Department of Neurosurgery, Nisantasi University, Istanbul, Turkey) and Kenan Demir, MD (Health Sciences University, Samsun Training and Research Hospital, Samsun Eğitim ve Araştırma Hastanesi, İlkadım, Turkey)

In series: New Developments in Medical Research
Publication Date: 07/27/2022
208 pp.
Hardcover: 978-1-68507-993-2. $160.00
e-book: 978-8-86977-066-1. $160.00
Rapidly developing technology also gives direction to our lives in the field of health and medicine. New developments are taking both diagnosis and treatment possibilities to places we could not predict before. The development of tissues and organs in a laboratory environment is one of these developments. This issue, which came to the fore with the introduction of 3D printers into our lives, has now started to mature and experiment in the field of medicine. Using a technology similar to 3D printing that fundamentally changes therapeutic possibilities, bioprinting uses a digital file as a blueprint to produce biomedical parts that closely mimic the properties of natural tissue. Engineered textures are created by layering biomaterials and/or living cells, collectively called bioinks. Transplanting the tissues or organs obtained to the needy patient also prevents possible undesirable situations such as tissue and organ rejection. This book on bioprinting aims to present the basics of bioprinting and its use in major tissues to the reader with the latest developments.
Chronic Disease Follow-Ups for Adults in Primary Care
Duygu Üstünol, MD (Department of Family Medicine, Sulakyurt State Hospital, Kirikkale, Sulakyurt Devlet Hastanesi, Kirikkale, Turkey) and Bahar Urün Unal, MD (Assistant Professor, Faculty of Medicine, Department of Family Medicine, Selcuk University, Konya, Turkey)

In series: Medical Procedures, Testing and Technology
Publication Date: 09/07/2022
513 pp.
Hardcover: 979-8-88697-050-0. $310.00
e-book: 979-8-88697-138-5. $310.00
60%-80% of all outpatients worldwide have a chronic disease, and this fact demonstrates that an essential part of primary care practice will be the prevention, treatment, and rehabilitation of chronic illnesses. The medical literature, which states that the cost, mortality, and morbidity rates will decrease when the healthcare service is improved, has led to writing this comprehensive and up-to-date book. In addition to the sections where you can find detailed information about each stage of chronic disease follow-up, the book includes up-to-date information accompanied by guidelines and ways to be followed in clinical practice, including primary prevention.

Environmental Emergencies and Injuries in Nature
Murat Yücel, MD Associate Professor, Faculty of Medicine, Department of Emergency Medicine, Samsun University, Samsun Training and Research Hospital, Samsun, Turkey), Murat Güzel, MD (Associate Professor, Department of Emergency Medicine, Health Sciences University, Samsun Training and Research Hospital, Samsun, Turkey) and İbrahim İkizceli, MD (Professor, Faculty of Medicine, Department of Emergency Medicine, Istanbul University, Cerrahpasa, Istanbul, Turkey)

In series: Emergency and Intensive Care Medicine
Publication Date: 06/17/2022
327 pp.
Hardcover: 978-1-68507-833-1. $230.00
e-book: 978-1-68507-917-8. $230.00
The interaction of human beings with the environment can cause unwanted injuries. The damage to the environment from people is a big problem carried from the past to the future. The healthy living of both parties in harmony is associated with "environmental awareness" and "preparedness." Lives can be saved with the rapid recognition and treatment of environmental emergencies such as disasters, injuries, and poisonings, which occur with increasing frequency, and with the right first aid. The book Environmental Emergencies contains up-to-date information to help manage many emergencies that every person may suddenly encounter. It has been prepared as a resource book that can be used by everyone interested, especially health professionals, medical students, and first aid volunteers. The common purpose of all chapters in this book is to provide the reader with theoretical and practical information for early recognition of the clinical situation in the prehospital setting and emergency departments and the rapid initiation of appropriate treatment. Effective and safe interventions in environmental emergencies will reduce the risk of bad outcomes as in every emergency.

Environmental Health: Poverty, Race and Child Health in the Time of COVID-19
I. Leslie Rubin, MD (Associate Professor, Department of Pediatrics, Morehouse School of Medicine, Adjunct Associate Professor, Department of Pediatrics, Emory University School of Medicine; Co-director, Southeast Pediatric Environmental Health Specialty Unit, Emory University School of Medicine; Founder, Break the Cycle of Health Disparities, Inc.; Medical Director, The Rubin Center for Autism and Developmental Pediatrics, Atlanta, GA, USA) and Joav Merrick, MD, MMedSci, DMSc (Division of Adolescent Medicine, KY Children’s Hospital, Department of Pediatrics, Lexington, Kentucky, USA National Institute of Child Health and Human Development,
Jerusalem, Israel Division of Pediatrics, Hadassah Hebrew University Medical Centers, Mt Scopus Campus, Jerusalem, Israel School of Public Health, Georgia State University, Atlanta, Georgia, USA)

In series: Health and Human Development
Publication Date: 12/22/2022
239 pp.
Hardcover: 979-8-88697-292-4. $195.00
e-book: 979-8-88697-453-9. $195.00
This book presents a wide ranging selection of nine chapters covering topics of poverty, race and child health in the time of COVID-19. Chapter One reviews the student projects of the 16th annual Break the Cycle of Children’s Environmental Health Disparities program, an annual collaborative interdisciplinary research and training program involving university students in academic tracks focusing on the impact of adverse social, economic, and environmental factors on children’s health, development, education, and prospects for their future. Chapter Two is a broad overview of the prevalence of COVID-19 in the Texas juvenile justice system. Chapter Three examines the six month outcomes of malnourished children who are enrolled in the Nutritional Therapeutic program in a peri-urban, low-income settlement in the Western Cape, South Africa. Chapter Four asks the question, “Does early life phthalate exposure mediate racial disparities in children’s cognitive abilities?” Chapter Five assesses the knowledge, attitudes, and behaviors of families with a low socioeconomic status in regards to phthalate exposure in children. Chapter Six examines a comparison of the Neighborhood Deprivation Index and food desert status as environmental predictors of early childhood obesity. Chapter Seven takes a look at the implications for children’s mental health in Durham, North Carolina, on account of equitable access to greenspace during the COVID-19 pandemic. Chapter Eight reviews neighborhood quality and positive health indicators among urban adolescents. Chapter Nine looks to the development of evidence-based intervention for teens that have lost a parent through human-centered design, seeking to create a grief group for today’s teens.

Handbook of Data Analysis of Electronic Health Records (EHR) using SAS Software
Behrouz Ehsani-Moghaddam, PhD (Adjunct Professor, Health Sciences, Queen’s University, ON Canada)
In series: Health Care in Transition
Publication Date: 12/15/2022
167 pp.
Softcover: 979-8-88697-372-3. $95.00
e-book: 979-8-88697-437-9. $95.00
Electronic Health Records (EHR) are longitudinal data that are stored in a database that captures current and new patients at different points in time. Since EHR data come from multiple different vendors and open-source products, they can be messy, inconsistent, and often need to be harmonized and reformatted properly before they can provide real-world insights about patients using statistical techniques. This book goes beyond the general data manipulation, viewing the data analysis issues in a wider and more practical context. It covers all major steps of analysis of EHR data, even those instructions that cannot be taught in any classroom. The reader can have hands-on experience using the codes that are provided in the book and by utilizing the accompanying data that are available for free. This book is not restricted to one specific discipline but rather will be of interest to scientists working in any area where analyzing electronic public health data using SAS program is necessary. The material is aimed at the reader who are already familiar with applied statistics at an undergraduate level or higher.

Mobile Health: Advances in Research and Applications - Volume II
Gaurav Gupta, PhD (Assistant Professor, Yogananda School of AI Computers and Data Science, Shoolini University, Solan, H.P. India), Varun Jaiswal, PhD (Assistant Professor, BioNano Technology, Department of Food & Nutrition Gachon University, Sujeong-Gu, Seongnam-Si, Gyeonggi-Do, Republic of Korea), Manju Khari, PhD (Associate Professor, School of Computing, JNU, New Delhi) and Nagesh Kumar, PhD (Assistant Professor, Yogananda School of AI Computers and Data Science, Shoolini University, Solan, H.P. India)
In series: Health Care in Transition
Publication Date: 10/06/2022
189 pp.
This book will explain the rapidly emerging mobile health perspective, the emergence of integrated platforms and hosted third-party tools, and the development of decentralized applications for various research domains. It presents various applications that are helpful for research scholars and scientists who are working toward identifying the potential of as well as the hindrances to mobile health. The wide variety of topics it presents offers readers multiple perspectives on a variety of disciplines. The aim of this edited book is to publish the latest research advancements in the convergence of automation technology, artificial intelligence, biomedical engineering, and health informatics. This will help readers grasp the essence of the recent advances in this field.

**Putting an End to Surprise Medical Billing**

*Daniu E. Tackett*

In series: *Government Procedures and Operations*  
Publication Date: 10/20/2022  
405 pp.  
Hardcover: 979-8-88697-296-2. $230.00  
e-book: 979-8-88697-327-3. $230.00

Surprise medical bills arise when a consumer covered by a health plan is unexpectedly treated by an out-of-network provider and is required to pay the difference between what the plan pays and the provider’s charge. The issue of surprise bills, which can often expose a consumer to thousands of dollars of unforeseen medical costs, is widespread. In 2017, one in six Americans covered by an employer-sponsored plan received a surprise medical bill for out-of-network care despite having health insurance. One in ten elective hospital admissions and one in five admissions from emergency departments result in surprise bills.

**The 6th Annual International Conference and Exhibition on Indonesian Medical Education and Research Institute (6th ICE on IMERI) 2021**

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In series: *New Developments in Medical Research*  
Publication Date: 09/07/2022  
224 pp.  
Hardcover: 978-1-68507-925-3. $160.00  
e-book: 979-8-88697-024-1. $160.00

The International Conference and Exhibition on The Indonesian Medical Education Research Institute (ICE on IMERI) is a yearly conference presented by The Indonesian Medical Education Research Institute (IMERI). This year, the 6th ICE on IMERI with the selected theme "Biomedical Research and Primary Care Transformation: The Potential Issue in Post Pandemic Era" provides a panel of experts on relevant topics. This book contains selected academic papers submitted to the 6th ICE on IMERI editorial team by participants. Primary care needs adjustment during the era of the Covid-19 pandemic. This book presents various case studies, reviews, and original articles that provide a new perspective on health care settings during the pandemic. Articles about novel therapy, diagnosis, and prognosis regarding Covid-19 and other health-related topics can be found in this book.
It is difficult to find solutions for diseases such as cancer and neurodegenerative disease if we do not understand the most basic structures within the human body. Instead of such mechanisms as integrin, ATP synthase, homeostasis and the sodium-potassium pump, we need to find an alternative explanation when it comes to the organization of flows of masses in and between systems of the human body. Even the molecule of DNA requires a new interpretation. This new concept is TRANSFORMER, where there is interaction between the pathway, its infrastructure and the packages - they are woven and interconnected together. Packages enter the pathway in order, then by the infrastructure they are organized and transformed into a new shape; a new entity occurs, e.g. cells, organs, humans and the species. The theory in this book presents an alternative understanding of the human body based on one principle by using the criterion of simplicity. It all starts with one fundamental postulate: Nothing exists in isolation; everything exists in relations. In this book, a new method for finding drugs is proposed. We have seen how many factors can be the cause of Alzheimer’s Disease, so we have to create a manifold drug, i.e., a combination of integrin protein, kinesin, dynein and others.
This book includes questions of the etiology and morphogenesis of cerebral aneurysms, pathophysiological and pathomorphological aspects of subarachnoid hemorrhage and cerebral vasospasm, the relationship between constitution and developmental risk of subarachnoid hemorrhage, hemostasiological disorders in patients with aneurysmal subarachnoid and intracranial hemorrhage, peculiarities of diagnosis and methods of conservative and neurosurgical treatment in different types of patients with subarachnoid hemorrhage – adults, pregnant women and children. Anesthetic management of cerebral aneurysm surgery is an important topic of discussion. A special chapter is devoted to the analysis of the COVID-19 pandemic’s influence on the dynamic of subarachnoid hemorrhage incidence as a neurovascular emergency. Finally, a very interesting chapter regarding the concerns, developments, and future direction of aneurysmal subarachnoid hemorrhage management is included. This book was written by neurologists, neuroradiologists, neurosurgeons, anesthesiologists and intensive care specialists, pathologists, laboratory diagnosticians and hemostasiologists - 23 authors from 4 countries, whose daily work is to manage and treat emergency vascular neurosurgical patients.

Neurointerventional Surgery: Current Status and Future Prospects
Xianli Lv, MD (Neurosurgery, Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, Beijing, China) and Zhongxue Wu, MD (Neurosurgery, Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, Beijing, China)
In series: Surgery - Procedures, Complications, and Results
Publication Date: 07/15/2022
377 pp.
Hardcover: 978-1-68507-863-8. $230.00
e-book: 979-8-88697-062-3. $230.00
Endovascular neurosurgery is now the most commonly practiced therapeutic approach for most vascular lesions involving the brain and spinal cord. This book describes the endovascular diagnosis and treatment of vascular lesions involving the brain and spinal cord using catheters in the DSA (digital subtraction angiography) unite. The field of endovascular neurosurgery has resulted in effective endovascular therapies for carotid-cavernous fistulas (CCFs), intracranial aneurysms, arteriovenous malformations (AVMs), dural arteriovenous fistulas, atherosclerosis of cerebral arteries, acute stroke, carotid artery disease, and vascular tumors of the head, neck, and spinal vascular malformations and tumors. The scope of practice of neurovascular endovascular surgery has become complex, requiring training in specific skill sets and techniques. The evolution of the neuroendovascular field has resulted in the development of program requirements for residency or fellowship education in endovascular neurosurgery.

Neurosurgery Research: An Update
Amit Agrawal, MD (Department of Neurosurgery, All India Institute of Medical Sciences, Saket Nagar, Madhya Pradesh, India), Pradeep Chouksey, MD (Department of Neurosurgery, All India Institute of Medical Sciences, Saket Nagar, Madhya Pradesh, India), Adesh Shrivastava, MD (Department of Neurosurgery, All India Institute of Medical Sciences, Saket Nagar, Madhya Pradesh, India), Sumit Raj, MD (Department of Neurosurgery, All India Institute of Medical Sciences, Saket Nagar, Madhya Pradesh, India) and Rakesh Mishra, MD (Assistant Professor, Department of Neurosurgery, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India)
In series: Neurosurgery Research Progress
Publication Date: 08/10/2022
433 pp.
Hardcover: 978-1-68507-837-9. $230.00
e-book: 979-8-88697-076-0. $230.00
In this book, chapters covering the broad areas in spinal neurosurgery, pediatric neurosurgery, and peripheral nerve surgery are included. Chapters presented have been of active interest in academia for the last couple of decades. Care has been taken to avoid duplication of other neurological texts. These chapters will provide a framework of current understanding and available evidence, which will help interested readers understand the area in more depth.
Postoperative Pain: From Management to Recovery
Indraneil Mukherjee, MBBS, MD, FACS (Assistant Professor, Zucker School of Medicine, Hofstra University, Northwell, Uniondale, NY, USA), Rayna Walburger, MD (Department of Anesthesia, Icahn School of Medicine at Mount Sinai, New York, NY, USA) and Simer Preet Singh, MD, MPH, FAAPMR, FASAM (System Lead Physician for Spine and Pain Medicine, Rochester Regional Health System, Rochester, NY, USA)
In series: Pain Management - Research and Technology
Publication Date: 09/29/2022
302 pp.
Hardcover: 978-1-68507-971-0. $230.00
e-book: 978-8-88697-286-3. $230.00
Most patients who undergo surgery will experience acute postoperative pain, making postoperative pain management an important topic. Pain management has shifted towards a multimodal approach and away from the traditional opioid administration due in part to the opioid crisis. As opioids came to be abused, with many starting after initially being prescribed opioids by their physician, the focus on how to manage pain changed. However, a multimodal approach also has benefits outside of decreasing use of opioids such as targeting multiple pathways of pain to lead to more favorable outcomes for patients. A multimodal approach does not consist of the same approach for each patient. It gives the ability to tailor the pain management approach to the patient and the type of surgery. In this textbook, the approach to postoperative pain management for different surgeries will be highlighted. The different modalities used for a multimodal approach will be defined with their underlying pathophysiology explained. This textbook will give a basic understanding of how the combination of multiple medications often results in superior outcomes, with better patient satisfaction and often lower doses being required due the additive effects of different pathways being targeted.

Endocrine Surgery
A Clinical Guide to Thyroidectomies
Anand Mishra (Professor and Head, Department of Endocrine Surgery, King George's Medical University, Lucknow, India)
In series: Endocrinology Research and Clinical Developments
Publication Date: 08/10/2022
394 pp.
Hardcover: 978-1-68507-814-0. $230.00
e-book: 978-8-88697-033-3. $230.00
A Clinical Guide to Thyroidectomies is a comprehensive compilation that gives extensive detail on thyroid surgery, with examples illustrated by photographs and artwork. It aims to help surgeons practice safe and adequate thyroid surgery and provides updates on new technologies and techniques, such as robotic and remote site thyroidectomy. Thyroid surgery is practiced not only by dedicated endocrine surgeons, but also by general surgeons, surgical oncologists, and head and neck otolaryngologists. This book will be useful for practitioners in all of these disciplines.

Infectious and Parasitic Diseases of Animals in Developing Countries
Selwyn Arlington Headley
In series: Veterinary Science and Medicine
Expected Publication Date: 03/15/2023
Hardcover: 978-8-88697-504-8. $230.00
e-book: 978-8-88697-577-2. $230.00
This book presents a list of important animal diseases that occur in developing nations, and is written predominantly by experienced scientists from several developing countries. The origin of the main objective that was considered in the preparation of this book was to provide high-quality literature of international standards for veterinary students, practicing veterinarians, and veterinary diagnosticians in developing and underdeveloped countries but written by scientists/professors from these regions. This is of fundamental importance, since most books on infectious and parasitic
diseases of domestic animals, used worldwide in universities and other institutions, are written predominantly by American and/or European-based authors/scientist and frequently reflects the American and/or European views of specific diseases, which does not always coincide with the manifestations of these diseases in developing countries. Consequently, this book offers an alternative view of important diseases of animals based on the experience of scientists from developing countries. It is our intention that this book serves as a complementary text for these specific diseases so that veterinary students and veterinarians from developing countries may easily identify these disease processes in domestic and/or wild animals.
SCIENCE AND TECHNOLOGY
AGRICULTURE

Agricultural Economics and Resource Management

Sustainable and Organic Agriculture

Computational Intelligence for Sustainable Development

Brojo Kishore Mishra, PhD (Professor, Department of Computer Science & Engineering, Associate Dean (International Affairs), GIET University, Odisha, India)

In series: Agriculture Issues and Policies
Publication Date: 11/17/2022
426 pp.
Hardcover: 979-8-88697-198-9. $230.00
e-book: 979-8-88697-346-4. $230.00

This book covers the latest advances in the field of computational intelligence with a special focus on Sustainable Development Goals (SDG) such as promoting sustainable agriculture, good health, clean water and sanitation, affordable and clean energy, sustainable cities and communities, sustainable industrialization and innovation, and sustainable use of terrestrial ecosystems. This book would be an excellent resource for data scientists, engineers, students and professors of higher education, computer scientists, researchers, and academicians.

Crops

Diseases of Fruit and Plantation Crops and Their Sustainable Management

Mujeebur Rahman Khan, PhD (Professor, Aligarh Muslim University, Uttar Pradesh, India) and Ziaul Haque, PhD (Assistant Professor, Department of Plant Protection, Aligarh Muslim University, India)

In series: Agriculture Issues and Policies
Publication Date: 10/20/2022
530 pp.
Hardcover: 978-1-68507-978-9. $310.00
e-book: 979-8-88697-297-9. $310.00

The perineal nature, huge foliage and extensive root system of fruit crops offer conducive conditions for survival and colonization of plant pathogens. Plant diseases in fruit crops are of common occurrence and account for up to 10-20% yield losses. The present book embodies 18 chapters covering major diseases of important temperate fruit crops (almond, apple, apricot, cherry, peach, pear, pistachio, plums, strawberry, walnut, etc.), subtropical and tropical fruit crops (aonla, avocado, bael, banana, cashew, citrus, fig, grapes, guava, jackfruit, jamun, jujube, kiwi, litchi, loquat, mango, papaya, passion-fruit, pineapple, pomegranate, sapota, etc.) and plantation crops (Coconut, Coffee, Date palm, Oil palm, Rubber, Tea, etc.), highlighting the aetiology, symptoms, disease cycle, economic importance, distribution, and management aspects with advanced and sustainable approaches. The present book shall serve as an important reference source to UG/PG students, academics, professionals, scientists, researchers and extension personnel dealing with plant diseases in universities and institutes, bureaus, directorates, research stations etc.

Emerging Environmental Applications of Nanozymes

Dr. Seema Nara and Smriti Singh

In series: Environmental Science, Engineering and Technology
Expected Publication Date: 03/20/2023
Softcover: 979-8-88697-552-9. $95.00
e-book: 979-8-88697-592-5. $95.00
This book will cover all aspects of using nanozymes for environmental safety, monitoring and remediation. It will uncover the way nanozymes are being used for sensing different categories of environmental pollutants like pesticides, heavy metals, organic pollutants or microbes. Further, it will provide information on using nanozymes for extraction, removal or remediation of pollutants from soil or water samples and their degradation to relatively safer by-products. This book will also include the challenges to be met by nanozymes and their future prospects.

**Jute: Cultivation, Properties and Uses**  
*Matthieu Issa*  
In series: *Agriculture Issues and Policies*  
Publication Date: 12/15/2022  
144 pp.  
Softcover: 979-8-88697-490-4. $95.00  
e-book: 979-8-88697-505-5. $95.00  
This volume contains five chapters discussing the cultivation, properties, and uses of jute fiber. Chapter One is an overview of the manufacturing processes of jute fiber-based composites. Chapter Two discusses methods of chemical modification of the properties of jute fiber for lifecycle enhancement in wastewater treatment. Chapter Three examines in a scope beyond traditional applications the progress, challenges, and prospects of jute fiber as a green adsorbent. Chapter Four provides a review of the processing of jute fiber from extraction to products. Chapter Five discusses potential applications of jute in projects of environmental recovery and environmental conservation.

**Legumes: Nutritional Value, Health Benefits and Management**  
*Dr. Phetole Mangena, PhD*  
In series: *Agriculture Issues and Policies*  
Expected Publication Date: 03/15/2023  
Softcover: 979-8-88697-558-1. $95.00  
e-book: 979-8-88697-583-3. $95.00  
One of the most important scientific contributions to future generations that the current generation must leave to its successors is a protected, improved and sustainable genetic diversity of legume crop plants. This endeavor can be augmented by establishing efficiently analyzed morpho-physiological and molecular data that provide concrete insights that underline mechanisms playing a critical role in enabling crops to effectively react and respond to biotic and abiotic stresses. Research projects involving genetic improvement of legumes represents some of the advances and technologies aimed at providing new avenues to efficiently improve the growth and yield of these crops. This book consists of eight well-structured and written chapters which discuss different perspectives and management of legume crops. The book embodies a diversity of views, bringing new ideas and sharing new important original information involving cultivation, physiology, nutritional quality, medicinal benefits, traditional uses and in vivo priming for enhanced legume production. This book is intended for use as a reference book for both undergraduate and postgraduate students, together with researchers in the field.

**Farming**

**Research Advancements in Organic Farming**  
*Dr. Jatindra Nath Bhakta and Dr. Sukanta Rana*  
In series: *Agriculture Issues and Policies*  
Expected Publication Date: 03/15/2023  
Hardcover: 979-8-88697-519-2. $230.00  
e-book: 979-8-88697-580-2. $230.00  
The present book, entitled Research Advancement in Organic Farming, focuses on advanced approaches of organic farming practices for sustainable production of crops and protection of the environment from pollution caused by conventional farming practices. Organic farming is a holistic self-sustaining approach that recycles its own organic wastes in a natural way in an agro-ecosystem for healthier production and a healthier environment. The inclusion of advanced green techniques and human skills in organic farming magnifies its production. Conservation of biodiversity, soil, water, and air and maintenance of local hydrological and nutrient cycles are the great benefits of it. Consequently, pollution-free safe organic crops are produced and the environment is conserved in organic farming systems. Organic farming contributes 1 to 2% of global food production. The demand for organic products in the world market is rising from day to day. On account of the above, the objectives of the present book are to draw current and advanced pictures of different approaches to organic farming for organic food production and conserving the environment by preventing pollutant-generating conventional chemical-based farming practices. The present book comprises current advancements in basic theoretical,
practical, application frameworks in organic farming by focusing latest empirical research findings on the following topics: basic concept, significance and future prospects of organic farming, organic agriculture, aquaculture, animal husbandry, environmental quality management, composting and vermicomposting, bioslurry and bio-fertilizers.

**Horticulture**

*Ficus carica: Production, Cultivation and Uses*

Zeynel Dalkılıç, PhD (Professor, Aydın Adnan Menderes University, Faculty of Agriculture, Department of Horticulture, South Campus, Aydın, Turkey)

In series: Horticulture, Viticulture and Viniculture

Publication Date: 05/06/2022

258 pp.

Hardcover: 978-1-68507-765-5. $195.00  
e-book: 978-1-68507-873-7. $195.00

Ficus carica, the fig, is one of the ancient crop plants originated from Anatolia. This is one of the most precious fruit crops beneficial to human health. It contains vitamins, minerals, protective compounds, and high carbohydrate content for human diet. On the one hand some people are starving in remote areas in the world, and on the other hand some people are getting obese. The more global climate change affects agricultural production and the food chain, the more the divide between the poor and the rich opens. While some experts draw attention to food security from farm to fork, some others advocate sustainable energy usage. When we are combating a global Covid-19 pandemic nowadays, remembering to help and back each other up has never been so important and striking in human history. Therefore, fig fruit can be considered as a functional food for human consumption. This noteworthy piece of work is composed of 10 chapters and covers the following subjects: Chapter 1, ancient history and cultural heritage; Chapter 2, production, trade, and marketing; Chapter 3, genetic diversity; Chapter 4, characteristics and caprification potentials; Chapter 5, gender identification using molecular markers; Chapter 6, effect of cordon pruning system; Chapter 7, virus diseases; Chapter 8, arthropod pests and nematodes; Chapter 9, postharvest handling and storage; and Chapter 10, modified atmosphere packaging and edible surface coating of fig plant.

**Pest Control**

*Pest Management: Methods, Applications and Challenges*

Tarique Hassan Askary, PhD (Division of Entomology, Faculty of Agriculture, Wadura (SKUAST-K), Sopore, Jammu & Kashmir, India)

In series: Agriculture Issues and Policies

Publication Date: 12/01/2022

389 pp.

Hardcover: 979-8-88697-268-9. $230.00  
e-book: 979-8-88697-393-8. $230.00

This book contains thirteen chapters focusing on pest management and control. The volume is broadly divided into two parts. Part I contains six chapters that deal with the role of chemicals in pest management. The opening chapter begins with the challenges and opportunities in the application of insecticides. The five additional chapters provide information on the pests of temperate fruits, pulses, spices and rice and the recent advances in their management. The concluding chapter of Part I deals with the utilization of chemicals in plant parasitic nematode management and the challenges faced thereof. In Part II, there are seven chapters devoted to microbes. The first chapter broadly explains the role of biopesticides in pest management, the new developments, challenges and future thrusts in this direction. The emphasis of the subsequent chapters shifts to different biocontrol agents viz., entomopathogenic nematodes, nematophagous fungi, bacteria and baculoviruses. One chapter deals exclusively with the integrated application of entomopathogenic nematodes and chemicals. The last chapter of the book deals extensively with the field application of biopesticides. An attempt has been made to present all important aspects and necessary guidelines for pest management in as simple and lucid a manner as possible with some essential data and nice photographs. This book will help agricultural scientists, research practitioners, extension workers, the farming community and especially those undergraduate and postgraduate students having entomology or nematology as their specialized subject.
Soil

Advantages and Disadvantages of Sandy Soils
Rashidi Bin Othman, PhD (Professor, Landscape Ecology, International Islamic University Malaysia (IIUM), Malaysia), Farah Ayuni Mohd Hatta, PhD (Research Fellow, Plant Biotechnology, Institute of Islam Hadhari, National University of Malaysia, Bangi, Selangor, Malaysia), Wan Syibrah Hanisah Wan Sulaiman, PhD (Assistant Professor, Environmental Management and Sustainability, International Institute for Halal Research and Training (INHART), Malaysia), Nur Hanie Mohd Latiff, PhD (Assistant Professor, Environmental Science, International Institute for Halal Research and Training (INHART), Malaysia) and Razanah Ramya, PhD (Research Fellow, Ecology & Ethno Science, Institute of the Malay World and Civilization, National University of Malaysia, Bangi, Selangor, Malaysia)

In series: Air, Water and Soil Pollution Science and Technology
Publication Date: 01/12/2023
257 pp.
Hardcover: 979-8-88697-486-7. $195.00
e-book: 979-8-88697-532-1. $195.00
This book presents the significant values of sandy soil and its properties, which include biotic and abiotic components, soil protection, soil amelioration, ecological indicators, and, differing from other books, Forest Therapy concept implementation in the sandy soil forest areas. This book may benefit people from different fields, including ecologists, landscape architects, researchers, and students to understand in-depth the properties of sandy soil, its characteristics, and functional values.

Special Topics

Agricultural Research Updates. Volume 41
Prathamesh Gorawala and Srushti Mandhatri

In series: Agricultural Research Updates
Publication Date: 05/17/2022
223 pp.
Hardcover: 978-1-68507-861-4. $250.00
e-book: 978-1-68507-920-8. $250.00
This volume includes eight chapters that provide updates in agricultural research. Chapter One elucidates utilization of refined soybean oil and the by-products from the refinery process relating to food production. Chapter Two deals with the use of single 6-benzylaminopurine spray to increase biomass accumulation in cacti. Chapter Three examines the governance efficiency of agricultural farms in Bulgaria. Chapter Four highlights the contribution of organic matter in traditional soil fertility management practices. Chapter Five addresses the potential of saponins in mycorrhizal plants for enhancing biosynthesis. Chapter Six examines the influence of arbuscular mycorrhizal fungi on growth and secondary metabolites on herbs including oregano, sage, basil, and others. Chapter Seven explicates the different aspects of soil fertility and its importance in agriculture. Lastly, Chapter Eight evaluates the extraction of polyphenols of some agro-industrial co-products with soybean oil as solvent to enhance antioxidant properties.
Agricultural Research Updates. Volume 42
Prathamesh Gorawala and Srushti Mandhatri

In series: Agricultural Research Updates
Publication Date: 10/06/2022
226 pp.
Hardcover: 979-8-88697-261-0. $250.00
e-book: 979-8-88697-319-8. $250.00
This volume includes eight chapters that provide updates in agricultural research. Chapter One focuses on elaborating the rice straw characteristics and its sustenance as a valuable material for commercial, industrial and environmental applications. Chapter Two aims to provide a literature review that assesses the role of ruminants, particularly cattle, for smallholder farmers in an integrated farming system and its economic impacts. Chapter Three aims to analyze the effect of fermented silage diets using agroindustrial by-products on milk production and cheese characteristics. Chapter Four describes the application of different machine learning algorithms in banana production systems in Venezuela. Chapter 5 shows an overview of published research studies about the features of nettle source, the extraction methodologies employed to obtain vegetable extracts, their bioactive chemical composition as well as some of their viable exploitation targets in order to summarize updated information for future development investigations on this plant. Chapter 6 investigates the competency factors influencing agricultural programmes. Chapter 7 examines the repercussions of climate change on production systems in small ruminants. Finally, in Chapter 8, the potential applications of drones for livestock management is discussed.

Agricultural Research Updates. Volume 43
Prathamesh Gorawala and Srushti Mandhatri

In series: Agricultural Research Updates
Expected Publication Date: 02/28/2023
294 pp.
Hardcover: 979-8-88697-550-5. $250.00
e-book: 979-8-88697-568-0. $250.00
This book contains seven selected articles on the topic of agricultural research. Chapter One is a resource and assessment and technological review of the production of biodiesel from spent coffee ground lipids. Chapter Two is a state of the art review of mango fruit aroma compounds. Chapter Three is a review of the Indian scenario and perspectives on non-edible oilseeds storage for biodiesel. Chapter Four examines new research on bioethanol production through agro-industrial wastewaters as feedstocks. Chapter Five explores Mentha piperita essential oil as an effective biopesticide against mosquitoes. Chapter Six reviews a simulation for controlling and predicting grain aeration effects. Finally, Chapter Seven is a comparison of genome-wide association studies in multi environmental trials.

Principles of Digital Image Processing for Agricultural Applications
Suryaprabha Deenan, PhD (Assistant Professor, Department of Computer Applications, Nehru Arts and Science College, Coimbatore, Tamil Nadu, India), Satheeshkumar Janakiraman, PhD (Associate Professor, Department of Computer Applications, Bharathiar University, Coimbatore, Tamil Nadu, India) and Seenivasan Nagachandrabose, PhD (Associate Professor, Department of Nematology, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India)

In series: Agriculture Issues and Policies
Publication Date: 12/29/2022
173 pp.
Softcover: 979-8-88697-428-7. $95.00
e-book: 979-8-88697-480-5. $95.00
This book is designed for undergraduate and post-graduate agricultural science students and agricultural engineering researchers to provide a comprehensive insight into the role of digital image processing in agriculture, and its basic principles to solve agriculture issues. This book is constructed with 11 different chapters comprising an introduction to digital image processing, various applications of digital image processing, the role of image processing in the agriculture sector, an overview of fundamental digital image processing procedures, image acquisition methods appropriate for various
agricultural situations, image enhancement tools for images acquired in different conditions, image segmentation methods concerned with plant and agriculture images, feature extraction techniques applicable for agricultural images, image classification or pattern recognition to solve agricultural problems, quality assessment metrics of reference and non-reference agriculturally important images and a case study on successful digital image processing application on the banana.

**Sustainable Agriculture**

**Strategies to Achieve Sustainable Development Goals (SDGs): A Road Map for Global Development**

*Rajani Srivastava, M.Sc., PhD (Assistant Professor, Department of Environment & Sustainable Development, Rajiv Gandhi South Campus, Banaras Hindu University, India)*

In series: *Agriculture Issues and Policies*
Publication Date: 08/10/2022
370 pp.
Hardcover: 978-1-68507-836-2. $230.00
e-book: 979-8-88697-027-2. $230.00

Sustainability entails addressing our demands without jeopardizing future generations’ ability to meet their own needs. In September 2015, 193 United Nations Member States adopted the 17 Sustainable Development Goals (SDGs), also known as the Global Goals, as a universal call for action to eradicate poverty, safeguard the environment, and ensure that all people experience peace and prosperity by 2030. These 17 interconnected global goals and 169 targets will be tracked and reviewed using a set of global indicators that will serve as a "blueprint for achieving a better and more sustainable future for everybody." Strategies to Achieve Sustainable Development Goals (SDGs): A Road Map for Global Development contributes to the intellectual foundation that will enable students to become the engines that will propel and maintain society on the path of sustainability and sustainable development through the difficult process of change.

**Chemometrics: Advances in Applications and Research**

*Larry D. Crenshaw*

In series: *Analytical Chemistry and Microchemistry*
Publication Date: 09/29/2022
280 pp.
Hardcover: 979-8-88697-274-0. $195.00
e-book: 979-8-88697-311-9; 979-8-88697-274-0. $195.00

Chemometrics is a discipline of chemistry that finds correlation between specific data using mathematical and statistical methods. During any thorough research, the scientists are handling vast amounts of data related to the samples which are being researched. In this type of research, finding the correlation (similarities or differences) between analyzed samples and data is of great importance. In the first chapter, commonly used chemometrics for spectral modeling transfer is examined. The second chapter provides an analytical tool to detect fraud when olive oil is illegally blended with VOs or a ‘legal’ blend is falsely labelled with respect to the botanical nature of the oils mixed and/or the percentage of each oil in the declared mixture. H-NMR spectral data of olive and virgin olive oils and their mixtures with the VOs most commonly used to make blends was analysed by pattern recognition techniques to develop multivariate classification and regression models, which were organised in a decision tree to afford a stepwise strategy for the aimed purposes. The next chapter focuses on a metabolomics approach based on H-NMR fingerprinting and multivariate data analysis for virgin olive oil stability assessments. In the fourth chapter, the authors review unsupervised methods using both principal component analysis (PCA) and hierarchical cluster analysis (HCA). Using these methods, they were able to spot the correlation between the samples and underlying data structures without the potential bias of scientists about the previous knowledge of data samples.
FTIR Spectroscopy: Advances in Research and Applications
Adriana S. França, PhD (Professora Titular, Departamento de Engenharia Mecânica, Universidade Federal de Minas Gerais, Brazil) and Leandro S. Oliveira, PhD (Universidade Federal de Minas Gerais, Brazil)

In series: Analytical Chemistry and Microchemistry
Publication Date: 05/26/2022
183 pp.
Softcover: 978-1-68507-571-2. $95.00
e-book: 978-1-68507-939-0. $95.00

Mid-infrared (MIR) or Fourier Transform Infrared (FTIR) spectroscopy is a vibrational spectroscopy technique that identifies chemicals based on the interaction of molecules with electromagnetic radiation in the mid-infrared region. The use of this technique has increased over the last decades due to its many advantages compared with the use of other methods, including non-destruction of the sample, minimal or no sample preparation, and the fact that it does not involve the use of any hazardous chemicals during the analysis. FTIR Spectroscopy: Advances in Research and Applications presents some of the most recent advances on the application of mid-infrared spectroscopy in biology, medicine and food science. It starts with an overview of chemometric methods that are needed for analysis and interpretation of infrared data (Chapter 1), followed by applications in the analysis of food and biological systems, including food provenance identification (Chapter 2) and structural aspects (Chapter 3), structural analysis of mollusk shells (Chapter 4), and applications in biomedical research (Chapter 5) and cancer diagnosis (Chapter 6). The book is written by an international panel of scientists with extensive expertise in the field of infrared spectroscopy, providing unique views and perspectives on both practical and theoretical applications.

Biochemistry

Biomolecules and Corrosion
Santosh Kumar Karn, PhD (Department of Biochemistry and Biotechnology, Sardar Bhagwan Singh University, Dehradun, India) and Anne Bhambri (Department of Biochemistry and Biotechnology, Sardar Bhagwan Singh University, Dehradun, India)

In series: Biochemistry Research Trends
Expected Publication Date: 01/31/2023
139 pp.
Softcover: 979-8-88697-458-4. $95.00
e-book: 979-8-88697-531-4. $95.00

Corrosion causes great losses to the economy every year. Microbial-influenced corrosion (MIC) is important for maritime, chemical engineering, and bioprocess engineering industries. Presently no environmentally friendly technology has been available to minimize the economic loss of biocorrosion. Currently available anti-biocorrosion technology depends heavily on chemical methods to regulate biofilm formation which has a negative impact on the environment. Therefore, it is essential to know the fundamentals of the roles of biomolecules within the whole process to develop detailed research capabilities and potential control and management strategies. This book targets the roles of EPS, proteins, lipids, DNA, and different metabolites currently known to be involved in the corrosion processes. The potential roles of EPS, proteins, lipids and enzymes are still poorly understood. There are still collective issues that need to be addressed, including the importance of the microbial role in MIC. More specifically, there exists a need to understand the impact of enzyme activities inside the biofilm matrix on the dynamics of corrosion reactions. Also, there is the involvement of metals or organometallic complexes in electron transfer and from chemically and morphologically diverse metallic surface films to ultimate electron acceptors.
Laboratory Guide: Concepts and Protocols for Practical Courses in Biochemistry and Molecular Biology

*Shafat Ahmad Latoo, M.S., PhD (Lecturer, Biochemistry, Islamia College of Science and Commerce, Srinagar, J & K, India) and Mohammad Asif Shah, M.S., PhD (Lecturer, Biotechnology, Govt College for Women, Nawakadal, Srinagar, J & K, India)*

In series: *Biochemistry and Molecular Biology in the Post Genomic Era*

Publication Date: 09/01/2022

286 pp.
Hardcover: 978-1-68507-862-1. $195.00
e-book: 978-8-88697-028-9. $195.00

Laboratory Guide: Concepts and Protocols for Practical Courses in Biochemistry and Molecular Biology communicates science to novice and advanced learners and teaches students about basic concepts and their practical applications in the laboratory. By understanding and properly applying the protocols included in this book, students will be able to complete their laboratory-based courses with ease.

The Biochemical Guide to Enzymes

*David Aebisher, PhD  and Dorota Bartusik-Aebisher, PhD (Medical College of The University of Rzeszów, University of Rzeszów, Rzeszów, Poland)*

In series: *Biochemistry Research Trends*

Publication Date: 12/29/2022

132 pp.
Softcover: 978-8-88697-410-2. $82.00
e-book: 978-8-88697-518-5. $82.00

In this book, the authors seek to demonstrate the significant role of enzymes used in metabolomic processes. The mechanism of enzyme action is provided. This book presents the discovery, chemical structure and mechanism of action of 24 enzymes. The metabolomic functions of enzymes in treatment and diagnostics are also described.

The Biochemical Guide to Proteins

*David Aebisher, PhD, DSc  and Dorota Bartusik-Aebisher, PhD, DSc (Medical College of The University of Rzeszów, University of Rzeszów, Rzeszów, Poland)*

In series: *Biochemistry Research Trends*

Publication Date: 01/26/2023

174 pp.
Softcover: 978-8-88697-493-5. $95.00
e-book: 978-8-88697-535-2. $95.00

This book aims to provide scientific information about proteins. 30 chapters have been written that describe the characteristics of proteins and their influence on human physiology. The authors presented the structure of individual proteins and their role in particular diseases. Proteins are among the most important nutrients responsible for the proper functioning of the body. Protein is one of the basic building blocks of our tissues, plays a role in transport, regulating biochemical processes and in reactions initiated by the immune system.
Chemical Elements

Selected Topics in Germanium
Charles A. Smith
In series: Chemistry Research and Applications
Publication Date: 09/07/2022
206 pp.
Softcover: 979-8-88697-200-9, $95.00
e-book: 979-8-88697-216-0, $95.00

Germanium (Ge) is a lustrous, hard-brittle, grayish-white chemical element with applications in electronic devices and fluorescent lamps, among others. This volume includes four chapters that cover germanium from a variety of perspectives. Chapter One presents recent studies and developments in hydrometallurgical extraction of Ge from base metals production waste. Chapter Two reviews the current knowledge of high-k gate oxides based on Ge semiconductor substrate. Chapter Three focuses on the biocoordination chemistry of Ge and the role Ge plays in the human body. Lastly, Chapter Four presents a dual material Fin Field Effect Transistor structure using Ge as channel material.

Chemical Engineering

Properties and Uses of Calcium Silicate
Amanda G. Carlton
In series: Chemical Engineering Methods and Technology
Publication Date: 09/01/2022
208 pp.
Hardcover: 979-8-88697-128-6, $160.00
e-book: 979-8-88697-184-2, $160.00

Calcium silicate is a compound that can be derived from limestone and diatomaceous earth, and has applications as an anticaking agent in food preparation, as insulation, and more. The four chapters of this book explore the various characteristics and applications of calcium silicate. Chapter One examines the effectiveness of calcium-silicate cements in furcal perforation repair. Chapter Two investigates methods of producing cement with lower energy consumption by using calcium silicate. Chapter Three deals with the use of synthesized calcium silicates in compositions for the restoration of buildings. Lastly, Chapter Four evaluates and compares the effects of simulated tissue fluid on the Berkovic microhardness of four calcium silicate cements.

Food Science and Technology

Algal Biorefining: Resource Expenditure and Exergo-Environmental Sustainability
Cynthia Ofori-Boateng, PhD (Sustainable Biofuels and Coproducts. Eastern Regional Research Center, ARS, USDA, Wyndmoor PA, USA)
In series: Waste and Waste Management
Publication Date: 06/01/2022
296 pp.
Hardcover: 978-1-68507-706-8, $230.00
e-book: 978-1-68507-921-5, $230.00

This book details the attractive features of algae as a sustainable third-generation feedstock for biorefineries. The commonly explored algal biofuels technologies such as pyrolysis, fermentation, transesterification, gasification, and briquetting/pelleting are assessed in a biorefinery concept and discussed based on resource utilization and sustainability considering biorefinery concepts. Process improvement options for sustainable algal biorefineries are also discussed in this book. Finally, the thermo-environmental sustainability of algal biorefineries using exergy and life cycle assessment (LCA) tools are reviewed and assessed based on literature data.
Bioprospecting of Natural Compounds in Food, Pharmaceutical and Biomedical Science
Siddhartha Pati, PhD (Director, NatNov Bioscience Private Limited, Odisha, India), Tanmay Sarkar, PhD (Lecturer, Malda Polytechnic, West Bengal State Council of Technical Education, Government of West Bengal, Malda, India) and Dibyait Lahiri, PhD (Assistant Professor, Department of Biotechnology, University of Engineering and Management, West Bengal, India)

In series: Food Science and Technology
Publication Date: 12/08/2022
248 pp.
Hardcover: 979-8-88697-361-7. $195.00
e-book: 979-8-88697-431-7. $195.00

Bioprospecting of nature-based compounds is an important topic of biochemistry, owing to their structural variety and great application prospects. These chemicals, in particular, have been shown to have positive physiological and immunological benefits. Their use has been linked to the prevention of a variety of diseases as well as the promotion of good health. This book mainly intends to highlight high-quality original research and review papers that include innovative bioactive compounds and cutting-edge characterization techniques that contribute significantly to the area of diverse potential applications. The goal of this book is to emphasize the possibilities of utilizing nature-based compounds with favorable health effects in their entirety.

Flavonoids: Dietary Sources, Biological Properties and Therapeutic Potential
Nirmala Sehrawat, PhD (Assistant Professor, Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University), Mullana-Ambala, India), Diwakar Aggarwal, PhD (Assistant Professor, Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University), Mullana-Ambala, India), Sushil Kumar Upadhyay, PhD (Assistant Professor, Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University), Mullana-Ambala, India) and Mukesh Yadav, PhD (Assistant Professor, Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University), Mullana-Ambala, India)

In series: Food Science and Technology
Publication Date: 09/07/2022
199 pp.
Hardcover: 978-1-68507-953-6. $160.00
e-book: 979-8-88697-031-9. $160.00

This book focuses on dietary flavonoids and their biological activity along with their therapeutic potential. Dietary flavonoids have emerged as a safe and effective way of treating, controlling or managing various diseases. Various flavonoids have been investigated as natural, cost effective, alternate and combinatorial therapy for managing various diseases and have been found promising. Various functional foods have proven effective and beneficial for human health due to the presence of flavonoids. Flavonoids have antibacterial, anti-inflammatory and antioxidant properties. The antioxidant and anti-inflammatory properties result in various health benefits to consumers. Various flavonoids have been found useful for management of diabetes, obesity, metabolic diseases, cancers, bone health, gut health, renal functions, liver diseases, neurological diseases, viral infections, overall immunity and other health improvements. Scientists throughout the world are studying the mechanisms of action of flavonoids against different diseases. Besides these mentioned complications, flavonoids provide overall health benefits.
Food Packaging: Safety, Management and Quality

Wing-Fu Lai, PhD (Principal Investigator, Ciechanover Institute of Precision and Regenerative Medicine, The Chinese University of Hong Kong (Shenzhen), China)

In series: Food Science and Technology
Publication Date: 10/20/2022
328 pp.
Hardcover: 979-8-88697-249-8. $230.00
e-book: 979-8-88697-314-3. $230.00

The objective of this book is to present a snapshot of the latest advances in the development, characterization and quality management of films for food packaging purposes. This book consists of three sections. The first section aims at presenting an introduction to materials selection and design for food packaging. Different types of materials, ranging from polysaccharides to graphene oxide nanocomposites, for film development will be discussed. The second section reviews the current status of engineering and optimization of food packaging films. Applications of the films for packaging foods such as green vegetables and mushrooms will also be presented. The last section is devoted to delineating practices useful for quality control and assurance in food packaging. Concepts and implementation of HACCP and other quality control measures will be discussed. Strategies to reduce human error in quality control of fresh produce labels will also be covered for food production purposes.

Polyacaprolactone: Applications, Synthesis and Characterization

Krishna Pramanik, PhD (Professor, Biotechnology & Medical Engineering, Head of the Center of Excellence in Tissue Engineering, National Institute of Technology Rourkela, India)

In series: Materials Science and Technologies
Publication Date: 09/21/2022
346 pp.
Hardcover: 978-1-68507-973-4. $230.00
e-book: 979-8-88697-119-4. $230.00

This book provides an overview of the advances in the synthesis of PCL, PCL-based biomaterials, and designing of appropriate PCL structures keeping in view of their applications in biomedical (orthopaedic implant), tissue engineering including bone, cartilage, skin, and cornea, protecting agent for material for medical devices and food packaging. The book shall be of special interest to material scientists, tissue engineers, medical scientists, mechanical engineers and biotechnologists with a better understanding of the physico-chemical and biological characteristics of PCL biomaterial to develop more appropriate and innovative, PCL-based composite materials for a wide field of applications. I hope the researchers, scientists, medical/healthcare professionals and industries shall find all these contributions interesting and will be inspired from reading to broaden their research towards the PCL-based material development and manufacturing of innovative products and devices from these materials.

Polyphenols and their Role in Health and Disease

Augustine Dion

In series: Food Science and Technology
Publication Date: 01/05/2023
165 pp.
Softcover: 979-8-88697-418-8. $95.00
e-book: 979-8-88697-472-0. $95.00

This book contains a selection of five chapters each discussing a different aspect of polyphenols and their roles in health and disease. Chapter One reviews the oral health benefits of polyphenols found in cocoa. Chapter Two is an overview of the effects of polyphenols on the microbiota of the gut and the consequent roles these play in health and disease. Chapter Three is a review of potential sources and health benefits of various polyphenols. Chapter Four examines different polyphenols from food and medicinal plants as well as their uses in Mexico. Chapter Five discusses the role of polyphenols in honey and their use as a natural therapeutic.
Proceedings of BIOSPECTRUM: The International Conference on Biotechnology and Biological Sciences: Biotechnological Intervention Towards Enhancing Food Value
Sanket Joshi, PhD (Deputy Director, Oil & Gas Research Center, Sultan Qaboos University, Muscat, Oman), Susmita Mukherjee (Professor and Head, Department of Biotechnology, Faculty Coordinator, Students’ Gymkhana, Faculty Coordinator Alumni Association, University of Engineering & Management, Kolkata, West Bengal, India) and Moupriya Nag, PhD (Assistant Professor, Department of Biotechnology, University of Engineering and Management, Kolkata, West Bengal, India)

In series: Food Science and Technology
Publication Date: 08/10/2022
240 pp.
Hardcover: 978-1-68507-985-7. $195.00
e-book: 979-8-88697-069-2. $195.00

This book deals with the theme of biotechnological intervention towards the food value chain. Chapters are based on papers submitted to “BIOSPECTRUM: The International Conference on Biotechnology & Biological Sciences.” The majority of topics of concern for researchers, policy makers, and the scientific community are included. Subjects discussed include biotechnological intervention in food security and value chain, practices to improve high quality agricultural produce and improved food security, probiotics, antioxidant activity of edible oils, fermentation to improve protein and phenolic profiles of plant products, marker assisted breeding for genetic improvement of pest-insect resistance in cash crops, and more.

General Chemistry

Properties and Uses of Antimony
David J. Jenkins

In series: Chemistry Research and Applications
Publication Date: 07/22/2022
134 pp.
Softcover: 979-8-88697-081-4. $82.00
e-book: 979-8-88697-088-3. $82.00

Antimony (Sb) is a semimetallic chemical element which can exist in metallic form or non-metallic form. Antimony has a variety of applications and properties which are described in the five chapters of this book. Chapter One describes the structural and electrochemical properties of Sb and examines its application in rechargeable batteries. Chapter Two provides a complete picture of phase equilibria in the Cu-Sb-S system obtained experimentally by differential thermal analysis and powder X-ray technique. Chapter Three characterizes new layered high-entropy alloys based on antimony and bismuth chalcogenides with tetradymite structure. Chapter Four determines the phase equilibria in the PbTe-Bi2Te3-Sb2Te3 system using differential thermal analysis, X-ray diffraction, and scanning electron microscopy techniques. Lastly, Chapter Five determines the thermodynamic properties of the manganese-antimony tellurides using an electromotive force method.

Pyrimidines and their Importance
Roger G. Ward

In series: Chemistry Research and Applications
Expected Publication Date: 03/10/2023
134 pp.
Softcover: 979-8-88697-656-4. $95.00
e-book: 979-8-88697-663-2. $95.00

This book contains four selected chapters on pyrimidines and their importance. The first chapter examines the synthesis, physico-chemical properties, and anti-fungal activity of new hybrids of thiazolo[4,5-D] pyrimidines with (1H-1,2, 4) triazole. The second chapter reviews pyrimidine ring containing natural products and their biological importance. The third chapter examines the regulation of the pyrimidine biosynthetic pathway in the bacterium Pseudomonas chlororaphis. The fourth and final chapter looks at pyrimidines as potential corrosion inhibitors.
The Chemistry of Calcium Carbonate  
George R. Hood  
In series: Chemistry Research and Applications  
Publication Date: 12/01/2022  
339 pp.  
Hardcover: 979-8-88697-442-3. $230.00  
e-book: 979-8-88697-448-5. $230.00  
This book contains seven selected chapters on the chemistry of calcium carbonate. Chapter One is an overview of the production and unique properties of precipitated calcium carbonate (PCC). Chapter Two explores the potential for increasing the efficiency of doxorubicin delivery systems by means of transforming porous calcium carbonate vaterites into calcium phosphate structures. Chapters Three, Four, and Five each characterize calcium carbonate by different analytical methods. Chapter Three utilizes the X-ray fluorescence method, Chapter Four utilizes energy dispersive X-ray spectroscopy (EDS), and Chapter Five utilizes atomic force microscopy (AFM). Chapter Six is a mobile elements analysis of calcium carbonate by means of X-ray photoelectron spectroscopy (XPS) characterization. Finally, Chapter Seven is a characterization of calcium carbonate’s mineral crystal structure using X-ray diffraction (XRD).

The Future of Biorefineries  
Waldemar Nyström  
In series: Chemistry Research and Applications  
Publication Date: 01/05/2023  
259 pp.  
Hardcover: 979-8-88697-524-6. $140.00  
e-book: 979-8-88697-528-4. $140.00  
This book is a collection of four chapters which review the future prospects of biorefineries. Chapter One is a review of the future of biorefineries from a circular economic perspective. Chapter Two is a prospective analysis of the challenges which biorefineries in Latin America face. Chapter Three reviews the advances and challenges to the process scale up for biorefineries in Latin America. Chapter Four is a spatially explicit assessment of a forestry biorefinery for the recovery of bio-based materials.

What to Know about Hydroxyapatite  
Isaac Lavoie  
In series: Biomaterials - Properties, Production and Devices  
Publication Date: 01/19/2023  
282 pp.  
Hardcover: 979-8-88697-523-9. $140.00  
e-book: 979-8-88697-529-1. $140.00  
This book is a collection of eight chapters which provide an overview of what one should know about hydroxyapatite (Ha). Chapter One reviews the modification of hydroxyapatite coatings for implant applications. Chapter Two discusses the removal of pollutants by means of hydroxyapatite composites. Chapter Three reviews the synthesis and characterization of hydroxyapatite. Chapter Four explores the potential use of functionalized hydroxyapatite in bone regeneration. Chapter Five reviews the applications of modified hydroxyapatite in catalysis. Chapter Six examines hydroxyapatite in terms of sustainable product development and waste valorization. Chapter Seven reviews the deposition of Ha-based coatings on bio-inert substrates by various deposition methods for improved bio-mechanical properties. Chapter Eight explores 3D printed Ha ceramics and its composite scaffolds for tissue engineering.
Organic Chemistry

The Essential Guide to Alkaloids
Deepak Kumar Semwal, PhD (Assistant Professor, Phytochemistry, Uttarakhand Ayurved University, Dehradun, India)
In series: Chemistry Research and Applications
Publication Date: 01/19/2023
240 pp.
Hardcover: 979-8-88697-456-0. $195.00
e-book: 979-8-88697-526-0. $195.00
This book is based on general information about alkaloids, their applications, and the chemistry of some natural and synthetic alkaloids. The contents are divided into a total of nine chapters contributed by different subject experts. The first chapter describes introductory knowledge and pharmaceutical perspectives of alkaloids. This section reports the different classification methods of alkaloids for better understanding. In addition, various extraction methods and pharmaceutical applications of alkaloids are also included in this chapter. The second chapter is based on chemical aspects and therapeutic uses of tropane alkaloids. Different uses of alkaloids in traditional medicine are described in the third chapter, which is based on scientific and historical evidence. The fourth chapter discusses alkaloids of the genus Solanum such as solamargine, solasonine, tomatidine and kukoamines. Catharanthus roseus, a well-known alkaloid-rich herb is covered in the fifth chapter with its key alkaloids like vinblastine and vincristine. The sixth chapter examines a bromopyrrole alkaloid namely stevensine which is naturally found in marine sponges. The seventh chapter focused on alkaloids derived from the Tinospora cordifolia, their structure and function and biosynthesis. Theophylline, a dimethylxanthine alkaloid with therapeutic properties is covered in the eighth chapter. This chapter also describes the applications of theophylline as a bronchodilator, immunomodulator and antiviral which make it an interesting candidate against coronaviruses. In addition to their medicinal properties, alkaloids are also useful as pesticides to protect plants from different pathogens and pests. These applications are included in the ninth chapter with the main emphasis on their unique properties such as being safer for the environment, easily degradable and low toxicity as compared to synthetic pesticides.

Waterborne Polyurethanes (WBPUs): Production, Chemistry and Applications
Dr. Abbas Mohammadi, PhD
In series: Polymer Science and Technology
Expected Publication Date: 03/20/2023
Hardcover: 979-8-88697-520-8. $230.00
e-book: 979-8-88697-628-1. $230.00
Over the course of fifteen selected chapters, this book explores the production, chemistry, and applications of waterborne polyurethanes (WBPUs). The first chapter is a conceptual introduction to WBPUs, and the following eight chapters cover different kinds of waterborne polyurethanes, such as those made with natural and synthetic polymers, polyurethane/acrylic hybrids, waterborne polyurethane nanocomposites, and even light stimuli responsive and conductive WBPUs. The remaining six chapters cover various applications of WBPUs ranging from textile treatment and food packing to biomedical applications such as drug delivery.

Physical Chemistry

A Closer Look at Chemical Kinetics
Dr. Victor Martinez-Luaces, PhD
In series: Chemistry Research and Applications
Expected Publication Date: 03/15/2023
Hardcover: 979-8-88697-484-3. $195.00
e-book: 979-8-88697-581-9. $195.00
This book proposes a closer look at chemical kinetics, which in this specific case, should be understood as a more detailed study of the connections of this discipline with other branches of chemistry and, even more, with other areas of science and technology. The first part—which includes two chapters—explores theoretical developments where the connections of chemical kinetics with mathematical modeling of scientific and industrial problems are clearly illustrated. The second part of the volume is devoted to experimental chemical kinetics, where specific reactions are studied in Chapters Three to Six. In all these chapters, kinetic studies allow the authors to propose mechanisms consistent with the experimental results obtained. In the third part of the book—which includes the following two chapters—different types of catalytic processes are studied, particularly those related to electrocatalysis, photocatalysis, and surface phenomena. The fourth part of this volume presents a work related to nanotechnology and its catalytic applications. The fifth and last part of this volume exemplifies the link between chemical kinetics and industrial processes, particularly in metallurgy.
Owing to possession of idiosyncratic physical attributes together with inherent magnetism, superconductivity and charge-density-wave order leads to potential usage over diverse domains, e.g., high-end microelectronic strategies, energy conversion and storage, catalysis, etc. 2D metallic TMDs have clutched extensive contemplation in the current time. Upon a thorough revisitation of a great deal of relevant literature, a visible dearth of a comprehensive compendium regarding such substances has been deeply realized. This edited book is aimed at filling such a gap via the presentation of eight different chapters devoted to systematically discussing fundamentals and applications of 2D metallic TMDs, so as to enable the readers to attain an inclusive concept and adequate knowledge regarding such materials.

This volume includes eight chapters that detail recent advances in chemistry research. Chapter One focuses on the kinetic-energy/information probes of chemical processes. Chapter Two reviews the chemistry and application of acrylamide and polyacrylamide as well as associated health risks. Chapter Three discusses inter- and intra-molecular force processes and absorption/luminescence energies in inorganic supramolecular systems in complexes and clusters based on gold. Chapter Four provides various applications, significant advancements, and future opportunities of the Chemical Reactor Network method. Chapter Five includes an overview of nanocellulose and discusses various factors that affect its surface morphology. Chapter Six presents a chemical product design methodology applied to complex fluids such as Pickering emulsions. Chapter Seven summarizes recent developments for H2O2-based green oxidation reactions using different transition metal salt catalysts. Finally, Chapter Eight provides a green perspective on the use of Oxone in organic synthesis.
continuous chemical reactors, considering the closed-loop performance of the reactor under a Proportional-Integral (PI)
controller. Chapter 5 is a comprehensive review on the new ferrocene functionalized copper complexes which are explored
in different organic transformations. Chapter 6 examines the luminescence quenching method for dissolved oxygen (DO).
Finally, the authors of Chapter 7 discuss single-walled carbon nanotubes based sensors for biomedical analysis, the latter of
which requires fast and reliable screening methods for the fast assessment and diagnosis of different diseases.

Advances in Chemistry Research. Volume 75
James C. Taylor
In series: Advances in Chemistry Research
Publication Date: 10/13/2022
246 pp.
Hardcover: 979-8-88697-259-7. $250.00
e-book: 979-8-88697-321-1. $250.00
This book consists of 8 chapters on the latest advances in chemistry research. Chapter 1 is
devoted to the state-of-the art catalysts for pyrolysis to obtain biofuels and chemicals
from biomass, plastics and other residues. The studies catalysts are critically revised,
focusing on the most promising solids and their improvements using bifunctional
catalysts. In addition, guidance on their future perspectives is discussed. Chapter Two
focuses on a general approach to the various sulfides on the occurrence of sulfites and the
methods usually used to monitor and warn about possible adverse reactions resulting
from their use in food products. A case study of sulfites in meat preparations is also
presented. In Chapter 3, the authors considered the methods available in literature on the
synthesis of apatite-structured compounds. Chapter 4 focuses on the magnetic torque
inside the superoxide radical as the driving force for oxygen activation by cofactor-free dioxygenases. In Chapter 5, the
developments in covalent organic frameworks membranes over the past few years are reviewed. The fabrication methods
of COF membranes, including bottom-up strategy and top-down strategy are discussed and the applications of COF
membranes in liquid separation are highlighted. Finally, the existing challenges and outlook in this field are analyzed.
Chapter 6 reviews various eco-friendly green and one-pot synthetic approaches useful in preparing 1,2,4-thiadiazole
containing derivatives. Chapter 7 gives brief details on the chemistry, physicochemical properties, clinical uses, and
chemical and photodegradation of 5-fluorouracil (5-FU), an anticancerous agent which is widely used in the treatment of
different malignancies including stomach cancer, head and neck cancer, and breast cancer. The last chapter of this volume
collectively describes the recent important catalytic roles of manganese Schiff base catalysts. The role of Mn-Schiff base
complexes in biological activities is also examined.

Advances in Chemistry Research. Volume 76
James C. Taylor
In series: Advances in Chemistry Research
Publication Date: 11/24/2022
319 pp.
Hardcover: 979-8-88697-378-5. $250.00
e-book: 979-8-88697-413-3. $250.00
This book is a collection of eleven chapters discussing various topics on recent advances
in chemistry research. Chapter One discusses the potential use of hydrogels in
engineering applications. Chapter Two reviews multifunctional supramolecular gels.
Chapter Three discusses the various processes used to dry aromatic plants and their
effects on final product quality. Chapter Four is an analysis of Single Crystal X-ray
structures and anticancer activity studies on substances derived from thiazolidine.
Chapter Five examines the design and function of low molecular mass gelators based on
derivatives of thiazolidine. Chapter Six is a review of the properties of bismuth niobate-
based materials via impedance spectroscopy, a powerful and non-destructive technique.
Chapter Seven examines the use of nitrogen containing conjugated building blocks for
use in organic electronics. Chapter Eight is a study of transition metal dichalcogenides through an ab-initio approach.
Chapter Nine reviews the synthesis process as well as antioxidant and antibacterial properties of substances derived from
thiazolidine-4-carboxylic acid. Chapter Ten examines the potential to remove beryllium from aqueous solutions by means
of chelating resins. The final chapter discusses the removal of beryllium from aqueous solutions, but presents the
possibility of doing so by means of biopolymer-enhanced ultrafiltration.
Advances in Chemistry Research. Volume 77

James C. Taylor

In series: Advances in Chemistry Research
Expected Publication Date: 03/10/2023
270 pp.
Hardcover: 979-8-88697-574-1, $250.00
e-book: 979-8-88697-625-0, $250.00

This volume presents nine selected chapters discussing recent advances in chemistry research. Chapter One examines the synthesis and various properties of chromophores with aminostyryl quinoxaline moiety for photonic and optoelectronic applications. Chapter Two reviews the importance of the chemiluminescent system of marine chromophore coelenterazine. Chapter Three is a literature review of computational alanine scanning mutagenesis for probing protein stability and protein-protein interactions. Chapter Four is an investigation of various studies of L-alanine in an aqueous medium. Chapter Five reviews the synthesis of indole containing chromophores. Chapter Six reviews the interaction of bis[N-(2,6-dimethylphenyl)aminophenylglyoximato-κ2N, N′]nickel(II) dimethyl sulfoxide solvate with some biomolecules by computational chemistry methods. Chapter Seven examines the interaction between DNA bases with the molecular structure of 1,4-Bis[(z)-2-(3-mesityl-3-methylcyclobutyl)-2-(thiosemicarbazono)ethyl]piperazine dimethyl sulfoxide.

Chapter Eight reviews the acetoxylation of camphene over activated carbons with sulfonic acid groups. Chapter Nine demonstrates the behavior of short oligomeric molecules as being that of bistable machines.

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Functional Analytical Techniques in Pharmaceutical Chemistry

Malik Saadullah (Government College University Faisalabad, Faisalabad Punjab, Pakistan)

In series: Analytical Chemistry and Microchemistry
Publication Date: 09/29/2022
299 pp.
Hardcover: 979-8-88697-059-3, $230.00
e-book: 979-8-88697-288-7, $230.00

Pharmaceutical Chemistry is a scientific discipline in the chemical and pharmaceutical field involved in the design and development of pharmaceutical drugs and their analytical techniques. Analytical chemistry is a branch of pharmaceutical chemistry that specializes in the analysis of various substances. It involves the separation, identification, and the quantification of matter by using classical and modern methods involving the use of scientific instruments. This book is an attempt to expose the analytical techniques used in pharmaceutical chemistry, so that one can possess command in analytical techniques.

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Introduction to Multidisciplinary Science in an Artificial-Intelligence Age: Properties of Matter: Elasticity, Permeability, Porosity, Viscosity, and Wettability

Luc Ikelle

In series: Chemistry Research and Applications
Expected Publication Date: 03/15/2023
Hardcover: 979-8-88697-522-2, $310.00
e-book: 979-8-88697-578-9, $310.00

Higher science education is about preparing people to address the scientific and technological challenges of our times. The list of these challenges includes, but is not limited to, feeding the world's growing population, improving the length and quality of lives on Earth, improving short- and long-distance communication and transportation, predicting, adapting to, and mitigating of natural hazards, and exploring space to improve our lives on Earth and for the survival of our civilization. This book series prepares students to understand and contribute, to address these challenges. Because these challenges, even in most of their narrow focuses, transcend the current college curriculums or programs. The Earth's climate change is an example of the narrow focus of the large topic of natural hazards. It spans almost all aspects of modern sciences, including biology, chemistry, and physics. Moreover, the span of these challenges may also be telling us that we have to rethink higher sciences education because the current splintering of science education into endless disciplines may not be the best or a unique way to prepare minds to address these challenges. We may be locking talented young minds to a certain viewpoint forever, an unintended indoctrination. At least some universities and colleges must start moving away from the monolithic way of delivering higher science education or to create a multidisciplinary science as a separate program and hopefully unleash a new generation of super engineers and scientists who are speaking scientific language. Moreover, this approach may optimize the higher education time for some people.
The Chemistry of Coumarin
Scott R. Sheley
In series: Chemistry Research and Applications
Expected Publication Date: 03/20/2023
Softcover: 979-8-88697-560-4. $82.00
e-book: 979-8-88697-597-0. $82.00
This book reviews and examines the chemistry of coumarin from different perspectives in six chapters. Chapter One reviews the one-pot synthesis of bromocoumarins via consecutive Pechmann condensation and bromination catalyzed by cellulose sulfuric acid. Chapter Two examines recent advances in heterocyclic compounds. Chapter Three looks at the chemical constituents and synthetic methods of bioactive coumarins. Chapter Four provides insights into the structure-activity relationship of alkynyl-coumarinyl ethers as selective mao-B inhibitors using molecular docking. Chapter Five reviews the phytochemistry and pharmacological actions of coumarin. Chapter Six is an overview of coumarins from different perspectives.

The Science of Carbamates
Dr. Gülü Kaymak (Kütahya Health Sciences University, Evliya Çelebi, Kütahya, Turkey)
In series: Chemistry Research and Applications
Publication Date: 05/03/2022
134 pp.
Softcover: 978-1-68507-708-2. $95.00
e-book: 978-1-68507-872-0. $95.00
This scientific book is about the toxic effects of carbamates, which have a functional carbonyl group, and how these effects can be eliminated. It is aimed to provide knowledge to all scientists related to this field. Although carbamates are generally considered to be pesticides, significant amounts of carbamates are used as medicine. This book contains eight chapters that examine carbamates from a variety of perspectives, including the latest research in this field. Chapter One comprehensively studies the chemical structure of carbamates used as drugs and the poisoning of carbamates. Chapter Two discusses how to develop cheap and efficient modes of remediation from the environment. Chapter Three highlights the important role of microorganisms in the degradation of carbamates. Chapter Four focuses on especially biodeterioration of carbamates by fungi. Chapter Five examines the probiotic microorganisms as detoxification tools in the degradation and transformation of carbamates. Chapter Six reviews the genetic risk that may occur as a result of exposure to carbamate pesticides in living things. Chapter Seven explains the genetic biomarkers that help determine the management of chronic pesticide toxicity by determining different gene polymorphisms in agricultural workers as a result of long-term contact with carbamates. Chapter Eight thoroughly studies the clinical information about intoxication that may arise as a result of carbamate group exposure.

What to Know about Lanthanum
Catherine C. Bradley
In series: Chemistry Research and Applications
Publication Date: 01/26/2023
115 pp.
Softcover: 979-8-88697-615-1. $82.00
e-book: 979-8-88697-623-6. $82.00
This book contains four chapters discussing essential facts about lanthanum. Chapter One describes lanthanum complexes with variable coordination and versatile applications. Chapter Two reviews the effects of lanthanum on aquatic organisms. Chapter Three discusses the synthesis and properties of nanodispersed luminescent structures based on lanthanum fluoride and phosphate for optopharmacology and photodynamic therapy of tumor diseases localized in cranial organs and bone tissues. Chapter Four discusses the removal and recovery of lanthanum from aqueous solutions by biosorption.
AI-Enabled IoT for Smart Health Care Systems
Tawseef Ayoub Shaikh, PhD (Senior Assistant Professor, Pandit Deendayal Energy University, Gandhinagar, Gujrat, India), Tabasum Rasool, PhD (Research Associate, Division of Interdisciplinary Sciences, Indian Institute of Science (IISc) Bangalore, India) and Mohammed Wasid, PhD (Assistant Professor, Interdisciplinary Centre for Artificial Intelligence, Aligarh Muslim University, Uttar Pradesh, India)

In series: Internet of Things and Machine Learning
Publication Date: 08/10/2022
269 pp.
Hardcover: 978-1-68507-977-2. $195.00
e-book: 978-1-68507-977-2. $195.00

The book focuses on intelligent computer-aided tools and techniques for early and precise disease diagnosis. Trending topics like deep learning and the internet of things have immense opportunities in healthcare data analytics. So, the contents of the book are targeted mainly at the automated CAD tools for healthcare data analytics. A major portion of the book emphasizes the recent state-of-the-art methodologies, tools, and datasets that are used in healthcare diagnosis, patient monitoring, healthcare recommendation systems, etc.

Applications of Artificial Intelligence in the Healthcare Sector
Jyoti Prakash Patra, PhD (Professor, Department of Computer Science and Engineering, Shri Shankaracharya Institute of Professional Management and Technology, Mujgahan, Raipur (CG), India) and Yogesh Kumar Rathore (Assistant Professor, Department of Computer Science and Engineering, Shri Shankaracharya Institute of Professional Management and Technology, Mujgahan, Raipur (CG), India)

In series: Computer Science, Technology and Applications
Expected Publication Date: 02/15/2023
184 pp.
Hardcover: 978-9-88697-502-4. $160.00
e-book: 978-9-88697-541-3. $160.00

This book was constructed with the syllabus of many countries’ universities in mind, so that undergraduate students, postgraduate students, and university researchers can utilize it for their studies. Chapter 1 of the book mainly focuses on the background of Artificial Intelligence and its applications in various fields. Chapter 2 presents the applications of Artificial Intelligence to save lives in rural areas. In Chapter 3, applications of Artificial Intelligence in pharmacies are explored. Chapter 4 is about the use of machine learning algorithms to extract and optimize features from the imaging of a diseased patient. Chapter 5 provides details about the machine learning techniques used to detect lung cancer and pneumonia. Chapter 6 examines applications of deep learning techniques to fight the COVID-19 Pandemic. In Chapter 7, the use of deep autoencoders in the fields of bio-medicine is described with its implementation, and Chapter 8 covers chronic disease diagnosis using Artificial Intelligence and the Internet of Things. The last two chapters, Chapters 9 and 10 give focus to currently available health monitoring devices and possible improvements of their design along with the applications of IoRT (Internet of Robotics Things) in healthcare.
Applied Artificial Intelligence (AI) to Green Power Technology
Yogesh Kumar Chauhan, PhD (Associate Professor, EED, KNIT, Uttar Pradesh, India), Ranjan Kumar Behera, PhD (Department of Electrical Engineering, Indian Institute of Technology, Patna Bihta, Bihar, India) and Asheesh K. Singh, PhD (Professor, M. N. National Institute of Technology Allahabad, Prayagraj, India)
In series: Computer Science, Technology and Applications
Publication Date: 11/17/2022
257 pp.
Hardcover: 979-8-88697-131-6. $195.00
e-book: 979-8-88697-317-4. $195.00
The aim of this book is to explore the feasible solutions of various issues related to performance of green power technologies with the help of proven artificial intelligence techniques. Issues related to performance, wind energy conversion systems, micro/pico hydropower generation systems, fuel cell systems, and other emerging green power technologies are covered. Also, challenges in distributed energy generating systems and other relevant issues are covered.

Artificial Intelligence and Digital Diversity Inclusiveness in Corporate Restructuring
Richa Goel, PhD (Assistant Professor, Department of International Business, Amity University, Uttar Pradesh, Noida, India), S. K. Baral, PhD (Professor, Department of Commerce, Faculty of Commerce & Management, Indira Gandhi National Tribal University (A Central University) Amarkantak, Madhya Pradesh, India) and Ramamurthy Venkatesh, PhD (Head of Business & Technology, Regional System Integrator, NETS International Communications, Dubai)
In series: Internet of Things and Machine Learning
Publication Date: 07/27/2022
335 pp.
Hardcover: 978-1-68507-786-0. $230.00
e-book: 979-8-88697-074-6. $230.00
In this era of globalization, diversity in the business environment is about more than gender, race and ethnicity. It now includes employees with diverse religious and political beliefs, education, socioeconomic backgrounds, sexual orientation, cultures and even disabilities. Companies are discovering that, by supporting and promoting a diverse and inclusive workplace, they are gaining benefits that go beyond the optics. There is no industry left where artificial intelligence is not used in some capacity. Considering the pace at which AI, machine learning and deep learning have been developing in recent years, it is expected that AI will profoundly modify the way we live and work. One of the areas in which this paradigm may stand out in the future is related to diversity and inclusion within companies. AI can detect potential bias and prejudice in decision-making by simulating intelligent behaviour, potentially reducing trends and prejudices that could hinder organizations’ ability to recruit diversely and inclusively.

Blockchain Technology: Advances in Research and Applications
Eva R. Porras, PhD (Managing Director and Lead Researcher at SmartLedger Blockchain Solutions and Honorary Research Collaborator of the Department of Business Economics, Rey Juan Carlos University, Spain)
In series: Economic Issues, Problems and Perspectives
Publication Date: 10/06/2022
261 pp.
Hardcover: 979-8-88697-162-0. $195.00
e-book: 979-8-88697-263-4. $195.00
Nakamoto's 2008 publication of the Bitcoin protocol started a technological and economic revolution. Now, more than 10,000 digital payment brands in the markets claim to be backed up by distributed ledger technologies (DTLs) or blockchains. This volume compares the characteristics of these technologies while it brings clarity to the different aspects of the ecosystem.
Machine Learning Algorithms for Engineering Applications: Future Trends and Research Directions
Prasenjit Chatterjee, PhD (Department of Mechanical Engineering, MCKV Institute of Engineering, West Bengal, India), Parmanand Astya, PhD (Dean, Faculty of Engineering & Technology, Sharda University, Uzbekistan), Sudeshna Chakraborty, PhD (Associate Professor, Sharda University, Greater Noida, Uttar Pradesh, India) and Dr. Pooja (Associate Professor, Faculty of Engineering & Technology, Sharda University, Uzbekistan)
In series: Advances in Data Science and Computing Technologies
Publication Date: 06/24/2022
214 pp.
Hardcover: 978-1-68507-449-4. $160.00
e-book: 978-8-88697-086-9. $160.00
Machine learning is a vital part of numerous academic and financial applications, in areas ranging from health care and treatment to finding relevant information in social networks. Large organizations thoughtfully apply machine learning algorithms with extensive research teams. The purpose of this book is to provide an intellectual introduction to statistical or machine learning (ML) techniques for those that would not normally be exposed to such approaches during their typical required statistical exercise. Statistical analysis is an integral part of machine learning and can be described as a form of it, often even utilizing well-known and familiar techniques, that has a different focus than traditional analytical practice in applied disciplines. The key notion is that flexible, automatic approaches are used to detect patterns within the data, with a primary focus on making predictions on future data.

Novel Developments in Computational Intelligence Systems and Their Applications in Multidisciplinary Areas
Manoj Sahni, PhD ( Associate Professor and Head, Mathematics, Pandit Deendayal Energy University, Gandhinagar, Gujarat, India), José Maria Merigó, PhD (Professor, School of Systems, Management and Leadership at the Faculty of Engineering and Information Technology, University of Technology Sydney, Australia), Ernesto León Castro, PhD (Professor, Universidad Católica de la Santísima Concepcion, Chile) and Ritu Sahni, PhD (Visiting Faculty, Pandit Deendayal Energy University, Gandhinagar, Gujarat, India)
In series: Computer Science, Technology and Applications
Publication Date: 2/9/2023
192 pp.
Hardcover: 979-8-88697-547-5. $160.00
e-book: 979-8-88697-585-7. $160.00
This book covers novel research based on various computational intelligence topics, including deep learning, artificial intelligence, machine learning, neural networks, healthcare, solutions to various problems using fuzzy systems and their applications in cryptography, assignment problems, transportation problems, cloud computing, etc. The goal of writing this book is to promote advances in the field of computational intelligence systems and to aid in the dissemination of results concerning recent applications in the areas of computational intelligence system-based applications, its allied branches like artificial intelligence, deep learning, cloud computing, fuzzy system, etc… among working professionals, researchers, and educators. This book will be useful for Data Scientists, web developers, cryptographers, medical researchers, engineers, researchers, and graduate level students in computer science, data science, operations research, and mathematics. It provides novel applications as well as new theoretical developments required to understand current computational intelligence topics such as deep learning, machine learning, fuzzy based systems, and various other relevant fields. Graduate and postgraduate Computer Science, Engineering, Information Technology and Mathematics students, as well as teachers, can use it as a reference book because they can find applications that can be used to clarify specific concepts.
Revolutionary Applications of Intelligent Drones
Mohit Angurala, PhD (Head of the Department (Computer Science and Engineering), Khalsa College of Engineering and Technology, Amritsar, India) and Vikas Khullar, PhD (Associate Professor, Department of Computer Science and Engineering, Chitkara University Institute of Engineering and Technology, Chitkara University, Punjab, India)

In series: Computer Science, Technology and Applications
Publication Date: 08/29/2022
155 pp.
Softcover: 978-1-68507-991-8. $95.00
e-book: 979-8-88697-123-1. $95.00

This work includes details starting from the basics of drone technology and discusses diverse aspects related to drone designing and implementation. Further chapters detail the impact of drone technology on society in terms of development, challenges, and security concerns. Then, implementations of artificial intelligence techniques such as machine learning, deep learning, etc., are discussed to translate drone technology into intelligent drone technology. There are diverse applications in the area of intelligent drone technologies such as agriculture, disaster management, security, military, etc. Hence, in this book, some of the drone-specific applications are discussed.

Understanding Pattern Analysis
Mangesh M. Ghonge, PhD (Associate Professor, Department of Computer Engineering, Sandip Foundation’s Sandip Institute of Technology and Research Centre, Nashik, India), Pradeep Nijalingappa, PhD (Professor, Computer Science and Engineering, Bapuji Institute of Engineering and Technology, Davangere, Karnataka, India) and Ahmed J. Obaid, PhD (Assistant Professor, Department of Computer Science, Faculty of Computer Science and Mathematics, University of Kufa, Iraq)

In series: Computer Science, Technology and Applications
Publication Date: 08/10/2022
159 pp.
Softcover: 978-1-68507-951-2. $95.00
e-book: 978-1-68507-777-8. $95.00

Understanding Pattern Analysis provides an overview of the most recent research on the creation and application of synergistic approaches to pattern analysis in real-world contexts. This book discusses a variety of hybrid intelligence strategies, including application of pattern analysis to astrobiology, pattern analysis for predictive systems of modern agriculture practices, cognitive pattern recognition, cognition of 5G network toward digital healthcare for smart cities and object detection for autonomous vehicles.

Computer Science

A Guide to Design and Analysis of Algorithms
Soubhik Chakraborty (Professor, Department of Mathematics, Birla Institute of Technology, Mesra, Jharkhand, India), Prashant Pranav (Assistant Professor, Department of Computer Science and Engineering, Birla Institute of Technology, Mesra, Jharkhand, India), Naghma Khatoon (Assistant Professor, Faculty of Computing and Information Technology, Usha Martin University, Jharkhand, India) and Sandip Dutta (Professor, Department of Computer Science and Engineering, Birla Institute of Technology, Mesra, Jharkhand, India)

In series: Computer Science, Technology and Applications
Publication Date: 12/15/2022
114 pp.
As there can be more than one algorithm for the same problem, designing and analyzing an algorithm becomes important in order to make it as efficient and robust as possible. This book will serve as a guide to design and analysis of computer algorithms. Chapter One provides an overview of different algorithm design techniques and the various applications of such techniques. Chapter Two reviews the divide and conquer strategy and the algorithm types that employ it. Chapter Three explores greedy algorithms and some problems that can be solved with this approach. Chapter Four discusses in depth the dynamic programming approach. Chapter Five provides a solution to the N-Queens problem utilizing a backtracking approach. Chapter Six elucidates the reader to branch and bound techniques and provides three solutions to problems implementing them. Part II of this book begins with Chapter Seven, where two different approaches to the analysis of algorithms are discussed. Chapter Eight reviews randomized algorithms through an empirical lens. Chapter Nine discusses Master Theorem and the many kinds of problems this Theorem can solve. Chapter Ten, the final chapter, provides notes on the empirical complexity analysis of algorithms.

Applying an Advanced Information Search and Retrieval Model in Organisations: Research and Opportunities

Maria del Carmen Cruz Gil (Professor, Zaragoza University, Facultad de Filosofía y Letras, Spain)

In series: Computer Science, Technology and Applications
Publication Date: 05/26/2022
99 pp.
Softcover: 978-1-68507-560-6. $82.00
e-book: 978-1-68507-914-7. $82.00

In our lives, we need information continuously to carry out tasks of any kind (personal, academic, and professional). Depending on the context in which we find ourselves and the time available to carry out the task, emotions such as uncertainty and stress can present in the search process. But the important thing is that when we know the search process, the uncertainty and stress are minimized. In this context, the author investigates existing studies on the search and retrieval of information from the user's perspective. The study turned out to be very complex for two reasons: 1. Scientific literature is widely dispersed in different articles and academic books, even if it was the same search and information retrieval model. 2. Sources are not accessible to all people. As a consequence, the author plans to disseminate the results of this research with the aim of facilitating knowledge and understanding of anyone interested in entering the information search and retrieval process. With the collaboration of Nova Science Publishers, we find ourselves before an affordable, simple, and manageable book. Chapters 1 to 7 outline the search and information retrieval models of the following authors: Belkin, Ingwersen, Ellis, Kuhlthau, Wilson, Dervin, and Byström. In Chapter 8, the author presents her own model for searching and retrieving information. This model is formed by some elements previously seen from the other authors, but also by other novel ones such as the organisation. This is due to the fact that some of the tasks carried out with greater frequency and complexity are those that intervene in our professional tasks, in which scientific studies confirm that an effective organisation cannot be conceived without efficient information management.

Internet of Everything: Smart Sensing Technologies

T. Kavitha (Professor, Department of Electronics and Communication Engineering, AMC Engineering College, Visvesvaraya Technological University (VTU), Bengaluru, India), V. Ajantha Devi (Research Head, AP3 Solutions, Chennai, Tamil Nadu, India), S. Neelavathy Pari (Assistant Professor, Department of Computer Technology, Anna University, MIT Campus, Chennai, India) and Sakkaravarthi Ramanathan (Professor, Computer Science Department, Vanier College, Saint Laurent, Quebec, Canada)

In series: Internet of Things and Machine Learning
Publication Date: 06/17/2022
353 pp.
Hardcover: 978-1-68507-865-2. $230.00
e-book: 978-1-68507-943-7. $230.00

The Internet of Things (IoT) refers to a system of interconnected computing devices with sensors, processing ability, and software, which connect and communicate with other devices and systems over the internet or other networks. IoT technology enables applications that perform tasks without human-to-human or human-to-computer interaction, improving efficiency and generating new opportunities. IoT digitalizes industries to improve product quality and cost and creates the potential for a fully networked, human-centered society with healthy economic growth. The concept of Internet of Everything (IoE) goes beyond IoT to include the connections between people, things, data, and processes combined into a
common interrelated system, leveraging human and artificial intelligence to improve decisions and experience, and represents the future of IoT technology. Internet of Everything: Smart Sensing Technologies addresses the forefront of study of IoE by presenting state-of-the-art research along with current and future challenges in building new, smart applications. Specific topics covered include sensing, connectivity and communication, knowledge extraction by discovering resources for modeling information, and security and privacy. The sixteen chapters of this book will benefit students, researchers, and others who are interested in the future of this exciting technology.

**Machine Learning Analysis of qPCR Data Using R**

Luigi Marongiu, PhD (Research Associate, Viral Oncolytic Group, University of Tübingen, Germany)

In series: Research Methodology and Data Analysis

Publication Date: 11/17/2022

135 pp.

Softcover: 979-8-88697-339-6. $82.00

e-book: 979-8-88697-380-8. $82.00

The quantitative polymerase chain reaction (qPCR) is a versatile and popular assay for quantifying nucleic acids. With the recent expansion of the number of reactions per assay, there is a need for an accurate method to report the data suitable for automation. This book will describe such a method, based on machine learning analysis, and implement it with publicly available tools. This book is intended for researchers and will provide a detailed introduction to the programming language R, including references for the most common functions. This book will provide an advanced strategy for the objective analysis of qPCR data suitable for experts in the field and an introduction to qPCR and computational analysis for students.

**Speech Recognition Technology and Applications**

Vasile-Florian Păiș (Research Institute for Artificial Intelligence "Mihai Drăgănescu", Romanian Academy, Bucharest, Romania)

In series: Computer Science, Technology and Applications

Publication Date: 09/07/2022

226 pp.

Hardcover: 978-1-68507-929-1. $160.00

e-book: 979-8-88697-179-8. $160.00

Speech represents the most natural means of communication between humans. By using Automatic Speech Recognition (ASR) and Text-to-Speech (TTS) systems, machines also become able to interact with humans using speech. This is of particular importance for building interactive robots or speech-enabled chatbots. This book starts by exploring state-of-the-art ASR and TTS approaches, making use of artificial neural networks, relevant also to low-resource scenarios. Then, it explores the application of speech technology to specific domains, such as the medical domain, human-robot interaction, and even interlinking of speech and text resources using linguistic linked open data (LLOD) principles. The book also provides punctuation restoration techniques, enabling the production of high-quality text transcripts. Included algorithms have low latency and can be parallelized, thus enabling their use in interactive systems. Chapter authors are professors and scientific researchers with experience in building and using natural language processing algorithms and speech applications.

**The Future of Data Mining**

Cem Ufuk Baytar, PhD (University Lecturer, Management Information Systems, Istanbul Topkapı University, Istanbul, Turkey)

In series: Research Methodology and Data Analysis

Publication Date: 10/20/2022

152 pp.

Softcover: 979-8-88697-250-4. $95.00

e-book: 979-8-88697-315-0. $95.00

The purpose of this book is to discuss data mining, which is a subset of data science, from a variety of perspectives. With the technological advances of recent years, new software and hardware-based systems are available in most business environments. With these systems, data production continues to increase in personal, corporate, commercial and many other areas. Information systems convert raw data, which alone are not so meaningful, into information after the processes are applied. Database systems are necessary for the storage and management of the information generated. Revealing meaningful relationships hidden in a stack of high-volume data shows the function of
data mining. Processing big data has become important to produce information that will support business decisions and be a strategic tool in today's competitive environment. In this context, the effectiveness of data mining applications is increasing day by day as a decision support system to develop marketing strategies in every sector by identifying customer behavior and target groups.

**Programming and Software Development**

**Neural Network Control of Vehicles: Modeling and Simulation**  
*Igor Astrov (Tallinn University of Technology, Harjumaa, Estonia)*

In series: *Computer Science, Technology and Applications*  
Publication Date: 06/01/2022  
220 pp.  
Hardcover: 978-1-68507-757-0. $160.00  
e-book: 978-1-68507-916-1. $160.00  

In the past few years, considerable interest has been shown and relevant resources have been devoted to the design, development and operation of autonomous aerial, underwater, and sea surface vehicles. The possibility of removing human pilots from danger and the size and cost advantages of autonomous vehicles are indeed attractive, but often have to be compared with the performance that can be attained by human-piloted vehicles, in terms of mission capabilities, efficiency and flexibility. The operation of an autonomous vehicle in an unknown, dynamic and potentially hostile environment is a very complex problem, especially when the autonomous vehicle is required to use its full maneuvering capabilities and to react in real time to changes in the operational environment. A common way of dealing with highly complex systems is via a hierarchical decomposition of the activities to be performed by the autonomous vehicles. However, only limited results can be obtained with this method. Another method is to design a hybrid control system that offers safety and performance guarantees by use of neural control technique. Neural networks appear to offer a new, promising direction toward better understanding of the most difficult control problems that have previously been very difficult or impossible to solve. This book provides basic approaches for the modeling and simulation of neural control systems using the MATLAB/Simulink environment for various types of vehicles, emphasizing realistic dynamics with numerous examples. These types of vehicles include experimental aircraft, self-guided missiles, unmanned miniature helicopters, autonomous underwater vehicles, and more.

**Special Topics**

**A Beginner's Guide to Virtual Reality (VR) Modeling in Healthcare Applications with Blender**  
*Yuk Ming Tang, PhD (Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, Hong Kong), Ho Lun Ho (Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, Hong Kong), Ka Yin Chau (Faculty of Business, City University of Macau, Macao) and Yan Wan (Faculty of Business, City University of Macau, Macao)*

In series: *Computer Science, Technology and Applications*  
Publication Date: 07/27/2022  
166 pp.  
Softcover: 978-1-68507-811-9. $95.00  
e-book: 978-1-68507-945-1. $95.00  

This book aims to guide using 3D modeling techniques, texturing, and assigning material by using healthcare as the core application for demonstration. Blender is a free and open-source digital content creation (DCC) tool that provides the freedom to users of different backgrounds to get started quickly. The demonstrating of healthcare application enables related expertise to be equipped with modeling and rendering techniques through understanding background knowledge in character modeling, dressing and animation in healthcare application. The target audience includes professionals and researchers working in virtual reality, computer graphics, computer simulation, design, visual arts in various disciplines, e.g., computer science, design, art, healthcare, rehabilitation, education, and information technology.
A Closer Look at Online Deception and Disinformation
Suzanne M. Williams
In series: Internet Policies and Issues
Publication Date: 11/17/2022
250 pp.
Hardcover: 978-8-88697-310-5, $150.00
e-book: 978-8-88697-377-8, $150.00
In the two-plus decades since the creation of the internet, we have seen life for Americans and their families transformed in many positive ways. The internet provides new opportunities for commerce, education, information, and connecting people. However, along with these many new opportunities, we have seen new challenges as well. Bad actors are stocking the online marketplace, using deceptive techniques to influence consumers, deceptive designs to fool them into giving away personal information, stealing their money, and engaging in other unfair practices.

Blockchain Technology Based Big Data for Healthcare: Concept and Paradigm
Basetty Mallikarjuna, PhD (Associate Professor, School of Computing Science & Engineering, Galgotias University, Greater Noida, India), Niranjanamurthy M, PhD (Assistant Professor, Department of Computer Applications, M S Ramaiah Institute of Technology, Bangalore, India), Sheng-Lung Peng, PhD (Professor, Department of Computer Science and Information Engineering, National Dong Hwa University, Hualien, Taiwan) and Amulya MP (Assistant Professor, Department of Computer Science and Engineering, BGSIT / Adichunchanagiri University (ACU), Karnataka, India)
In series: Advances in Distributed Computing and Intelligent Data Analytics
Publication Date: 10/06/2022
224 pp.
Hardcover: 978-1-68507-968-0, $160.00
e-book: 978-8-88697-204-7, $160.00
Blockchain is an open-source technology that offers an alternative to the traditional intermediary for transfers of cryptocurrency, among other applications. This book discusses existing research on blockchain and big data and provides its readers with the state-of-the-art in blockchain based on big data for healthcare.

Frontiers in Quantum Computing: New Research
R. Anandan, PhD (Professor, Head of the Department of Computer Science and Engineering, Vels Institute of Science, Technology and Advanced Studies, Tamil Nadu, India)
In series: Computer Science, Technology and Applications
Publication Date: 05/13/2022
265 pp.
Hardcover: 978-1-68507-816-4, $195.00
e-book: 978-1-68507-900-0, $195.00
The objective of this book is to communicate advancements of knowledge and help disseminate results concerning recent applications and case studies in the area of quantum computing among working professionals and professionals in education and research, covering a broad cross-section of technical disciplines. This book will allow students to explore knowledge in quantum computing to produce serviceable and innocuous systems as well as purposeful systems with cutting-edge technology. To yield computer systems with decent usability, developers must attempt to understand the factors that determine how people use technology. This book will cater to an extensive cross-sectional and multi-disciplinary readership ranging from academics, business delegates, CEOs, communication designers, computer scientists, digital customers, e-decision makers, e-learning environment designers, industrial leaders, industry consultants, key workers, law enforcement agencies, managers, practitioners, professionals, professors, profit/non-profit e-organizations, programmers, R&D/professional...
research communities, security architects, stakeholders, students, support staff and university researchers/scholars of various communities, such as artificial intelligence, cyber-physical systems, ethics, robotics, safety engineering, safety-critical systems, standardization and certification digital forensics and application domain communities such as aerospace, agriculture, automotive, critical infrastructures, healthcare, manufacturing, retail, smart transports, smart cities and smart healthcare, using real case studies and projecting outcomes, showing the intricate details of quantum computing in these real-life scenarios. As a final point, this book will provide up-to-date, premeditated, and creative information to those engrossed in the field of quantum computing.

Horizons in Computer Science Research. Volume 22  
Thomas S. Clary  
In series: Horizons in Computer Science  
Publication Date: 09/01/2022  
290 pp.  
Hardcover: 978-8-8697-101-9. $250.00  
e-book: 978-8-8697-234-4. $250.00  
This volume includes eight chapters that describe recent advances in computer science research. Chapter One reviews the taxonomy of phishing attacks and focuses on the soft computing-based anti-phishing techniques proposed for identifying phishing websites. Chapter Two gives the basic theory and applications of quantum hypercomputation. Chapter Three presents a method using soft sets for a qualitative assessment of human-machine performance under fuzzy conditions and describes how topological spaces can be extended to fuzzy structures. Chapter Four considers forensic computing, collection of relevant data, and metrology and measurements in the cybernetic system. Chapter Five explores the features of phase change memory and proposes a series of strategies to improve its lifetime. Chapter Six proposes a new method for developing Quality of Service routing applications in Software Defined Networks. Chapter Seven discusses the recent trends of machine learning applications in cosmology and gravitational wave astronomy. Finally, Chapter Eight introduces a write-aware data allocation approach to address the data assignment problem and a bucket-based wear-leveling algorithm for phase-change memory data management.

Horizons in Computer Science Research. Volume 23  
Thomas S. Clary  
In series: Horizons in Computer Science  
Publication Date: 10/27/2022  
250 pp.  
Hardcover: 978-8-8697-337-2. $250.00  
e-book: 978-8-8697-399-0. $250.00  
This volume contains ten chapters which present recent and future research concepts in computer science research. Chapter One presents new theorems for analysing digital logic gates. The second chapter reviews current work to postulate the future of intrusion detection systems in cloud computing. Chapter Three analyzes the storage structure and management of distributed ledger technologies in blockchain systems. Chapter Four reviews an experiment testing the bouncing phenomenon of sand particles on a membrane and how their random walk forms Chladni patterns. The fifth chapter discusses a robust model for the foraging of microorganisms by random walk patterns. Chapter Six presents research into the use of printed circuit board from a recycling based point of view. The seventh chapter is an introduction to sparse distributed representations in text data curation in the context of natural language processing (NLP). The eighth chapter reviews a wide ranging survey of research into intrusion detection systems in the Internet of Things (IoT) model of the world. Chapter Nine provides a far reaching review of modern issues in digital forensic processes in the environment of cloud computing. The tenth and final chapter uses a schema of hegemonic praxis to analyze issues of cyber warfare in the modern world.
Kennedy Njenga (University of Johannesburg, Johannesburg, South Africa)

In series: Cybercrime and Cybersecurity Research
Publication Date: 11/24/2022
102 pp.
Softcover: 979-8-88697-390-7. $82.00
e-book: 979-8-88697-450-8. $82.00

This book is the outcome of a review of literature on the possible concerns and issues Small and Medium-Sized Enterprises (SMEs) would face when adopting the fourth industrial revolution (4IR) technologies. From a review of the current and past literature, this book disseminates insightful ideas and developments in the field of information and cybersecurity. It is intended that these ideas will shape how SMEs now and in the immediate future address information and cyber security risks. This book is also of particular interest to information security administrators managing SME information security, who may gather additional insights on the emergent information security threats facing SMEs that are discussed. A key consideration for this book is the innovative ways that SMEs have adopted 4IR technologies but, in doing so, have attracted unknown information and cyber security risks.

Geology

Neogene Deep Water Benthic Foraminifera from the Indian Ocean – A Monograph
Anil Kumar Gupta (Professor, Department of Geology and Geophysics, Indian Institute of Technology Kharagpur, Kharagpur, WB, India)

In series: Earth Sciences in the 21st Century
Publication Date: 12/01/2022
337 pp.
Hardcover: 979-8-88697-385-3. $230.00
e-book: 979-8-88697-412-6. $230.00

This book pertains to the broader discipline of micropaleontology, presenting detailed taxonomic descriptions of deep water benthic foraminifera from the three Deep Sea Drilling Project (DSDP) sites. Brief notes on microhabitats of benthic foraminifera, biostratigraphy and their importance in understanding history of oxygen minimum zone and deep-sea circulation in the Indian Ocean during the Neogene have also been provided. The purpose of this volume is to cater to the greater needs of graduate students, researchers and professionals working on Foraminifera – their systematic descriptions and use in paleoceanography from the marine realms with special interests on the Indian Ocean microfauna. This book is expected to serve as both a reference and textbook to students and experts. This book will reduce the ambiguities in taxonomic status of deep-water benthic foraminifera to a great extent since there is disagreement about the application of names to certain benthic foraminiferal taxa. For students of geology, this book will be relevant to the study of subjects of micropaleontology, paleoceanography and paleoclimatology, and marine geosciences. It will be useful for both teaching and research to graduate, doctoral and post-doctoral students.
Radium in the Hydrosphere of Brazilian Alkaline Areas
Luis Henrique Mancini, PhD (Researcher, Departamento de Geologia, UFPR- Universidade Federal do Paraná, Curitiba (PR), Brazil) and Daniel Marcos Bonotto (Full Professor of Geochemistry, UNESP-Universidade Estadual Paulista “Júlio de Mesquita Filho”, Rio Claro (SP), Brazil)
In series: Environmental Remediation Technologies, Regulations and Safety
Publication Date: 07/08/2022
224 pp.
Hardcover: 978-1-68507-889-8. $160.00
e-book: 979-8-88697-009-8. $160.00
Radium is a radioactive element and the heaviest in the group of alkaline earth metals, with geochemical characteristics that are very similar to those of barium and calcium. In the environment, its chemical properties are controlled by ion exchange and adsorption processes, mechanisms that control the rate of radium transport in surface waters, groundwaters and soil systems. There are four natural isotopes of radium: 226Ra (half-life = 1,622 years, alpha particle emitter, member of the 238U decay series); 223Ra (half-life = 11.4 days, alpha particle emitter, member of the 235U decay series); 228Ra (half-life = 6.7 years, beta particle emitter, member of the 232Th decay series); 224Ra (half-life = 3.6 days, alpha particle emitter, member of the 232Th decay series). The dominant mineralogical characteristics of the rocks in the drainage basins and aquifers strata considerably influence the presence of these radium isotopes in the waters. Thus, the geological characteristics of the drainage basins and aquifers, physico-chemical properties and hydrological conditions are factors affecting the radiological quality of the surface waters and groundwaters. The radium isotopes usually monitored in waters for the purpose of assessing their radiological quality are 226Ra and 228Ra due to their longer half-life. The limits recommended by the Brazilian and World Health Organization legislations for the intake of 226Ra and 228Ra in drinking water are 1 Bq/L (=1000 mBq/L) and 0.1 Bq/L (=100 mBq/L), respectively. Analyses of most natural waters have shown that 226Ra and 228Ra are present at very low activities, usually lower than the guideline reference values. However, some rock types in fractured aquifers contain relatively high concentrations of uranium and thorium, such as granites and alkaline rocks that can contribute to the release of enhanced radium levels into the waters. Additionally to these geogenic factors, anthropogenic activities such as ores mining, fertilizer production and electricity generation by nuclear power plants may also increase the presence of radium in the water resources. This book reports a relevant 226Ra and 228Ra dataset in waters and bottom sediments occurring at two alkaline geological domains of Minas Gerais State, southeast Brazil.

Hydrology

Water Scarcity: Global Perspectives, Issues and Challenges
Saeid Eslamian, PhD (Professor, Center of Excellence in Risk Management and Natural Hazards, Isfahan University of Technology, Isfahan, Iran), Prabal Barua, PhD (Program Manager, Young Power in Social Action, Bangladesh) and Faezeh Eslamian, PhD (Department of Bioresources Enginering, Faculty of Agricultural and Environmental Sciences, McGill University, Montreal, Canada)
In series: Water Resource Planning, Development and Management
Publication Date: 07/27/2022
249 pp.
Hardcover: 978-1-68507-812-6. $195.00
e-book: 979-8-88697-085-2. $195.00
This book includes diverse perspectives on the water scarcity problem for global communities. The agriculture sector is one of the most affected sectors in the world. The authors in this book explore the adaptation techniques used by agriculture farmers to mitigate the water crisis and increase food production. This book aims to depict the main global problems and challenges that have a negative impact on water insecurity, human health, and food security, with the underlying objective of highlighting the need for reinforcing its full application in all contexts and countries.
**Meteorology and Climatology**

**Handbook of Uncertainty in Eurasian Forecasting (HEF)**

*Eslamian, PhD (Professor, Water Engineering, Isfahan University of Technology, Iran), Bintul Huda, PhD (Consultant, Water Resources Management Centre, National Institute of Technology, Jammu & Kashmir, India)* and *Eslamian, PhD (Department of Bioresource Engineering, McGill University, Montreal, Quebec, Canada)*

In series: Meteorology and Climatology

Publication Date: 09/07/2022

277 pp.

Hardcover: 978-1-68507-966-6. $195.00

e-book: 978-8-88697-158-3. $195.00

Forecasting is a technique that uses historical data as inputs to make informed estimates that are predictive in determining the direction of future trends. Eurasia comprises about 36% of the world’s total area and about 70% of the world population. Eurasia comprises Asia and Europe, although, geographically, it is a single continent with arbitrary geological borders. Eurasia has been a home to the world’s oldest civilizations and plays an important part in the mainstream history of the world. Eurasian countries have many common characteristics and forecasting of this region can prove to be of major help in integrated resources management, leading to sustainable development, optimum decision making of international world organizations and achieving goals of world peace. This book deals with the various aspects of social and environmental importance in this region, especially climate change and hydrological modeling and flood forecasting.

**Observing Micrometeorology: A Personal Tour through an Evolving Science**

*B. Hicks (Metcorps, Norris, TN USA; Adjunct Professor, Agriculture, University of Tennessee, Knoxville, TN USA)*

In series: Earth Sciences in the 21st Century

Publication Date: 12/01/2022

328 pp.

Hardcover: 978-8-88697-369-3. $230.00

e-book: 978-8-88697-426-3. $230.00

In early 1962, at the age of 21, Bruce Hicks found himself temporarily in charge of a micrometeorological experimental program conducted at Kerang, in Victoria (Australia). He had no schooling in the atmospheric sciences, and so started a self-education program based on (a) what he saw with his own eyes, (b) what his mentors told him and (c) textbook lore. He quickly discovered that others in that group of researchers at CSIRO in Australia (under the leadership of C. H. B. Priestley) shared his misgivings about some of the science that was then rapidly becoming disciplinary dogma. A career in experimental meteorology followed, accompanied by bursts of unrestrained iconoclasm. After migrating to the USA in 1973 and serving a sojourn as Director of the Air Resources Laboratory of the National Oceanic and Atmospheric Administration, he returned to his favorite science with new vigor in 2006. He quickly found that new instrumentation and new researchers were yielding mountains of reasons to reconsider what textbooks often teach. His book reveals the bases for his revised understanding of air-surface exchange, the surface boundary layer, and the atmospheric and terrestrial features that influence them. This is not a textbook. Rather, it is a summary of how the teachings of textbooks might be interpreted in the light of information more recently available. This is an update of the basics that underpinned an evolving science before it was kidnapped by computers and modeling. He is not trying to change the science. Oh, heck. Yes, he is.
Mineralogy

Geopolymers: Structure, Properties and Applications
Joseph E. Glenn
In series: Geology and Mineralogy Research Developments
Publication Date: 09/21/2022
223 pp.
Hardcover: 979-8-88697-197-2. $160.00
e-book: 979-8-88697-224-5. $160.00
Geopolymers are networks of mineral molecules linked with covalent bonds. Geopolymers have a number of commercial applications and are used in medicine, high-temperature ceramics, and more. This volume includes four chapters discussing various aspects of geopolymers. Chapter One reviews some of the modifications, applications, and challenges of waste-derived geopolymer catalysts. Chapter Two investigates the adsorption of Cu(II), Mn(II), Pb(II), and Zn(II) ions to geopolymers obtained from biomass combustion ash. Chapter Three presents a summary of the literature on geopolymer concrete’s foundations and disadvantages compared to portland cement concrete, mix proportions that give the best strength, management of fiber additives, performance analysis against burst rate, and resistance to attack. Lastly, Chapter Four deals with the development and application of sulfated geopolymer catalyst in the oxidation of dibenzothiophene.

Gypsum: Sources, Uses and Properties
Matthew N. Ippolito
In series: Geology and Mineralogy Research Developments
Publication Date: 05/20/2022
96 pp.
Softcover: 978-1-68507-932-1. $82.00
e-book: 979-8-88697-016-6. $82.00
Gypsum is a soft sulfate mineral made up of calcium sulfate dihydrate and has various applications, such as fertilizer, chalk, and plaster. This book includes five chapters that provide further details on this material. Chapter One focuses on some recently reported gypsum composite plasterboards as well as the functions and properties of various other composite plasterboards. Chapter Two deals with the methods of preparation and utilization of gypsum-based lightweight materials. Chapter Three shows the possibilities of multiple strengthening of gypsum products by surface treatment and impregnation with water-acrylic and epoxy compound. Chapter Four deals with the effect of waste plastic fiber inclusion on the mechanical and some durability properties of foamed gypsum. Lastly, Chapter Five captures the current state of art of gypsum utilization in geotechnical applications.

Pyrite and Pyrrhotite: Managing the Risks in Construction Materials and New Applications
Michael L.J. Maher, PhD, P.Eng. (Principal and Construction Materials Specialist, WSP Golder, Whitby, Ontario, Canada)
In series: Construction Materials and Engineering
Publication Date: 12/22/2022
383 pp.
Hardcover: 979-8-88697-329-7. $230.00
e-book: 979-8-88697-395-2. $230.00
This book has been divided into three sections. The first section contains one chapter setting out the geological origins of sedimentary pyrite. Section two contains five chapters that provide detailed insights into the behavior of reactive pyrite and pyrrhotite when present in construction aggregates. Most recently, the consequences for property owners in Québec, Ireland and Connecticut, from iron sulfides in unbound aggregates and in aggregates in concrete have been devastating both financially and emotionally to building owners. When, through no fault of their own, their house loses some or all of its value, the impact on homeowners’ lives can be shattering. The third section deals with the more positive aspects of pyrite and how emerging research is showing its value as a low-cost material for such diverse applications as coatings for solar panels and as a growth enhancer for agricultural crops.
Special Topics

Non-Euclidean Geometry in Materials of Living and Non-Living Matter in the Space of the Highest Dimension
Gennadiy Zhizhin (Professor, Academician of Russian Academy of Natural Sciences, Associate Editor of Int. J. of Applied Research in Bioinformatics (IGI Global), Member of the Editorial Board of the Journal Biosphere (Russia), Member of the Scientific Council of the Russian Academy of Sciences on Combustion and Explosion, St. Petersburg, Russia)

In series: Mathematics Research Developments
Publication Date: 07/27/2022
281 pp.
Hardcover: 978-1-68507-885-0. $195.00
e-book: 978-8-88697-064-7. $195.00

This monograph briefly describes the properties of Euclidean geometry and Riemannian geometry. The significance of the genetic code in connection with the established laws of transmission of hereditary information in the polytope of hereditary information and their sequence in the chain of nucleotides is discussed. Information processes in living matter play a significant role in ensuring the sustainable existence of living organisms. In this regard, the monograph pays great attention to the study of information flows in polytopes of the highest dimension, which are biomolecules. It is shown that the higher the dimensionality of the polytope, the more powerful the information flow it has. This allows living organisms to create reliable protection against harmful external influences (for example, from viruses). In general, the monograph represents a new worldview of nature and life on Earth, which is based on the highest dimension of the molecules of chemical compounds.

ENVIRONMENTAL SCIENCES

Air Pollution and Industrial Hygiene

Atmospheric Aerosols: Properties, Sources and Detection
Binoy K. Saikia, PhD (Coal & Energy Division, CSIR-North East Institute of Science & Technology, Jorhat, Assam, India)

In series: Environmental Science, Engineering and Technology
Publication Date: 10/13/2022
149 pp.
Softcover: 979-8-88697-211-5. $95.00
e-book: 979-8-88697-341-9. $95.00

This book explores different aspects of atmospheric aerosols such as rare earth elements, trace elements, organic compounds, bioaerosols and microplastics emphasizing their types, properties, sources, and analytical and source apportionment methods. All the chapters are authored by experts in their relevant fields and contain up-to-date reference materials.

Indoor Air Quality: Control, Health Implications and Challenges
Robert M. Ridgway

In series: Air, Water and Soil Pollution Science and Technology
Publication Date: 08/10/2022
116 pp.
Softcover: 979-8-88697-134-7. $82.00
e-book: 979-8-88697-181-1. $82.00

This book includes five chapters that explore the topic of indoor air quality from several perspectives. Chapter One investigates the efficiency of a solar air heater system. Chapter Two examines the effect of indoor air pollution in child populations in educational settings. Chapter Three studies the impact of numerical parameters on heat ventilation in a box prototype. Chapter Four includes simulations of airflow related to a room
containing a sitting person and a computer to determine ventilation system performance. Lastly, Chapter Five analyzes airflow in spaces equipped with a vertical confluent jets ventilation system.

**Ecology**

**Vultures of India: Ecological Developments, Problems, and Prospects**

*Kaushalendra Kumar Jha, PhD (Former PCCF and Professor, Indian Institute of Forest Management, India) and Michael O’Neal Campbell, PhD (Lecturer, Simon Fraser University, Canada)*

In series: *Birds - Evolution, Behavior and Ecology*

Publication Date: 12/22/2022

529 pp.

Hardcover: 979-8-88697-441-6. $310.00

e-book: 979-8-88697-461-4. $310.00

This book covers selected topics about Indian vultures, focussing on their ecology, interactions with people and future, based on related political, social, economic, biological, and technological issues. This is a complex and vast area, complicated by the recent catastrophic decline in the populations of South Asian vulture species on the heels of the introduction of the veterinary drug diclofenac, and the consequent global media and research attention. Related issues have also emerged, such as human induced landscape change, and successes and failures of the ameliorative actions that followed. The book shows that while diclofenac dominated the attention to vulture ecologies and their futures in South Asia, other comparatively neglected issues such as socio-economic policies and technological developments were and are still vital. In the study of vultures and their rapidly changing ecologies, the main clusters of research methods have included laboratory studies and field techniques, the latter both biological and human socio-cultural and economic/technological. The chapters of this book consequently include work on computer software and associated technology, ecological research methods, the behavioral patterns of the studied vulture species and related animals, chemical analyses, related to animal dietary patterns and environmental degradation, avian intrusions into human life spaces etc. The book introduces the ecology of the vulture species residing or wintering in India. This is followed by natural ecological processes of habitat selection, population status and impact of diclofenac which was believed to bring some of the Indian vultures close to local or regional extinction.

**Environmental Conservation**

**Understanding Kashmir Lakes: Water Quality, Biodiversity, Deterioration, Encroachment, and Vision for Their Protection and Restoration**

*Waseem A. Wani, PhD (Chemistry, PDF (UTM, Malaysia), PDF (INST, India), PDF (UMN, USA), Assistant Professor of Chemistry at Govt. Degree College Tral, Kashmir, J&K, India), Javaid Ahmad Tali, PhD (Assistant Professor of Geography, Government Degree College Tral, Kashmir, Jammu and Kashmir, India) and Mohammad Farooq Mir, PhD (Zoology, Associate Professor of Zoology, Principal of Govt. Degree College Bomai, Kashmir, J&K, India)*

In series: *Environmental Remediation Technologies, Regulations and Safety*

Publication Date: 11/24/2022

118 pp.

Softcover: 979-8-88697-391-4. $82.00

e-book: 979-8-88697-452-2. $82.00

The last three decades have witnessed serious deterioration of major Kashmir lakes (Wular, Dal, Nigeen, Anchar and Manasbal) due to the pollution of their water and large-scale encroachment into their surroundings. Quite an extensive amount of research work has been carried out on the growing state of deterioration of the above named five indispensable lakes of the Kashmir valley. This book gives a glimpse of the overview of these lakes along with a discussion of their water quality, diversity of flora and fauna, deterioration, state of encroachment, and the vision for their protection and restoration. This book will raise awareness about the plight of the important Kashmir lakes and the measures for their protection and restoration. Interestingly, this book compiles the most recent information on the water quality, biodiversity and the state of...
deterioration of the five major indispensable lakes of Kashmir valley. The discussion of the scientific vision for the protection and restoration of Kashmir lakes will greatly help this book to become a standout choice for readers.

Wildfires: Assistance Programs and Management
Joel M. Nelson
In series: Natural Disaster Research, Prediction and Mitigation
Publication Date: 12/22/2022
275 pp.
Hardcover: 979-8-88697-445-4. $150.00
e-book: 979-8-88697-495-9. $150.00
Wildfires in the western United States are burning hotter, more frequently, and causing an increasing and unprecedented amount of damage and destruction to the natural and built environment. Chapter 1 looks at existing federal assistance programs—including several at the Federal Emergency Management Agency (FEMA)—for state, local, tribal, and territorial governments and individual survivors impacted by wildfire. Chapter 2 examines wildfire management in the midst of the COVID–19 pandemic.

Global Warming and Climate Change
Urban Heat Islands Reexamined
Satyaprakash, PhD (Professor, Department of Civil Engineering, Sharda University, Greater Noida, UP, India) and Anne W. M. Ng, PhD (Senior Lecturer, Charles Darwin University, Darwin, Australia)
In series: Climate Change and its Causes, Effects and Prediction
Publication Date: 09/29/2022
223 pp.
Hardcover: 979-8-88697-215-3. $160.00
e-book: 979-8-88697-287-0. $160.00
“Urban heat island” refers to the phenomenon of increased temperatures in urban areas due to dense high-rise buildings and entrapped heat. The effects of urban heat islands are compounded by climate change, which drives temperatures up even further. This book will provide readers with an overview of the current understanding of urban heat islands and will give them an understanding of ways to mitigate the effects of urban heat islands.

Natural Disasters
The Challenges of Disaster Planning, Management, and Resilience
Michail Chalaris (Assistant Professor, Department of Chemistry Research, International Hellenic University, School of Science, Director on Risk, Hazards, Crises, and Safety, Hephaestus Advanced Research Laboratory, Rtd Major General (HFCs), East Macedonia and Thrace, Greece)
In series: Natural Disaster Research, Prediction and Mitigation
Expected Publication Date: 02/2/2023
605 pp.
Hardcover: 979-8-88697-229-0. $275.00
e-book: 979-8-88697-533-8. $275.00
Major disasters, both natural and man-made, have led to an increased need to improve the effectiveness of existing prevention, mitigation, and response capabilities. The types of disasters that many countries face depend to some extent on their geography and climate, and as a result, they have built different response strategies. There is evidence of a growing vulnerability to disasters as the worsening conditions of climate change may increase the destruction of human life, ecosystems, and infrastructures. This book aims to explore and analyze different approaches and practices in dealing
with both traditional and novel forms of resilience and crisis and suggest a way forward for science based on correct decision-making at different levels.

**Tsunamis: Detection Technologies, Response Efforts and Harmful Effects**

*Wei Chek Moon, PhD (Lecturer, Department of Civil Engineering, Faculty of Engineering & Built Environment, MAHSA University, Malaysia) and Tze Liang Lau, PhD (School of Civil Engineering, Universiti Sains Malaysia, Penang, Malaysia)*

In series: *Natural Disaster Research, Prediction and Mitigation*
Publication Date: 12/29/2022
86 pp.
Softcover: 979-8-88697-483-6. $82.00
e-book: 979-8-88697-514-7. $82.00

Tsunamis – the most deadly natural disaster – have been part of the world’s history for thousands of years. Much of the world witnessed historical tsunamis that devastated the coast with great losses of life and property. Over the latter decade of the 20th century, the development of tsunami sciences has seen rapid growth as an interdisciplinary field that brings together scientists, engineers and researchers from all over the world. As a sequel to the first two editions - Tsunamis: Economic Impact, Disaster Management and Future Challenges in 2013 and Tsunamis: Detection, Risk Assessment and Crisis Management in 2018, the current edition of Tsunamis: Detection Technologies, Response Efforts and Harmful Effects serves as a collection of tsunami research that showcases on how the evolving technologies and innovative efforts in foreseeing the harmful effects of tsunamis. This current edition consists of five chapters authored by tsunami experts in their respective fields, from Malaysia, Indonesia, India, and Germany. These chapters are written with hopes of contributing towards continued progress in the future.

**Wildfire Crisis: Management, Strategies, and Impacts**

*William W. Reed*

In series: *Natural Disaster Research, Prediction and Mitigation*
Publication Date: 12/01/2022
223 pp.
Hardcover: 979-8-88697-444-7. $150.00
e-book: 979-8-88697-496-6. $150.00

Wildfires have been growing in size, duration, and destructivity over the past 20 years. Growing wildfire risk is due to accumulating fuels, a warming climate, and expanding development in the wildland-urban interface. The risk has reached crisis proportions in the West, calling for decisive action to protect people and communities and improve forest health and resilience. In addition, devastating wildfires and related electricity blackouts have drawn national attention to the challenge of maintaining grid resiliency in the face of extreme conditions.

**Wildfires: Response, Recovery and Mitigation**

*Edward R. Robbins*

In series: *Natural Disaster Research, Prediction and Mitigation*
Publication Date: 12/15/2022
322 pp.
Hardcover: 979-8-88697-446-1. $230.00
e-book: 979-8-88697-494-2. $230.00

The United States is experiencing an ongoing wildfire crisis. Fires, including some of the largest wildfires in the history of the United States, have engulfed millions of acres of wildlands over the past decade causing extensive property damage and resulting in loss of life. Wildfires are expected to continue growing in size and destructive potential in the foreseeable future. FEMA is required to respond to a rapidly increasing number of wildfires that are affecting communities, and government auditors have found deficiencies in FEMA’s responses. This book reviews wildland fire prevention, mitigation, suppression, management, and rehabilitation policies.
This volume includes eight chapters that provide updates in the field of environmental research. Chapter One deals with the subject of applied bioethics, providing historical and contemporary environmental examples. Chapter Two presents different field and experimental studies based on fluorescence spectroscopy addressing the spatio-temporal dynamics of dissolved organic matter in headwaters of North Patagonia. Chapter Three reviews the recent advancements in the field of small RNA delivery in plants and discusses the advantages, limitations and successes of various delivery methods along with their applications in crop improvement. Chapter Four describes the factors that pose threats to floodplain fisheries in Bangladesh and strategies to overcome these threats. Chapter Five explores the preparation and properties of natural fiber-reinforced castor oil-derived polyurethane foams and their applications. Chapter Six discusses the role and long-lasting effect of seasonal flooding in phytoplankton ecology of floodplain lakes along the Middle Daugava River at Daugavpils, South-East Latvia. Chapter Seven evaluates the surface water quality of Küçük Menderes River Basin, located in Turkey, using factor analysis and water quality index methods. Finally, Chapter Eight investigates the effect of nanomagnetite, hydroxyapatite, and nanocomposite particles on wheat.

This book includes nine chapters that detail recent advancements in environmental research. Chapter One studies the deposition of chemical elements in the territory of Kosovo using the technique of mosses as biomonitor. Chapter Two investigates how exposure time affects the moss uptake of polycyclic aromatic hydrocarbons (PAHs), compares different techniques for the determination of PAHs in moss samples, and provides an overview of advantages of moss over other biomonitor. Chapter Three provides an overview of rare earth element distribution in moss and soil samples collected from 67 sites in North Macedonia. Chapter Four explains the occurrence and remediation of acid mine drainage. Chapter Five includes a literature review concerning public-private partnerships in connection with environmental sustainability. Chapter Six quantifies pollutant emissions during commutes in Querétaro, Mexico. Chapter Seven investigates spatiotemporal drought monitoring using soil water in arid rangelands. Chapter Eight discusses the main factors controlling acid mine drainage generation and the various technologies applied for removal of toxic metals from acidic drainages. Finally, Chapter Nine proposes that hydroponics and environmental control using plant factories are effective methods for enhancing the functionality and utilization of prickly pear.

This volume includes eight chapters that present recent advances in environmental research. Chapter One gives a detailed explanation of humic substances. Chapter Two explores the impact of built environment variables on air quality and transport choices. Chapter Three focuses on genetic engineering improvement for bioremediation and the feasibility of low-cost technology for algal biomass utilization. Chapter Four reviews the biodegradation of pollutants and removal of metals in constructed wetlands and microbial fuel cells. Chapter Five concerns the recycling of lithium-ion batteries from electric cars and the development of new anode materials for high energy storage.
vehicles. Chapter Six deals with the impact of chlorides on drinking water safety. Chapter Seven explores the food security context under the constraints of climate change on rural farmers in Hadejia River Basin, northwestern Nigeria. Finally, Chapter Eight provides a review on the application of dimethylether for enhanced oil recovery.

Advances in Environmental Research. Volume 92
Justin A. Daniels
In series: Advances in Environmental Research
Publication Date: 11/10/2022
208 pp.
Hardcover: 979-8-88697-362-4. $250.00
e-book: 979-8-88697-400-3. $250.00
This volume presents eight chapters reviewing advances in environmental research. The first chapter provides an overview of effects of microplastic pollution in the environment. Chapter two analyzes the population dynamics and community structure of aquatic organisms in freshwater ecosystems, looking at multiple important variables. The third chapter discusses the sources, properties, and ecological applications of calcium sulfates. Chapter four reviews the bounce back of nature during the COVID-19 pandemic. The fifth chapter looks into issues of soil water repellency and moisture dynamics in eucalyptus tree populations. Chapter six examines rheological properties and antioxidant activity of polysaccharides extracted from five cystoseira algae. Chapter seven reviews research on the synergistic effects of calcium sulfate and silica on arsenic mobility and accumulation by cultivated plants. The final chapter discusses a study of novel fibrous ion-exchange sorbents for pretreatment processes in the nanofiltration for water treatment.

Advances in Environmental Research. Volume 93
Justin A. Daniels
In series: Advances in Environmental Research
Publication Date: 12/15/2022
239 pp.
Hardcover: 979-8-88697-417-1. $250.00
e-book: 979-8-88697-474-4. $250.00
This book is a selection of nine chapters focused on advances in environmental research. Chapter One is an update on a study of plant responses to environmental stresses. Chapter Two is a review on the management of a hunting population using wild reindeer in the Taymir. Chapter Three examines ecosystems which have been impacted by antibiotics and pesticides, specifically exploring the emergence of resistances and their implication for human health. Chapter Four reviews biogas production from brewer's spent grain. Chapter Five examines the effects of turbulent environments on laser beams. Chapter Six provides a snapshot of the biodiversity of macroalgae in the Red Sea. Chapter Seven discusses a restructuring of regional approaches to manage the biodiversity of the Red Sea and Gulf of Aden. Chapter Eight is a review on pollution prevention and sustainability. Chapter Nine provides a viewpoint on the evolution of environmental stresses by examining the impact of environmental stress on photodetectors and human eyes.

Advances in Environmental Research. Volume 94
Justin A. Daniels
In series: Advances in Environmental Research
Expected Publication Date: 03/20/2023
278 pp.
Hardcover: 979-8-88697-586-4. $250.00
e-book: 979-8-88697-665-6. $250.00
This book contains eight selected chapters covering advances in environmental research. Chapter One examines recent advances in soil remediation using nano zero-valent iron (nZVI) activated peroxydisulfate (PDS) and peroxymonosulfate (PMS). Chapter Two reviews the current knowledge and future trends of bioplastics. Chapter Three is a comprehensive review of the various aspects of inhalable ambient particulate matter. Chapter Four is an overview of bioethanol production from agricultural wastes. Chapter Five examines the environmental occurrence and toxicological effects of benzo(a)pyrene. Chapter Six reviews how the impact of carbon dioxide emissions worsen perceptions of climate-friendly material selection, with a focus on the Ghanaian perspective. Chapter Seven is a conceptual framework for a multi-criteria optimization model for office building development through climate-friendly material selection. Chapter Eight is a kinetic study of dry flue gas desulfurization by various sorbents using a random pore model.
Sustainable and Healthy Building Environments
Roberto Alonso González Lezcano, PhD (Professor, Department of Architecture and Design, Universidad CEU San Pablo, Madrid, Spain)
In series: Green Research, Developments, and Programs
Publication Date: 01/26/2023
341 pp.
Hardcover: 979-8-88697-401-0. $230.00
e-book: 979-8-88697-497-3. $230.00
This book addresses a topic of great relevance today, considering that in developed countries, most of the time is spent indoors; therefore, indoor residential environments have a direct influence on human health. Furthermore, in developing countries, significant levels of indoor pollution make housing unsafe, which has an impact on the health of its inhabitants; thus, housing is a key factor in the health of people around the world. In this book we look at a range of innovative research and evidence-based policy ideas that demonstrate the importance of housing research and policy for health and well-being.

Wind Turbines: Technology, Applications and Efficiency
David Borge-Diez, PhD (professor, Department of Electrical, Systems and Automation Engineering, University of León, Spain) and Daniel Orlando Icaza (Professor, Catholic University of Cuenca, Ecuador. Center for research, innovation and technology transfer CIITT. Lighting technology research laboratory CIITT, GIRVyP Group, Ecuador)
In series: Environmental Remediation Technologies, Regulations and Safety
Publication Date: 09/07/2022
237 pp.
Hardcover: 978-1-68507-974-1. $195.00
e-book: 979-8-88697-159-0. $195.00
This book performs a multidisciplinary approach of wind energy and analyzes existing wind technologies to propose novel modeling techniques and control systems and explore novel applications. The authors discuss whether wind energy is a valid alternative from the point of view of feasibility to be integrated in buildings or desalination plants, among others. The results support that wind energy is a profitable alternative that can also be used in several different applications different from large-scale plants. Finally, in this book, a chapter is included to evaluate the feasibility and economic, social and environmental implications of large-scale wind plants in locations where no previous development exists and where specific complex characteristics must be considered and a case study for the largest wind plant in Ecuador is presented. As a result, readers can access a detailed approach to wind energy from a technical point of view and consider novel applications and related implications of this renewable energy.

Toxic and Hazardous Substances

Pesticide Residues: Chemistry, Toxicology and Environmental Impact
David J. Goode
In series: Environmental Science, Engineering and Technology
Expected Publication Date: 03/20/2023
Softcover: 979-8-88697-557-4. $95.00
e-book: 979-8-88697-594-9. $95.00
This book contains three chapters focusing on the chemistry, toxicology, and environmental impact of pesticide residues. Chapter One reviews recent advances in the formulation of pesticides and their relationship to their efficacy and toxicity. Chapter Two is an overview of soil phytoremediation technologies. Chapter Three examines corbicular pollen as a potential source of information in agroecosystems.
Phthalates: Environmental and Health Effects
Müfide Aydoğan Ahbab, PhD (Associate Professor, Hamidiye Vocational School of Health Services, University of Health Sciences, İstanbul, Turkey) and Nurhayat Barlas, PhD (Professor, Science Faculty, Hacettepe University, Ankara, Turkey)

In series: Environmental Remediation Technologies, Regulations and Safety
Publication Date: 07/27/2022
289 pp.
 Hardcover: 978-1-68507-970-3. $230.00
e-book: 978-8-88697-038-8. $230.00

Phthalates are esters of phthalic acid that are groups of chemicals used mainly in the production of plastics. Phthalates are also called plasticizers and they make solid plastics flexible and soft. Besides plastics, phthalates are also used as raw materials and/or auxiliary chemicals in many industrial activities. Because of their widespread use, phthalates are very common in nature and are classified as non-persistent pollutants. Their harmful effects have started to be shown by studies conducted in the last 20-30 years which revealed that phthalates have endocrine disrupting effects, among other health consequences. This book deals with the various health and environmental effects of phthalates.

Waste
Waste Management

Recycling of Discarded Carpets for Structural Polymer Composites
Dr. Rajesh Kumar Verma, Dr. Jogendra Kumar and Mr. Shivi Kesarwani

In series: Materials Science and Technologies
Publication Date: 02/09/2023
128 pp.
 Hardcover: 978-8-88697-538-3. $82.00
e-book: 978-8-88697-588-8. $82.00

In the 21st century, waste has become the primary concern for manufacturing processes and industries. Waste management is critical for controlling many types of waste, including solid, liquid, and gaseous forms. The manufacturing of carpets and their uses is a substantial source of waste. The generation of waste leads to an imbalance of the environmental conditions and has hazardous effects on the ecology. The principle of “waste to wealth” could be helpful for manufacturing industries and human beings. This book is comprised of four parts. Part One begins with an overview of the subject, focusing on general issues and technologies relevant to carpet waste. Part Two demonstrates the potential of methodology for developing materials made from discarded carpet polymer composites. Part Three discusses the use of novel nanomaterials to recycle discarded materials. Finally, the last section of the book discusses possible uses for recycled carpet composite structures that may act as a noise barrier in the sound insulating wall tiles, and in many more applications like floor tiles, road barriers, tooling, and fire-retardant instrumentation.

What is Biodegradation and Why it Matters
Robert T. Howard

In series: Waste and Waste Management
Publication Date: 06/24/2022
347 pp.
 Hardcover: 978-1-68507-933-8. $230.00
e-book: 978-1-68507-959-8. $230.00

Biodegradation refers to the breakdown of organic matter by microorganisms, such as bacteria and fungi, and constitutes an important part of waste management, environmental protection, and more. This book includes four chapters that provide different perspectives on the importance of biodegradation using new research. Chapter One presents a comprehensive discussion of biodegradable implants, emphasizing the important features of biodegradable Mg-based and Fe-based systems and their recent developments. Chapter Two explores case studies on the reutilization of fishery waste to
gain a better understanding of biodegradation in the production of biofertilizer and bioactive compounds. Chapter Three reviews information about studies performed in order to develop bioremediation strategies using fungi or microbial consortia to diminish chemical herbicides residues in soil. Lastly, Chapter Four describes green synthesized and biologically synthesized nanoparticles and their role in remediation and gives insight into a recently emerged, novel method that makes use of nano-bio composite in dye remediation.
Advances in Medicine and Biology. Volume 197
Leon V. Berhardt

In series: Advances in Medicine and Biology
Publication Date: 09/07/2022
229 pp.
Hardcover: 979-8-88697-151-4, $250.00
e-book: 979-8-88697-173-6, $250.00

This volume includes nine chapters that detail recent advancements in medicine and biology. Chapter One describes how to sequence the genomes of medicinal plants using the genetic engineering toolkit developed during the sequencing of human genome. Chapter Two gives brief details about the biochemical and therapeutic importance and the developed methods for the determination of riboflavin in bulk and pharmaceutical preparations. Chapter Three encompasses the current state-of-art successful computational drug design strategies that include curated databases, virtual high-throughput screening, pharmacophore modelling and biomolecular interaction network analysis tools. Chapter Four focuses on recent advancements in high temperature effects on plants, from heat perception to its manifestations in growth, development and defense, with a special emphasis on jasmonates, which play an important role in responding to developmental and environmental cues. Chapter Five describes the symptoms, diagnosis, and treatment of granulomatosis with polyangiitis. Chapter Six examines progressive multifocal leukoencephalopathy reactivation in Anti-CD 20 antibodies. Chapter Seven explores the therapeutic potential of eugenol, an allyl-substituted guaiacolphenol. Chapter Eight summarizes the development of genome manipulation techniques for next-generation lactic acid bacteria. Finally, Chapter Nine discusses methods for overcoming molecular processes that cause violations of the regularity of fibrin structure and their functional complications.

HMGB1: Functions, Inhibitors and Clinical Significance
Eylem Taskin, PhD (Professor, Physiology, Adiyaman University, Adiyaman, Turkey), Celal Guven, PhD (Associate Professor, Biophysics, Adiyaman University, Adiyaman, Turkey) and Salih Tunc Kaya, PhD (Assistant Dr., Biology, Duzce University, Duzce, Turkey)

In series: Life Sciences Research and Development
Publication Date: 12/08/2022
280 pp.
Hardcover: $160.00
e-book: 979-8-88697-466-9, 979-8-88697-408-9

Damage-associated molecular patterns (DAMPs), a term also known as alarmins coined by Walter G. Land, Seong, and Matzinger, are endogenous danger molecules that are released from damaged or dying cells and activate the innate immune system by interacting with pattern recognition receptors (PRRs). One of the most well-known DAMPs is high mobility group box-1 (HMGB1), the name being such due to its very fast movement in gel electrophoresis. Importantly, HMGB1 has been shown to contribute to the pathogenesis of various diseases including myocardial ischemia/reperfusion injury, epilepsy, diabetes, multiple sclerosis, cancer, as well as hepatic steatosis, and fatty liver disease. There are three sections in the book. The first section is named HMGB1 and Cancer, including two chapters. One of the chapters in the first section is focused on HMGB1 in cancer therapy and managing COVID-19 infection, as well as multiple sclerosis. The second chapter in the first section is the crosstalk between cancer and myocardial ischemia/reperfusion injury (MIR) through HMGB1 via ferroptotic cell death. The second section is HMGB1 and metabolic interactions, consisting of two chapters. The first chapter is HMGB1 and inflammation in adipose tissue, resulting in insulin resistance and type 2 diabetes. The second chapter in the second sectionsums up recent data related to HMGB1 and liver injury, e.g., drug-induced liver injury, alcoholic liver disease, non-alcoholic fatty liver disease, viral hepatitis, sepsis, and acute chronic liver failure, hepatocellular death through oxidative stress, inflammatory signaling, and autophagy in hepatocytes. The third section is about HMGB1 and neurodegenerative diseases. The section contains four chapters. The first chapter in the section evaluates HMGB1 and its antagonist in brain disorders, including epilepsy, headache, neuroimmunological disorders, neurodegenerative disorders, and stroke. The second chapter in the third section is about the role of HMGB1 on post-brain injury, including potential mechanisms and therapeutic opportunities as well. The third chapter in the third section evaluates the interaction of HMGB1 and Multiple sclerosis via TLR4/NF-kB signaling pathway, leading to the release of proinflammatory cytokines causing an inflammatory response. The last chapter in the third chapter aims to explain the effects of HMGB1 on Epilepsy.
**Structure and Function of Cytochromes**

*Elaine J. Mathis*

In series: *Biochemistry and Molecular Biology in the Post Genomic Era*

Publicaton Date: 10/13/2022

281 pp.

Hardcover: 979-8-88697-102-6, $230.00
e-book: 979-8-88697-122-4, $230.00

This book contains five chapters exploring the structure and function of cytochromes, which are redox-active proteins that contain a heme with a central Fe atom at its core as a cofactor. Chapter One explores the functional relevance of cytochrome c-oxidase subunit IV isoform expression for cellular energy sensing, ATP production, and oxidative stress levels and its role in neurodegeneration. Chapter Two deals with the factors determining the orientation of ligated histadines in hemoproteins, cytochromes, and model systems. Chapters Three and Four include comparative studies of native and synthetic cytochrome b. Lastly, Chapter Five discusses some examples of synthetic and native cytochromes used as central components of biosensors in bioelectronic/biocatalytic applications.

**Bacteriology**

*Cyanobacteria: Life History, Ecology and Impact on Humans*

*Rajeshwar P. Sinha, Ph.D., FSAB (Professor, Centre of Advanced Study in Botany, Banaras Hindu University, Varanasi, India)*

In series: *Bacteriology Research Developments*

Publication Date: 10/20/2022

289 pp.

Hardcover: 979-8-88697-169-9, $230.00
e-book: 979-8-88697-206-1, $230.00

Cyanobacteria are a rich source of several novel metabolites having the potential for drug development. They are a promising bioresource for application in sustainable agriculture, medicine, and green nanotechnology. Certain natural compounds of cyanobacteria such as mycosporine-like amino acids (MAAs) and scytonemin, having UV-absorbing/screening and antioxidative properties, could be biotechnologically exploited by the pharmaceutical industries for the development of natural sunscreens as well as antiaging medicines. This book encompasses the most recent knowledge and modern trends in the field of cyanobacterial research and their impact on humans. It provides a guide for beginners as well as advanced researchers in the field of cyanobacterial study.

**Biotechnology**

*Cyanobacteria and Their Importance*

*Rajeshwar P. Sinha, PhD (Director and CEO, InnoResTech Foundation, Coordinator (Applied Microbiology), Former Coordinator (Industrial Microbiology), DAAD Fellowship Awardee, Centre of Advanced Study in Botany, Banaras Hindu University, Varanasi, India)*

In series: *Life Sciences Research and Development*

Publication Date: 08/10/2022

399 pp.

Hardcover: 978-1-68507-934-5, $230.00
e-book: 979-8-88697-071-5, $230.00

Cyanobacteria form a prominent component of microbial populations in almost all ecosystems, especially in rice fields where they contribute significantly to fertility as a natural biofertilizer. Also, cyanobacteria are a rich source of several novel metabolites having biotechnological and industrial significance. This book discusses the most recent knowledge and modern trends in the field of cyanobacterial research and its importance in the scientific and industrial world.
Botany

*Coriandrum sativum*: Origin, Uses and Nutrition

Mamta Pujari, PhD (Assistant Professor, Department of Botany, Lovely Professional University, Phagwara, Punjab, India), Bharat Kapoor, PhD (Assistant Professor, Department of Hotel management and Tourism, Guru Nanak Dev University, Amritsar, Punjab, India), Neeta Pande, PhD (Professor, Department of Botany, Govt. College Kumaon University Nainital, Uttarakhand, India) and Anju Joshi, PhD (Professor, Department of Botany, Govt. Degree College, Sitarganj Udham Singh Nagar, Uttarakhand, India)

In series: *Botanical Research and Practices*

Publication Date: 06/02/2022
146 pp.
Softcover: 978-1-68507-842-3. $95.00
e-book: 978-1-68507-955-0. $95.00

This book describes the origin, cultivation, botanical characteristics, phytochemical composition, and biological properties of *Coriandrum sativum*, also known as coriander. The book also discusses management strategies to prevent various diseases by using this herb. Chapter One emphasizes coriander's nutritional and functional properties. Chapter Two covers the traditional medicinal properties of coriander and argues for its potential for improving quality of life, especially related to aging and lifestyle-associated illnesses. Chapter Three describes the pharmacological activities of all parts of the plant and its use as a functional food and nutraceutical. Chapter Four summarizes the cultivation and processing of coriander and provides further details on its medicinal properties. Chapter Five discusses coriander's role in the food industry as a flavoring agent and preservative, among other applications. Chapter Six assesses coriander's effectiveness as a medicinal agent. Lastly, Chapter Seven gives an overview of the origin, taxonomic status, distribution, botanical description, and cultivation of coriander, as well as the diseases that affect it.

Ferns: Growth, Diversity and Ecological Importance

Dr. Shobhit Kumar Srivastava, PhD and Mr. Gyan Prakash Srivastava

In series: *Life Sciences Research and Development*

Expected Publication Date: 03/15/2023
Hardcover: 979-8-88697-554-3. $160.00
e-book: 979-8-88697-582-6. $160.00

The study of organism evolution and diversity has long drawn the attention of scientists, particularly those working in the various branches of botany. As a result, there are numerous textbooks on the topic. Pteridophytes (Ferns) take up different percentages of the extant texts, and some textbooks even focus on only one subgroup, like the ferns. Currently, no book that comprehensively addresses every crucial aspect related to the development, diversity, and ecological significance of pteridophytes to the best of our knowledge. The authors are confident that the readers of this book will be fascinated by pteridophytes and the range of products they provides, including food, fibers, and ornaments etc. The chapters on the evolution of different plant parts will give the readers new insights into how to investigate more relationships that link the evolution's lingering. All aspects of biodiversity in pteridophytes are covered in the current book, including spore morphology, climate and ecological relationships, ethnobotanical significance, and nematode activity. The remaining two chapters focused on the discourse of these magnificent plants and the cultural relevance of pteridophytes in diverse agro-climatic zones worldwide.
Indian Medicinal Plants of Ladakh Himalaya Used in Sowa Rigpa
Mayaram Uniyal (Former Director, CCRAS, Ministry of AYUSH, Government of India, India), Deepak Kumar Semwal – Assistant Professor, Uttarakhand Ayurved University, Harrawala, Dehradun, India, Ruchi Badoni Semwal (Assistant Professor, Pt. L.M.S. Govt. PG College, Rishikesh, Uttarakhand, India) and Ankit Kumar (Senior Research Fellow, Uttarakhand Ayurved University, Harrawala, Dehradun, India)

In series: Herbs and Herbalism
Publication Date: 11/10/2022
148 pp.
Softcover: 979-8-88697-210-8. $95.00
e-book: 979-8-88697-427-0. $95.00

This book is based on the medicinal plants of Ladakh used in the traditional system of medicine in the Northern part of India, which consists of the Leh and Kargil districts. The medicinal plants described in this book are based on the survey work conducted with the financial support of the Ministry of AYUSH Government of India. Interestingly, there are several species described in this book that are for the first time identified by the author. Although there are many floras used as medicinal plants including some regional floras of India including Indian Medicinal Plants, the flora of indigenous plants of India and some Medicinal plants of Jammu and Kashmir, the present book mainly focuses on the medicinal plants of the Ladakh region used in their traditional medicinal system called Sowa Rigpa or Amchi.

Cell Biology

Endothelial Progenitor Cells in Health and Disease
Amankeldi A. Salybekov, MD, PhD (Senior Clinical Researcher, PI at Clinical Research Center, Shonan Kamakura General Hospital, Kanagawa, Japan), Shuzo Kobayashi, MD, PhD (Kidney Diseases and Transplant Center, Shonan Kamakura General Hospital, Kamakura, Japan) and Takayuki Asahara, MD, PhD (Shonan Research Institute of Innovative Medicine, Fujisawa, Japan)

In series: Cell Biology Research Progress
Publication Date: 07/08/2022
191 pp.
Hardcover: 978-1-68507-794-5. $160.00
e-book: 978-1-68507-948-2. $160.00

We are delighted to offer this textbook to the scientific community, entitled Endothelial Progenitor Cells in Health and Diseases, which covers a timely topic in the rapidly evolving discipline of vascular biology. Written primarily for a life science audience and clinicians, the fundamentals of EPCs biology and the latest characterization and definition in health and diseases are introduced, followed by explanations of the most cutting-edge cell therapy methods to cure ischemic diseases. In Section One, endothelial cell progenitor isolation methods and biological characterization were reported. The discovery of this novel endothelial progenitor cells (EPC) concept has overturned the previous dogma which suggested that vasculogenesis could only occur during embryogenesis. In fact, both vasculogenesis and angiogenesis may potentially have a synergistic role in postnatal revascularization. Also, this chapter summarized recent advances in EPC biology such as biological function, origin, definition, and classification. Each EPC culture and isolation method is clearly defined to prevent confusion in EPC biology. Section Two focuses on EPC biological function alteration in cardiovascular diseases (CVD). Several large clinical trials have reported that the number and biological function are strongly associated with major adverse cardiovascular events. The diagnostic and prognostic potential of EPC is crucial in terms of CVD. In Section Three, biological dysfunction mechanisms of EPC and their scarcity in diabetic patients’ peripheral blood were clearly described. Preclinical studies have shown that EPC-based therapy is feasible, safe, and efficacious in multiple disease states. Subsequently, this has led to several clinical trials demonstrating the feasibility and safety profile of EPC therapy against cardiovascular ischemic diseases. In Section Four, regenerative medicine pioneers discussed EPCs translation to the clinic and cell transplantation challenges along with their solutions. Personalized stem cell-based therapy approaches employing several clinical biomarkers, disease-related genetic-trait evaluation methods, and advanced analyses with state-of-the-art computational methods such as machine learning-based prediction can increase cell therapies’ efficacy and decrease treatment costs. The last chapter in the book describes a therapeutic application of EPC-derived extracellular vesicles to cure CVD.
Transcriptomics and their Importance
Sarah Naiyer, PhD (Research Scientist, Department of Microbiology and Immunology, University of Illinois at Chicago, USA) and Khalid Hussain Bhat, PhD (Assistant professor, Division of Basic Sciences and Humanities, FOA, Wadura, Sopore, SKUAST-Kashmir, India)
In series: Cell Biology Research Progress
Publication Date: 10/06/2022
229 pp.
Hardcover: 979-8-88697-044-9. $195.00
e-book: 979-8-88697-203-0. $195.00
Transcriptomics refers to the study of the transcriptome, which is the complete set of RNA transcripts produced by the genome of a specific cell. This book provides an overview of the information that the transcriptome provides and how developments in transcriptomics has transformed our understanding of cell biology. This book is comprised of three parts. Part I serves as an introduction to describe the development of transcriptomics as a technique and the way by which it has enhanced our knowledge and provided a better understanding of the basic biology of cellular function. Part II of the book is written to understand the milestones and contributions of transcriptomics in understanding the dynamics of cancer biology. Part III provides an insight on how transcriptomics is helping us to understand microbes and host-pathogen interaction including bioremediation.

Ecology

Dynamics and Interrelations between Nature, Science, and Society
Kaushalendra Kumar Jha, PhD (Former PCCF and Professor, Technical Forestry, Indian Institute of Forest Management, Bhopal, India) and Michael Campbell, PhD (Lecturer, Simon Fraser University, Canada)
In series: Life Sciences Research and Development
Publication Date: 09/21/2022
481 pp.
Hardcover: 979-8-88697-053-1. $230.00
e-book: 979-8-88697-130-9. $230.00
This book covers cutting edge topics on the interactions between scientific advancements and societal developments, and the applications of these developments to nature and environmental measurements and change. In this endeavor, there are four main clusters, namely technological developments such as geomatics applications to the measurement and analysis of socio-environmental change, ecological modifications and environmental damage, comparative ecologies, and management methods. These issues have emerged as the key topical clusters during the 21st century and may be researched effectively only by using wide-ranging examples. India stands as one of the best examples for case studies, due to its extremely variable landcover, dense human population and topflight cohorts of researchers on environmental management. The current book acknowledges the need for comparative studies, hence international comparisons are also included, using integrated ecological studies covering animal behavior, landcover, habitat and plant ecological change and human/animal relations, with the international case studies along these lines. Crucially, from a technological perspective, developments include more accurate positioning and tracking systems, detailed ecological studies, and analyses of the research results to support more sophisticated research tools. In the current book, each chapter is written by leading, international scholars, each taking a vital topic for current research.

Terminal Philosophy Syndrome - Ecology and the Imponderable
Michael Charles Tobias, PhD (President, Dancing Star Foundation, Tesuque, New Mexico, USA) and Jane Gray Morrison (Senior Vice President, Dancing Star Foundation, Tesuque, New Mexico, USA)
In series: Human Evolution, Biological and Cultural Domains
Publication Date: 12/29/2022
290 pp.
Hardcover: 979-8-88697-415-7. $125.00
e-book: 979-8-88697-478-2. $125.00
This treatise is focused on biology and the imponderable; ecosystems lost and found. The problem of human consciousness in the Anthropocene, which is a very different crisis for
the planet than ever posed before by our thinking, and the reactive thoughts and feelings of all Others (a word we use to
guide one’s image and interior sense of every individual of every other taxonomic rank on earth). We cannot offer
something otherwise, that would connotate a validation of philosophical speculation. To do so is to live in a falsity, where
the authentic, integral and protracted Consciousness that aspires to a facet of biology (and for some, physics) imports every
buttress that can attempt to stave off, or at least delay reality, involving itself in everybody’s business, believing fiercely
that its very Being matters. When -though who can say – by all evidence it does so only in negative numbers and
exponents. In square roots whose expressions are largely disastrous, save for the moments of kindness, the unstinting
gestures, first responders, museums, those who have sworn to a Hippocratic Oath in whatever honest and virtuous form, all
those cherished byproducts of this unlikely species. Recognition that our species’ capacity to venerate nature in all her
quirks and ellipses, stochastic incalculables and steadfast patterns, her graces and unimagined diversity, is our only chance
of at least partial survival into an unknown future. Not that it matters in the least, whether we survive as a species, that is.
Although, given the currents of our collective behavior – not to be entirely foregone in our conclusions – the one fact that
appears to stand out in biological history is that the quicker we are gone, the better it will be. That is not a mean-spirited
approach to a text, but a necessarily sobering one.

Genetics and Genomics

Genetic Instability and Some Unusual Radiobiological Effects
Ekaterina S. Evstratova (Head of Laboratory, National Medical
Research Radiological Center of the Ministry of Health of the
Russian Federation, Kaluga Region, Russia), Vladislav G. Petin
(Head of Laboratory, A. Tsyb Medical Radiological Research Center,
Kaluga Region, Russia), Andrey D. Kaprin (CEO, National Medical
Research Radiological Center of the Ministry of Health of the
Russian Federation, Kaluga Region, Russia) and Petr V. Shegai
(Deputy CEO for Sciences, National Medical Research Radiological
Center of the Ministry of Health of the Russian Federation, Kaluga
Region, Russia)

In series: Genetics - Research and Issues
Publication Date: 07/15/2022
294 pp.
Hardcover: 978-1-68507-886-7. $230.00
e-book: 979-8-88697-007-4. $230.00

Genetic instability leads to the accumulation of many changes necessary to transform the stable genome of a normal cell
into an unstable genome. Such a transformation can be the cause of radiation mutagenesis, carcinogenesis and aging – the
main long-term effects of ionizing radiation, UV light, and other harmful environmental factors. A new quantitative
assessment of the genetic instability was suggested, taking into account the delay in the formation of colonies by cells
surviving after exposure to harmful agents. It was demonstrated that the genetic instability of yeast cells is mainly
determined by cell ploidy, but not by the sigmoid shape of the survival curve or the cell’s ability of post-irradiation
recovery. New experimental data confirm the participation of recovery processes in the manifestation of the relative
biological effectiveness of densely ionizing radiation both for cell inactivation and for radiation-induced genetic instability.
A number of universal patterns of synergic interactions are demonstrated, which did not depend on the used biological test
and objects nor the interacting physical and chemical factors. Potential significance of synergy at low intensities of
physical and chemical environmental factors is proved. Original data on the influence of cyclic heating and cooling on cell
survival are obtained. It is concluded that osmotic homeostasis of cells, along with DNA, is an important target responsible
for cell viability under the damaging action of various agents. Data on the favorable effect of the increased natural
background of ionizing radiation are discussed. The manifestations of radiation hormesis were revealed for various
radiation accidents, professional and medical exposure. The results obtained demonstrate that the action of high-energy
ionizing radiation is accompanied by irradiation with UV light that occurs when charged particles move at a speed
exceeding the speed of light in a given medium.
**Marine Biology**

**Properties and Applications of Alginate**  
*Michael Y. Wilkerson*

In series: *Life Sciences Research and Development*  
Publication Date: 11/10/2022  
181 pp.  
Softcover: 979-8-8697-371-6. $95.00  
e-book: 979-8-8697-381-5. $95.00

This book includes seven chapters, each focusing on modern research into properties and applications of alginate. The first chapter elucidates the reader to the structural properties and applications of alginate, and additionally discusses future development targets in various fields. The second chapter gives an overview into fabrication of ALG- and S-ALG-based submicron- and nano-sized gel particles with a focus on protein encapsulation. The third chapter returns to analyzing the unique physical properties of alginate and its current and potential uses. The fourth chapter reviews the development of alginate hydrogel beads by the process of microencapsulation, enabling the preservation of the entrapped material. The fifth chapter reviews new uses of alginate in the probiotic food industry as a carrier for probiotic immobilization, and summarizes the extrusion and spray dry techniques used to implement them. The sixth chapter gives a brief knowledge of the structure-property relationships, film formation, biocompatibility, and toxicity study of alginate and its different biomedical applications. The seventh and final chapter, after reviewing how alginate is discovered, describes the main properties of alginate, discusses the sources and chemical structure of alginate, and its various applications, especially in drug release and tissue engineering.

**Microbiology**

**Bacteriophages: Interaction, Diversity and Applications**  
*Prasanth Manohar, PhD*

In series: *Microbiology Research Advances*  
Publication Date: 07/15/2022  
322 pp.  
Hardcover: 978-1-68507-860-7. $230.00  
e-book: 978-1-68507-958-1. $230.00

The impact of viruses on the human population is inevitable. But not all viruses are deadly. There are good viruses that occupy our body and the environment. These bacteria-eating viruses are called bacteriophages. From birth to adulthood, bacteriophages have a consequential impact on human health by stabilizing the beneficial bacteria. Bacteriophages can arrest the bacterial machinery and kill them, which finds direct use in curing bacterial infections, known as phage therapy. In the future, phages, instead of antibiotics, will be used to treat bacterial diseases.

**Catalase and its Applications**  
*Kaley Rutherford*

In series: *Microbiology Research Advances*  
Publication Date: 10/27/2022  
119 pp.  
Softcover: 979-8-8697-421-8. $82.00  
e-book: 979-8-8697-433-1. $82.00

This book is a collection of five chapters discussing catalase and its various applications in different fields. Chapter One discusses the cardiovascular effects of a catalase blockade of H2O2 in normotensive and hypertensive rats. Chapter Two reviews daily and seasonal changes in activity of catalase in littoral macroalgae on the Barents Sea, as well as the influence of abiotic factors in the aforementioned. Chapter Three is an overview of plant catalases under abiotic stress. Chapter Four analyses aspects of the blood catalase in the human body, and finally, Chapter Five discusses the inhibitory effect of drugs on catalase activity.
Endophytes: Types, Potential Uses and Mechanism(s) of Action
Pragya Tiwari, PhD (Research Professor, Department of Biotechnology, Yeungnam University, Gyeongsan, Gyeongbuk, Republic of Korea)

In series: Microbiology Research Advances
Publication Date: 10/06/2022
351 pp.
Hardcover: 979-8-88697-045-6. $230.00
e-book: 979-8-88697-205-4. $230.00

Endophytes are organisms that live between living plant cells and do not cause disease. Endophytes are ubiquitously present in diverse plant species, demonstrating a co-evolution with the plant host. Furthermore, different classes of microbial species, including bacteria, fungi, and actinomycetes colonize the internal plant tissues, leading to a wide range of implications. The medicinal plants associated with endophytes have been extensively studied as a potential source of bioactive compounds, with pharmacological attributes and biotechnological applications. Scientific breakthroughs in whole genome sequencing and annotation of endophyte-associated gene/metabolic pathways provided key insights into functional mechanisms and their dynamics within plants. Studies have highlighted the socio-economic implications of fungal endophytes in the environment, agriculture, and medicine with considerable success. Although extensively studied as a “production platform” of novel pharmacological metabolites, the molecular mechanisms of plant-endophyte dynamics remain less understood/explored for their efficient utilization in drug discovery and other biotechnological applications. This book aims to provide comprehensive knowledge about the multifaceted applications of endophytes.

Endotoxins and their Importance
Arif Pandit, PhD (Assistant Director Research, Directorate of Research, Sher e Kashmir University of Agricultural Sciences and Technology of Kashmir, Shalimar, Srinagar, Jammu and Kashmir, India) and R. S. Sethi, PhD (Professor and Head, Department of Animal Biotechnology, Guru Angad Dev Vety and Animal Sciences University, Ludhiana, Punjab, India)

In series: Microbiology Research Advances
Publication Date: 06/07/2022
120 pp.
Softcover: 978-1-68507-839-3. $82.00
e-book: 978-1-68507-913-0. $82.00

This book is divided into six chapters that cover a wide range of endotoxin biology topics. The first chapter provides a general overview of endotoxins, as well as a timeline of their use and discovery. In Chapter Two, we’ll look at how to extract and characterize these compounds. In Chapter Three, the genetics and biochemical pathways involved in endotoxin biosynthesis are discussed in depth. In Chapter Four, endotoxin virulence is discussed, as well as the mechanisms of host-pathogen interactions. In Chapter Five, the use of endotoxins as vaccine adjuvants is discussed as a futuristic way to improve vaccine efficacy. At the end, Chapter Six discusses potential areas of endotoxin exposure in the environment, as well as measures to combat the ecological threat.

Listeria monocytogenes: Microbiology, Sites of Infection and Treatment
Raghu Vishweswaraiah, PhD (Scientist, Dairy Microbiology Division, ICAR-NDRI, Karnal, Haryana, India) and Faizan Ahmed, PhD (Postdoctoral Scientist, Cedars-Sinai Medical Center, Los Angeles USA)

In series: Microbiology Research Advances
Publication Date: 08/24/2022
354 pp.
Hardcover: 978-1-68507-883-6. $230.00
e-book: 979-8-88697-087-6. $230.00

Listeria monocytogenes is a Gram-positive soil bacterium that is ubiquitous. Consumption of ready-to-eat, frozen, raw, or little processed meals has recently increased its rise, causing alarm among scientists. It is a pathogenic bacterium with a dual lifestyle: it develops as a full normal bacterium in the environment, but when it enters the human body, it grows as an intracellular invasive pathogen that causes listeriosis. In this new
book, the authors present current research in the study of Listeria monocytogenes causing food-borne illnesses through various food sources, pathogenicity caused by Listeria monocytogenes, antimicrobial resistance in Listeria monocytogenes, risk assessment of Listeria monocytogenes in foods, control and prevention of infection, and treatment of listeriosis in humans. This book also covers bacteriophages-based control of Listeria monocytogenes in foods and its diagnosis in foods through conventional and novel rapid techniques.

New Research on Mycorrhizal Fungus
Professor Qiang-Sheng Wu, Professor Ying-Ning Zou, Professor Yue-Jun He, and Professor Nong Zhou
In series: Microbiology Research Advances
Expected Publication Date: 03/20/2023
Hardcover: 979-8-88697-637-3. $160.00
e-book: 979-8-88697-662-5. $160.00
This book focuses on an overview of new advances in mycorrhizal fungi, especially arbuscular mycorrhizal fungi. The book contains chapters on mycorrhizal fungi populations in mangroves, the growth of arbuscular mycorrhizal fungi, mycorrhization of pears in in vitro culture conditions, mycorrhizal mineralization of nutrients, mycorrhizal roles in improving soil health, the benefits of synergistic application of biochar and arbuscular mycorrhizal fungi, and the ecological functions of arbuscular mycorrhizal fungi (invasive plant control, mycorrhizal remediation of soil pollution, and mycorrhizal farm management systems). This book can provide theoretical as well as technical support for researchers working on mycorrhizal fungi, and also provide ideas for new research on mycorrhizal fungi in the future.

The Book of Fungal Pathogens
André Luis Souza dos Santos, PhD (Laboratory of Advanced Studies of Emerging and Resistant Microorganisms, General Microbiology Department, Microbiology Institute Paulo de Góes (IMPG), Health Center Science, Federal University of Rio de Janeiro, Brazil), Marta Helena Branquinho (Universidade Federal do Rio de Janeiro (UFRJ), Brazil), Lucimar Ferreira Kneipp (Fundação Oswaldo Cruz (FIOCRUZ), Brazil) and Maryam Roudbary (Iran University of Medical Sciences, Iran)
In series: Infectious Diseases and Microbiology
Publication Date: 12/22/2022
505 pp.
Hardcover: 979-8-88697-454-6. $250.00
e-book: 979-8-88697-470-6. $250.00
Fungi can be harmful to global health, biodiversity and agriculture and they are responsible for life-threatening diseases, especially in individuals with a weakened immune system. Over the last decades, the number of invasive infections, mainly caused by fungi belonging to Candida, Cryptococcus, Aspergillus and Pneumocystis genera has increased and negatively affected the clinical outcomes of the patients. With regard to all these issues, this book focuses on the processes associated with fungal pathogenesis. The authors believe that this book will serve as a useful reference for consultations with specialists in the Mycology field since it contemplates the most important issues in the proposed area. The chapters are written by experts who actively contribute to international scientific literature. The editors also believe that the theme is a very attractive proposal and the compilation of interesting data will benefit readers in terms of identification, epidemiology, pathogenesis, and treatment of predominant fungal infections around the world. “The Book of Fungal Pathogens” contains 18 chapters, several pictures, diagrams, and tables that can be used in both undergraduate and postgraduate teaching as well as scientific lectures.

Understanding Antibiofilm Activity
Iram Liaqat, PhD (Associate Professor, Department of Zoology, Government College University, Lahore, Pakistan)
In series: Microbiology Research Advances
Publication Date: 07/08/2022
206 pp.
Hardcover: 978-1-68507-927-7. $160.00
e-book: 979-8-88697-005-0. $160.00
Biofilms have grown into a major issue that poses hazards to all life forms. This book reviews strategies which can be employed to combat biofilms. Chapter 1 demonstrates that microbial biofilms are generated when a polymeric matrix surrounds a collection of
single or heterogeneous microbial organisms. Chapter 2 discusses how biofilm resistance to antimicrobial drugs has become a global problem for medical researchers. Chapter 3 discusses how even though antibiofilm tactics are helpful, they are still worth investigating because each strategy is limited by physiological parameters such as composition, osmolarity, and bacterial species. Chapter 4 reveals that biofilms are diverse microbial societies dwelling in diverse environments. Chapter 5 confers emerging biofilm eradication tendencies and tactics, as well as the treatment of biofilm-related medical problems. Chapter 6 examines how biofilm's pervasiveness makes its removal extremely challenging. Chapter 7 looks at a variety of recently discovered nano-established biomaterials as well as the approaches that are being used to create antibiofilm surfaces. Finally, Chapter 8 discusses how microbial biofilms, which are generated by the aggregation of single or varied microbial species encased in a polymeric matrix, are a frequent way for bacteria to shield themselves against environmental challenges and antibacterial treatments.

Zoology

A Closer Look at Silkworms

Pratheep Thangaraj, PhD (Department of Biotechnology, PRIST Deemed to be University, Tanjavur, Tamil Nadu, India)

In series: Insects and Other Terrestrial Arthropods: Biology, Chemistry and Behavior

Publication Date: 02/2/2023
129 pp.
Softcover: 979-8-8697-501-7. $82.00
e-book: 979-8-8697-563-5. $82.00

The first section of this book covers recent research developments on the silkworm, B. mori. Chapter One describes the recent advancements in utilization, product diversification and value addition of ericulture resources for the sustainability of farmers. Chapter Two compares the efficacy of silk production and how it is achieved through the growth and development of silkworms supplemented with antioxidants and exposed to low dose radiation from the gamma source. B. mori viral disease and lipid compositional changes during the spinning stage is the focus in the next two chapters. In Chapter Three, Tanmaya et al. review the characteristics of B. mori viruses, the classification of viral infections, mode of infectivity, transmission, symptomatology of viral diseases, detection of pathogenic viruses, the molecular mechanism of pathogenicity of viral diseases and insect antiviral defense mechanisms. Management practices can be carried out both at pre-rearing and rearing conditions for obtaining and improving qualitative and quantitative silk production. Chapter Four analyzes the neutral lipids changes in silk glands during fifth instar larvae and spinning stages of B. mori. Chapter Five, by Geeta Pandey, is an outline of the historical perception of silk, its structure, general characteristics, current clinical trials and emerging biomedical applications of silk fibroin along with future prospects and challenges in this field. The authors of Chapter Six discuss the recent advancements in B. mori lipid metabolism, transportation, and lipid carrier proteins. This book ends with Chapter Seven – a review of silk proteins such as sericin and fibroin and their medical applications.

Advances in Animal Science and Zoology. Volume 20

Owen P. Jenkins

In series: Advances in Animal Science and Zoology

Publication Date: 09/21/2022
222 pp.
Hardcover: 979-8-8697-199-6. $250.00
e-book: 979-8-8697-217-7. $250.00

This volume includes six chapters that present updates in animal science and zoology. Chapter One examines the use of zebrafish model system to investigate the pathophysiology of schizophrenia. Chapter Two consolidates facts about melatonin and its involvement in the regulation of fish populations. Chapter Three explores the interaction between the native aquatic gastropod, Valvata humeralis, and invasive aquatic gastropod, Potamopyrgus antipodarum, along a biotic gradient of density in a system where it was suspected that an interaction shift was occurring. Chapter Four explores competition and facilitation between these two gastropods. Chapter Five analyzes the role of superoxide dismutase in reptiles under toxicity contexts. Lastly, Chapter Six analyzes and assesses the corpses of three English Bulldog puppies that had anasarca, a fetal malformation that presents generalized edema.
Christopher I. Argyros (Professor, Department of Mathematical Sciences, Cameron University, Lawton, Oklahoma, USA), Samundra Regmi (Researcher, Learning Commons, University of North Texas at Dallas, Dallas, TX, USA), Ioannis K. Argyros, PhD (Researcher, Department of Computing and Technology, Cameron University, Lawton, Oklahoma, USA) and Santhosh George, PhD (Department of Mathematical and Computational Sciences, National Institute of Technology, Karnataka, India)
In series: Mathematics Research Developments
Publication Date: 12/01/2022
447 pp.
Hardcover: 978-1-68507-994-9. $230.00
e-book: 979-8-88697-425-6. $230.00
This book provides different avenues to study algorithms. It also brings new techniques and methodologies to problem solving in computational sciences, engineering, scientific computing and medicine (imaging, radiation therapy) to mention a few. A plethora of algorithms which are universally applicable are presented in a sound, analytical way. The chapters are written independently of each other, so they can be understood without reading earlier chapters. But some knowledge of analysis, linear algebra, and some computing experience is required. The organization and content of this book cater to senior undergraduate, graduate students, researchers, practitioners, professionals, and academicians in the aforementioned disciplines. It can also be used as a reference book and includes numerous references and open problems.

Contemporary Algorithms: Theory and Applications Volume II
Christopher I. Argyros (Researcher, Department of Computing and Mathematical Sciences, Cameron University, Lawton, Oklahoma, USA), Samundra Regmi (Researcher, Learning Commons, University of North Texas at Dallas, Dallas, TX, USA), Ioannis K. Argyros, PhD (Professor, Department of Computing and Mathematical Sciences, Cameron University, Lawton, Oklahoma, USA) and Santhosh George, PhD (Department of Mathematical and Computational Sciences, National Institute of Technology, Karnataka, India)
In series: Mathematics Research Developments
Publication Date: 12/15/2022
401 pp.
Hardcover: 979-8-88697-109-5. $230.00
e-book: 979-8-88697-479-9. $230.00
The book is a continuation of Volume I with the same title. It provides different avenues to study algorithms. It also brings new techniques and methodologies to problem solving in computational sciences, engineering, scientific computing and medicine (imaging, radiation therapy) to mention a few. A plethora of algorithms are presented in a sound analytical way. The chapters are written independently of each other, so they can be understood without reading earlier chapters. But some knowledge of analysis, linear algebra, and some computing experience are required. The organization and content of the book cater to senior undergraduate, graduate students, researchers, practitioners, professionals, and academicians in the aforementioned disciplines. It can also be used as a reference book and includes numerous references and open problems.
Game Theory

Balancing Economic, Legal, and Social Macrosystems Based on Modelling Decision Processes

Lidiya V. Zhukovskaya, Dr. Sci. (Econ.), Cand. Sci. (Phys.-Math.) (Chief Researcher, Central Economics and Mathematics Institute, the Russian Academy of Sciences, Moscow, Russia)

In series: Economic Issues, Problems and Perspectives
Publication Date: 09/29/2022
214 pp.
Hardcover: 979-8-88697-093-7. $160.00
e-book: 979-8-88697-141-5. $160.00

The author considers the interaction of three national macrosystems (economic, legal, and social) within a national public metasystem, justifying and solving the problem of their balancedness using the concept of Berge equilibrium. This equilibrium mathematically expresses the Golden Rule of ethics (GR), one of the most ancient, specific, and widespread moral generalizations that appear in Christianity, Islam, Judaism, Buddhism, and Confucianism. It instructs: “Do to others as you would like them to do to you.” The author studies the influence of morality (in the sense of Kant's imperative or the GR) on strategic decision-making in the national public metasystem. The Nash equilibrium of the three macrosystems reflects the neoliberal economic doctrine widespread currently. An alternative moral-philosophical economic doctrine based on the GR is substantiated using systems theory and game theory.

Probability and Mathematical Statistics

Frontiers in Mathematical Modelling Research

M. Haider Ali Biswas, PhD (Professor, Mathematics, Science Engineering and Technology School, Khulna University, Khulna, Bangladesh) and M. Humayun Kabir, PhD (Associate Professor, Department of Mathematics, Jahangirnagar University, Savar, Bangladesh)

In series: Mathematics Research Developments
Publication Date: 05/06/2022
379 pp.
Hardcover: 978-1-68507-430-2. $230.00
e-book: 978-1-68507-845-4. $230.00

Mathematical modeling is the process of trying to precisely define a nonmathematical situation, real-life phenomena of changing world and the relationships between the situations in the language of mathematics, and finding out mathematical formulations or patterns within these situations and phenomena. Mathematical modeling in terms of nonlinear dynamic equations is described as a conversion activity of real problems in a mathematical form. The interactions between the mathematical and biological sciences have been increasing rapidly in recent years. Both traditional topics, such as population and disease modeling, and new ones, such as those in genomics arising from the accumulation of DNA sequence data, have made mathematical modeling in biomathematics an exciting field. The best predictions of numerous individuals and scientific communities have suggested that this growing area will continue to be one of the most dominating and fascinating driving factors to capture the global change phenomena and design a sustainable management for a better world. Frontiers in Mathematical Modelling Research provides the most recent and up-to-date developments in the mathematical analysis of real world problems arising in engineering, biology, economics, geography, planning, sociology, psychology, medicine and epidemiology of infectious diseases. Mathematical modeling and analysis are important, not only to understand disease progression, but also to provide predictions about the evolution of the disease and insights about the dynamics of the transmission rate and the effectiveness of control measures. One of the main focuses of the book is the transmission dynamics of emerging and re-emerging infectious diseases and the implementation of intervention strategies. It also discusses optimal control strategies like pharmaceutical and non-pharmaceutical interventions and their potential effectiveness on the control of infections with the help of compartmental mathematical models in epidemiology. This book also covers a wide variety of topics like dynamic models in robotics, chemical process, biodynamic hypothesis and its application for the mathematical modeling of biological growth and the analysis of diagnosis rate effects and prediction of zoonotic viruses, data-driven dynamic simulation and scenario analysis of the spread of diseases. Frontiers in Mathematical Modelling Research will play a pivotal role as helpful resource for mathematical biologists and ecologists, epidemiologists, epidemic modelers, virologists, researchers, mathematical modelers, robotic scientists and control engineers and others engaged in the analysis of the transmission, prevention, and
control of infectious diseases and their impact on human health. It is expected that this self-contained edited book can also serve undergraduate and graduate students, young scholars and early career researchers as the basis for meaningful directives of current trends of research in mathematical biology.

**Record Values and Their Applications for Exponential and Rayleigh Distributions - A Handbook**

*Mohammad Ahsanullah (Professor Emeritus, Rider University, Lawrenceville, New Jersey, USA) and Mohammad Shakil (Professor of Mathematics, Miami Dade College, Hialeah, Florida, USA)*

In series: *Mathematics Research Developments*

Publication Date: 12/29/2022

139 pp.

Softcover: 979-8-8697-245-0. $95.00

e-book: 979-8-8697-508-6. $95.00

Records arise naturally in many fields of study such as climatology, sports, science, engineering, medicine, traffic, and industry, among others. An observation is called a record if its value is greater than (or analogously, less than) all the preceding observations. The exponential and Rayleigh distribution play pivotal roles in the study of records because of their wide applicability in the modeling and analysis of lifetime data. In this handbook, various properties of record values of univariate exponential and Rayleigh distributions, including most of the recent works, are reviewed. Some new results on mean residual life based on records and the minimum variance linear unbiased estimators of past records from univariate exponential distribution are presented.

**Stochastic Processes: Fundamentals and Emerging Applications**

*Mikhail Moklyachuk, D.Sc. (Professor, Department of Probability Theory, Statistics and Actuarial Mathematics, Taras Shevchenko National University of Kyiv, Ukraine)*

In series: *Mathematics Research Developments*

Publication Date: 12/15/2022

530 pp.

Hardcover: 978-1-68507-982-6. $260.00

e-book: 978-8-8697-475-1. $260.00

Stochastic processes involving random variables are associated with the concepts of uncertainty or chance. Significant research areas in mathematical and applied sciences are devoted to their study. The growing interest of researchers interested in this field is caused by a variety of different applications in many areas like mechanics, acoustics, economics, medicine, biology etc. Thus, understanding the needs of practitioners and simultaneously presenting the new theoretical results is the aim of the book. This book consists of 12 chapters, which describe the basic concepts and properties of random processes.

**Special Topics**

**Advances in Mathematics Research. Volume 31**

*Albert R. Baswell*

In series: *Advances in Mathematics Research*

Publication Date: 06/01/2022

205 pp.

Hardcover: 978-1-68507-892-8. $250.00

e-book: 978-1-68507-903-1. $250.00

This volume includes six chapters that detail recent advancements in mathematics research. Chapter One presents various capabilities of the Maple computer algebra system. Chapter Two uses data from the Children of Immigrants Longitudinal Study to demonstrate how to perform multilevel structural equation modeling to investigate if academic aspiration of immigrant youths in late adolescence mediates both the effects of family socioeconomic status and school location at individual and school levels in early adolescence on their later successful college graduation in young adulthood. Chapter Three proves the existence and regularity of solutions in $\alpha$-norm for some partial functional integrodifferential equations in Banach spaces. Chapter Four discusses a
method for obtaining exact solutions of nonlinear partial differential equations. Chapter Five analyzes the linear and nonlinear stability of modons and We-Verkley waves, which are weak solutions of the barotropic vorticity equation. Lastly, Chapter Six provides an explicit representation of the maps interconnecting the sets of solutions to the special double confluent Heun equation and the equation of the RSJ model of overdamped Josephson junction in case of shifted sinusoidal bias.

**Advances in Mathematics Research. Volume 32**  
*Albert R. Baswell*

In series: *Advances in Mathematics Research*  
Publication Date: 10/13/2022  
317 pp.  
Hardcover: 979-8-88697-332-7. $250.00  
e-book: 979-8-88697-351-8. $250.00

Chapter 1 is an introduction to meta-regression analysis. The authors demonstrate that meta-regression analysis is a methodological framework that allows modeling and correcting problems of publication bias while explaining the variability of results usually found in social sciences literature. In Chapter 2, a new model order reduction technique for the simplification of the complex large-scale stable linear dynamic systems is presented. Chapter 3 discusses the importance of identifying variables, scales, and methods for the sensory analysis of novel food products. Chapter 4 focuses on structural stability and dynamic quantum models. Chapter 5 is an introduction to linear difference equations. Chapter 6 includes a survey of various measures used in cohort analysis with alternative multifaceted indices used in theory and often by practitioners. The chapter is intended to offer a concise description of these measures and elaborate where and how they may be used in different cohort analysis. In Chapter 7, two mixed initial-boundary value problems describing motions of incompressible Maxwell fluids with power-law dependence of viscosity on the pressure are analytically investigated. In Chapter 8, new permanent solutions for Stokes’ second problem of incompressible burgers fluids and their applications is explored. Next, for the first time, the authors propose the definitions of the fractional sum and fractional difference on non-uniform lattices in two different ways. Chapter 10 focuses on the Carleman linearization method for boundary value problems. In the last chapter, Chapter 11, the authors review some of the recent work on pattern packing, superfamilies, and pattern avoidance when colored or circular patterns/permutions are considered.

**PHYSICS AND ASTRONOMY**

**Cosmology**

*A Guide to Black Holes*  
*Kenth Arun, PhD (Assistant Professor, Department of Physics & Electronics, CHRIST (Deemed to be University), Bengaluru, India)*

In series: *Space Science, Exploration and Policies*  
Publication Date: 12/29/2022  
230 pp.  
Hardcover: 979-8-88697-163-7. $160.00  
e-book: 979-8-88697-515-4. $160.00

The idea of a black hole goes back to Laplace or maybe even earlier to Englishman John Michell, referring to these bodies as ‘dark stars’, way back in 1783. Laplace argued that the largest objects in the universe must become invisible and would hence be dark. When Einstein proposed his general theory of relativity in the early 1900s, Schwarzschild solved the equation (1916) for a spherical star and the solution implied that below a radius (referred to as the Schwarzschild radius), all light and other radiation are trapped inside the star, and it becomes what is called a black hole. With better detection mechanisms, such as the images from the Event Horizon Telescope, the universe of black holes is opening up for astronomical observations and discoveries over all wavelengths. This book covers a wide range of topics related to black holes and their dynamics.
Conceptual Features of Einstein’s Theory of General Relativity
Based on the Philosophy of Science
Jun-Young Oh (Emeritus Professor, Hanyang University at Seoul Campus, Republic of Korea, Visiting Research Professor, Seoul National University, Republic of Korea, Seoul, South Korea)

In series: Space Science, Exploration and Policies
Publication Date: 09/15/2022
139 pp.
Softcover: 979-8-88697-107-1. $95.00
e-book: 979-8-88697-140-8. $95.00

The main objective of this book is to present the theory of general relativity in a direction that will be intelligible, informative, and interesting to the individual reader. Many of the texts about general relativity are either too thin on detail or too narrow in scope; this book was written with the aim of rectifying these shortcomings.

Mathematical and Computational Physics

Second Harmonic Generation: Pathways of Nonlinear Photonics
Abdel-Baset M. A. Ibrahim, PhD (School of Physics and Material Studies, Faculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia) and Pankaj Kumar Choudhury, PhD (Institute of Microengineering and Nanoelectronics, Universiti Kebangsaan Malaysia)

In series: Physics Research and Technology
Publication Date: 07/08/2022
229 pp.
Hardcover: 978-1-68507-888-1. $160.00
e-book: 978-8-88697-002-9. $160.00

Second harmonic generation (SHG) has a wide range of applications in today’s technological era, including nonlinear optics, quantum optics, lasers, material science, medical science, biological imaging, and high-resolution optical microscopy. In the laser industry, for example, SHG is prudent to create wavelength-specific high-energy lasers. It is also used to measure ultra-short pulse width with autocorrelators. SHG is now indispensable as a spectroscopic imaging tool in applications, such as biophysical characterization of the plasma membrane, biological sensing, disease diagnostics, and investigations of biomolecular interactions at interfaces. Because of its non-destructive detection, ultrafast response, and polarization sensitivity, SHG is exploited to describe crystal structures and materials. The use of SHG to characterize two-dimensional (2D) material structures gives crucial insights into their physical properties, thereby promoting the development of the relevant basic research, leading to the investigation of the potential applications of those materials. Developments in SHG research hold promising potentials of a large class of materials, such as magnetic- and nonmagnetic layered materials, perovskites, antiferromagnetic oxides, II-VI and III-V semiconductors, and nanotubes, for a variety of technological applications. This book focuses on the process of modelling and simulations of the SHG phenomenon in the area of nonlinear and quantum optics. The first chapter provides a visualization of the scientific landscape of research in SHG using scientometric analysis from 1962 to 2020 based on Scopus database. This chapter gives new postgraduate students in the subject useful information on hot themes in SHG research and how they are related to one another. There is also a brief mention of multinational collaborative networks. The following four research chapters look at the SHG from a classical standpoint, using Maxwell’s equations to describe the nonlinear optical interaction between the electromagnetic wave and the medium. Such interaction is treated quantum mechanically in the second section of the book, with the SHG process described using a propagating Hamiltonian. As such, the volume adequately describes the SHG from both the classical and quantum mechanical viewpoints. This allows the postgraduate researchers, focusing on the nonlinear phenomena, resulting from light-matter interaction, to find the content useful. In the second part of this volume, readers are introduced to a full theoretical analysis of the quantum features generated in certain optical devices, such as a two-waveguide device working under the SHG and coupled waveguide arrays with the combined second- and third-order nonlinear effects. To be more specific, this part discusses how SHG-enabled devices might be a useful source of nonclassical light. This section remains relevant for postgraduate students commencing their studies in quantum optics, where the nonclassical phenomena, such as squeezing and entanglement, require a solid understanding of the underlying techniques, namely the phase space and the analytical perturbative methods.
Particle Physics

Scalar Strong Interaction Hadron Theory III
Fang Chao Hoh (Retired, Uppsala, Sweden)
In series: Physics Research and Technology
Publication Date: 09/21/2022
349 pp.
Hardcover: 979-8-88697-110-1. $230.00
e-book: 979-8-88697-142-2. $230.00
The purpose of this book is to present the scalar strong interaction hadron theory in a coherent and systematic manner. This is not a finished research monograph, but gives an account of the present state of a theory supposedly still at its early stage of development. The chapters herein have been revised and updated many times over the years. This work will hopefully facilitate researchers interested in entering into this field and serve as a basis for future development of this theory. The new feature of this third edition is mainly Chapters 16 and 17 in which gravitation is included in the scalar strong interaction hadron theory.

Polymer Physics

Natural/Inorganic Fillers Reinforced Kevlar Fabric Based Polymer Composites
Mohit Hemanth Kumar, Ph.D. (Department of Mechanical Engineering, Alliance College of Engineering and Design, Alliance University, Bangalore, Karnataka, India), Nivedha B (Department of Physics, National Institute of Technology, Tiruchirappalli, India) and M. Ashok, Ph.D. (Department of Physics, National Institute of Technology, Tiruchirappalli, India)
In series: Polymer Science and Technology
Publication Date: 06/10/2022
186 pp.
Hardcover: 978-1-68507-864-5. $160.00
e-book: 978-1-68507-923-9. $160.00
In recent years, composite materials have garnered attention, as various combinations of reinforcements can be incorporated to create lightweight materials with diverse properties. Composite materials can be tailored for particular applications and made suitable for adverse atmospheric conditions. A new, challenging research area involves the formulation of innovative materials with less weight, higher stiffness, lower costs, and higher biocompatibility. Examples of applications for such materials include electric vehicles, defense vehicles, aircraft parts and industrial machine structures. The incorporation of natural and inorganic filler to Kevlar epoxy composite shows improved behavioral properties compared to either natural or inorganic filler alone. These properties include tensile, flexural and interlaminar shear strength as well as thermal performance. This book aims to describe the advantages of using bi-filler reinforcement over single filler reinforcement to enable the development of innovative composite materials with tunable properties.

Quantum Theory

Radiation and Matter
Marian Apostol, PhD (Professor, Institute for Physics and Nuclear Engineering, Magurele, Romania)
In series: Physics Research and Technology
Publication Date: 10/06/2022
315 pp.
Hardcover: 979-8-88697-246-7. $230.00
e-book: 979-8-88697-267-2. $230.00
The book describes the quantum-mechanical motion in the context of the quantum field theory. A relativistic particle requires time and length thresholds in order to move
quantum-mechanically, as a consequence of its relativistic rest energy and momentum. The subject is discussed mainly in relation to the Dirac equation for the electron and the electromagnetic interaction. Electromagnetic quantum-mechanical effects are computed. Also, the book presents the theory of the electromagnetic field, the relativistic motion, especially the motion of a charge in the electromagnetic field, as well as the electromagnetic field in matter and the surface electromagnetism.

**Special Topics**

**An Introduction to Permittivity**
Parveen Saini, PhD (Conjugated Polymers and Graphene Technology Group, Solar Hutment, Polymeric and Soft Materials Section, Materials Physics and Engineering Division, CSIR-National Physical Laboratory, New Delhi, India)

In series: Physics Research and Technology
Publication Date: 11/24/2022
288 pp.
Hardcover: 979-8-88697-042-5. $230.00
e-book: 979-8-88697-375-4. $230.00

Permittivity is a very important quantity often used to quantify the behavior of a system under a given electric field distribution in space. The dielectric polarization and associated losses are two main associated effects that are connected through the complex permittivity via its real and imaginary parts respectively. Therefore, the quantitative measure of permittivity is essential for predicting the response of a system, e.g. charge storage characteristics of capacitor/supercapacitor, flux through a charge carrying closed surface, exciton binding energy in solar cells/LEDs, properties of liquid crystals and LCDs, relaxation of dielectrics, microwave absorption effectiveness of shielding materials, response of antenna systems, governing phase velocity of electromagnetic radiation through given medium, designing of metamaterials etc. Permittivity has special relevance in energy storage, energy harvesting, energy conversion, energy transmission, energy dissipation, and even stealth technology; therefore, its thorough understanding is required especially in the context of practical applications. This edited book is the first of its kind that provides a single-source solution to specifically address the fundamentals and applications of permittivity through a comprehensive literature account.

**Beyond Special Relativity: Looking for the Intrinsic Properties of Space-Time**
Riccardo Zancan (Energy Engineering Student, University of Pisa (UNIP), Via Angiolo Tommasi, Livorno (LI), Italy) and Raul Tozzi (State Scientific High School “Federigo Enriques”, Regional School Office for Tuscany, Piazza Giacomo Matteotti, Livorno (LI), Italy)

In series: Physics Research and Technology
Publication Date: 10/06/2022
249 pp.
Hardcover: 979-8-88697-108-8. $195.00
e-book: 979-8-88697-219-1. $195.00

What is time? And space? How are these two apparently opposed elements indissolubly linked? This book starts from man's intrinsic need to ask himself questions and elaborate answers, and tries to analyze, through a simple and intuitive physical-mathematical language, some aspects of Einstein's Special and General Relativity, accompanied by equally clear and immediately understandable images. An interesting discussion of simultaneity and causality is presented together with the relativistic accelerated version of the original twin paradox.
Electromagnetic Waves: Advances in Applications and Research
Manuel B. Hutchinson
In series: Physics Research and Technology
Publication Date: 09/15/2022
168 pp.
Softcover: 979-8-88697-254-2, $95.00
e-book: 979-8-88697-265-8, $95.00
Electromagnetic waves are waves that are formed due to vibrations between an electric field and a magnetic field. This book includes four chapters that present new applications and research on electromagnetic waves. Chapter One reviews the microwave absorption properties of CoFe2O4-based materials. Chapter Two examines strong resonance effects in ordered layered photonic structures for filtering, collimation, metrology and spectroscopy. Chapter Three describes an antenna array of upgraded quadruple sector emitters for wireless 4G networks. Lastly, Chapter Four explores the possibility of numerical solving scattering problems of electromagnetic waves by bodies with non-coordinate boundaries by reducing to infinite sets of linear algebraic equations relative to the coefficients of expansion of the unknown field in terms of eigen waves of coordinate domains in different coordinate systems.

Future Relativity, Gravitation, Cosmology
Valeriy V. Dvoeglazov, PhD, M. de G. Caldera Cabral, J. A. Cázares Montes, and J. L. Quintanar González (Unidad Académica de Física, Universidad Autónoma de Zacatecas, Mexico)
In series: Physics Research and Technology
Publication Date: 01/26/2023
379 pp.
Hardcover: 979-8-88697-455-3, $230.00
e-book: 979-8-88697-527-7, $230.00
This book contains fifteen selected articles which each relate to the emergent problems in modern physics. Each article has been peer-reviewed, as this volume is a continuation of the work published by the editors in the past. This book shall be of interest to professors, researchers, engineers, theoretical physicists, postgraduate students, and anyone with an interest in theoretical physics and astrophysics.

Horizons in World Physics. Volume 308
Albert Reimer
In series: Horizons in World Physics
Expected Publication Date: 03/20/2023
Hardcover: 979-8-88697-226-9, $250.00
e-book: 979-8-88697-593-2, $250.00
This volume includes ten chapters that describe recent advancements in physics research. Chapter One analyzes the molecular interaction of various types of radiation on biological matter. Chapter Two deals with supercontinuum generation using noise-like pulses from erbium-doped fiber lasers. Chapter Three examines new thermodynamic approaches to ferroelectric phase transitions. Chapter Four studies the gravitational noise from model helical structures in gelatin and chromosomes. Chapter Five describes the influence of nuclear DNA on mitochondrial DNA. Chapter Six presents the results obtained in two different problems in quantum information theory. Chapter Seven reviews hybrid quantum systems built with neutral atoms. Chapters Eight and Nine assesses the potential of successors and upgrades to the Large Hadron Collider. Finally, Chapter Ten provides measurement techniques for determining thermal conductivity on bulk samples and thin films.

Physics and Mechanics of New Materials and Their Applications, 2021 – 2022
Ivan A. Parinov, DrSc, Shun-Hsyung Chang, PhD and Arkady N. Soloviev, DrSc
In series: Materials Science and Technologies
Expected Publication Date: 02/28/2023
e-book: 979-8-88697-542-0, $210.00
The developing modern methods and approaches for studying advanced materials define the main vectors and topics for modern science and its applications. These investigations
are based on strict mathematical and numerical methods, including modern approaches of mathematical modeling and physical experiments. They allow for direct improvement of material properties and characteristics of designed devices. These PHENMA 2021 – 2022 Proceedings are devoted to Research and Development of various actual problems divided into a framework of five scientific directions: (i) processing techniques; (ii) physics and mathematics; (iii) mechanics; (iv) applications and (v) industry and management of prospective materials. This collection presents selected reports of the 10th Anniversary International Conference on "Physics and Mechanics of New Materials and Their Applications" (PHENMA 2021 – 2022), which took place in Divnomorsk, Russia, May 23 – 27, 2022.

Quantum Field Theory and Applications
Natale Palerma
In series: Physics Research and Technology
Publication Date: 07/08/2022
257 pp.
Hardcover: 978-1-68507-930-7. $160.00
e-book: 978-1-68507-957-4. $160.00
Quantum field theory (QFT) is a theoretical framework that combines classical field theory, special relativity and quantum mechanics, and represents the forefront of theoretical physics. The four chapters of this book include new research on quantum field theory and present different perspectives on the subject. Chapter One applies the notion of clothing particles in QFT to the theory of nuclear forces and quantum electrodynamics. Chapter Two is based on results from black hole thermodynamics at all energy scales and demonstrates that there is a natural ultraviolet applicable boundary distant from the Planck scales in QFT. Chapter Three presents a version of quantum field theory based on discrete energy-momentum and illustrates this theory using examples of fermion and boson fields. Lastly, Chapter Four discusses in detail whether or not perturbative expansion series in quantum electrodynamics are convergent and points out that the disagreement between the experimental value of the muon g-2 and the theoretical one predicted in the standard model might be due either to the larger hadronic vacuum polarization contributions or to an unexpectedly large sum of the perturbative expansion series.

The World of Circulating Light Where Ball Lightnings Live
Vladimir Torchigin, PhD (Professor, Chief Researcher, Russian Academy of Sciences, Federal Research Center “Computer Science and Control”, Moscow, Russia)
In series: Physics Research and Technology
Publication Date: 10/06/2022
218 pp.
Hardcover: 978-8-88697-222-1. $160.00
e-book: 978-8-88697-352-5. $160.00
The book describes a completely new world, the existence of which no one had even suspected before. Therefore, this world could not be studied either theoretically or experimentally. The study of the nature of ball lightning made it possible to discover this world. Pyotr Kapitza, a Russian scientist, Nobel Prize winner, studying the phenomenon of ball lightning, was forced to admit at the end of his life that this bright nut was too strong for his teeth. At the same time, he suggested that ball lightning is a phenomenon from another world unknown to him. Indeed, he was partly right. He was wrong that ball lightning was related to plasma, but he was right that ball lightning belonged to another world unknown to him. The book describes the features of this world and the properties of its inhabitants. The most known among them is ball lightning. This world we called the world of circulating light. This book is not science fiction. The book is based on over eight dozen articles published since 2003 in leading international physics and optics journals. Although scientists have not been able to unravel the nature of ball lightning for many centuries, it turned out that the explanation is so simple that it is accessible to schoolchildren. Such an explanation can be given without a single formula, recalling only the well-known physical laws from the school curriculum.
Advances in Sustainable Materials and Technology
Abhishek Kanoungo, PhD (Assistant Professor, Department of Civil Engineering, Chitkara University School of Engineering & Technology, Chitkara University, Himachal Pradesh, India), Sandeep Singh, PhD (Associate Professor, Department of Civil Engineering, Chandigarh University, Mohali, India), Shristi Kanoungo, M.E. (Research Scholar, Department of Civil Engineering, Punjab Engineering College, Chandigarh, India) and Ajay Goyal, PhD (Professor, Department of Civil Engineering, Chitkara University School of Engineering & Technology, Chitkara University, Himachal Pradesh, India)

In series: Civil Engineering and Architecture
Publication Date: 08/10/2022
204 pp.
Hardcover: 978-1-68507-967-3. $160.00
e-book: 978-1-68507-608-8. $160.00
Advances in Sustainable Materials and Technology focuses on the core issues of sustainable development and materials with the least environmental impact. The book discusses numerous relevant areas and innovative technologies, such as key construction materials and production, materials with lower energy impact, production processes encouraging less use of ever-depleting natural raw materials, minimization of the generation of greenhouse gases, development of new, environmentally friendly materials and agents, characterization of the properties of construction materials, and methodologies applied in the building of structures.

Recent Advances in Structural Health Monitoring Research in Australia
Hong Guan (Professor, Griffith University, Research Theme Leader of Building Science and Construction Innovation, Australia), Tommy H.T. Chan (Professor, Queensland University of Technology, Founding Chair and President, Australian Network of Structural Health Monitoring, Australia) and Jianchun Li (Professor, University of Technology Sydney, Head of Discipline, Structural & Materials Engineering, Director, CBIR – Centre for Built Infrastructure Research, Australia)

In series: Civil Engineering and Architecture
Publication Date: 06/10/2022
394 pp.
Hardcover: 978-1-68507-741-9. $230.00
e-book: 978-1-68507-609-2. $230.00
Structural Health Monitoring (SHM), a process of utilising on-structure or remote sensing systems and/or imaging techniques to monitor the performance of structures and evaluate their health conditions, has rapidly grown worldwide on its research and industrial practices in recent years. Recent disastrous bridge failures, such as the collapses of the Nanfang’ao tied-arch bridge in Taiwan, the Wuxi National Highway 312 overpass in China, and the Pont de Mirepoix suspension bridge in France, all in the year 2019, and the Mexico City Metro overpass collapse in 2021, have further reminded us of the importance of structural health monitoring for civil infrastructures. During the last three decades, SHM has attracted enormous research efforts around the world because it targets on monitoring structural conditions to prevent catastrophic failure and to provide quantitative data for engineers and infrastructure owners to design reliable and economical asset management plans. This book showcases the recent advancement in SHM research, especially for civil engineering applications in Australia, covering the state-of-the-art SHM technologies together with its latest developments and successful applications. The book provides a glance on the research outcomes in SHM-related areas delivered by some of the experts in Australian universities. This book is launched to mark the significant milestone of the 10th Anniversary of Australian Network of Structural Health Monitoring (ANSHM) and its contribution to the SHM research and practice over the past 12 years since its inception in 2009. The preparation of this book for an intended completion in 2020 was
significantly delayed due to the impact of the COVID-19 pandemic. The Network, comprising leading Australian SHM experts, aims to promote and advance SHM application, education, research and development in Australia. Although the title of the book highlights recent SHM advances in Australia, the technologies and approaches described can be applied around the world.

**Electronics**

**Recent Trends in Microstrip Antennas for Wireless Applications**

*S. Kannadhasan, PhD (Assistant Professor, Department of Electronics and Communication Engineering, Cheraisan College of Engineering, Tamil Nadu, India) and R. Nagarajan, PhD (Professor, Department of Electrical and Electronics Engineering, Gnanamani College of Technology, Tamil Nadu, India)*

In series: *Electronics and Telecommunications Research*

Publication Date: 05/04/2022

95 pp.

Softcover: 978-1-68507-744-0. $82.00
e-book: 978-1-68507-828-7. $82.00

The book covers a broad range of topics, including basic antenna theory, analytical and numerical techniques in applied electromagnetics, antenna arrays (including adaptive), aperture antennas, antenna measurements, microwave engineering, industrial and medical microwave applications, and so on. 5G propagation, MIMO and array antennas, optical nano-antennas, scattering and diffraction, computational electromagnetics, radar systems, plasmonics and nanophotonics, and advanced EM materials and structures such as metamaterials and metasurfaces are among the subjects covered in the book.

**Energy**

**Advances in Energy Research. Volume 36**

*Morena J. Acosta*

In series: *Advances in Energy Research*

Publication Date: 06/03/2022

229 pp.

Hardcover: 978-1-68507-869-0. $250.00
e-book: 978-1-68507-947-5. $250.00

This book includes eight chapters, each of which details recent advances in energy research. Chapter One examines wave power absorption using wave energy converters. Chapter Two discusses various synthesis methods for zinc oxide nanostructures, nanogenerator fabrication, and tests its performance. Chapter Three investigates the feasibility of form-stable phase change materials for thermoelectric energy harvesting applications. Chapter Four utilizes the semiotic square analysis to identify and elaborate the semantic categories of energy transition ideologies. Chapter Five deals with pyrolysis of peanut shells examining two possible routes to enhance yield and/or quality of the resulting bio-oils and to improve sustainability. Chapter Six provides an introduction to synchrotron-based X-ray techniques for analyzing energy storage materials. Chapter Seven addresses the application of Weibull distribution to analyze wind energy aspects. Finally, Chapter Eight explores the optimal design parameters of a three-magnet electromagnetic vibration-based generator under subsea conditions.

**Advances in Energy Research. Volume 37**

*Morena J. Acosta*

In series: *Advances in Energy Research*

Publication Date: 10/27/2022

225 pp.

Hardcover: 979-8-88697-392-1. $250.00
e-book: 979-8-88697-407-2. $250.00

This volume contains a selection of six chapters which review current advances in energy research, covering a wide variety of topics within that category. Chapter One analyzes the carbon footprint of hospitals and a number of potential solutions for their energy needs via “smart energy.” The second chapter discusses the potential for using ferroelectric
materials in photovoltaic energy harvesting and storage devices. Chapter Three reviews the development of advanced triboelectric nanogenerators for wave energy harvesting. The fourth chapter discusses potential alternative materials with higher capacity for energy in rechargeable batteries by examining the redox reactions for anomalous capacity. Chapter Five examines the potential of energy recovery and power production from butchery wastes in Malaysia. The final chapter reviews progress in biomass combustion and its application to energy sciences.

Designing Efficient Utilization of Energy Systems: From Green Perspectives
Teena Mishra, PhD (PSS Central Institute of Vocational Education, Bhopal, Madhya Pradesh, India)
In series: Green Research, Developments, and Programs
Publication Date: 09/21/2022
168 pp.
Softcover: 979-8-88697-051-7. $95.00
e-book: 979-8-88697-239-9. $95.00
Energy is an essential component of all life. The increasing demand for energy for human life and its impact on the environment necessitate a rethinking of the energy use system. Green energy is the solution to many of the environmental issues that we face today. The book concentrates on the notion of green energy and its application.

Energy Conversion: Methods, Technology and Future Directions
Saurabh Mani Tripathi, PhD (Founder/Coordinator, Power & Energy Research Centre (Perc), (Centre of Excellence), Assistant Professor, Department of Electrical Engineering, Kamla Nehru Institute of Technology, (An Academic Autonomous Govt. Funded Institute), Sultanpur, India) and Asheesh Kumar Singh, PhD (Professor, Department of Electrical Engineering, Motilal Nehru National Institute of Technology, Allahabad, Prayagraj, India)
In series: Energy Science, Engineering and Technology
Publication Date: 12/08/2022
341 pp.
Hardcover: 979-8-88697-370-9. $230.00
e-book: 979-8-88697-424-9. $230.00
This edited book is intended to serve as a resource for engineers, researchers, scientists and experts wishing to become familiar with energy conversion technologies. This edited volume contains thirteen selected chapters that deal with cutting-edge studies on energy conversion and storage technologies. A comprehensive collection of relevant topics on the subject area has been produced in this edited book. Readers are expected to find all the chapters inspiring and very useful while doing their research in the subject area.

The Future of Biodiesel
Michael F. Simpson
In series: Energy Science, Engineering and Technology
Publication Date: 08/29/2022
151 pp.
Softcover: 979-8-88697-166-8. $82.00
e-book: 979-8-88697-172-9. $82.00
Biodiesel is a renewable and biodegradable form of diesel derived from vegetable oils, animal fats, or recycled grease. Biodiesel offers a number of benefits compared to standard diesel, including environmental and safety benefits. This book includes five chapters that explain various aspects of biodiesel. Chapter One focuses on various aspects of biodiesel production from microalgal species that have the potential to remediate different types of wastewaters. Chapter Two aims to show whether microreactors can replace conventional biodiesel production processes and how this replacement technology could be carried out. Chapter Three studies the effects of Cynara biodiesel-bioethanol-diesel fuel mixtures on engine performance characteristics. Chapter Four presents a study of flash point and refractive index in biodiesel/butanol and
biodiesel/diesel/butonal blends. Lastly, Chapter Five presents how microbial biodegradation may ultimately affect the overall degradation of hydrocarbons, including biodiesel.

**Nuclear Energy**

A Complete Perspective of Nuclear Energy  
**J. Jason Chao, PhD** (Nuclear Engineering and Design, Elsevier, Nuclear Resilience Group, Inc., Cupertino, CA, USA)  
In series: Nuclear Materials and Disaster Research  
Publication Date: 05/17/2022  
339 pp.  
Hardcover: 978-1-68507-821-8. $230.00  
e-book: 978-1-68507-924-6. $230.00  
All the relevant subjects on nuclear power are explained in plain language to provide an across-the-board perspective on this interesting topic. Examples are designed to make the strenuous and challenging concepts easy to understand. All the topics of nuclear power are included: nuclear safety, nuclear waste, nuclear weapons, nuclear power plants, nuclear accidents, nuclear rockets, nuclear fusion, nuclear medicine, nuclear vaccines, proliferation, and some light versions of nuclear physics and nuclear fuels.

**Renewable Energy**

Microbial Fuel Cell: Electricity Generation and Environmental Remediation  
**Arpita Roy, PhD** (Assistant Professor, Department of Biotechnology, School of Engineering & Technology, Sharda University, Greater Noida, India) and **Amit Kumar Roy, PhD** (Assistant Professor, Department of Electrical Engineering, J.S.S. Academy of Technical Education, Noida, India)  
In series: Renewable Energy: Research, Development and Policies  
Publication Date: 10/06/2022  
304 pp.  
Hardcover: 979-8-88697-190-3. $230.00  
e-book: 979-8-88697-238-2. $230.00  
This book provides comprehensive knowledge on the mechanisms of microbial fuel cells and their in-depth application in the field of bio-remediation and electricity production. It provides full coverage of the basic concepts of the environmental remediation process occurring through a microbial fuel cell and reviews the latest applications of microbial fuel. Researchers will be able to find all relevant applications of microbial fuel cells in this book.

Power Electronic Converters and Induction Motor Drives  
**Jorge Rodas, PhD** (Professor, Faculty of Engineering, National University of Asuncion, Paraguay)  
In series: Renewable Energy: Research, Development and Policies  
Publication Date: 11/03/2022  
397 pp.  
Hardcover: 978-1-68507-950-5. $230.00  
With the increased emphasis on climate change and reducing harmful emissions in the atmosphere, interest in power electronics converters and electric motor drives has led to significant new developments in renewable energy systems or electric propulsion. By and large, an electric machine and a power converter are required as a means of propulsion in transportation-related applications, and an electric generator and a power converter are indispensable parts of many wind-energy-based generation systems. This book resulted in five chapters covering some of the following topics: Linear and nonlinear control of three-phase and multiphase motor drive systems; Linear and nonlinear control of power electronics converters; Winding types of multiphase machines; and Fault-tolerant control of multiphase machines. The
chapters published in this book, written by the world’s leading researchers in the field, will provide a further impetus to the developments in the field, stimulating new research endeavours in an area that will likely increase in importance in the forthcoming years.

**Smart Grid Technologies in Electric Systems for Renewable Energy**

*Eugene Chaikovskaya, PhD (Senior Researcher, Associate Professor, Department of Theoretic, General and Nonconventional Power Engineering, Odessa Polytechnic National University, Ukraine)*

In series: *Energy Science, Engineering and Technology*

Publication Date: 12/01/2022

181 pp.

Softcover: 979-8-8697-387-7. $95.00

e-book: 979-8-8697-432-4. $95.00

The book includes six chapters in which represented integrated Smart Grid systems for coordination of production and consumption of the electric power on the basis of forecasting of change of parameters of technological processes are developed. Chapter One provides a mathematical and methodological substantiation of smart grid technologies for maintaining the function of electrical systems. Chapter Two discusses the uses of a smart grid system in maintaining a biogas cogeneration system. Chapter Three gives similar insight into use of these systems in maintaining a biodiesel cogeneration system. Chapter Four explores the uses of smart grid technologies for the maintenance of the function of a drying plant as part of a cogeneration system. Chapter Five reviews smart grid technologies for maintaining wind-solar electric systems, and the final chapter, Chapter Six, similarly reviews technologies for maintaining photoelectric charging stations.

**The Future of Wind Energy**

*M. Dhurgadevi, PhD (Associate Professor, Computer Science and Engineering, Mahendra Engineering College, Tamilnadu, India), P. Sakthivel, PhD (Associate Professor, Mechanical Engineering, Sri Krishna College of Technology, Coimbatore, Tamilnadu, India) and K. Gunasekaran, PhD (Associate Professor, Computer Science and Engineering, Sri Indhu College of Engineering and Technology, Telengana, India)*

In series: *Renewable Energy: Research, Development and Policies*

Publication Date: 10/13/2022

129 pp.

Softcover: 979-8-8697-232-0. $95.00

e-book: 979-8-8697-344-0. $95.00

This book provides fundamental concepts of wind energy systems and discusses the design issues for the future as well as the challenges in wind energy research. The future of wind energy relies on Artificial Intelligence, Cloud Computing, IoT, Block chain and big data analytics for wind energy generation and monitoring.

**Industrial Technology**

**Applications of AHP Methodology for Decision-Making in Cleaner Production Processes**

*Fisnik Osmani, PhD (Assistant Professor, Faculty of Mechanical Engineering and Computers, University “Isa Boletini,” Mitrovica, Kosovo and Atanas Kochov, PhD (Professor, Mechanical Engineering, Ss. Cyril and Methodius University, Skopje, North Macedonia)*

In series: *Environmental Science, Engineering and Technology*

Publication Date: 06/30/2022

100 pp.

Softcover: 978-1-68507-882-9. $82.00

e-book: 979-8-8697-012-8. $82.00
Machinery

The Fault-Tolerant Control of Induction Motors
Mykhaylo V. Zagirnyak, Rector, D. Sc. (Eng.) (Professor, Kremenchuk Mykhailo Ostrohadskyi National University, Kremenchuk, Ukraine), Andrii P. Kalinov, Cand. Sc. (Eng.) (Associate Professor, Kremenchuk Mykhailo Ostrohadskyi National University, Kremenchuk, Ukraine), Anna V. Kostenko, Cand. Sc. (Eng.) (Kremenchuk Mykhailo Ostrohadskyi National University, Kremenchuk, Ukraine) nad Viacheslav O. Melnykov, Cand. Sc. (Eng.) (Associate Professor, Kremenchuk Mykhailo Ostrohadskyi National University, Kremenchuk, Ukraine)

In series: Electrical Engineering Developments
Publication Date: 11/03/2022
276 pp.
Hardcover: 979-8-88697-223-8. $230.00
e-book: 979-8-88697-302-0. $230.00

Under the conditions of increased consumption of energy resources, the problem of their conservation and rational use is topical. About 50-70 % of all energy produced in the world is consumed by the electric drive. However, its operation is often accompanied by the appearance of various kinds of defects and damage caused by poor-quality manufacturing or repair, failure of individual elements of electric motors without loss of performance. It results in more energy consumption and premature repair of electrical equipment, and hence in an increase in material costs and enlarged use of energy resources. To eliminate the negative consequences of the operation of an electric drive with defects and damage to induction motors, the monograph presents methods and systems of fault-tolerant control that allow the adjustment of the operating modes using the means of a variable-frequency electric drive. The main idea of such systems is to maintain the operability of technological mechanisms in the event of various malfunctions. The worked out methods and systems make it possible to detect various types of damage at the initial stages of their development. Then, based on the obtained information, they allow upgrading the control algorithm to maintain the operable state of the electromechanical equipment to the possibility of replacing the corresponding equipment or repairing the electric drive motor. That is, the most rational area for using the developed fault-tolerant control systems is industrial equipment, which must continue to operate, despite the deterioration in dynamic characteristics and energy efficiency.

Materials Science

Advances in Materials Science Research. Volume 52
Maryann C. Wythers

In series: Advances in Materials Science Research
Publication Date: 05/06/2022
232 pp.
Hardcover: 978-1-68507-813-3. $250.00
e-book: 978-1-68507-856-0. $250.00

This volume includes seven chapters that present recent updates in materials science research. Chapter One reviews recent theoretical investigations on designing single-atom catalysts as efficient electrocatalysts in key energy conversion reactions including the oxygen evolution reaction, hydrogen evolution reaction, oxygen reduction reaction, and carbon dioxide reduction reaction. Chapter Two investigates the potential of zirconium-based adsorbents for the sequestration of dyes and heavy metals from water bodies. Chapter Three highlights the active centers of catalytic synthesis of ammonia on a sequence of single-atom catalysts, metal alloys and clusters using density functional theory calculations, semi-empirical calculations, microkinetic modeling and experimental data. Chapter Four deals with the application of zirconium and zirconium alloys in the biomedical field. Chapter Five summarizes the latest commercially available strategies for reducing and replacing the use of toxic and polluting sanitizing agents in the food industry while still allowing for a long-lasting effect against bacterial
contamination. Chapter Six includes the results of a study of metal matrix composites for identification of non-agglomerated nanodiamonds. Lastly, Chapter Seven shows that electron tunneling through a potential barrier that separates two colloidal quantum dots of germanium leads to the splitting of electron states localized over spherical interfaces.

**Advances in Materials Science Research. Volume 53**  
*Maryann C. Wythers*  
Publication Date: 09/07/2022  
Hardcover: 979-8-88697-080-7. $250.00  
e-book: 979-8-88697-096-8. $250.00  
This book includes eight chapters covering recent advances in materials science research. Chapter One focuses on various sustainable isolation methods, properties, and potential applications of nanocellulose. Chapter Two covers the use of microwave irradiation in the formation of biomaterials based on calcium phosphates and their complexes with biopolymers. Chapter Three reviews the medico-biological aspects of hydroxyapatite application and its bioactive coatings. Chapter Four discusses active materials which can be integrated in food packaging to advance its functionality. Chapter Five deals with the use of temperature-programmed desorption technique to characterize the strength of amine interaction with the metal surface in palladium catalysts. Chapter Six involves the synthesis of binary copper oxide-doped cadmium oxide nanocrystals by hydrothermal technique in a basic medium. Chapter Seven concerns the synthesis of ErNbO4 samples by the sol-gel method, through the citrate route, and heat-treated at different temperatures. Finally, Chapter Eight represents and assembles the entire progress and prospect of metal-guided photochromic materials.

**Advances in Materials Science Research. Volume 54**  
*Maryann C. Wythers*  
Publication Date: 09/21/2022  
Hardcover: 979-8-88697-194-1. $250.00  
e-book: 979-8-88697-241-2. $250.00  
This volume includes seven chapters that present recent advances in materials science research. Chapter One explores metal-based antioxidant nanomaterials and their potential role in regulating the oxidative stress response of spondyloarthritits. Chapter Two deals with the in situ synthesis and characterization of anaphoretic multifunctional coatings on titanium with enhanced properties. Chapter Three presents the basics of the development of sensors with zeolites and their applications. Chapter Four reviews the methods of synthesis and electrochemical applications of graphite and its analogues. Chapter Five includes a brief overview of the obtaining of pyrite, its applications, efficiency and the mechanisms of its actions in different processes and devices. Chapter Six reviews coprecipitation, which is one of the principal synthetic methodologies used to prepare magnetic nanoparticles, followed by coating them with silica and their applications in catalytic reactions. Lastly, Chapter Seven uses a full factorial design to identify the factors in thermomechanical processes that affect the mechanical properties of low carbon steel rebars.

**Advances in Materials Science Research. Volume 55**  
*Maryann C. Wythers*  
Publication Date: 10/20/2022  
Hardcover: 979-8-88697-213-9. $250.00  
e-book: 979-8-88697-323-5. $250.00  
This book consists of eight chapters on the latest advances in materials science research. Chapter 1 considers the production of nano-layered materials for various functional applications. Chapter 2 presents the results of a research project aimed at increasing the mechanical properties of a rolled sheet of S355 steels, microalloyed with a complex of V-Nb-Al, by means of optimization of its chemical composition and parameters of normalizing heat treatment. Chapter 3 deals with the selection criteria of brake pad material for both dry and wet environmental conditions. The review provides an insight knowledge in the development of dry and wet friction brake pad materials. Chapter 4 explores a strategy for preparing potentially useful iron oxide nanoparticles utilizing ferocene and its derivates as source materials through the solid state thermal
decomposition technique. Chapter 5 presents a detailed review on the recent research directed towards developing epoxy-based materials for radiation shielding applications. Chapter 6 focuses on the evolution of microcrystalline cellulose (MCC) in co-processed excipient technology. In Chapter 7, the drilling and machining behavior such as speed, feed, drill bit type, drill bit diameter, feed rate and their influence of natural fiber reinforced epoxy composites are discussed. In Chapter 8, the physical properties of alkali borate glasses are reviewed, as well as their relation to the changes of microscopic structure such as structural units, bridging and nonbridging oxygens. The mixed alkali effect of borate glass is also discussed.

Advances in Materials Science Research. Volume 56
Maryann C. Wythers
In series: Advances in Materials Science Research
Publication Date: 10/20/2022
316 pp.
Hardcover: 979-8-88697-331-0. $250.00
e-book: 979-8-88697-354-9. $250.00
Chapter One is focused on the basic concept of magnetron sputtering, magnetic configurations and applied power for various applications. The deposition of thin films of metals, metal oxides, metal nitrides and transition metal dichalcogenide materials by magnetron sputtering techniques for various applications is also examined. In Chapter Two, the limitations for the conventional magnetron sputtering plasma are introduced. Chapter Three begins with an overview of conjugated polymers for optoelectronic applications and the purpose of polymer blending. The chapter also addresses various blending strategies like the molecular weight of the non-conjugated polymer, blending approach, degree of crystallization, aggregation and solvation. In Chapter Four, the effect of carbon nanotubes (CNTs) on the crystallization of PLA nanocomposites is investigated. Chapter Five provides a detailed discussion of the main findings of various studies carried out for different combinations of polymer blend films consisting of insulating polymers, and blend films consisting of insulating and conducting polymers. Chapter Six focuses on degradable, biocompatible polymer blend films for microwave absorption. The last chapter of this book reviews the structure, advantages and disadvantages for a general understanding of carbon nanotubes (CNT) and then focuses on the applications of CNTs in a variety of electronic devices such as lithium-ion batteries, fuel cells, supercapacitors and solar cells.

Advances in Materials Science Research. Volume 57
Maryann C. Wythers
In series: Advances in Materials Science Research
Publication Date: 11/24/2022
286 pp.
Hardcover: 979-8-88697-363-1. $250.00
e-book: 979-8-88697-384-6. $250.00
This volume includes eight chapters that present recent advances in materials science research. Chapter One discusses the potential for using conjugated polymers in enzyme-based electrochemical biosensors. The second chapter reviews the synthesis and applications of BODIPY based conjugated polymers. The third chapter discusses the
bioprospecting of biofilm producers for bioconcrete production. Chapter Four examines the past, present, and future of iron removal from kaolin through bioleaching. Chapter Five reviews the use of coir fibers as reinforcement in polymer composites. Chapter Six reviews the molecular arrangement of long-chain ferrocenyl derivatives which have asymmetric carbon in their organized molecular films and formation of its helical nanofibers. Chapter Seven is an investigation of the spectral characteristics of composite structures based on porous materials/colloidal quantum dots/metal and metal oxide nanoparticles for optoelectronic devices and biomedical application. Chapter Eight is a quantum mechanical study of ‘4-[4-(1H-benzo[d]imidazol-2-yl)phenoxyl]phthalonitrile dimethyl sulfoxide monosolvate’ compounds containing dimethyl sulfoxide (DMSO).
Bioceramics: Advances in Applications and Research

Micheal B. Heidelberg

In series: Materials Science and Technologies
Publication Date: 08/10/2022
191 pp.
Hardcover: 979-8-88697-129-3. $160.00
e-book: 979-8-88697-137-8. $160.00

Bioceramics refers to materials that are used for repairing or replacing damaged bone tissues. This book contains four chapters that review bioceramics from a variety of perspectives. Chapter One provides salient information on the structure and properties of several calcium orthophosphates designed and used in a wide range of medical applications. Chapter Two presents a detailed review of studies of isomorphic substitutions and morphotropic transformations in compounds with the crystal structure of apatite. Chapter Three discusses the source, manufacturing methods and advantages of using calcium orthophosphates scaffolds for bone tissue engineering applications. Lastly, Chapter Four focuses on the preparation and characterization of beta-calcium pyrophosphate macroporous scaffolds from avian eggshell waste by using the polymer replication method.

Cerium Oxide: Structure, Occurrence and Applications

Jorben Gerritzen

In series: Materials Science and Technologies
Publication Date: 07/22/2022
180 pp.
Hardcover: 978-1-68507-928-4. $160.00
e-book: 978-1-68507-938-3. $160.00

Cerium oxide is a pale yellow-white powder with commercial applications in optics and welding, among other domains. This book explores the synthesis, properties and applications of cerium oxide. Chapter One exposes the different types of cerium oxide nanostructures, with emphasis on the nanotubular structure, the synthesis process, and the influence of using heat treatment. Chapter Two reviews the principal synthetic methodologies used to form cerium oxide and develop its activity. Chapter Three describes the use of metal-doped cerium oxide nanoparticles for the degradation of dyes. Lastly, Chapter Four assesses the catalytic activity of cerium oxide species towards selective catalytic reduction of SO2 with CH4.

Materials Science: Future Aspects

Kalpana Awasthi (Assistant Professor, Department of Physics, K.N. Govt. P.G. College, Gyanpur, Bhadohi, India, Arti Srivastava (Assistant Professor, Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur, India) and Mridula Tripathi (Department of Chemistry, CMP Degree College, Prayagraj, India)

In series: Materials Science and Technologies
Publication Date: 07/08/2022
264 pp.
Hardcover: 978-1-68507-843-0. $195.00
e-book: 978-8-88697-008-1. $195.00

Nanomaterials are materials with individual units ranging in size from 1 to 1000 nanometers. Nanomaterials research necessitates collaboration between materials science and nanotechnology, improved materials metrology, and synthesis. This book is made up of chapters that cover the most important aspects of nanotechnology. The majority of the subjects covered in this book are related to nanomaterial properties, synthesis, procedures, and applications. This edited book provides a comprehensive overview of the current state of this vital area. The different materials and their presentations in energy, ceramics, alloys, catalysis, membrane, pollution, and biomedical sciences are covered in this edited book. It addresses a range of aspects because these materials’ structure can be tailored at extremely small scales to achieve specific properties, thus greatly expanding the materials science toolkit. It explores several applications that could potentially be used to improve the environment and to more efficiently and cost-effectively produce energy, such as producing solar cells that generate electricity at a competitive rate, so the book offers a valuable asset for a broad
readersh, including professionals, students, and researchers from materials science/engineering, polymer science, composite technology, nanotechnology, and biotechnology whose work involves various types of nanomaterials. Increased coverage of important background science makes this a valuable self-contained text, and extensive expanded referencing engages readers with the newest research and industrial advancements in the subject. This edited book contains twelve chapters of valuable studies from recent years.

Metamaterials for Microwave and Terahertz Applications: Absorbers, Sensors and Filters
Bhargav Appasani, PhD (Assistant Professor and Research Faculty, School of Electronics Engineering, Kalinga Institute of Industrial Technology, Bhubaneswar, Odisha, India), Om Prakash Acharya (School of Electronics Engineering, Kalinga Institute of Industrial Technology, Bhubaneswar, Odisha, India), Amitkumar Vidyakant Jha (School of Electronics Engineering, Kalinga Institute of Industrial Technology, Bhubaneswar, Odisha, India) and Nisha Gupta (Department of Electronics Engineering, Birla Institute of Technology, Mesra, Jharkhand, India)

In series: Advances in Applied Science and Engineering
Publication Date: 12/08/2022
208 pp.
Hardcover: 978-8-88697-330-3. $160.00
E-book: 978-8-88697-419-5. $160.00

The research on advanced materials is moving at a pace to achieve better performance with limited resources and time. Electromagnetic materials made up of materials such as metals and dielectrics, when scaled down to subwavelength dimensions and when arranged in a periodic manner, begin to exhibit some unique properties that cannot be obtained or that cannot be observed using the conventional materials. These materials are known as meta-materials and have attracted the attention of the electromagnetic community because of their myriad applications. They are usually arranged in repeating patterns, at scales that are smaller than the wavelengths of the phenomena they influence. Their precise shape, geometry, dimensions, orientation and arrangement gives them the ability to influence the electromagnetic waves and achieve benefits that go beyond what is possible with conventional materials. Over the last few years, metamaterials have discovered an unprecedented rise in practical applications in various fields of science and engineering, particularly, in microwave and terahertz frequency regimes. This book will provide a glimpse into the design of filters, sensors and absorbers in microwave and terahertz frequencies. The main objective of this book is to create awareness among young researchers about this challenging and growing field of this metamaterial, and to provide them detailed theory of designing such structures.

Photosensitizers and Their Applications
Davor Margetic, PhD (Senior Scientist, Head of Division, Organic Chemistry and Biochemistry, Head of Laboratory, Physical-Organic Chemistry, Rudjer Boskovic Institute Bijenicka, Zagreb, Croatia) and Renjith Thomas, PhD (Assistant Professor, Department of Chemistry, Theoretical Chemistry and Chemical Physics Lab, St. Berchman’s College, Changanassery, Kerala, India)

In series: Materials Science and Technologies
Publication Date: 07/27/2022
356 pp.
Hardcover: 978-1-68507-880-5. $230.00
E-book: 978-8-88697-039-5. $230.00

Application of light in chemistry presents an active field of research with a very promising outlook, particularly in technology and medicine. Molecules which mediate the transfer of light to another molecule (photosensitizers) are the cornerstone of exploitation of light. The current state of research and recent progress in applications of photosensitizers in diverse fields are documented in twelve chapters written by scientists from around the world. Chapter 1 gives a general overview on the applications of photosensitizers in synthetic organic chemistry. This review is followed by Chapters 2-7, which deal with the various applications of photosensitizers in medicine, in particular, in photodynamic cancer therapy. The subsequent Chapters 8-12 cover different aspects of applications of photosensitizers in material science, such as for dye-sensitized solar cells and photo-responsive materials.
Silk Fibroin: Advances in Applications and Research

Shivaji H. Pawar, PhD (Distinguished Professor and Former Vice Chancellor, D. Y. Patil University, Kolpahur, India, Emeritus Professor in Physics & Founder Director, Centre for Innovative and Applied Research (CIAR), T. C. College, Baramati, India)

In series: Recent Trends in Biotechnology
Publication Date: 01/26/2023
332 pp.
Hardcover: 979-8-88697-402-7. $230.00
e-book: 979-8-88697-516-1. $230.00

This book is an extensive collection of new research on nanoscience and nanomaterials by experts working in the fields of nanoscience, material science, energy, agriculture, computer science and engineering, atmospheric nanoscience, medicine, and nanobiotechnology.

Metal Alloys

Magnesium Alloys: Advances in Research and Applications

Catalin Iulian Pruncu, PhD (Visiting Researcher, Departimento di Meccanica, Matematica e Management, Bari, Italy) and Kavian Omar Cooke (Associate Professor of Material Science and Engineering, University of Bradford, UK); Kavian Omar Cooke, PhD (Associate Professor of Material Science and Engineering, University of Bradford, UK)

In series: Materials Science and Technologies
Publication Date: 09/30/2022
133 pp.
Softcover: 978-1-68507-975-8. $82.00
e-book: 979-8-88697-237-5. $82.00

As the world moves towards electrification of a large percentage of the transportation networks in wealthy countries such as the United Kingdom, the United States of America and several European nations, magnesium alloys and their fundamental research are important in order to create robust platforms for delivering lighter weight structures which in turn helps to promote an eco-environmental society. This manuscript contains a comprehensive discussion of the recent research dedicated to improving the strength and formability of the magnesium alloy while identifying potential applications for different critical sectors. Further, the present book provides a substantial review of the most recent developments of magnesium alloys and their use in self-healing technology and battery storage, among several other areas.

The Fundamentals of Metal-Matrix Composites

Sezgin Ersoy, PhD (Professor, Department of Mechatronics Engineering, Faculty of Technology, Marmara University, Istanbul, Turkey)

In series: Materials Science and Technologies
Publication Date: 07/27/2022
197 pp.
Hardcover: 978-1-68507-952-9. $160.00
e-book: 979-8-88697-091-3. $160.00

Developing production technology tries to respond to human needs. Meeting these needs requires the development of new products or an increase in the supply of raw materials. Although polymer-based, recycled, and natural resources are used as raw materials, it does not reduce the importance of metal-based structures. However, there is a need to use these metal-based materials at lower costs or to improve their existing properties. This book offers relational studies to these issues.
Nanotechnology

Advancements in the Science and Technology of Conjugated Polymers

Nimisha Kaippamangalath, PhD (Assistant Research Officer, Drug Standardization Unit, Government Ayurveda College Thiruvananthapuram, Ayurveda Medical Education, Kerala, India) and G. Unnikrishnan, PhD (Professor, Department of Chemistry, National Institute of Technology Calicut, Kerala, India)

In series: New Developments in Nanotechnology Research
Publication Date: 06/01/2022
245 pp.
Hardcover: 978-1-68507-804-1. $195.00
e-book: 978-1-68507-898-0. $195.00

Pi-conjugated polymers (PCPs) are organic macromolecular systems characterized by backbone chains with alternating single and double bonds and are fascinating materials for energy-related applications. The first chapter shall help those readers who are new to the domain of PCPs to assimilate the fundamental features and the excellent opportunities associated with such macrosystems. Chapter 2 focuses on a special and growing class of PCPs – heavy main group element containing heterocyclic systems and their unique properties. The dynamic domain of conjugated porous polymers, versatile photocatalysts, is discussed in Chapter 3. The synthetic strategies, functional modifications, characteristics, and recent applications of poly(oxadiazole)s and poly(indolocarbazole)s have been presented in Chapter 4. A basic understanding of the photophysics of conjugated polymer nanoparticles and the related fabrication routes are illustrated in Chapter 5, followed by the illustration of the theory behind the utilization for modeling and simulation in Chapter 6.

Mechanical Engineering

Analytical Models of Thermal Stresses in Porous Two-Component Materials

Ladislav Ceniga (Research Professor, Institute of Material Research, Kosice, Slovak Republic)

In series: Mechanical Engineering Theory and Applications
Expected Publication Date: 02/28/2023
93 pp.
e-book: 979-8-88697-113-2. $82.00

This book presents original analytical models of stress-strain fields around pores in two-component materials. These fields are induced by thermal stresses in/around isotropic components of the porous two-component materials. The thermal stresses, which are observed during a cooling process, originate below relaxation temperature of a porous two-component material. These stresses are a consequence of different thermal expansion coefficients of material components. The thermal stresses and the stress-strain fields are determined for such a model material system, which corresponds to two types of real porous two-component materials with isotropic components. Results of this book are applicable within basic research (solid continuum mechanics, theoretical physics, materials science), as well as within the practice of engineering. The analytical models in this book can be incorporated into analytical, computational and experimental models of material stresses, interactions of energy barriers with dislocations and magnetic domain walls. Material scientists and engineers can determine such numerical values of structural parameters to result in maximum values of the thermal stresses and the stress-strain fields. Consequently, these maximum values result in maximum mechanical properties of the real porous two-component materials. Finally, this book presents such mathematical methods, which are required to determine these analytical models.
Nanotechnology and MEMS

Advances in Nanotechnology. Volume 27
Zacharie Bartul and Jérôme Trenor
In series: Advances in Nanotechnology
Publication Date: 09/01/2022
209 pp.
Hardcover: 979-8-88697-171-2. $250.00
e-book: 979-8-88697-183-5. $250.00
This volume includes five chapters that detail recent advancements in nanotechnology. Chapter One presents some of the potential applications of nanotechnology in the food industry. Chapter Two provides a systematized approach of the main synthesis and characterization methods of silver nanoparticles, their main biological activities, and their most common daily applications. Chapter Three reviews the use of nanoparticles in the pharmaceutical industry. Chapter Four describes the application of graphene in solar cells, capacitors, batteries, and more. Chapter Five explores the potential of hydrogen peroxide in detecting diseases. Chapter Six deals with the use of nanosilver-labeled polymer glycoconjugates for specific lectins sensing. Chapter Seven explores some nanotechnology applications in the DNA damage using the Monte Carlo method. Chapter Eight reviews recent reports on clay-based absorbent for the purification of wastewater contaminated with toxic dyes and heavy metals. Lastly, Chapter Nine studies an absolute stability of a nanomechatronics system with an electroelastic actuator.

Advances in Nanotechnology. Volume 28
Zacharie Bartul and Jérôme Trenor
In series: Advances in Nanotechnology
Publication Date: 12/15/2022
272 pp.
Hardcover: 979-8-88697-440-9. $250.00
e-book: 979-8-88697-462-1. $250.00
This volume contains eight selected chapters discussing recent advances in nanotechnology research and development. Chapter One discusses the dielectric and microwave absorbing properties of epoxy composites which are comprised of nanocarbon and/or inorganic particles. Chapter Two examines the use of electromagnetic heating enhanced with magnetic nanoparticles to perform cryopreservation of a large volume cell suspension. Chapter Three reviews the current state of the art and perspectives on clay epoxy nanocomposites. Chapter Four provides an overview of the process to synthesize hematite nanoparticles and an examination of their applications. Chapter Five reviews a process to synthesize nano- and microstructured layers of silver via the photo and thermal destruction of polyvinyl alcohol with silver nitrate. Chapter Six reviews the application of polyvinyl alcohol as a stabilizer for nanoparticles and the formation of nanocomposites. Chapter Seven provides a CUDA-based very fast analysis of sacrificial nanomaterials for epoxy coatings. Chapter Eight is a brief review on copper oxide nanoparticles for catalytic degradation.

Applications of Gold Nanoparticles
George L. Morrow
In series: Nanotechnology Science and Technology
Publication Date: 10/20/2022
282 pp.
Hardcover: 979-8-88697-272-6. $195.00
e-book: 979-8-88697-301-3. $195.00
Nanoscience is one of the most promising research areas in modern science with implausible applications in physics, chemistry, biology and materials science. Nanotechnology can be defined as the design, synthesis and application of materials and devices the size and shape of which have been developed at the nanoscale. In the first chapter, the authors bring to light various green methods used for gold nanoparticles (AuNPs) synthesis, their characterization and highlight their various applications. The second chapter focuses on the facile, low-cost and eco-friendly synthesis of gold nanoparticles using Caesalpinia Crista seed extract and evaluates their antimicrobial, antioxidant and anticancer efficacies. The third chapter focuses on the efficacy of biogenically synthesized AuNPs in the reduction of dyestuff pollutants and in the catalytic reduction of nitrophenols to aminophenols in the presence of NaBH4, as is the usage of plant extract-mediated
AuNPs as effective probes for the detection of heavy metal ions in water bodies. The last chapter examines the synthesis, characterizations and applications of gold nanoparticles using a 220 keV Ag Beam.

**Special Topics**

**Advances in Engineering Research. Volume 47**

*Victoria M. Petrova*

In series: *Advances in Engineering Research*

Publication Date: 05/06/2022

184 pp.

Hardcover: 978-1-68507-796-9. $250.00

e-book: 978-1-68507-902-4. $250.00

This volume includes six chapters, each of which provides updates in the field of engineering research. Chapter One reviews how cognitive radio schemes such as spectrum pooling among others improve the use of millimeter waves in mobile networks. Chapter Two introduces coupling theory and exhibits two manipulation methods for array antennas. Chapter Three describes a hardware implementation of a Simplified Gabor Wavelet transform-based approach for edge detection in image processing. Chapter Four presents a model of using multiple factor analysis and grouping to estimate the disparities in crop production development among different regions. Chapter Five models a cybernetic attack using colored petri nets to modify and delay the transmission of messages. Lastly, Chapter Six presents data mining techniques applied to a road traffic accidents database in Morocco to analyze choke points and intersection types that caused previous accidents.

**Advances in Engineering Research. Volume 48**

*Victoria M. Petrova*

In series: *Advances in Engineering Research*

Publication Date: 07/15/2022

253 pp.

Hardcover: 978-1-68507-894-2. $250.00

e-book: 979-8-88697-083-8. $250.00

This book includes nine chapters detailing recent advances in engineering research. Chapter One considers the factors affecting fuel consumption in the open pit mining model by investigating the existing equipment and machinery, and examines the results and consequences of reducing the effects of fuel mismanagement and increasing energy efficiency. Chapter Two aims to address the coaxial mixer principle and comprehensively discuss its agitation mechanism applied to the single and multiphase flows considering Newtonian and non-Newtonian fluids. Chapter Three presents a methodological framework for the implementation of Geographic Information Systems (GIS) for the management of cultural heritage. Chapter Four considers 182 licensed wind farms that are under operation in various parts of Turkey using the Data Envelopment Analysis. Chapter Five discusses the influence of cooling rate on microstructure evolution and mechanical properties for a thermomechanically processed near eutectoid steel, particularly with Nb microalloying. Chapter Six concerns a non-standard multicopter design. Chapter Seven reports on pulse generation via mode-locking and Q-switching. Chapter Eight proposes an energy-efficient write scheme for phase change memory. Finally, Chapter Nine reveals the orbiting satellite dynamics in the form of nonlinear stochastic differential equation (SDE) and state vectors.

**Advances in Engineering Research. Volume 49**

*Victoria M. Petrova*

In series: *Advances in Engineering Research*

Publication Date: 08/10/2022

221 pp.

Hardcover: 979-8-88697-132-3. $250.00

e-book: 979-8-88697-156-9. $250.00

This volume includes nine chapters that describe recent advancements in engineering research. Chapter One proposes an automatic data acquisition system using a low-cost camera for optical character recognition in industrial applications. Chapter Two describes the basic concepts and advanced techniques of Forster Resonance Energy Transfer. Chapter Three examines Hidden Markov Models and their properties. Chapter Four deals with identifying file types using file header signatures and file extensions in the context of computer forensics. Chapter Five analyzes the experience of implementing the Kanban system for inventory management at an automotive component company. Chapter Six...
provides an overview of online learning in engineering education. Chapter Seven examines tire servicing operations at a firm that maintains public service vehicles. Chapter Eight proposes an algorithm for mining actionable patterns from datasets. Lastly, Chapter Nine explains an energy-efficient home automation system using Li-Fi.

**Advances in Engineering Research. Volume 50**  
*Victoria M. Petrova*  
In series: *Advances in Engineering Research*  
Publication Date: 10/20/2022  
215 pp.  
Hardcover: 979-8-88697-283-2. $250.00  
e-book: 979-8-88697-353-2. $250.00  
One of the multiple approaches employed to monitor older people and check their health status is the use of the Hidden Markov Models (HMM), a statistical model that uses observable facts to model hidden events. Chapter One presents a systematic review of using the Prisma Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) that was updated in 2020 to incorporate the latest technologies and techniques. The review aims to establish the state of the art of the subject and presents as a conclusion how the HMM has been used and which are the open issues that need deeper research or new development to get new insights. To achieve this aim, the PRISMA methodology is carried out on Web of Science, PubMed, and Scopus. Chapter Two focuses on developing processes that provide tools (including soft and hard, analog and digital technologies) to any type of population, to break the inequality gaps in the context of the 4th industrial revolution. Chapter Three provides an overview, applications and challenges of VLC ODFM (orthogonal frequency division multiplexing) systems. In Chapter Four, the authors propose a low-cost, simple, and durable IoT-based system for the following two purposes: 1) predicting crops suitable for a given piece of land based on the soil parameters, namely, soil potential of Hydrogen (pH) and soil temperature and 2) monitoring and automating some of the recurrent processes, i.e., adding fertilizer such as Nitrogen, Phosphorous, and Potassium (NPK) and irrigation of the land. Chapter Five focuses on the effect of noise on the dynamics of natural processes. Chapter Six presents a study regarding the contribution of inrush current to the occurrence of mechanical fatigue in windings of a power transformer and, consequently, the impact of that phenomenon on the equipment’s lifetime. Chapter Seven presents a design for short circuit withstand capability of a transformer. The short circuit test is carried out to verify the integrity of short circuits developed when short circuit current flows through the transformer. In the final chapter, the problem of initial orientation of strapdown navigation system on a movable base is solved using inertial measurements under the most general assumptions about the nature of random angular motion of the base. The solution to the problem is obtained in the form of an extended Kalman filter.

**Advances in Engineering Research. Volume 51**  
*Victoria M. Petrova*  
In series: *Advances in Engineering Research*  
Expected Publication Date: 02/28/2023  
245 pp.  
Hardcover: 979-8-88697-556-7. $250.00  
e-book: 979-8-88697-569-7. $250.00  
This book contains eight selected chapters on advances in engineering research. Chapter One examines a new dielectric barrier discharge plasma actuator configuration for thermo-fluid dynamic applications. Chapter Two reviews the research on and applications of precision machining methods for aerospace engine casting. Chapter Three examines potentialities of infrared thermography in education. Chapter Four provides a review of infrared thermography in magnetism. Chapter Five reviews the use of different gas injection channel geometries to improve the performance of proton-exchange membrane fuel cells. Chapter Six explores the prospect of solving the idle LBO problem for next-generation aero combustors. Chapter Seven is an interdisciplinary study of the classification of cardiac arrhythmia using fractal dimension. Chapter Eight is a review of the operation and control of active distribution networks.
Cybersecurity and Digital Forensics: Challenges and Future Paradigms
Abdulrahman Yarali, PhD (Professor, Cybersecurity and Network Management, Murray State University, KY USA), Randal Joyce, PhD (Instructor- Cybersecurity and Network Management, Murray State University, KY USA) and Faris Sahawneh, PhD (Cybersecurity and Network Management, Murray State University, KY USA)

In series: Cybercrime and Cybersecurity Research
Publication Date: 06/03/2022
188 pp.
Hardcover: 978-1-68507-810-2. $160.00
e-book: 979-8-88697-013-5. $160.00

The aim of this book is to have a detailed discussion of cybersecurity and digital forensics for creating effective defence, analysis, and investigation of cybercrime. A broad coverage of technical and socio-economic perspectives for utilizing information and communication technologies and developing practical solutions in cybersecurity, cybercrime, and cyber forensics will be discussed. The many academic areas covered in this book include, but are not limited to: Digital Transformation and New Crimes; Evolution of Digital Forensics; Cybercrime: Privacy, Security and Law Enforcement; Digital Forensics and Cybersecurity; Mobile, Cloud and Network Forensics; Virtual Crimes of the Information Age; AI and Cybersecurity; Securing Next Generation Internet Services. There will be comprehensive discussion/research on cybercrimes and forensics, a somewhat new field, as true internet/online crimes have really only started to gain recognition in the past 10-20 years. This book presents a thorough analysis of mobile forensics, big data and cloud forensics, social networking forensics, and instant messaging apps in forensics, with the challenges that law enforcement agencies are encountering.

Nonlinear Systems: Chaos, Advanced Control and Application Perspectives
Piyush Pratap Singh, PhD (Assistant Professor, Department of Electrical Engineering, National Institute of Technology Meghalaya, Shillong, India)

In series: Technology in a Globalizing World
Publication Date: 05/23/2022
137 pp.
Softcover: 978-1-68507-660-3. $95.00
e-book: 979-8-88697-001-2. $95.00

The book covers different subjects in the field of nonlinear dynamics, especially applications and investigation of chaos and chaotic systems in electrical engineering, information technology, communication engineering and mechanical engineering. This book is suitable as a textbook at the graduate or advanced undergraduate level and will appeal to postgraduate-level students and young researchers in different fields. This book provides technological advancement in nonlinear dynamics and chaos and explores the fields of communication, electric vehicles, power systems and rotational machines with centrifugal flyball governor system. An autonomous chaotic system is explored with real and complex state variables; their projective synchronisation is reported with application to secure communication. Secure communication is achieved using Masking-Modulation and Diffie-Hellman Key Exchange encryption techniques. Further, electric vehicles are the necessity of upcoming trends. To optimize the control performance of the permanent-magnet synchronous motor with different disturbances and uncertainties, a nonlinear control for the permanent-magnet synchronous motor using sliding-mode control is reported and Cascaded PI sliding mode control technique is explored to control the chaotic behaviour in electric vehicles. Chaos behaviour is explored in power systems and its control is presented using higher order sliding mode control. Comparative performances are analysed followed by control of chaos in the Rotational Machine with Centrifugal Flyball Governor system where chaos is controlled using recursive backstepping sliding mode control. All the simulations are carried out in the MATLAB environment and reveal successful achievement of the objectives. Researchers from academia and industry, who are working in the research areas Nonlinear Dynamical Systems & Chaos, Electrical Engineering, Computer Science Engineering, Information Technology, Communication Engineering and Mechanical Engineering may be principal audiences. Also, the book will be helpful for (i) graduate or advanced undergraduate level students as a textbook or major reference book for courses such as electrical circuits, nonlinear dynamical systems, mathematical modelling, computational science, numerical simulation, and many others and (ii) postgraduate level students and young researchers in the following fields: Communication Engineering; Computer Science; Electrical and Electronic Engineering; Mechanical Engineering; Engineering Mathematics; Computational Physics.
Sustainable Production: Definitions, Aspects, and Elements  
Kamran Kheiralipour (Associate Professor, Mechanical Engineering of Biosystems Department, Ilam University, Ilam, Iran)  
In series: Technology in a Globalizing World  
Publication Date: 09/29/2022  
124 pp.  
Softcover: 979-8-88697-057-9. $82.00  
e-book: 979-8-88697-208-5. $82.00  
Production has high importance in each country in point of technical, social, environmental, and economic aspects. On another side, sustainability is a hyper-disciplinary issue which became one of the main concerns across the world. It encompasses sections of society as academic fields, and all companies, factories, organization systems, and consumers. It is a hyper-disciplinary issue because involves all aspects of human life as economic, environmental, and social aspects. Therefore, it is necessary to define and explain the various considerations and elements of sustainable production. The goal of the book is to define all aspects and elements of sustainable production for readers. This book introduces and describes sustainable production elements. It includes production, design, implementation, management, and sustainability description. Sustainable production has different aspects as technical, economic, environmental, and social. Each of these aspects has different elements in sustainable production. In this book, different elements in each aspect have been described where many of them are affected by each other. For the production a product, all or some of the elements may be considered to be respected. This book can assist the readers in considering the sustainability elements in their lives, jobs, and researches. The readers may be students, researchers, manufacturers, and those who conduct any producing or servicing activity.

Technology Development

Facial Recognition Technology: Usage by Federal Law Enforcement  
Mari F. Burke  
In series: Technology in a Globalizing World  
Publication Date: 09/07/2022  
197 pp.  
Hardcover: 979-8-88697-124-8. $160.00  
e-book: 979-8-88697-175-0. $160.00  
Facial recognition—a type of biometric technology—mimics how people identify or verify others by examining their faces. Recent advancements have increased the accuracy of automated FRT resulting in increased use across a range of applications. As the use of facial recognition technology (FRT) continues to expand, it has become increasingly important to understand its use across the federal government in a comprehensive way. Law enforcement agencies’ use of FRT has received increased attention from policymakers and the public. Some of the concerns raised revolve around the accuracy of the technology, including potential race-, gender-, and age-related biases; the process of collecting, retaining, and securing images contained in various facial recognition databases; public notification of the use of facial recognition and other image-capturing technology; and policies or standards governing law enforcement agencies’ use of the technology. Some of these concerns have manifested in actions such as federal, state, and city efforts to prohibit or bound law enforcement agencies’ use of FRT. In addition, some companies producing facial recognition software have placed new barriers to law enforcement using their technologies. This book provides an overview of federal law enforcement agencies’ use of FRT, including the current status of scientific standards for its use.

Perspectives and Practices of Gamification  
Mageswaran Sammugam, PhD (Senior Lecturer, Educational Technology, Universiti Sains Malaysia, Penang, Malaysia), Mohd Mokhzani Ibrahim, PhD (Senior Lecturer, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, Malaysia), Nurul Nadwa Zulkifli, PhD (Senior Lecturer, Educational Technology, Universiti Putra Malaysia Bintulu Campus, Sarawak, Malaysia), Syahrini Shawalludin (Senior Lecturer, Faculty of Art and Design, Universiti Teknologi Mara Kedah Branch, Kedah, Malaysia) and
In series: Advancements in Learning and Instruction
Publication Date: 06/01/2022
335 pp.
Hardcover: 978-1-68507-806-5. $230.00
This book discusses the concept of gamification in a comprehensive and in-depth manner through an emphasis on its perspectives and practices in the field of education. Much effort has been expended to present the reader with comprehensive discussions about gamification from the kindergarten level to the tertiary level of education. As a result, this book serves as a comprehensive resource for anyone interested in learning more about the concept of gamification. This book's chapters are separated into two categories, namely: (i) concept article and (ii) research article. The authors of each chapter made every attempt to be accessible and appropriate to the majority of interested parties, such as prospective teachers and researchers. Readers will be able to delve into the theories that underpin the concept of gamification in each concept article, including Game Theory, definitions, and gamification features. The basic concepts mentioned show that this book is appropriate for all levels of readers, whether they are new to gamification or have been active in gamification-related studies for a long time. Furthermore, several chapters discuss gamification-related review studies, allowing the reader to see the most recent research trends as well as research gaps that can be explored for further study. The discussion in the research articles is primarily focused on the development of a product, such as games and modules, and their implementation. At the start of each of these research articles, the author focused on current issues that prompted the development of the product. Following that, the reader will be introduced to theories and models pertinent to the product's development. Discussions on data analysis and conclusions for each chapter were detailed and in-depth, based on evidence and credible reference sources. We wish the readers a pleasant reading experience while reading this book. We hope that the book will assist readers in solidifying their understanding of gamification and putting it into practice. Furthermore, we hope that this book will serve as a catalyst for readers to explore other areas of gamification.

Industrial Health and Safety

Motor Vehicles

Automated Vehicles: Safety, Benefits, and Implications
Norman D. Hart
In series: Transportation Issues, Policies and R&D
Publication Date: 09/29/2022
350 pp.
Hardcover: 979-8-88697-256-6. $230.00
e-book: 979-8-88697-293-1. $230.00
Automated vehicles (AVs), including automated trucks and buses, are vehicles in which the safety-critical control functions (e.g., steering, acceleration, or braking) can occur without direct driver input. There are at least 1,400 automated vehicles, including automated trucks, currently in testing by more than 80 companies across 36 states, according to the U.S. Department of Transportation (DOT). This book explores the impact of automated vehicle deployment, including automated trucks and buses, on mobility, infrastructure, safety, workforce, and other economic and societal implications or benefits.
SOCIAL SCIENCES
BUSINESS AND ECONOMICS

Accounting

Who Will Pay to Save the Planet? The $100 Trillion Question
Anthony Rowley (Author and Journalist, Tokyo, Japan)

In series: Economic Issues, Problems and Perspectives
Publication Date: 08/10/2022
102 pp.
Softcover: 978-1-68507-986-4. $82.00
e-book: 979-8-88697-121-7. $82.00

Until quite recently most people were either in the dark or in denial about climate change, and even now that the impact is showing up dramatically in (man-made) "natural" disasters such as typhoons, hurricanes, fires, floods, and rising seas, the world remains divided over what action to take and largely ignorant as to what the cost of action will be. The critical issue of who will pay for a climate rescue operation has long been neglected, and now that it is finally coming into focus it is obvious that the potential deficit of finance is matched by a similar deficit of clear thinking on how to marshal and deploy the funds needed to transition successfully from a "brown" to a "green" global economy. This book discusses the nature of the threat of climate change and the problems faced by governments in combating climate change, as well as potential solutions.

Economics

Economic and Legal Foundations of Innovative Development in the Digital Age
Gabibulla Khasaev (Samara State University of Economics, Samara, Russia), Victoria Bolgova (Samara State University of Economics, Samara, Russia), Sergey Bortnikov (Samara State University of Economics, Samara, Russia), Yurii Shul’zenko (Institute of State and Law, Russian Academy of Sciences, Moscow, Russia) and Evgenia Medentseva (Samara State University of Economics, Samara, Russia)

In series: Economic Issues, Problems and Perspectives
Publication Date: 06/24/2022
221 pp.
Hardcover: 978-1-68507-730-3. $160.00
e-book: 978-1-68507-946-8. $160.00

The digital age is a modern stage of the development of society and economy, which started with the wide use of the first digital technologies (Internet, mobile communication) and reached its peak amid the Fourth Industrial Revolution due to the dissemination of smart technologies (the Internet of Things, artificial intelligence). The digital age has the highest rate of technological progress in the entire history of industrial revolutions, which predetermines two specific features of this age. The first specific feature is as follows: unlike the previous industrial revolutions, when, despite certain companies’ transition to new technologies, other companies – due to the traditional thinking of society – preserved the previous technological mode for a long time, the society progressed together with economy. Digital technologies transform not only the processes of production but also the processes of distribution and consumption of products. The growing demand for digital innovations is strong pressure on the market, which does not allow companies to remain aside from the Fourth Industrial Revolution. The second specific feature is that digitalization takes place in waves – continuously and over and over again. This is the difference between the Fourth Industrial Revolution and the previous revolutions when the technological transition was momentary and single-step. Due to this specific feature, there emerged a hypothesis that the digital age could have not one but several industrial revolutions. Followers of this hypothesis suggest considering technological progress in the macro-scale, distinguishing the pre-digital age, which was the time of the first three industrial revolutions, and the digital age, which was opened by the Fourth Industrial Revolution. Regardless of the level of the view of the digital age, it is obvious that it requires continuous, step-by-step digital innovations. This book’s contribution to the literature on digital innovations is due to offering a new
scientific and methodological approach to managing innovative development in the digital age. The main feature of the new approach is active, continuous, and comprehensive interaction between government, society, and entrepreneurship. The advantage of the new approach is the increase of effectiveness of state and corporate management of innovative development, as well as accelerated and well-balanced adaptation of society to the digital age. This book is aimed primarily at scholars studying digital innovations. For them, the book offers fundamental developments, empirical overview, case studies, and scientific and methodological recommendations in the sphere of innovative development of state and law, society, and economy in the digital age. Due to its multidisciplinary character, the book will also be of interest to the representatives of various humanitarian disciplines: legal, social, and economic. The book will be also of interest for practicing experts involved with the practice of corporate management and for bodies of public administration of innovative development in the digital age. For them, the book offers various issues of economic and legal regulation of innovative development in the digital age, due to which it could be a theoretical and methodological guide for improving this management.

**Economic Growth and Wellbeing: Evidence from the Belt and Road Initiative Countries**

*Raufhon Salahodjaev, PhD (Professor, Tashkent State Economics University, Tashkent, Uzbekistan)*

In series: *Economic Issues, Problems and Perspectives*

Publication Date: 09/29/2022

160 pp.

Softcover: 978-1-68507-990-1. $95.00
e-book: 978-8-88697-104-0. $95.00

Over the past two decades, there has been growing interest in understanding the drivers of rapid growth rates of countries in Central, East and South Asia. For example, countries such as China, Lao PDR, Vietnam, Uzbekistan and Mongolia were in the list of most rapid growing countries in the period of 2000-2020. As a result, these countries have considerably increased quality of life, standards of living and life satisfaction. For example, Uzbekistan is consistently ranked among one of the happiest developing countries in the world. The present book attempts to build up on existing empirical research to offer all-encompassing evidence on some of the drivers and correlates of economic growth and quality of life in the Belt and Road Initiative countries. It explores the relationships between renewable energy and CO2 emissions, financial development and economic growth, institutional and life satisfaction, among others.

**Progress in Economics Research. Volume 49**

*Albert Tavidze*

In series: *Progress in Economics Research*

Publication Date: 05/06/2022

256 pp.

Hardcover: 978-1-68507-867-6. $250.00
e-book: 978-1-68507-944-4. $250.00

This volume includes eight chapters, each of which detail recent developments in economics research. Chapter One presents the results of a large-scale study on the governance, efficiency, and development of Agricultural Knowledge and Innovation System in Bulgaria. Chapter Two assesses how efficiently educational resources or inputs are being used by Spanish public universities to maximize their teaching outputs. Chapter Three contextualizes, summarizes and integrates research on novice stock investors’ risk management. Chapter Four analyzes the economic impact of the Russia-Ukraine conflict on inflation in Trinidad and Tobago. Chapter Five looks at the spatial distribution and determinants of segregation of the Moroccan labor market. Chapter Six draws on the results of an empirical study to critically evaluate the strategic implications, challenges and opportunities of adopting a sharing economy-based framework for developing remote rural communities in Indonesia into international tourism destinations. Chapter Seven analyzes ten years of Data Envelopment Analysis models published in journals, books and papers. Lastly, Chapter Eight introduces preferences a la Greenwood, Hercowitz and Huffman into a real-business-cycle setup augmented with government.
Progress in Economics Research. Volume 50  
Albert Tavidze

In series: Progress in Economics Research  
Expected Publication Date: 03/20/2023  
Hardcover: 979-8-88697-546-8. $250.00  
e-book: 979-8-88697-596-3. $250.00

This volume contains eight selected chapters covering progress in economics research. Chapter One is an investigation into the quantitative importance of oil price on aggregate economic activity in the UK. Chapter Two is an analysis of naturally occurring patterns of growth in asset management based off of theoretical mathematical models. Chapter Three analyzes new global challenges stemming from the digitalization of the economy. Chapter Four examines quantitative effects of the Reagannomics taxation program. Chapter Five looks to progress in general equilibrium modeling of involuntary unemployment through the case of Diamond-Type OLG models. Chapter Six reviews military expenditure and growth in OECD countries. Chapter Seven examines Lithuanian armaments acquisition. Chapter Eight looks at the case of Bulgaria from 1999-2020 through the lens of a monetary business-cycle model.

Entrepreneurship

Digitalization in Business: On the Road to a Sustainable World  
José Manuel Guaita Martínez (Valencia Polytechnic University, Valencia, Spain) and Rosa Puertas Medina (Valencia Polytechnic University, Valencia, Spain)

In series: Business Issues, Competition and Entrepreneurship  
Publication Date: 11/10/2022  
352 pp.  
Hardcover: 979-8-88697-275-7. $230.00  
e-book: 979-8-88697-347-1. $230.00

In recent decades, all sectors of society and the economy have been forced to adapt to the continuous advances of the digital age. These new technologies are bringing about changes in how we communicate, work and even live, offering opportunities to face future challenges. The concept of digitalization is a fundamental part of the economic catharsis of the 21st century. The book presented here captures some aspects of this great transformation, revealing how digitalization impacts all levels of society and the economy. The need for innovation, the efficiency of its implementation, the effects on tourism and trade, its implementation in culture, and the possible gender gap associated with its development, are crucial elements analyzed in the chapters that make up this book. The results will provide evidence that decision-makers can use to achieve a homogeneous evolution of this great transformation, guaranteeing the success of the measures adopted.

Social Entrepreneurship: Perspectives, Management and Gender Differences  
Olga Agatova (Scientific Director of the Center for Management in Education, Professor, Russian Academy of National Economy and Public Administration under the President of the Russian Federation, Russian Academy of Education, Moscow, Russia)

In series: Business Issues, Competition and Entrepreneurship  
Publication Date: 09/07/2022  
194 pp.  
Hardcover: 978-1-68507-981-9. $160.00  
e-book: 979-8-88697-115-6. $160.00

In this book, social entrepreneurship is characterized as an activity aiming at solving social problems and improving social welfare. Various research approaches to the study of social entrepreneurship are presented. Entrepreneurship is studied as an activity to create new configurations of development factors as socio-technological and socio-organizational innovations. The results of research on the competencies of social entrepreneurs are presented, as well as the results of comparative studies on the development of infrastructure to support social startups and social entrepreneurs. This book covers a wide range of issues, from the analysis of the development of the concepts of "empresa" and social entrepreneurship, to the characteristics of the results of social entrepreneurship practices in various countries, as well as professional development programs for social entrepreneurs and programs of infrastructure and grant support for social projects and social startups.
**Finance and Investments**

**Credit Reporting: Reforms, Scoring and Policies**  
*Anthony J. Haley*  
In series: *Financial Institutions and Services*  
Publication Date: 12/15/2022  
269 pp.  
Hardcover: 979-8-88697-414-0. $135.00  
e-book: 979-8-88697-465-2. $135.00

The existing credit reporting system does not work for consumers. Too frequently, consumers struggle to access their credit reports, and when they do, too often, they find that errors can limit their financial opportunities and can be difficult to correct. Consumers need a credit reporting system that works for them, one where their reports are accessible and accurate, and errors are easy to correct.

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**International Finance**

**Dynamics of International Finance**  
*Ruchi Mehrotra Joshi, PhD (University of Petroleum and Energy Studies, Dehradun, Uttarakhand, India)*  
In series: *Economic Issues, Problems and Perspectives*  
Publication Date: 07/15/2022  
261 pp.  
Hardcover: 978-1-68507-838-6. $195.00  
e-book: 979-8-88697-011-1. $195.00

International finance has evolved in all aspects, be it in terms of institutional framework, rules and regulations, standardized operations, innovative financial products or policy framework. International trade and business have helped economies grow and bring prosperity across nations. Hence, the interface between international trade and business and international finance is cohesive. There are various facets of international finance including globalization, foreign direct investment, foreign exchange markets, balance of payments, institutional framework strengthening like World Bank, BIS, IMF and many others which are covered in the book. The foreign currency exchange market is the largest financial market both by volume and turnover. Forex market is developing at a better than average pace though it is also said that the foreign exchange market is still in the nascent stage in India. The issues of foreign currency regimes, exchange rate fluctuations, and the forex rate volatility dynamics and its impact on economies are interesting to understand. The book provides chapters from learned academicians in their field discussing the contemporary developments in international finance and the dynamics of evolving international financial markets.

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**Industries**

**Tourism and Hospitality**

**Exploring Cities and Countries of the World. Volume 4**  
*Kathie Summers*  
In series: *Exploring Cities and Countries of the World*  
Expected Publication Date: 03/20/2023  
176 pp.  
Hardcover: 979-8-88697-634-2. $250.00  
e-book: 979-8-88697-647-2. $250.00

This book contains seven chapters exploring the cities and countries of the world, including commentary on modern issues. Chapter One explores the effects of Korea-ASEAN cooperation in a modern era of competition between the US and China. Chapter Two reviews the institutionalization of SDGs and CSR policies in Estonia. Chapter Three proposes a new method for conservation and management of the Iranian literature through literary tourism and film-induced tourism. Chapter Four looks at influencing factors of rural community involvement in tourism development in the Gunung Leuser National Park.
Chapter Five reviews sustainable tourism through niche tourism, specifically through the lens of tea and coffee tourism in African destinations. Chapter Six reviews the question of what affected South Korea’s behaviors in hosting the Olympic Games. Chapter Seven reviews methods to improve youths’ entrepreneurial abilities to strengthen the future of Finland.

**Sustainability in Tourism: Understanding Sustainable Solutions for the Tourism Industry**

Kannapa Pongponrat, PhD (Assistant Professor, College of Innovation, Thammasat University, Bangkok, Thailand)

In series: Hospitality, Tourism and Marketing Studies
Publication Date: 07/27/2022
162 pp.
Softcover: 978-1-68507-818-8. $95.00
e-book: 978-8-88697-023-4. $95.00

This book focuses on sustainable development in the tourism industry by providing an understanding of sustainability solutions implementation in the tourism industry. It introduces sustainable development concepts and principles, then provides an explanation of how these can be applied for a sustainable tourism industry. The book provides fundamental knowledge with an intermediate level of implications to understand its practices in tourism sectors. It also provides discussion on potentials and constraints for further development in dynamic and rapid change in world tourism development, especially when it comes to an aging society, digital disruption, and the uncertainty of pandemic conditions and future changes.

**Management**

**Advances in Business and Management. Volume 19**

William D. Nelson

In series: Advances in Business and Management
Publication Date: 05/06/2022
199 pp.
Hardcover: 978-1-68507-834-8. $250.00
e-book: 978-1-68507-877-5. $250.00

This volume includes eleven chapters that present various research updates in the fields of business and management. Chapter One describes the current disruptive process and growing fragmentation in the global labor market and shows how digital platforms have reconfigured the organization of work and the trends that emerge in the context of the pandemic. Chapter Two addresses how the development of people in organizations around the world is achieved and what advancements are on the horizon in this area, specifically in Latin America. Chapter Three analyzes corporate social responsibility in agribusiness in Latin America. Chapter Four investigates whether the shift in focus of companies from shareholder to all stakeholders has led to a reorientation of remuneration incentives. Chapter Five explores the role of buyers’ personalities on their responses to business-to-business advertising messages. Chapter Six analyzes the main entropy measures applied to the sovereign credit rating data of the European Union. Chapter Seven highlights the importance of collaborative entrepreneurship education. Chapter Eight describes strategies for success for small and medium enterprises using action-oriented systems thinking simulations. Chapter Nine analyzes narrative practices of greenwashing developed by multinational corporations in Spain. Chapter Ten discusses major policy changes for Bhutan in light of the impact of the pandemic on tourism. Finally, Chapter Eleven proposes and evaluates a framework augmenting the standard business cycle model with shopping time to study business cycles in Bulgaria.

**Leading with Passion**

Cam Caldwell, PhD (Retired Professor, Business, American University of the Emirates; University of Illinois Springfield, Illinois, USA) and Verl Anderson, PhD (Professor of Management, College of Business, Dixie State University, St. George, UT, USA)

In series: Management Science - Theory and Applications
Publication Date: 06/24/2022
197 pp.
This book addresses the nature of passion and emotion as a part of the leader-follower relationship. Those who lead must establish the ability to understand others’ hopes, desires, and emotional priorities in order to unlock their highest potential. Great organizations and effective leaders accomplish extraordinary results by obtaining the commitment and dedication of all of their members. Leading with passion most effectively means that a leader also understands her or his own motivations and develops the ability to use those feelings and emotions in healthy and constructive ways. Passion enriches and enlarges the capacity to feel strongly and to care completely. But passion must also be fully understood and regulated in appropriate ways for a leader to be most effective. We trust that those who read this book will enjoy its chapters and will contemplate the ideas, suggestions, and challenges contained herein. We encourage the readers to utilize their passions to live a fuller and more satisfying life themselves – and to use those same passions to bless and serve the lives of others.

Marketing and Sales

Brands, Products, Labels and the COVID-19 Pandemic: Impact and Perspectives
Joseph Kaswengi, PhD (Vallorem Lab, Université d’Orléans, Orléans, France) and Aurore Ingarao, PhD (Vallorem Lab, Université d’Orléans, Orléans, France)
In series: Management Science - Theory and Applications
Publication Date: 08/18/2022
190 pp.
Online Book: 979-8-88697-147-7. $0.00
The COVID-19 pandemic has had a wide-ranging impact on not only businesses and consumers, but also on brands, products, and labels. Several issues have been identified by practitioners and researchers, including supply chain disruptions and challenges, new ways of customer shopping, opportunities for brand competition, shifts in demand-specific product categories, and label importance in customer relationship management, among others. The papers in this book demonstrate the practical and theoretical implications of brand, product, and label management in the context of COVID-19. The themes addressed in the book contributions include healthy food consumption behavior, brand image-loyalty relationship, heritage tourism labeling, innovations, and brand performance.

Consumer Behavior

Pandemics and Consumer Behavior
Gresi Sanje, PhD (Program Coordinator, Nisantasi University School of Marketing Communication, Turkey) and Enes Emre Başar (Faculty of Business Administration, Anadolu University, Yunus Emre Campus, Tepebaşı, Eskişehir, Turkey)
In series: Marketing and Operations Management Research
Publication Date: 10/20/2022
230 pp.
Hardcover: 979-8-88697-255-9. $195.00
e-book: 979-8-88697-289-4. $195.00
Consumer behavior has changed as a consequence of the COVID-19 pandemic. As countries around the world instituted stay-at-home orders and other public health measures, consumers increased their use of online shopping and consumption of entertainment via the Internet, among other changes. As such, businesses have had to adapt their marketing strategies to appeal to this shift in consumer behavior. While some of these changes have reverted as a consequence of increased vaccination rates and the lifting of restrictions, others represent a long-lasting shift in how consumers make decisions that will last beyond the pandemic. This book includes twelve chapters that explore the effect of the pandemic on consumer behavior from a variety of perspectives.
Special Topics

A Closer Look at Counterfeit Products
Tina R. Donahue
In series: Economic Issues, Problems and Perspectives
Publication Date: 10/20/2022
169 pp.
Softcover: 979-8-88697-285-6. $95.00
e-book: 979-8-88697-328-0. $95.00
Brand owners have been sounding the alarm about dangerous counterfeit products plaguing the internet for years. As consumers have moved online, counterfeiters have embraced the internet also. Their tools are becoming more sophisticated and their targeted products becoming more wide ranging as they dupe unwitting consumers into purchasing fakes. It is clear that the fight against dangerous fakes in e-commerce requires proactive measures by the platforms. SHOP SAFE takes an important step in ensuring that what consumers see online is what they will get as reported in chapter 1. Counterfeit goods infringe on IPR, and can harm the U.S. economy and threaten consumer safety. U.S. Customs and Border Protection (CPB), the U.S. agency tasked with enforcement against counterfeits at the border, has reported that the annual number of small packages sent to the U.S. since fiscal year 2013 more than doubled, and small packages seized often contain counterfeit goods. Chapter 2 examines: how elements of the EU and U.S. approaches to combating counterfeit goods in small packages compare, any enforcement challenges posed by these goods, and the extent to which CBP has taken steps to address these challenges. Chapters 3 and 4 examine counterfeit medications.

A Closer Look at Medical Debt
Gary S. Covey
In series: Economic Issues, Problems and Perspectives
Publication Date: 09/21/2022
100 pp.
Softcover: 979-8-88697-257-3. $82.00
e-book: 979-8-88697-303-7. $82.00
Medical debt is the most common collection tradeline reported on consumer credit records. People also report being contacted by debt collectors about medical debt more than any other type of debt. While medical debt has long played an outsized role on credit reports, concerns about medical debt collections and reporting are particularly elevated due to the COVID-19 pandemic. Many people have incurred pandemic-related medical debt. Chapter 1 summarizes key areas of concern in medical debt collections and reporting. Chapter 2 reviews a bill to amend the Fair Debt Collection Practices Act.

Advances in Business and Management. Volume 20
William D. Nelson
In series: Advances in Business and Management
Publication Date: 12/22/2022
245 pp.
Hardcover: 979-8-88697-489-8. $250.00
e-book: 979-8-88697-509-3. $250.00
This volume contains eight selected chapters covering recent advances in business and management. The first chapter is a comparative empirical analysis of financial entropy from the perspective of asset management. The second chapter asks how to balance innovation and regulation in regards to SMEs and FinTech in the European Union. The third chapter provides a study of how interest rates effect consumption in the United Kingdom. The fourth chapter utilizes the Simus-Iosa method to perform a sensitivity analysis via linear programming to support stakeholders in the decision process. The fifth chapter provides a systematic approach to substantiating chain management structures in business. The sixth chapter is a guide to implementing knowledge management in financial institutions which provides a flowchart for practice. The seventh chapter reviews the effects of competitive resources and capabilities as a driver toward sustained competitive advantage among manufacturing MSMEs in emerging markets. The eighth and final chapter displays the application of random walks to Bayesian classification and business decision making.
Cryptocurrency: Policy Issues, Financial Implications, and Security Risks
Edward J. McCallum
In series: Economic Issues, Problems and Perspectives
Publication Date: 09/01/2022
442 pp.
Hardcover: 979-8-88697-126-2. $270.00
e-book: 979-8-88697-160-6. $270.00
Cryptocurrencies are digital money in electronic payment systems that generally do not require government backing or the involvement of an intermediary, such as a bank. Instead, users of the system validate payments using certain protocols. Since the 2008 invention of the first cryptocurrency, Bitcoin, cryptocurrencies have proliferated. In recent years, they experienced a rapid increase and subsequent decrease in value. One estimate found that, as of March 2020, there were more than 5,100 different cryptocurrencies worth about $231 billion.

Libra: Facebook’s Proposed Cryptocurrency
Shawn K. Guerriero
In series: Economic Issues, Problems and Perspectives
Publication Date: 08/10/2022
335 pp.
Hardcover: 979-8-88697-127-9. $230.00
e-book: 979-8-88697-161-3. $230.00
This book looks at Facebook’s proposed digital currency, Libra, and digital wallet, Calibra, and their impacts on consumers, investors, and the financial system. This venture is slated to be based in Switzerland, which has a history of being a monetary haven for criminals and shady corporations. Facebook’s plans raise serious privacy, trading, national security and monetary policy concerns.

The Future of E-Commerce
Vikas Kumar, PhD (Central University of Haryana, Mahendergarh, India) and Manju Lata, PhD (Chaudhary Bansi Lal University, Bhiwani, India)
In series: Organization, Business and Management
Publication Date: 11/24/2022
218 pp.
Hardcover: 979-8-88697-335-8. $160.00
e-book: 979-8-88697-358-7. $160.00
This book presents a futuristic perspective of e-commerce, covering the latest developments, applications and technological trends. An analytical perspective of e-commerce is presented with examples of social media and web analytics. The role of artificial intelligence and machine learning methods are also explored. Case studies and examples from around the world are included to identify the customer-centric approaches of e-commerce models of the near future.
**Assessment, Evaluation and Research Methods**

**Problem-Solving: Insights, Challenges, and Approaches**  
*Eleni Makri, PhD (Research Scientist, Insight SFI Research Centre for Data Analytics, University College Dublin, Dublin, Ireland)*  

In series:  
Publication Date: 06/01/2022  
202 pp.  
Hardcover: 978-1-68507-783-9. $160.00  
e-book: 978-1-68507-942-0. $160.00  

The authors of Problem-Solving: Insights, Challenges, and Approaches have done a brilliant job of highlighting how the definition and theorizing of problem-solving is changing and how this seems to inspire the development of research in resolving problems in current and upcoming years. By balancing our theoretical and research assumptions about problem-solving with a better awareness of the significance of plenty of other factors contributing to successfully resolving problems, individuals, teams, and communities of practice might possibly use more refined ways through which they can endorse influential transformations during problem-solving conditions and eventually generate greater shared value. In this excellent new cross-cultural Nova edition that grapples with the challenge of writing about the problem-solving paradigm, the authors have worked hard to blend diverse theoretical and research advances of problem-solving approaches in a balanced and visible way. It does not only integrate inspiring theory and research, but also develops avenues for the future of problem-solving as open science and an open innovation field. It gives insightful and practical associations addressing many of the most challenging topics that our agency and capacity as problem-solvers might entail, now and in the time ahead.

**Bilingual Education**

**Bilingualism and its Benefits**  
*Genevoix Nana, PhD (Pastoral Tutor, St. John’s College, Durham University, Durham, UK; External Postgraduate Research Supervisor, University of Wales Trinity Saint David, Lampeter, UK)*  

In series: *Education in a Competitive and Globalizing World*  
Publication Date: 01/26/2023  
261 pp.  
Hardcover: 979-8-88697-500-0. $195.00  
e-book: 979-8-88697-536-9. $195.00  

This book is about bilingualism and its benefits. It is a compilation of papers written in English and French that showcase the bilingualism of the contributors. The volume sheds light on bilingualism and bilinguals as harbingers of a close rapport with otherness. Even in uncharted and divisive situations where language use becomes highly indexed, bilinguals can metamorphose into linguistic and cultural turncoats and accommodate to the hostile host environment. This book will be of interest to academics in the fields of language, bilingualism and multilingualism and to language policymakers in general and in Africa in particular. This book will be an invaluable resource for language scholars, professionals and policymakers alike.
Exploring Alternative Assessment Techniques in Language Classrooms  
**Konstantina Iliopoulou, PhD (Laboratory Teaching Staff, Philosophy and Education, Aristotle University, Greece), Alexandra Anastasiadou, PhD (Tutor, English as a foreign/international language, Hellenic Open University, Greece), Georgia Karountzou, PhD (Tutor, Language Education for Refugees and Immigrants, Hellenic Open University, Greece) and Vasilios Zorbas, EdD (Tutor, English as a foreign/international language, Hellenic Open University, Greece)**

In series: *Languages and Linguistics*  
Publication Date: 06/29/2022  
130 pp.  
Softcover: 978-1-68507-034-2. $82.00  
e-book: 978-9-88697-003-6. $82.00

Student evaluation is one of the most important processes in the learning practice of schools, which constitutes a vital part of education. It is considered one of the most important issues which involves the teachers, the students and all the stakeholders who participate in the process of school performance. In this line, it requires the continuous attention and concern of all the engaged stakeholders, since it is a fundamental parameter of the learning process. The evaluation of Modern Greek is imperative within this context. This subject aims to enrich the students’ linguistic repertoire on the one hand and promote their knowledge of the structure and function of the language on the other. It should be noted that it is not only considered a subject per se but also as a means of organizing all other school subjects and improving students’ linguistic skills in general. Therefore, it constitutes the dominant teaching tool in an educational setting as well as the main communication method of society. The present research aims to empower students to question the quality of their evaluation in the Greek language both in school and in society, so that they will manage to demand equality in evaluation, develop critical thinking and take initiatives to defend not only themselves but also all the people who are oppressed, by seeking to create a fairer society which prioritizes meritocracy.

**Distance Education**

Contemporary Challenges in Digital Education  
**Andreia de Bem Machado, PhD (Federal University of Santa Catarina, Florianópolis, Brazil), Maria José Sousa, PhD (Professor at ISCTE, University Institute of Lisbon, Lisbon, Portugal) and Gertrudes Aparecida Dandolini, PhD (Professor Federal University of Santa Catarina, Florianópolis, Brazil)**

In series: *Education in a Competitive and Globalizing World*  
Publication Date: 08/05/2022  
169 pp.  
Softcover: 978-1-68507-866-9. $95.00  
e-book: 978-8-88697-025-8. $95.00

This book discusses the main digital pedagogies applied to higher education through a bibliometric review and identifies the digital tools and methodologies teachers have used online and intend to keep in their classes due to the identified advantages. As such, it addresses digital education and the main pedagogical trends, among them the characteristics of the flipped classroom method and analyzing the possibilities of its use in personalized higher education. It also explains the active methodologies that promote interactivity in the school context, including augmented and virtual reality in higher education. Finally, the main trends on the topic of social presence in distance education between 2010 and 2021 are discussed.
The Future of Online Education

Stephen McKenzie, PhD (School of Psychological Sciences, University of Melbourne, Australia), Lilani Arulkadacham, PhD (School of Psychological Sciences, Monash University, Australia), Jennifer Chung, PhD (School of Psychological Sciences, Monash University, Australia) and Zahra Aziz, PhD (School of Psychological Sciences, Monash University, Australia)

In series: Advancements in Learning and Instruction

Publication Date: 09/07/2022
414 pp.
Hardcover: 979-8-88697-118-7. $230.00
e-book: 979-8-88697-180-4. $230.00

The Future of Online Education provides a vision of a fully successful online education future and practical ways to best turn this vision into a reality, and benefit from it, for online education decision makers, designers, educators and students. The book provides emerging online education knowledge, perspectives, issues and opportunities, and integrates these with practical ways for online education providers and recipients to fully benefit from their great new opportunities. The book is a valuable guide to achieving the best possible online education future, and will comprehensively support online education development and implementation across courses and institutions. The Future of Online Education also provides a unique coming together of online education expert perspectives, ideas, examples and resources that will inform, inspire and support a whole-hearted entering into and advancing of our emerging online education world.

General Education

Continuing Engineering Education Handbook

Charles E. Baukal, Jr., PhD (Director, Koch Engineered Solutions Institute, John Zink Hamworthy Combustion, Tulsa, Oklahoma, USA)

In series: Education in a Competitive and Globalizing World

Publication Date: 06/03/2022
365 pp.
Hardcover: 978-1-68507-793-8. $230.00
e-book: 978-1-68507-906-2. $230.00

The book is divided into four sections. Section One includes two chapters on history. The opening chapter of the book introduces the subject of continuing engineering education (CEE). There are general sections on continuing education and engineering education and then the subject of CEE is presented. The chapter concludes with some sources for further information including relevant organizations, journals, and workshops. The second chapter in the section is on the 50-year history of engineering distance education at Iowa State University. A timeline with notable events is presented along with the key people involved in the program. Section Two concerns instructional design and contains five chapters. The first is on the learning preferences of working engineers. It presents the results of a study on the learning strategy and verbal-visual preference of engineers working in the oil and gas industry. The results show that the engineers surveyed have statistically significantly different preferences compared to the general population. They prefer problem solving and are highly visually oriented. The second chapter shows how learning styles have been incorporated into a course on process heaters. The learning styles include print, aural, interactive, and visual. The use of multiple learning styles helps training content to match the preferences of most participants. The third chapter in the section provides guidelines for selecting multimedia for CEE. The primary takeaway is that engineers are highly visual so training content should be designed accordingly. Examples include drawings, photos, videos, animations, and virtual reality simulation. The fourth chapter provides recommendations for effective instructional practices for CEE. It discusses hybrid, converged, and hyflex delivery modes. The 60-year curriculum and the growing impacts of alternative credentials and virtual/augmented/extended reality are presented. It concludes with some work and learning models in effective instructional practices. The fifth chapter in the section presents the use of virtual reality (VR) and augmented reality (AR) in CEE. Brief histories of VR and AR are given. The human factors of information overload, verbal and non-verbal communications, sight, sound/auditory, gated response, and touch are discussed. Cognitive psychology subjects of sensory memory, iconic memory, echoic memory, split attention effect, automated behaviors, kinesethetics, chunking, and serial position effects are briefly described. VR/AR integration and extensibility show the power of contextualizing information for users. Section Three focuses on CEE delivery and administration. The first chapter in the section discusses the results of a survey of working engineers to
determine their CEE practices and preferences. It includes results such as how many courses engineers take each year, what types of courses they take (technical; management; environment, health, and safety; legal; and other), what fraction of the course is mandatory including what fraction is required by the participant’s organization and by outside organizations, the fraction of courses taken that are taken for credit, and how many courses are taken after normal working hours. It also presents data on what those same working engineers preferred regarding their CEE. The second chapter provides detailed information on how to conduct effective virtual (distance) training courses including the instructional design and delivery platforms. The third chapter in the section describes combustion CEE training designed for the oil and gas industry. While it is for a specific industry, the general principles apply universally. It also includes some case studies of classes conducted at clients’ sites. The fourth chapter discusses the many types of potential CEE providers categorized by internal, external, and hybrid providers. Providers include the engineer’s own organization, universities/community colleges, training organizations, vendors, professional societies, trade organizations, government, and consultants. It is recommended that organizations choose the combination of providers that makes the most sense for their particular situation which usually will include a combination of providers. The fifth and last chapter in the section describes how to build a sustainable administrative organization for delivering CEE. It provides cultural implications, organizational design models, the four-phase natural evolution of an organization delivering online CEE, a matrix organizational design model, the new professional working adult learner, and changing demographics. The fourth and last section concerns the future of CEE and includes three chapters. The first chapter describes a sustainable future through the 60-year curriculum model. It discusses the changing postsecondary landscape, the relevance of the model, adapting to the curriculum, the role of CEE in pioneering the 60-year curriculum, and mapping higher education’s future in the context of the 60-year curriculum. The second chapter in the section discusses sustainability education and research in action (SERINA), developed by the International Association on Continuing Engineering Education (IACEE). The executive committee used the United Nations 17 Sustainable Development Goals (SDGs) as a benchmark tool to evaluate SERINA. The purpose of SERINA is to provide practical tools for engineers to help meet the SDGs. The final chapter of the section and of the book suggest some future research areas for CEE. They are broadly categorized under learning preferences, curriculum, VR and AR, and multimedia.

**Progress in Education. Volume 73**

*Roberta V. Nata*

In series: *Progress in Education*

Publication Date: 10/20/2022

272 pp.

Hardcover: 979-8-88697-270-2. $250.00
e-book: 979-8-88697-345-7. $250.00

Chapter One describes the education of students in the field of biomedical engineering in connection with communication training. This article is based on the author’s 46 years of research and education experience related to cross-cultural exchange and interdisciplinary fields. This article contains case studies related to the experience at COVID-19 from 2020 to 2021. In Chapter Two, the role of leather engineering education and training to meet the specific challenges the leather industry faces and the methodologies and pedagogical models to solve these issues are discussed, with a select few successful case studies drawn from different countries. Chapter Three engages in rethinking what can be considered as a narrative and how a multimodal perspective on narration can increase understanding of self-expression in individuals with limited verbal resources, such as minimally verbal children on the autism spectrum. The article further discusses how minimally verbal children on the autism spectrum can be supported to express their thoughts through digital storytelling. In Chapter Four, the mental health of children and young people are examined, especially those from lower socio-economic groups, which have been negatively impacted by the recent lockdowns and closure of schools and colleges. Given this picture of radical disadvantage, it is suggested that plans for general educational, and particularly, vocational reconstruction need to address these inequalities in terms of funding and curriculum development. In addition, this chapter addresses a new model of post-school vocational and education and training (VET), which seeks to address the problems of climate change and, in this respect, any blueprinting for future development which needs to embrace the requirements for a new green industrial revolution to reduce carbon emissions and halt global warming. Chapter Five provides a South African perspective of technical and vocational education in technical and vocational education and training colleges (TVET). Next, the authors describe the requirements of a doctoral degree, the demands of writing a dissertation, the challenges of finding a job, and recommendations to focus, save time, prioritize, and get motivated during these facets of life. Chapter Seven focuses on overcoming students’ alternative conceptions in redox reactions using IITF (Insight, Interaction, Task and Forum) instruction. The last chapter explores how a blended online flipped class model affects university students’ self-regulated learning (SRL) and teachers’ technological pedagogical and content knowledge (TPACK).
Undergraduate Research Perceptions and Experiences: A New Zealand Study

Doreen Vikashni Chandra, PhD (University of Canterbury, Auckland, New Zealand)

In series: University Teaching and Faculty Development

Expected Publication Date: 02/15/2023

271 pp.
Hardcover: 979-8-88697-506-2. $195.00
E-book: 979-8-88697-540-6. $195.00

Are universities producing graduates that are employable and possess the required knowledge, skills, and attributes to be lifelong learners and global citizens? Research into graduate outcomes through undergraduate research is a little over two decades old and there is much-needed research and development by universities in improving the graduate profile outcomes for undergraduate students so that graduates are ready for the changing future career demands as well as participation in postgraduate studies by research.

This book investigates undergraduate students’ perceptions and experiences of research in their programmes of study. It offers a conceptual framework for understanding undergraduate students’ research learning experiences in New Zealand and suggests good research teaching and learning practices for universities that aim to support undergraduate students’ confidence and competence in research.

It is time to call for a re-contextualization of undergraduate research teaching and learning in New Zealand research universities by re-negotiating the balance between the value of research and the value of employability skills and its impact on future graduates, preparation, and readiness for higher education and employability.

The refocus on undergraduate research in New Zealand by universities and higher education institutions is pivotal and should be actioned with urgency. This resource is designed to inform: the strategic direction for universities in Australasia when enhancing undergraduate research in the present state; for government policy decisions on university funding; standard-setting bodies on qualification standards; for researchers and academics on student expectations for the teaching of research in undergraduate programmes.

Physical Education

Enhancing Experiences: Physical Education and Health-Related Movement for Individuals with Autism Spectrum Disorder

Colin G. Pennington

In series: Physical Fitness, Diet and Exercise

Publication Date: 12/15/2022

112 pp.
Softcover: 979-8-88697-404-1. $82.00
E-book: 979-8-88697-463-8. $82.00

This book contains collected works from kinesiology, sport pedagogy, coaching, and physical education professionals at the graduate level, as well as observations and ideas from the editor, a professor of kinesiology and sport pedagogy and former personal trainer and grade-school coach and educator. While enrolled in respective undergraduate and graduate courses aimed at enhancing movement, exercise, physical activity, physical education, and sporting experiences for individuals with disabilities, the authors thoroughly researched autism spectrum disorder, explored ideas to enhance movement opportunities for students with autism spectrum disorder, and wrote chapters for this book aimed at providing suggestions and improvement strategies for teachers, coaches, and other health and movement professionals. Each chapter explains the fundamental characteristics of autism spectrum disorder and describes how educators, coaches, and facilitators of exercise and physical activity can accommodate individuals with autism spectrum disorder and adapt and/or modify physical education, physical activity, and movement experiences for individuals with autism spectrum disorder under their care. Each chapter also takes steps in educating you, the reader, on how to accommodate, modify, and support physical education and physical activity experiences for individuals with autism.
Special Topics

The Future of Medical Education
Mildred López, PhD (Associate Dean for Academic Affairs, Tecnologico de Monterrey, Mexico)
In series: Education in a Competitive and Globalizing World
Publication Date: 08/24/2022
133 pp.
Softcover: 978-1-68507-881-2. $95.00
e-book: 978-8-88697-021-0. $95.00
Medical education is a thriving field. Several forces drive changes within, such as the transition in care models and some others attributed to epidemiological factors, the improvement of educational practices, and enriched technology environments. However, more than the continuous improvement changes that these transitions cause, medical education needs to dream about the future that needs to be built. Each chapter of this book proposes an answer to the question: what is the future of medical education?

The Pathway Towards Low Carbon Schools: Criteria, Targets and Solutions
Jesús Lizana, PhD (Researcher, Engineering Science, University of Oxford, Oxford, United Kingdom), Ricardo Chacartegui, PhD (Professor, Energy Engineering Department, University of Seville, Seville, Spain), Susana Marta Almeida, PhD (Researcher, Centro de Ciências e Tecnologias Nucleares (C2TN), Instituto Superior Técnico, Universidade de Lisboa, Portugal) and Vítor José Freira Manteigas, MSc (Professor, Environmental Health, H&TRC – Health & Technology Research Center, ESteSL – Escola Superior de Tecnologia da Saúde, Instituto Politécnico de Lisboa, Portugal)
In series: Education in a Competitive and Globalizing World
Publication Date: 09/29/2022
136 pp.
Online Book: 978-1-68507-778-5. $0.00
This publication summarizes a long period of research on the environmental performance of schools inside the framework of the ClimACT project (2016-2019). It proposes a methodological approach towards a low-carbon economy based on two main actions for environmental education in schools: measuring the environmental performance of school communities through a school sustainability index based on measurable indicators in the areas of transport, procurement, green spaces, indoor air quality, energy, water and waste; and encouraging students, teachers, and families towards an energy-efficient and low-carbon pathway through a structural procedure based on roles, activities and progress evaluation. The book includes the results of 39 pilot schools in Europe before and after implementing the methodology and the catalog of low-carbon activities and solutions proposed and implemented to empower school communities towards a low-carbon economy.

HUMANITIES

History

The Life and Times of the World’s Most Famous Female Scientists
Manuel F. Varela, PhD (Professor, Biology, Eastern New Mexico University, Portales, New Mexico, USA), Ann F. Varela (Instructor, Mathematical Sciences, Eastern New Mexico University, Portales, New Mexico, USA) and Michael F. Shaughnessy, PhD (Eastern New Mexico University, Portales, New Mexico, USA)
For centuries, women have been involved in science, medicine, biology, research and discoveries, yet few have received the acknowledgement and recognition that they deserve. Some have worked with a spouse, some have worked in a university or research center, and some have chanced upon a number of insights which have revolutionized science and biology as well as microbiology. This book delves into the lives and times of many women who have contributed to isotopes, viruses, leprosy, treatments such as streptomycin, and realms such as malaria and pulsars. How these women achieved so much, sometimes against tremendous odds, is amazing in and of itself. We have attempted to look at a number of women, from various countries around the world, who have achieved eminence and fame. Sadly, some have been neglected and we have attempted to highlight those whose contributions need to receive more recognition and respect. In this day and age of female achievement, these women are stellar examples of fortitude and achievement for young girls and adolescents to emulate. Reading about the work and achievements of these famous and not-so-famous women may supply hope and encouragement and motivate females to achieve their fullest potential.

African History

African History: One of the Original Seven Liberal Arts
William S. Cook (Associate Director, Lander Center for Educational Research, Graduate School of Education, Touro College, Bronx, New York, USA)

In series: African Studies
Publication Date: 09/07/2022
281 pp.
Hardcover: 978-1-68507-962-8. $195.00
e-book: 979-8-88697-065-4. $195.00

The lack of African history curricula in colleges and universities is a manifestation of influential American educators who have promoted the idea that Africa is irrelevant and inconsequential in today’s global affairs. In this context, many educators have supported a racial ideology of falsified, delusional-based information about the accomplishments of Europeans and Euro-Americans in comparison with people of African descent that “was clearly established, protected, and perpetuated by the U.S. economic, political, educational, social, and cultural spheres.” Although this perspective is one of the greatest falsehoods and misconceptions in the world, the educational system buttresses this misinformation by not positioning African history as a significant course of study within the Western liberal arts tradition. This work aims to correct this absence by presenting a comprehensive overview of the development of civilizations in Africa, the birthplace of humanity, as well as the history of Africa-oriented curricula in higher education.

European History

Construction Contracting in Malta During Wartime: Seeking Opportunities During a Time of Economic and Environmental Distress
Rebecca Dalli Gonzi, PhD (Faculty for the Built Environment, University of Malta, Malta), Simon Grima, PhD (Insurance Department, Faculty of Economics, Management and Accountancy, University of Malta, Malta) and Anthony Żarb Dimech (Freelance Researcher and Writer)

In series: Europe: Past, Present and Future
Publication Date: 06/30/2022
92 pp.
Softcover: 978-1-68507-858-4. $82.00
e-book: 979-8-88697-010-4. $82.00

The study of the effects of risk relates to the extension of time and the permutations and combinations of events in their progressive unravelling. The notion of modernity, an evolutionary justification for a turbulent array of hazards, drives rapid change, the majority of which is irreversible. Wars
bring about irreversible change, which has far-reaching consequences for future generations. We start to grasp the impact of these shifts as we experience them through time, and we research, write about, and learn from them. Understanding the impact of post-war change requires contemplation. The aim to develop stronger post-war communities necessitates a reflection on how conflicts have separated mankind and how humanity's nature might be used to serve others. The plans that are made and the decisions taken, especially by those in positions of influence, carry greater weight in terms of the speed at which risks to humanity evolve if not addressed in time, along with their corresponding effects. As we journey through age and experience our own wars, we can choose to blindfold our way through time or rise above with strength to reach out to others, a process which in truth brings about self-actualisation.

The Mind Has Mountains: The Germanic Mystics from 1100-1960
Theodore Sabo
In series: Historical Figures
Publication Date: 10/13/2022
106 pp.
Softcover: 979-8-88697-244-3. $82.00
e-book: 979-8-88697-356-3. $82.00
The Mind Has Mountains traces the history of Germanic mysticism from the nun Hildegard von Bingen to the founding of psychoanalysis. Its focal points are Meister Eckhart, Jacob Boehme, and Idealist philosophy. It takes its readers down what Hopkins called "cliffs of fall, frightful, sheer, no-man-fathomed": the nothingness of Eckhart's God beyond God, Boehme's Ungrund, and the spirit of the depths that Carl Jung termed the collective unconscious. Characters who traverse its pages include heretic nuns, laywomen living as nuns, a priest whose listeners collapsed to the ground on hearing one of his sermons, the author of a medieval guide to Christlikeness, a cartographer of heaven and hell, and an apostate Theosophist. These spiritual guides are not so much vestiges of a prescientific era as exponents of the knowledge of God that comes through the embrace of unitive love, or what the greatest philosopher of German Idealism called the becoming of the divine.

Linguistics

International Current Trends in Applied Linguistics and Pedagogy
Isaak Papadopoulos (Assistant Professor, Head of the School of Education, Larnaca College, Cyprus, Greece) and Sorina Chiper, PhD (Associate Professor, Intercultural Communication, English for Business and Business Communication, Alexandru Ioan Cuza University of Iasi Romania, Romania)
In series: Languages and Linguistics
Publication Date: 05/06/2022
253 pp.
Hardcover: 978-1-68507-758-7. $195.00
e-book: 978-1-68507-879-9. $195.00
Superdiverse classrooms, curriculum reforms, the need for alternative, formative assessment methods, sound research to identify student populations at risk, thought-provoking proposals to develop lexical areas and components of intercultural communication skills – these are just a few of the topics that make International Current Trends in Applied Linguistics and Pedagogy a compelling book for anyone interested in theoretical developments, trends, and examples of good practices and inspiring ideas in the field of applied linguistics, language education and pedagogy. This book includes a collection of engaging pieces of research and reminds us that “education is a form of living and in this respect, it is a daily practice that resides between the spaces of phronesis and theoria” (Balducchi, in this volume). Global in the results reported and innovative in its suggestions, International Current Trends in Applied Linguistics and Pedagogy paves the way for a better understanding of the direction that language education needs to take in the 21st century – a century of multiple and multiplying social, cultural and technological challenges. Through a multidimensional and multicultural collection of research, an attempt is made to shed light onto the current diverse context of research, teaching and learning and offer incentives for further investigating and consideration.
Sociolinguistics: Past, Present and Future Perspectives
Marcus K. Jakobsen
In series: Languages and Linguistics
Publication Date: 07/15/2022
125 pp.
Softcover: 979-8-88697-018-0. $79.00
e-book: 979-8-88697-026-5. $79.00
Sociolinguistics refers to the study of language in relation to social factors, including differences of regional, class, and occupational dialect, gender differences, and bilingualism. Each of the five chapters of this book presents a unique perspective of the some of the various applications of sociolinguistics around the world. Chapter One describes the phonology of Spanish as it is spoken in Argentina, including a section on syllable structure. Chapter Two analyzes duába, an Akan verbal taboo, and examines the factors that allow this taboo to be broken or used openly in Ghanaian party politics. Chapter Three explores the sociolinguistics of tourist signage, including the causes of inconsistencies and inaccurate information. Chapter Four deals with the history of the idea of a golden throne in Iranian religious tradition. Lastly, Chapter Five focuses on the meaning of a verb used in the title of Spell 17 of the ancient Egyptian Book of the Dead.

Language and Literature

Apocalyptic Visions: Pandemics in Literature, Art, and the Movies
Marcel Danesi , PhD (Professor Emeritus, Anthropology, University of Toronto, Toronto Canada)
In series: Advances in the Arts
Publication Date: 01/26/2023
116 pp.
Softcover: 979-8-88697-507-9. $82.00
e-book: 979-8-88697-565-9. $82.00
Pandemics and other catastrophic events have been the stimulus not only for inventions and discoveries in science, but also in literary modes of understanding the world. The latter were forged as “apocalyptic visions” of the world warning humans of extinction unless they changed their ways. Not only stories, but art works, painted on murals and canvas, tell the same kind of apocalyptic narrative, imploring humans to change their ways. This book is about the meaning and impact that such apocalyptic visions, ancient and contemporary, have had on human history. It is based on the premise that pandemics have changed the world socially, politically, and culturally. The main claim put forward is that pandemics have always been instrumental in introducing new creative forms of culture, from prose fiction to current-day memetic humor, through which people come to grips with the drastic changes that pandemics bring about. The cultural forms that served this purpose do not disappear but remain intrinsic in the overall cultural-historical paradigm of humanity.

Musicology

David Ewen
In series: Fine Arts, Music and Literature
Publication Date: 11/24/2022
478 pp.
Hardcover: 979-8-88697-308-2. $270.00
e-book: 979-8-88697-374-7. $270.00
In one brilliant volume, David Ewen offers a classic in musical literature. Here are the treasured semi-classical works of two continents—enduring, always alive—analyzed by a famed authority, acclaimed as “music’s interpreter to the American people.”
Philosophy

Emerson: The Philosophy of Obedience
Shoji Goto
In series: World Philosophy
Expected Publication Date: 03/15/2023
Hardcover: 979-8-88697-388-4. $160.00
e-book: 979-8-88697-584-0. $160.00

This book, Emerson, the Philosophy of Obedience, attempts to trace Emerson who sought to integrate Western and Eastern thoughts to found a new philosophy in the new world. An ardent admirer of Plato, he is at the same time an enthusiast of Eastern philosophy. “Memory,” for example, is one of his last lecture series, “Natural Method of Mental Philosophy,” in which men are all taken as the halves, because men have aforesight, but not aforsight. Memory is, to Emerson, not only to call forth the past knowledge to the present, but also there is something related to the future, because some past things memorized in the mind are changed into “a possession of its law.” This is called “a mutation in quality,” by which past things in the mind come into “a possession of its law,” obeying the law, just as, in Phaedo, “all the apparent equals strive to attain absolute equality.” The Platonic method of Analogy works doubtlessly in Emerson. Men obey this law, because “Nature and [Man] are from one source, and that he, when humble and obedient, is nearer to the source.” The mind is such a movement, as he finds that “The mind yields sympathetically to the tendencies or laws which stream through things.” The idea of “humble and obedient,” or humility and obedience, comes originally from the Chaldean Oracles and the Heetopades, which have a decisive influence on Emerson, through “the light-armed arrive at the summit,” and “the flower of the mind.” Because of this profound Eastern thought and ideas, he is called “this student of Eastern philosophy.”

Explaining Phenomenology
James R. Rivera
In series: World Philosophy
Publication Date: 09/07/2022
308 pp.
Hardcover: 979-8-88697-191-0. $130.00
e-book: 979-8-88697-207-8. $130.00

Phenomenology refers to the philosophical and scientific study of consciousness and the objects of direct experience. This book includes four chapters that explore phenomenology from several perspectives. Chapter One examines Augustine's paradox as the formula of a philosophical problem through the lens of the phenomenological concept of the horizon. Chapter Two employs the tenets of hermeneutic phenomenology and the method of path-dependent process tracing to interrogate the “longue durée” historical experience of Ghana from 1951 to 1992 to probe the evolutionary dynamics of its democracy. Chapter Three presents ongoing research on a phenomenological ontology of forms of life. Lastly, Chapter Four advances the study of organizational cognition by exploring emergence in the context of the postal sector.

Georgian Mythology
Zurab Kiknadze
In series: Georgian Classics
Expected Publication Date: 03/20/2023
Hardcover: 979-8-88697-389-1. $75.00
e-book: 979-8-88697-626-7. $75.00

Zurab Kiknadze (1933-2022) was a famous Georgian Orientalist, Semitologist, and Sumerologist, Emeritus Professor of Ilia State University. He researched the cultures of the ancient Near East, issues of Bible Studies, Christology, Georgian folklore, and mythology.

“Georgian Mythology” introduces an unknown world of myths to English-speaking readers. Its creator is one of the world’s oldest nations which traces the history of its statehood back to the 4th century BC. The Georgian mythological world is valuable not only for its antiquity but, most importantly, for its originality. Its significance is further increased by the fact that in the mountainous regions of Georgia (especially in eastern Georgia), the traditional lifestyle was preserved until almost the middle of the 20th century and fragmentarily is still found today. The worldview, customs, and traditions of such a society are completely based on mythical stories. Myths tell us about everything that happened from the creation of the world to the establishment of social institutions - ancestors, heroic adventures of supernatural beings, secret initiation, and others.

Georgian mythological texts are truly unique and universal; they provide us with invaluable information about the existence and life of traditional society. They introduce us to the ancient mytho-religious consciousness, moral and legal values, and spiritual culture of the Georgian people which, in the words of the author of the book, “fully expresses the hidden abilities of the whole nation, its potential.”
The book is notably valuable for specialists in various fields of humanities, researchers interested in traditional society, and students. Yet, every educated person will find it fascinating, especially a literate reader keen on the history of culture.

**Reflection: Visuality, Vision, and Time. The Ultimate Awareness**  
*Algis Mickunas (Professor, Department of Philosophy, Ohio University, Ohio, USA)*  
In series: *World Philosophy*  
Publication Date: 05/13/2022  
284 pp.  
Hardcover: 978-1-68507-745-7. $195.00  
e-book: 978-1-68507-908-6. $195.00  
Events in the contemporary world are available through a great variety of media and most of them consist of images, seemingly reflecting some “reality”. Yet there is no clear understanding what constitutes reflection, image, cultural symbolic designs and who is the reflecting Self. The text investigates the difference between visuality, images, vision and the different concepts of reality which are at the base of our understanding of the great varieties of means for reflection – from theological to technical.

**Social Responsibility of Scientists in the Technological Age: Papers from the AAAS Pacific Division Symposium Hawaii, USA, 2017**  
*Raghavan Jayakumar and Jesse J. Thomas (Lawrence Livermore National Laboratory, Livermore, CA, US)*  
In series: *Ethical Issues in the 21st Century*  
Publication Date: 10/03/2022  
152 pp.  
Online Book: 978-1-53613-458-2. $0.00  
The technological age has brought unprecedented benefits to society. Given the scope and speed of these developments, though, society may not have the ability and time to fully understand long-term impacts and react appropriately. For example, DDT, upon the discovery of its anti-arthropod activities, was widely used to help control diseases such as malaria. It was only years later that its sinister side was realized with the discovery that it accumulated within food chains, causing reproductive failure in bird populations and problems in other species. The development of CFCs led to widespread use of these compounds as refrigerants, only to later be determined a causative factor in the development of holes in the ozone layer. The development of newer chemicals such as neonicotinoids for insect control and glyphosate and atrazine for weed control has environmentalists worried that sensitive ecosystems and even entire biospheres may be endangered by these newer chemical and genetic engineering technologies. The thesis of this symposium is that science, as an expression of human life, should embody ethics and responsibility. Technology, being an outcome of science, should be considered a scientific responsibility. This symposium will focus on the approach scientists and technologists might take to fulfill this responsibility by discussing such questions as:

- Should scientists and technologists adopt the principle of “First, do no harm”?
- Should scientists assume responsibility for the consequences of their research and control technological development, or leave it to others such as funding agencies and corporations?
- How can scientists help society with risk assessment in order to help shape public policy on science and technology?
- How can scientists help stake-holders develop holistic solutions that protect the environment?
- How can scientists ensure that genetic and cyber technologies do not imperil human dignity and human rights?
- How can present and future scientists be educated on the risks of various newer technologies and their social responsibilities toward them?
Social Sciences

Special Topics

Be the Change: Learning and Teaching for the Creative Industries
Anna McNamara (Professor, Director of Learning and Teaching, Guildford School of Acting, University of Surrey, UK)
In series: Advances in the Arts
Publication Date: 08/29/2022
159 pp.
Softcover: 978-1-68507-935-2. $95.00
e-book: 978-8-88697-114-9. $95.00
Across the world, higher education and the actor and performer training sector are undergoing significant changes in response to the creative, economic and social effects of the global pandemic, the Black Lives Matter movement, and digital technologies. Be the Change: Learning and Teaching for the Creative Industries considers what change needs to look like within performance training and what we can do to create it. Each chapter captures insights from performing arts industry and educational experts, with reflections from high profile actors and practitioners. The focus is on action, not talk, seeking to provide those teaching, facilitating and leading performance training with ideas and practical steps to work differently. This book considers the training provider’s role in increasing representation and inclusivity, looking forward to a sustainable and resilient future. Whilst efforts to broaden access have had some success, for too long, people have felt excluded from audiences and from careers in the industry. Enabling future practitioners includes care of well-being, facilitating structured approaches to intimate scenes and adopting sustainable practices. International perspectives are captured to consider global systemic change, focussing on the core question: what next?

POLITICS

American Government and Politics

Examining the Withdrawal from Afghanistan and Its Effects
Juliane L. Oviedo
In series: American Political, Economic, and Security Issues
Publication Date: 09/07/2022
372 pp.
Hardcover: 978-8-88697-135-4. $230.00
e-book: 978-8-88697-176-7. $230.00
On August 15, 2021, the Taliban entered the Afghan capital of Kabul, completing a rapid takeover over the country with a speed that surprised many Afghans and Americans alike. The Taliban’s advance came as the United States was completing the military withdrawal. The U.S. military and diplomatic withdrawal and evacuation operation concluded on August 30, 2021, with the departure of U.S. forces from Afghanistan. The fall of the elected Afghan government, which had been supported by billions of dollars in U.S. assistance over the course of nearly two decades, raises significant questions about past, present, and future U.S. policy.

Intelligence Analysis: Domestic and Foreign Threats Confronting the Biden Administration
John Michael Weaver, DPA (Associate Professor, Intelligence Analysis, York College, PA, USA) and Jennifer Yongmei Pomeroy, PhD (Associate Professor, Geography, York College, PA, USA)
In series: American Political, Economic, and Security Issues
Publication Date: 05/13/2022
185 pp.
Hardcover: 978-1-68507-840-9. $160.00
e-book: 978-1-68507-940-6. $160.00
The United States, as the world’s sole superpower, is seeing its position wane as China and Russia look to reassert themselves as global powers, especially when seeing what is going on regarding Taiwan and Ukraine. These are significant challenges confronting
President Biden and his national security team. Moreover, there are many other security issues confronting the United States. This book is an amalgam of open-source intelligence analyses of countries and non-state actors from around the globe that could hurt the United States. Chapters in this work dissect issues using qualitative analysis techniques focusing on secondary data sources in order to provide an unclassified assessment of threats as seen by the United States using two models (the York Intelligence Red Team Model and the Federal Secondary Data Case Study Triangulation Model). The key audience for this book includes the 18 members of the U.S. intelligence community, members of the U.S. National Security Council, allies of the United States, nongovernmental organizations (NGOs) looking to provide support abroad, universities with international relations and intelligence analysis programs, and private sector companies considering expanding their operations overseas.

**Review of Capitol Police Procedures During the Capitol Attack**

*Rafael B. Phillips*

In series: *Government Procedures and Operations*

Publication Date: 09/29/2022

196 pp.

Hardcover: 979-8-88697-260-3. $150.00

e-book: 979-8-88697-280-1. $150.00

The Capitol Police is responsible for protecting the Congress, its members, staff, visitors, and facilities. The U.S. Capitol Police’s (Capitol Police) planning for January 6, 2021, did not reflect the potential for extreme violence aimed at the Capitol and did not include contingencies for support from other agencies. For example, although the Capitol Police had information protesters could be armed and were planning to target Congress, the Capitol Police’s plans focused on a manageable, largely nonviolent protest at the Capitol.

**Sanctions in Response to the Russian Invasion of Ukraine**

*Eric Freitag*

In series: *Government Procedures and Operations*

Publication Date: 09/01/2022

301 pp.

Hardcover: 979-8-88697-154-5. $149.00

e-book: 979-8-88697-189-7. $149.00

Sanctions are a central element of U.S. policy to counter and deter malign Russian behavior. The United States has imposed sanctions on Russia mainly in response to Russia’s invasion of Ukraine, to reverse and deter further Russian aggression in Ukraine, and to deter Russian aggression against other countries.

**U.S. Capitol Attack: Review, Response and Financing**

*Frank E. Sisson*

In series: *American Political, Economic, and Security Issues*

Publication Date: 10/20/2022

306 pp.

Hardcover: 979-8-88697-284-9. $230.00

e-book: 979-8-88697-325-9. $230.00

On January 6, 2021, the world witnessed a violent and unprecedented attack on the U.S. Capitol, the Vice President, Members of Congress, and the democratic process. Rioters, attempting to disrupt the Joint Session of Congress, broke into the Capitol building, vandalized and stole property, and ransacked offices. They attacked members of law enforcement and threatened the safety and lives of our nation’s elected leaders. Tragically, seven individuals, including three law enforcement officers, ultimately lost their lives. Chapter 1 addresses the security, planning, and response failures of the entities directly responsible for Capitol security along with critical breakdowns involving several federal agencies, particularly the Federal Bureau of Investigation (“FBI”), Department of Homeland Security (“DHS”), and Department of Defense (“DOD”). The United States faces a more dangerous period in the wake of January 6th than we did after the Oklahoma City bombing. This threat is real and it is, therefore, incumbent on all of us to look at the ways that these extremist groups fund not only their violent activities but their recruitment and radicalization efforts as well. To effectively disrupt domestic extremist
groups, we need to better understand their financing as explained in chapter 2. Chapter 3 is a transcript of remarks by Attorney General Merrick B. Garland on the anniversary of the attack.

**Laws and Legislation**

**Abortion Rights, Access, and Legislative Response**  
*Jorge P. Sandford*

In series: *Government Procedures and Operations*  
Publication Date: 09/15/2022  
172 pp.  
Softcover: 979-8-88697-258-0, $95.00  
e-book: 979-8-88697-294-8, $95.00

This book looks at the threat to abortion rights and access in the United States. It examines attempts by state governments to restrict access to abortion care. The threat to abortion rights has become dire. Millions of Americans are now living in a state where they lack meaningful access to abortion care. The right to abortion is rendered meaningless without access.

**Imperative Philosophy of International Criminal Justice. Visible Power. Invisible Essence.**  
*Farhad Malekian (Uppsala, Sweden)*

In series: *Criminal Justice, Law Enforcement and Corrections*  
Publication Date: 01/19/2023  
281 pp.  
Hardcover: 979-8-88697-366-2, $230.00  
e-book: 979-8-88697-566-6, $230.00

This book delivers a central and dynamic interpretation of the imperative philosophy of international criminal justice and how it struggles to defend the body of international human rights law. Understanding the fundamental philosophies of both legal disciplines reassures the promotion of the virtue of their norms. This work examines these basic philosophies by analysing them through the lens of the new terms: visible power and invisible essence. The former term addresses jus major provisions, while the latter reveals the substantive essence of the existence of the ethical virtues of both legal disciplines as subjects of unity. The invisible reasoning contains genuine imperative moral law and attempts to strengthen its visible framework by preventing autocratic law. The invisible platform of the system of international criminal justice should always remain imperative and it should not be compromised through new, domineering interpretations. The ethics of the procedures of the system of international criminal courts should not rest on the interpretation of visible provisions promoted through authoritarian impulsive rules, rather they should be based on whether or not the invisible pure “jus imperative” legal justice has been given sufficient weight in the judgements of courts. The coherent scale of the invisible moral essence should not be shattered by incoherent visible morality. Reading about these novel values with the new terms: criminalvisibilism and criminalinvisibilism, as coined by the author, is a must.

**Powertionism in International Criminal Justice**  
*Farhad Malekian*

In series: *Criminal Justice, Law Enforcement and Corrections*  
Publication Date: 12/15/2022  
304 pp.  
Hardcover: 979-8-88697-367-9, $230.00  
e-book: 979-8-88697-477-5, $230.00

Powertionism is an innovative legal term coined by the author used to emphasize the greed of our governments. This greed is demonstrated through how such governments interpret international legal rules based on their agendas and their desire to pursue and strengthen their political, military, and economic interests. As a result, certain governments have adopted hypocritical, autocratic, egregious, and reductio ad absurdum standards, while other governments continue to suffer under the hegemonic policies of the former. Powertionism sings a song of superiority instead of one of multilateralism. The epidemic of powertionism first arose within the systems of international human
rights law and international criminal justice when governments nominated themselves to be permanent members of the United Nations, Security Council, and NATO, and subsequently began imposing hypocritical sanctions upon other states. The existence of a number of brutal wars in different regions implies the expansion of hedonistic powerionism which has spawned from the concealed and cruel political interests at the national and international levels. The deceitful justification of the notion of powerionism prevents populations across the globe from attaining their substantive cultural, ethnic, and universal natural rights. This book illuminates the truth relating to the objectives of governments working to conceal the true nature and impact of their deadly weapons as a result of the punitive or deluded decisions made by NATO or others. We are compelled to promote accurate values of human rights in order to prevent large-scale massacres resulting from powerionist, oppressive, and unilateral judgments. We can no longer ethically consent to the domination of power, the waging of proxy wars, and the ambiguous incitement of the commission of international crimes by permitting the chauvinistic policies of powerionist governments.

**Asian Political, Social and Economic Issues**

**Modern China in Transition and Development: A Panoramic View**

Yanqing Jiang, PhD (Professor, School of Economics and Finance, Shanghai International Studies University, Shanghai, China) and Yun Sun (Postgraduate Student, School of Economics and Finance, Shanghai International Studies University, Shanghai, China)

In series: Asian Political, Economic and Social Issues
Publication Date: 12/01/2022
237 pp.
Hardcover: 979-8-88697-364-8. $160.00
e-book: 979-8-88697-394-5. $160.00

This is a book discussing China’s economic transition and development since the beginning of modern times. The book is chronologically divided into eight connected chapters that collectively provide a comprehensive and coherent discussion of the book’s focus – China’s economic transition and development in modern and contemporary times. However, each one of the eight chapters is sufficiently self-contained and can be read on its own, which potentially enhances the usefulness of the book. Chapter 1 provides an introduction and overview. All the subsequent chapters go into detail with each one of them pertaining to a specific historical time period as the corresponding chapter title properly implies. Chapter 2 focuses on the period of transformational development of the Late Qing Dynasty and the socio-economic situation after the founding of the Republic of China. Chapter 3 is about the Chinese economy in wars and covers the period of the Anti-Japanese War and China’s War of Liberation. Chapter 4 is concerned with the economy under the early governance of the People’s Republic of China while Chapter 5 focuses on the subsequent twists and turns of the socialist economic construction. The longest chapter, Chapter 6 is devoted to the great turning point in the history of China’s socialist construction – the reform and opening up. The last two chapters, Chapters 7 and 8, stride into the 21st Century. Chapter 7 is about the new stage of China’s economy, new development strategies, completion and prospect, and the achievements of the first 12 years into the new century, while Chapter 8 discusses the economic new normal and the socialism with Chinese characteristics for a new era.

**Southeast Asia**

**Mapping Out Governance: The Bangladesh Perspective**

Mohammad Mohabbat Khan, PhD (Retired Professor, Department of Public Administration, University of Dhaka, Former Member, University Grants Commission of Bangladesh, Former Member, Bangladesh Public Service Commission) and Jannatul Ferdous, PhD (Associate Professor, Department of Public Administration, Comilla University, Comilla, Bangladesh)

In series: South Asian Political, Economic and Social Issues
Publication Date: 07/27/2022
216 pp.
Hardcover: 978-1-68507-961-1. $160.00
e-book: 979-8-88697-040-1. $160.00

Good governance, at present, is a widely used term. Bangladesh has maintained a steady economic growth rate. This book explores the governance situation in Bangladesh and highlights some of the key strategies to deal with the issues related to governance. The
civil society of Bangladesh plays a crucial function in the institutionalization of democracy. Additionally, the NGOs, a key component of civil society, have continued to be enthusiastically involved in the rural community progress programs to enhance the well-being of the vulnerable people in rural areas. Moreover, the book also contains an analysis of Bangladesh's governance situation from good governance. Good governance is essential in Bangladesh because there is ongoing concern about the state's authority, the public sector's failure to meet citizens' needs and demands, the continuation of corrupt and inefficient public services, and an unfavorable business environment stifling the private sector's development. Finally, the idea of e-governance is discussed in this book. The advancements in Internet Technology (IT) can enhance service delivery efficiency. To satisfy the growing needs of today's citizens, the government has come under pressure to become more efficient and transparent. This book, it is hoped, will be helpful for those policymakers, researchers, students, and academics interested in learning about the governance situation in Bangladesh.

Southeast Asia: Redefined Strategic Order, Challenges and Impacts to Regional and Global Security

Antonio Marquina, PhD (Chair in International Security, Complutense University, Madrid, Spain), María Isabel Nieto Fernández, PhD (Lecturer, International Relations, Complutense University of Madrid, Spain), Xira Ruiz Campillo, PhD (Lecturer, International Relations, Complutense University of Madrid, Spain), Soledad Segoviano Monterrubio, PhD (Professor, International Relations, Universidad Complutense de Madrid, Spain) and Raquel Barras Tejudo, PhD (Advisor & Lecturer, International Relations, Complutense University of Madrid, Spain)

In series: South Asian Political, Economic and Social Issues
Publication Date: 12/08/2022
280 pp.
Hardcover: 979-8-88697-043-2. $195.00
e-book: 979-8-88697-411-9. $195.00

This book encompasses a wide range of security aspects and their transformation that will shape ASEAN in a period of great power competition: the blurring of ASEAN centrality, the growing importance of climate change, energy security, terrorism/organized crime transformation as well as digital economy and cybersecurity, considered as major regional risks and threats. The book shows how ASEAN is trying to be on the forefront on the in-depth global and regional discussions and policies on these issues.

Politics of Europe


Anis Bajrektarevic (Chairman for International Law and Global Political Studies, Vienna, Austria) and Nora Wolf (Research Assistant, Post-Graduate, Expert in International and European Law and International Politics, University of Geneva, Geneva, Switzerland)

In series: Europe: Past, Present and Future
Publication Date: 05/04/2022
96 pp.
Softcover: 978-1-68507-736-5. $82.00
e-book: 978-1-68507-852-2. $82.00

This reader is designed to be a concise summary of the history of the European Union. Starting with the rebirth of a common European vision right after WWII, this reader will elaborate on all the vital events and treaties that have come to substantially shape the course of the European Union to the point where it is today. Due reference is devoted to the current state-of-arts of the Union too (critically, but fairly and objectively assessed). Even though the European Union considerably contributes to improved living conditions being the form and the substance for European citizens and is commonly accepted as a heavyweight tool on the global political stage, it is yet to fully realize its capacities. The present reader does not seek to take position nor to make a case that the precise institution that came to be known as the European Union shall be exempt of criticism and questioning. Instead, the authors wish to convey an idea and an understanding of a real-life model, an essence of transnational cooperation. As such, it is objectively valuable to learn it and learn from it in order to give a chance to the
widest range possible of actors to fuel the current or future discussions on multilateral cooperation possibilities world-wide, understood here as a means to join forces in solidarity and reach common goals.

Russia’s Invasion of Ukraine: Background Issues, Conflict Developments, and International Policy Responses

Henry C. Anderson

In series: Europe: Past, Present and Future
Publication Date: 07/08/2022
419 pp.
Hardcover: 979-8-88697-020-3. $230.00
e-book: 979-8-88697-078-4. $230.00

On February 24, 2022, Russia launched a full-scale air, land, and sea attack on the independent and democratic state of Ukraine. The United States and its allies around the world have condemned Russia’s “unprecedented military aggression” as “unprovoked and unjustified.” The United States and allies, including the European Union (EU), EU members, and the United Kingdom (UK), have provided or pledged new military assistance to Ukraine. Members of legislatures, local governments, businesses, and the public in the United States and many other countries have expressed support for Ukraine and have condemned Russia’s invasion. This book compiles various aspects of this conflict and also includes some products published before the invasion that offer relevant background and context.

Special Topics

Theories of Geopolitics

James Biser Whisker (Emeritus/Retired, West Virginia University, PA, USA) and Kevin R. Spiker, PhD (Associate Professor of Political Science, Ohio University, St. Clairsville, OH, USA)

In series: Political Science and History
Publication Date: 12/08/2022
237 pp.
Hardcover: 979-8-88697-355-6. $160.00
e-book: 979-8-88697-434-8. $160.00

Using insights from critical geopolitics and cultural history, this book focuses on how the academic discipline of geopolitics was created, negotiated, and contested by a wide variety of intellectuals, practitioners, and academics. Many geopoliticians wish to begin by requiring that geopolitics take responsibility for its misuse in the past. Many also agree that this science must reconceptualize geopolitics to account for the many changes which have occurred in the late 20th, and early 21st, centuries. This book considers how geopolitical writings have been influenced by religion, iconography, and doctrine. It also considers how geopolitics has been reformulated in the post-World War II period.

SOCIAL AND BEHAVIORAL SCIENCES

Adolescence and Youth

Domestic Violence and Child Abuse in Native Communities

Caitlyn Schleinitz

In series: Domestic Violence and Abuse
Expected Publication Date: 03/20/2023
Hardcover: 979-8-88697-561-1. $135.00
e-book: 979-8-88697-600-7. $135.00

The federal government has a unique duty to Indian Tribes to assist in the protection of the health and welfare of Native American people and children. Public safety in Native communities is a problem. Criminals prey on Native women and children and putting tribal communities in harm’s way. Tribes that opt to exercise special domestic violence criminal jurisdiction can cut through the legal red tape to enforce protection orders and prosecute domestic violence crimes, all while safeguarding defendants’ due process and constitutional rights.
Child Safety

Keeping Our Children Safe Online
Joyce B. Dew

In series: Safety and Risk in Society
Expected Publication Date: 03/10/2023
Hardcover: 979-8-88697-659-5. $150.00
e-book: 979-8-88697-667-0. $150.00

Increased internet usage presents many complicated risks such as children’s online privacy. Growing bodies of research confirm the link between increased digital media use and depression and higher instances of addiction, anxiety, sleep deprivation, and obesity. As discussed in chapter 1, the Children’s Online Privacy Protection Act (COPPA) must be updated to safeguard children online.

Chapter 2 surveys how selected countries from the European Union (EU), namely France, Denmark, Germany, Greece, Portugal, Romania, Spain, Sweden, the United Kingdom (UK) and the laws of the European Union (EU) itself, provide privacy rights for children online.

While social media has changed the way the world communicates, it has also created privacy and safety concerns. Chapter 3 discusses the benefits of social media for children and youth in foster care and provides tips for parents and caregivers who want to help them use social media safely.

School Violence: Causes, Prevention and Safety Measures
Wesley R. Brown

In series: Social Issues, Justice and Status
Publication Date: 08/10/2022
378 pp.
Hardcover: 979-8-88697-103-3. $230.00
e-book: 979-8-88697-174-3. $230.00

School violence is defined as the threat or use of force with the intention of causing harm, either at school or during school-related activities. Every year millions of K-12 students experience hostile behaviors including bullying, hate speech, and hate crimes while in school. Hostile behaviors in schools can negatively affect K-12 students’ short- and long-term mental health, education, income, and overall well-being. In recent years, the U.S. Departments of Education and Justice have issued reminders to schools about their obligations to address harassment and discrimination. School-based prevention and intervention programs are designed to address a variety of issues faced by youth today, both within and outside of schools.

Communication and Media Studies

Research Advances in Communication Studies
S. R. Savithri, PhD Former Director, Department of Speech-Language Sciences, All India Institute of Speech & Hearing, Mysuru, Karnataka, India

In series: Research Advances in Communication Studies
Publication Date: 06/03/2022
355 pp.
Hardcover: 978-1-68507-527-9. $230.00
e-book: 978-1-68507-897-3. $230.00

This book is undeniably an informative and stimulating read for students, professionals, educators, and researchers with an interest in speech perception. The seven engaging chapters in the book encourage the reader to critically analyze issues in speech perception research and identify relevant areas for future examination. The first chapter introduces speech perception and raises some fundamental challenges associated with its study. In the subsequent chapters, the authors gradually immerse the reader in discussions about the anatomy and physiology of speech perception, theories, experimental methods, acoustic cues, spoken word recognition and development of speech perception to cover the depth and breadth of the field. Examples from different languages and comparisons with extant research in English highlight universal and language-specific aspects of speech perception. Scrutiny of research lacunae throughout the book make it a thought-provoking read. It calls for a collective scientific effort across languages around the world to continue unraveling the mystery of speech perception in human beings.
The Spread of Disinformation in the Media
Clarence B. Suhr
In series: Media and Communications - Technologies, Policies and Challenges
Publication Date: 11/10/2022
241 pp.
Hardcover: 978-8-88697-309-9. $150.00
e-book: 978-8-88697-376-1. $150.00
Disinformation is shared with the deliberate intent to deceive. Disinformation represents an intentional effort to shape or distort public perception. Chapter 1 reports on media outlets, such as cable news, broadcast news, and radio, and the role they play in disseminating disinformation and fomenting extremism. The spread of disinformation on social media and the deadly and dangerous effect it is having on our nation and on our democracy is reviewed in Chapter 2.

Communication Studies

Memes, Emojis, and Other Digital Signs: A Semiotic Perspective
Marcel Danesi, Ph.D. (Professor Emeritus, Department of Anthropology University of Toronto, Toronto, Ontario, Canada)
In series: Media and Communications - Technologies, Policies and Challenges
Publication Date: 05/04/2022
128 pp.
Softcover: 978-1-68507-720-4. $82.00
e-book: 978-1-68507-849-2. $82.00
Semiotics is being applied more and more to the study of digital media, which have made the production and use of new sign forms a daily event—forms that seem to evanesce almost as quickly as they emerge. These include, especially, memes, emojis, and digital narratives. How are these affecting our perception of meaning? What do they imply for the future narration of history? These are the types of questions that will be examined in this book. It has been written in as non-technical a style as possible, covering the main aspects of traditional semiotic theory and projecting them onto the contemporary world of digital communications.

Journalism

Psychological Strategies for Journalists
Alexandra Kitty, PhD (Cineflix, Toronto, Ontario, Canada)
In series: Media and Communications - Technologies, Policies and Challenges
Publication Date: 11/17/2022
319 pp.
Hardcover: 978-8-88697-357-0. $230.00
Legacy journalists have lacked psychological and empirical training, which resulted in their erosion and collapse in the eyes of the public; however, this book is the remedy for independent and emerging journalists who seek psychological training to offset hoaxes, propaganda, lies, and manipulations. What are the best practices for investigative journalists to deal with abusive sources? How does a journalist inform the public in superior ways which continue to elude traditional reporters? How does a journalist use analytical, emotional, and primal literacy along with biology to become a genuine news producer? This ground-breaking book weaves experimental and evolutionary psychology to give a new generation of independent journalists the tools they need to combat lies, manipulation, fear, and compliance while simultaneously focusing on the reporter’s own emotional and psychological well-being.
Since its inception in the 15th century, the modern humanist project developed in the West has always been linked to the utopian writings and imaginaries that have determined the characteristics of the supposed ideal society to be created. The fundamental issue is that all these projects have always emphasized the social hierarchy (class), heteropatriarchy (gender), territorial organization (colonialism and race) and the technical domain of nature (environment), regardless of whether private property of the means of production was defended or criticized. The current prevailing discourse, on the other hand, maintains a completely anti-utopian attitude from two fronts that are divergent in their starting points but convergent in their ultimate consequences. The first, with a greater presence in the environmental and technological field, is characterized by a dogmatic and uncompromising application of the principle of responsibility defined by Hans Jonas. The second, with greater application in socio-economic areas, renews the already old postulate of the “end of history” through an accelerationist-apocalyptic interpretation that identifies the current techno-capitalism with the hopeless collapse of human civilization. This book is based on the consideration that both fronts derive from a unilateral and reductionist notion of utopia, limited to the political-administrative character of public institutions, conceived under the public-private binarism of class defined during the 19th century: liberalism-capitalism vs socialism-communism. Given this position, the contributions collected in this book broaden the sociopolitical consideration of the utopian from an intersectional point of view (gender, race, class, species), identifying (the socio-symbolic organization of) sexuality as the key element from which to propose new utopian projects beyond the (human) binary of gender. With this background in mind, the seven chapters that make up this book have been divided into two non-antagonistic and non-exclusive sections. In the first, Gender Utopias in and against the Modern Project, three historical reflections are found that analyze and rescue some of the first utopian projects with a gender character conceived from a gnosological horizon and with the concepts of modern political theory in an attempt to expand, and make them work against, their heteropatriarchal-colonialist character, or at least evidence, denounce and criticize their insufficiency.

This book focuses on the all-too-commonplace tragedy that is gun violence. Chapter 1 reports on new legislation being developed to end gun violence including background checks, proper storage of firearms and the ban of assault rifles and ghost guns. Chapter 2 focuses on the epidemic of gun violence, the root causes of this violence, the trauma that results, and the various responses being developed to end the systemic, tragic, and daily experience of gun violence.
Regulation of the Professions in East Asia
Gary I. Lilienthal, PhD (Professor of Law, President of Carrington Rand, Goulburn, Australia) and Muhamad Hassan bin Ahmad, PhD (Assistant Professor of Law, IIUM Kuala Lumpur, Malaysia)

In series: Social Issues, Justice and Status
Publication Date: 12/08/2022
316 pp.
Hardcover: 979-8-88697-409-6. $230.00
e-book: 979-8-88697-451-5. $230.00

This book delves into the “mechanics” of the “fit and proper test”, as it functions around the world as de facto Imperial legislation, emanating from Western Europe, and followed without further analysis by systems of governance in East Asia. The meaning of the term “fit and proper”, for assessing people as professionals, in contrast to a well-structured good character test, is insufficiently specific to be used as a set of criteria for admission to a profession. The parties to a “fit and proper” assessment are actually the court and members of the public, with the court making a judgment in its own cause, and without the public ever participating in the assessment. A “fit and proper” assessment suggests a systemic inquiry against the applicant, inferring both bias and inherent public denunciation. Thus, the book contains in-depth research into these topics: The Fit and Proper Person Test: The Theory; The ‘Fit and Proper Person’ in Malaysia and Singapore; The Origin of the Professions; The Fitness and Propriety of Subaltern Groups; Délation of Character; The Stasis of Disrepute; Child Labor and the Subaltern Working Class; Coercive Moral Hazard. As such, this book is a frank and fearless exegesis on the realities of British Imperial regulation of the Professions in East Asia.

Why Do (Some) Americans Love Their Guns? Questions and Answers from Both Sides.
Michael R. Weisser (Belcherton, MA, USA)

In series: Safety and Risk in Society
Publication Date: 11/17/2022
121 pp.
Softcover: 979-8-88697-202-3. $82.00
e-book: 979-8-88697-373-0. $82.00

This book covers how both gun rights and gun control organizations explain and justify their respective positions on the ownership and use of guns in American society. It combines media sources, primary (previously unpublished) research by the author, personal experiences and organizational activities to create a balanced and comprehensive approach to a serious and continuous public debate.

International Law

The British Judges of the International Court of Justice: An Explication? The Later Jurists
Graeme Baber, PhD (Researcher in Financial Law)

In series: Laws and Legislation
Publication Date: 05/06/2022
377 pp.
Hardcover: 978-1-68507-735-8. $230.00
e-book: 978-1-68507-899-7. $230.00

The monograph considers the individual and joint dissertations, separate opinions and dissenting opinions that British judges Sir Gerald Fitzmaurice, Sir Humphrey Waldock, Sir Robert Jennings, Dame Rosalyn Higgins and Sir Christopher Greenwood appended to Judgments and Advisory Opinions of the International Court of Justice. It provides information of the life of, and reviews some of the scholarship of, these judges. In the final chapter, the author endeavours to identify characteristics of the British judges of the International Court of Justice that are shared by some of all of these five jurists – together with their predecessors at the Court, Baron Arnold McNair and Sir Hersch Lauterpacht.
Military and Veteran Issues

Domestic Violence in the Military
Michel Chesnay
In series: Domestic Violence and Abuse
Expected Publication Date: 03/20/2023
Hardcover: 979-8-88697-562-8. $135.00
e-book: 979-8-88697-599-4. $135.00
In the United States, domestic violence, including intimate partner violence and child abuse, are significant problems that cause immense harm in our society. While the military’s domestic violence and child abuse incidence rates are lower than comparable rates in civilian communities, both intimate partners and children die every year at the hands of military servicemembers. The Department of Defense must not rest until they eliminate violence and abuse of intimate partners and children within their ranks.

Political Science

Authoritarian Disaster: The Duterte Regime and the Prospects for a Marcos Presidency
Regletto Aldrich Imbong (Assistant Professor of Philosophy, College of Social Sciences, University of the Philippines Cebu, Gorordo Avenue, Lahug, Cebu City, Philippines)
In series: Asian Political, Economic and Social Issues
Publication Date: 01/26/2023
199 pp.
Hardcover: 979-8-88697-485-0. $160.00
e-book: 979-8-88697-539-0. $160.00
This book investigates Duterte’s brand of authoritarianism from a multidisciplinary approach. It brings together views from scholars and activists from diverse disciplines and areas of work to look into the core of Duterte’s disastrous authoritarianism and how it takes specific forms in various contexts (e.g., the church, peace process, discourse, Lumad schools, state). The book and its contributors do not in any way hide behind the language of academic neutrality. What is at work here is an engaged scholarship that does not investigate the problem of authoritarianism from a neutral ground supposedly devoid of all values, beliefs, and interpretations. Rather, the book recognizes scholarship to be a political practice which aims to elucidate a theoretical position that intends not only to understand authoritarianism but also to imagine the prospects for a democratic future.

International Extradition and Interstate Rendition
James Biser Whisker (Emeritus/Retired, West Virginia University, Everett, PA, USA) and Kevin R. Spiker, PhD (Associate Professor, Political Science, Ohio University, St. Clairsville, OH, USA)
In series: Political Science and History
Publication Date: 09/07/2022
208 pp.
Hardcover: 978-1-68507-781-5. $160.00
e-book: 979-8-88697-029-6. $160.00
This book demonstrates how extradition and rendition have evolved as various courts have spoken on and interpreted these issues. It shows how these issues are of both theoretical and practical importance. While careful steps have been taken to discuss important and relevant cases, it must be acknowledged that recent political events and cases warrant further discussion and will continue to develop. Nevertheless, it remains clear that as the world becomes more connected economically and politically, the issue of extradition and rendition will continue to be important in the United States and around the world.
The Small Print of Human Rights: Experiences during the Pandemic from China, Ireland, South Africa, Turkey and Germany

Peter Herrmann and Mao Junxiang

In series: *Human Rights – Looking Towards the Future*

Expected Publication Date: 03/20/2023

Softcover: 979-8-88697-503-1. $82.00

e-book: 979-8-88697-598-7. $82.00

This is the second volume of the book series Human Rights – Looking Towards the Future, edited by the Human Rights Centre of Central South University. The book is timely not only as it deals with the pandemic, the topic dominating the headlines in many countries, but also because it provides five succinct analyses – from China, Ireland, South Africa, Turkey and about Germany – directing attention to questions about Human Rights that are commonly underexposed.

Triumph of the Oppressed

Laure Paquette, PhD (Department of Political Science, Lakehead University, Thunder Bay, Ontario, Canada)

In series: *Political Science and History*

Publication Date: 09/07/2022

133 pp.

Softcover: 979-8-88697-055-5. $82.00

e-book: 979-8-88697-139-2. $82.00

The métis is the ancient wisdom of the oppressed. This book explains how to make use of it to create an exceptional, organic, step-by-step type of strategy. The book examines the characteristics of organic strategy and how to use them: identifying a dynamic point for an organic strategy; choosing a fertile goal; choosing positive tactics; adapting an existing strategy to become organic; and reviewing its potential applications.

Psychology

Advances in Psychology Research. Volume 148

Alexandra M. Columbus

In series: *Advances in Psychology Research*

Publication Date: 05/06/2022

218 pp.

Hardcover: 978-1-68507-762-4. $250.00

e-book: 978-1-68507-831-7. $250.00

This volume includes eight chapters that present recent advancements in the field of psychology research. Chapter One discusses strategies for the prevention of suicide in old age. Chapter Two considers theoretical explanations and research on the operation of systems of emotional regulation and self-compassion in relation to the development and maintenance of problematic social anxiety. Chapter Three provides an overview of the theoretical models that attempt to explain why people perform non-suicidal self-injury behaviors and the link between these behaviors and experiential avoidance. Chapter Four provides a public health framework for how high schools can promote effective adolescent suicide prevention and intervention through the implementation of multi-tiered systems of support. Chapter Five proposes an extraction model of implicit learning operating from a background of semantic relations to explain how children learn to produce and understand the sentences of their community language. Chapter Six outlines some theoretical implications for social anxiety disorder. Chapter Seven aims to inspire discoveries of psychological tactics to decrease vulnerability to cyberattacks and offers suggestions for interventions. Finally, Chapter Eight explores how early attachment experiences affect loneliness in offenders with substance use disorders.
In Chapter One, a synthesis of the available theoretical and empirical data on the role of self-compassion in eating related concerns is addressed, while proposing a framework which might help researchers and practitioners to understand the possible paths explaining the buffer role so often hypothesized for self-compassion. Chapter Two analyzes the psychometric properties of the Academic Uncertainty Questionnaire (AUQ) in Argentinian university students during COVID-19. It addresses the impact of academic uncertainties on psychological well-being in Argentinian University students during social isolation. Chapter 3 examines recent data indicating the trend of socio-cultural changes exerted by the COVID-19 pandemic, leading to an increasing use of new information and communication technologies (NICTs), which is associated with problems in people's physical and psychological health, especially in the younger age group. Chapter 4 looks at basic theories on why false memories occur, the cross-race effect, schema’s various effects, the weapon focus effect, and the innocent bystander effect. Chapter 5 is a literature review to better understand the usage and misuse of morphine (MOR). The chapter looked into the various models of use/misuse of MOR substances, as well as its diagnostic challenges, screening techniques, and treatment options for MOR, heroin, and MOR sulfate abuse. Chapter 6 is a psychological prediction of injuries in high-performance baseball pitchers through a Bayesian network. New confirmatory studies are required to support and guide the psychological prevention of injuries in high-performance baseball pitchers. Chapter 7 is primarily focused on the elements linking depression and inflammation. Inflammation, being a defensive reaction of the organism, is common. In addition, it can have varied intensity and manifestation. There is an increasing amount of data indicating that inflammation may underlie depressive episodes. This chapter provides a detailed analysis of the factors that may affect mood, based primarily on the analysis of the functioning of the immune system and markers of inflammation. In Chapter 8, the appearance of injuries suffered by high-performance Cuban athletes, as well as the manifestation of resilience capacity to overcome adversity, is explored in detail.

Lifelong Learning: Perspectives, Opportunities and Challenges
Isaac Kofi Biney, Ph.D., Paul G. Nixon and Rebecca Kleiweg de Zwaan
In series: Education in a Competitive and Globalizing World
Expected Publication Date: 03/15/2023
Hardcover: 979-8-88697-551-2. $160.00
e-book: 979-8-88697-579-6. $160.00

Whilst in the eons of history the term lifelong learning may be a relatively new addition to the language, the practices and experiences are most certainly not. Throughout human existence people have tried to improve their living conditions by accomplishing their tasks in more efficient and effective ways. This can often be linked to the notion of work but lifelong learning, whilst important in the workplace, affects all parts of our existence. It not only aids us to understand our tasks but also how we fit into a wider society. Without lifelong learning our society, and we as individuals, would stagnate. It is not something that we always do purposively but is a part of being human. We acquire skills and knowledge and then apply them sometimes in unrelated scenarios. Lifelong learning has benefits not just in terms of our work but can also help in terms of socialization. It also has potential health benefits, for example, in terms of enhancing neuroplasticity and aiding in the development of emotional intelligence and empathy for others. We become more confident in what we do as we achieve increased knowledge and understanding through lifelong learning, as can be evidenced in many of the contributions in this edited collection. We all benefit from lifelong learning and have a role to play in both in terms of educating ourselves and a duty to help to educate others in order to create a better society. The contributors and editors hope that this collection can play even a miniscule part in that development and we have certainly been through new experiences that have contributed to our own lifelong learning.

The Psychology of Self-Regulation
Jorja Dutton
In series: Psychology of Emotions, Motivations and Actions
Publication Date: 12/08/2022
259 pp.
Hardcover: 979-8-88697-416-4. $145.00
e-book: 979-8-88697-471-3. $145.00
This book contains eight selected chapters discussing the psychology of self-regulation. Chapter One reviews the lessons learned from a literature review on the role of canine-assisted interventions in the promotion of self-regulation. Chapter Two asks how the
The concept of self-regulation has been implemented in research on children and adolescent’s eating behavior. Chapter Three examines the impacts of a school-based mentoring support program on self-regulation in students who are experiencing school failure. Chapter Four examines the role of self-regulation and the perspective of agency in the management of Celiac disease. Chapter Five reviews the “hope avenue” for the school success of students with Roma background. Chapter Six discusses the role of parents in children’s self-regulation development by reviewing at-distance and online intervention programs. Chapter Seven provides a guide to enhancing students’ self-regulation. Chapter Eight examines the internal and external typologies of regulation in education and health contexts, focusing on regulation, de-regulation, and dys-regulation behaviors.

**Developmental Psychology**

Narratives: The Focus of 21st Century Psychology

T.L. Brink, PhD (Professor, Psychology, Crafton Hills College, CA USA) and Victoria Karalun (Childbirth Researcher, Redlands, CA, USA)

In series: Psychology Research Progress
Publication Date: 06/24/2022
198 pp.
Hardcover: 978-1-68507-857-7. $160.00

Humans are emotional beings who feel deeply, reason occasionally, and narrate constantly. Narratives are the stories we tell ourselves to help us understand what we are feeling, thinking, and doing. Narratives help us remember the past, interpret the present, and prepare for the future. Narratives justify ourselves, to ourselves and to others. Narratives can motivate our successes, or be used to excuse our failures. To change our lives, we must change our narratives. This book should not be regarded as a rejection of traditional religion, classical philosophy, psychoanalysis, behaviorism, humanistic psychology, or cognitive science. These are the milestones of humanity's attempts to understand human nature. We accept these as the building blocks for a more complete formulation. The first chapter explains what narratives are, and why all narratives are not equal (and some are even dead ends). The second chapter focuses on the most important thing in the study of humans (their values) and why we must distinguish between the ultimate, the utilitarian, and the ulterior dimensions of relevance. The third chapter reviews the role of religious narratives in understanding those values (historically, and in the present; in society, and in individuals). The fourth chapter considers classical philosophy, especially logic, and how this contributes to narratives (but cannot always save us from the dead-end narratives of conspiracy theory and determinism). The fifth chapter charts the historical development of psychology as a science (from mind, to behavior, to mental processes, to narrative and willpower). The sixth chapter looks at the lifespan, and how narratives develop as we confront the challenges posed by our changing relationships. The seventh chapter goes into greater depth on the interacting roles of adulthood: spousal, parent, career, consumer. The last chapter emphasizes the need for resilience and transformation in order to flourish and find flow in those roles.

**Psychological Methods, Research and Statistics**

Under the Paranormal Curve: Comparing Psychology Research Methods to Parapsychological Popular “Science”

Eric Charles Prichard, Ph.D. (University of Arkansas at Monticello, Monticello, Arkansas, USA)

In series: Research Methodology and Data Analysis
Publication Date: 10/20/2022
90 pp.
Softcover: 979-8-88697-243-6. $82.00
e-book: 979-8-88697-343-3. $82.00

This book is intended for anyone interested in psychological research, parapsychological topics, and students and teachers who are participating in psychology research methods courses. The book compares and contrasts the methodologies and approaches used by psychological scientists with those used by parapsychologists. In addition to covering the basics of correlational research, experimental research, and statistics, the book also discusses the often-fascinating intersection of psychology and parapsychology throughout history. Among other topics covered, readers will learn of William James’ involvement in a club of paranormal enthusiasts, the oddball world of ghost hunting, and Stanford’s history with psychic experiments. Readers will learn what differentiates science from pseudoscience and hopefully also learn a little about the nature of belief itself.
Security Issues

Global Cybercrime and Cybersecurity Laws and Regulations: Issues and Challenges in the 21st Century
Shahid M. Shahidullah, PhD (Department of Sociology, Hampton University, Hampton, Virginia, USA), Carla D. Coates, PhD (Department of Criminal Justice, North Carolina AT&T State University, NC, USA) and Dorothy Kersha-Aerga, PhD (Department of Social and Behavioral Sciences, Criminal Justice Program, H 342 Willie and Jacqueline Gilchrist Education and Psychology Complex, NC, USA)

In series: Cybercrime and Cybersecurity Research
Publication Date: 05/06/2022
340 pp.
Hardcover: 978-1-68507-755-6. $230.00
e-book: 978-1-68507-854-6. $230.00

The global Internet and cyberspace age witness a new generation of cybercriminals, hackers, cybergangs, cyber terrorists, and cyber sexual harassers. This phenomenon, broadly defined as cybercrimes, is the focus of this book. The International Telecommunication Union's Global Cyber Security Index found that about 90 percent of the world's countries have enacted laws and regulations to control and combat cybercrime. This book has examined some of those cyber laws and regulations in 12 countries, including the United States, United Kingdom, Canada, China, Russia, Japan, Singapore, Nigeria, South Africa, India, Pakistan, and Bangladesh. Different chapters of this book have found some common themes. First, in most of the countries of the world, there is an advancing process of legally criminalizing cybercrimes, including such behaviors as unauthorized access, use, and interception; damage and deletion of computer data; damage and destruction of computer networks; and dissemination and transportation of illegally obtained computer data. Second, there is high sensitivity in all countries studied about the security of the information infrastructure and their critical economic, political, and social infrastructures such as power plants, chemical industries, aviation systems, and electoral systems. Third, all forms of cybercrime committed by using the computer and the Internet are also defined as fraud and forgery, identity theft, cyber espionage, sexual harassment, cyber sexual extortion, online child pornography, and revenge pornography. One of the more critical themes that emerged is that no country defines cybersecurity as just a technical matter—a matter only of coding and decoding and encryption and decryption. Cybersecurity is also broadly perceived as a legal, political, organizational, and educational issue. It is perceived as a matter to be dealt with by a government in cooperation with international partners, potentially barring China and Russia. One of the other themes that emerged as a genuine concern is the rapid escalation of cyber sexual violence against women and minors. In most countries examined in this book, the policymakers and law enforcement believe that social media is partly responsible for increasing cyber sexual violence.

Social Policy and Welfare

Combating Homelessness: Support, Services and Resources
Gary C. Wisniewski

In series: Social Issues, Justice and Status
Publication Date: 10/20/2022
384 pp.
Hardcover: 979-8-88697-277-1. $230.00
e-book: 979-8-88697-305-1. $230.00

On any given night hundreds of thousands of Americans are without a home, and millions more live in fear that their family may end up homeless in the near future. Homelessness is associated with myriad negative issues related to economic status, physical health and mental conditions, and social and emotional outcomes. These negative effects manifest in different ways for people who are experiencing sheltered or unsheltered homeless. Evidence indicates that individuals who are experiencing unsheltered homelessness are more vulnerable than people in shelters and deal with higher rates of issues related to physical and mental health and substance abuse.
Homelessness: Challenges, Causes and Support Programs
David C. Payne
In series: Social Issues, Justice and Status
Publication Date: 10/20/2022
344 pp.
Hardcover: 979-8-88697-278-8. $230.00
e-book: 979-8-88697-304-4. $230.00
Every American has the right to safe, decent, and affordable housing. Yet, homelessness in the United States is an unnecessary and worsening crisis. According to HUD, between 2016 and 2020, homelessness increased in the richest nation on the planet by 6 percent, with more than 580,000 people, including children, experiencing homelessness in January of 2020. The significant economic instability brought by COVID-19 has only increased these numbers.

The Forgotten: Missing BIPOC Women and Girls
Marion R. Jhonson
In series: Social Issues, Justice and Status
Publication Date: 10/13/2022
256 pp.
Hardcover: 979-8-88697-295-5. $150.00
e-book: 979-8-88697-326-6. $150.00
In 2020, 100,000 of the quarter million women and girls who went missing in the U.S. were black, brown, or indigenous. Black women and girls make up just 13 percent of the female population in the country but accounted for fully 35 percent of all missing women in 2020. This crisis is dire in indigenous communities. According to researchers, American Indian and Alaska Native (AI/AN) women in the U.S. experience higher rates of violence than most other women, and tribal and federal officials have stated that this incidence of violence constitutes a crisis. The neglect shown by the media toward cases involving missing and murdered women of color is a primary reason that this epidemic remains obscure to the public.

The Veteran Homelessness Crisis
Earl H. Lopez
In series: Social Issues, Justice and Status
Publication Date: 10/13/2022
190 pp.
Hardcover: 979-8-88697-276-4. $160.00
e-book: 979-8-88697-306-8. $160.00
In 2009, the Department of Veterans Affairs committed to ending veteran homelessness by the end of 2015. Significant steps have been taken to get our heroes the services they need with, roughly, 50,000 fewer veterans experiencing homelessness than a decade ago. However, there is still much work still to do. Congress has continued working to improve the variety of Federal programs that currently exist to support homeless veterans. This includes permanent housing, transitional housing, prevention services, treatment, and employment programs.

Youth Homelessness: Risks, Safety and Human Trafficking
Brian E. Mach
In series: Social Issues, Justice and Status
Publication Date: 10/06/2022
366 pp.
Hardcover: 979-8-88697-273-3. $230.00
e-book: 979-8-88697-307-5. $230.00
Today, millions of youth across the country do not have access to a stable home. For many of them, the effects of homelessness are not isolated to days or weeks or months. Youth homelessness has long-term consequences that undermine their education, their safety, and their future. Youth who do not have access to the support and resources that come with stable housing are far more likely to drop out of school, fall prey to exploitation and human trafficking, and remain homeless as adults.
Crime and Criminal Justice

Tour de force of Moral Virtue in International Criminal Justice
Farhad Malekian (Uppsala, Sweden)

In series: Criminal Justice, Law Enforcement and Corrections
Publication Date: 01/19/2023
288 pp.
Hardcover: 979-8-88697-368-6. $195.00
e-book: 979-8-88697-567-3. $195.00

With the principle of tour de force, we refer to the use of the power of moral legality, the strength of statutes, and the fairness of judgments. A quantum force of moral legality and legal morality serves as an imperative force in the implementation of fair criminal justice, as well as in the prevention of future victims across the globe. Contrary to positivist ideas, the simple notion of morality contains within itself the very essence of international criminal norms. If the source of morality did not exist in the structure of our criminal justice, we could no longer call it criminal justice and would instead have to call it criminal revenge. Beyond the moral essence of international criminal justice, we also challenge the hidden illegality and immorality of certain attitudes. This is done in order to prevent acts which violate human rights law and criminal justice provisions. The codes of international human rights law cannot properly function without the comprehensive nature of morality which elevates the moral virtue of international criminal justice and strengthens the tour de force. One may observe that the principle of the tour de force of the moral virtue within the system of international criminal justice loses its legal power when governments attempt to justify their unjust decisions. This is the main reason why the major potential value of the tour de force of the moral virtue of human rights law and international criminal justice is not as strong as it should be. In order to achieve a vision of the tour de force of moral virtue, we need to establish a devoted influential ethical vision of the truth beyond political tradition. An unparalleled philosophical piece of literature for libraries.

Sociology

Advances in Sociology Research. Volume 38
Jared A. Jaworski

In series: Advances in Sociology Research
Publication Date: 05/06/2022
251 pp.
Hardcover: 978-1-68507-835-5. $250.00
e-book: 978-1-68507-890-4. $250.00

This volume includes nine chapters that examine recent advancements in sociology research. Chapter One analyzes the evolutionary trend of the theorizing of corruption as a scientific phenomenon. Chapter Two examines innovative environmentally conscious businesses and systems that have arisen in Japan. Chapter Three presents studies that propose generic organizational culture types and criticizes and discusses them. Chapter Four examines the rapid transit system implemented for the 2016 Olympics. Chapter Five examines cross-cultural issues pertaining to end-of-life care. Chapter Six analyzes Trump’s decision to withdraw from the Trans-Pacific Partnership from a neoclassical realism framework. Chapter Seven examines how the United Nations Framework Convention on Climate Change, through international environmental treaties, is attempting to interact with North Korea so that it may embrace and internalize international norms, especially those pertaining to climate change and human rights. Chapter Eight explores how the meaning of construction takes place across audio and visual elements, and how the music video Man in the Mirror by Michael Jackson can be interpreted through multiple semiotic resources in an art class lesson. Finally, Chapter Nine identifies issues that can create winning enterprises such as developing an innovative culture, creating a customer-responsive culture, and nurturing workplace spirituality.

Advances in Sociology Research. Volume 39
Jared A. Jaworski

In series: Advances in Sociology Research
Publication Date: 09/21/2022
220 pp.
Hardcover: 979-8-88697-196-5. $250.00
e-book: 979-8-88697-235-1. $250.00
This volume includes eight chapters that describe recent advances in sociology research. Chapter One reviews recent research conducted in educational and sports contexts via social network analysis regarding leadership, verbal aggressiveness, bullying and Machiavellianism in educational and sports contexts and presents the relationship among interpersonal attractiveness, social power and verbal aggressiveness across different educational and sports contexts. Chapter Two examines how the Airbnb platform mobilizes hosts’ material and immaterial resources as key elements of the platform infrastructure, thus building on hosts’ previous differences in terms of economic possibilities, digital competences, and relational networks. Chapter Three integrates findings to produce an in-depth understanding of self-development processes implicated in changing perspectives among former gang members as they develop shared wisdom of their lived experiences and undergo a greater life awareness that motivates them toward intervening in the proliferation of gangs. Chapter Four analyzes the interplay of technological and social innovations. Chapter Five examines the role of parent-child connectedness and parental expectations as well as school context, school connectedness, and social support on youth’s delinquency, fighting, and violence. Chapter Six presents the results of an empirical study of 300 companies implementing innovations in the Bulgarian business reality. Chapter Seven analyzes drug consumption depending on whether or not the adolescent belongs to a violent or non-violent gang. Finally, Chapter Eight examines the impact of the colored brain model on enhancing workplace team synergy.

Advances in Sociology Research. Volume 40
Jared A. Jaworski

In series: Advances in Sociology Research
Expected Publication Date: 03/20/2023
Hardcover: 979-8-88697-548-2. $250.00
e-book: 979-8-88697-630-4. $250.00

This volume contains ten chapters which detail advances in sociology research. Chapter One examines the well-being of construction professionals by modeling the root factors of job-related burnout among civil engineers at contracting organizations. Chapter Two is a comparative analysis of the state policy of national identity in Estonia and Latvia, focusing on the view of Russian ethnic minorities. Chapter Three provides a general outlook and strategies for the translation of cultural items. Chapter Four looks at gender inequality among individuals with minority sexual orientation, focusing on abuse and its factors among Filipino sexual minorities. Chapter Five reviews dating violence in adolescents in residential care in Spain. Chapter Six focuses on sexual orientation and mental health, specifically addressing depression and anxiety in Filipino gay and bisexual men. Chapter Seven examines the effect of social and economic factors which cause changes in work outcomes preferences among women and men in Israel. Chapter Eight looks at the influence of mentor competence on mentee satisfaction. Chapter Nine provides a bibliometric analysis in the web of science in the last decade to evaluate school failure and gender. Chapter Ten is a review of cultural differences and their impact on parental involvement among Jews and Arabs in Israel.

Global Emotion Communications: Narratives, Technology, and Power
Adrian Scribano (University of Buenos Aires, Buenos Aires, Argentina), Maximiliano E. Korstanje (University of Palermo, Buenos Aires, Argentina) and Antonio Rafele (University of Rome “La Sapienza,” Rome, Italy)

In series: Psychology of Emotions, Motivations and Actions
Publication Date: 12/08/2022
253 pp.
Hardcover: 979-8-88697-269-6. $195.00
e-book: 979-8-88697-397-6. $195.00

The world of the 21st century develops between the paradox of the coexistence of millions of human beings deprived of speech, unable to express their ideas, their feelings or their desires, and millions of people who communicate permanently from their mobile devices. These new experiences, sensibilities, and emotional narratives have a particular flavor and color depending on the place in which they are produced. This book tries to answer the question about the proximity and distances between the technologies, communications, and narratives produced in different times/spaces on the planet. This book aims to focus on the close relationship between new technologies and the narrative of emotions, showing their implications for identity construction and political action. The book is divided into three discontinuous but interconnected parts. The first addresses, from various theoretical perspectives, the epochal transformations that are taking place at the crossroads between the new century, the Covid-19 pandemic, the 4.0 "revolution", and the creation, reproduction, and criticism of the elaboration of narratives. The second makes evident the impact of the features of this “new era” in and through communication products and technologies where television series, artificial intelligence, and new forms of power are superimposed. The third and final part focuses on pointing out how in the studies of images, the analysis of social policies, and creativity/expressiveness is a way to capture sensibilities, where the connections between emotions and narratives clearly appear in the scenario of 4.0 inquiry strategies.
Reduction and Prevention of Youth Violence

Susan T. Sanders

In series: Social Issues, Justice and Status
Publication Date: 09/01/2022
208 pp.
Hardcover: 979-8-88697-133-0. $150.00
e-book: 979-8-88697-187-3. $150.00

Law enforcement and communities are continuing to work diligently to reduce crime, but unfortunately, despite these efforts, violent crimes remain a serious problem in some communities. Notably, violence committed by or against youth is not just an issue of public safety but also a matter of public health. Young people whose energies are taken up by fearing and avoiding involvement in crime can be distracted from focusing on doing well in school, enjoying the comfort and safety of good health, and thriving in the same ways as their peers who live in safer circumstances.

Sustaining Communities: Prospects and Challenges

Georgios O. Tsobanoglou, PhD (Professor, Department of Sociology, University of the Aegean, Mytilene, Greece) and Aikaterini T. Kokkinou, PhD (Adjunct Lecturer, Department of Financial and Management Engineering, University of the Aegean, Chios, Greece)

In series:
Publication Date: 08/10/2022
335 pp.
Hardcover: 978-1-68507-893-5. $230.00
e-book: 979-8-88697-092-0. $230.00

This book focuses on current sociological and socioeconomic issues, including recent developments, techniques and strategies within the current socioeconomic development spectrum of the 21st century. More specifically, this book presents a discussion of the planning and designing of a modern sustainable socioeconomic system, adequate for modern societies and communities, analyzing both technical and socio-cultural aspects. Systems that are planned and designed without considering these aspects often limit their efficiency or even fail. On this matter, this book fills a gap in socioeconomic literature by exploring and studying main dimensions of the interaction between some of the most important socioeconomic aspects and related factors (both theoretically and empirically).

Special Topics

Child Mortality in Eritrea: An Overview of History and Progress

Fikresus Amahazion, PhD (Research Analyst, Eritrean Center for Strategic Studies, Asmara, Eritrea)

In series: African Studies
Publication Date: 07/22/2022
161 pp.
Softcover: 979-8-88697-041-8. $95.00
e-book: 979-8-88697-095-1. $95.00

Across the world, today child mortality is far less common than it once was. Yet, huge disparities remain and improving child survival is still a matter of urgent global concern. However, an emerging success story is that of Eritrea, located in Northeast Africa. Despite limited resources, an extremely difficult regional geopolitical context, and an array of daunting challenges, the young country has achieved remarkable progress on reducing child deaths. Eritrea’s child mortality story has largely gone unrecognized; this book helps to fill the gap. It traces the history of child mortality in the country and unpacks the multifaceted factors that have helped to drive its success. Guided by high-quality research conducted on the ground, presenting a comprehensive review of a wide range of historical and current materials, and full of the latest, up-to-date data, this book contributes greatly to deepening understanding of child mortality and Eritrea.
Intercultural Approaches to Space and Identity
Noelia Bueno Gómez, PhD (Assistant Professor, Department of Geography, University of Oviedo, Florida, USA) ans Salvador Beato Bergua, PhD (Assistant Professor, Department of Geography, University of Oviedo, Florida, USA)
In series: Cultural Studies in the Third Millennium
Publication Date: 06/17/2022
185 pp.
Softcover: 978-1-68507-743-3. $95.00
e-book: 978-1-68507-907-9. $95.00
This book is the result of a teaching and research project that began in 2019 at the University of Oviedo with a view toward preparing the Expert Course on Interculturality, Justice and Global Change. The book is divided into 12 chapters by 14 researchers working in philosophy, geography, literature, education and culture, and it aims to contribute to the understanding of the re-configurations of space and identity against a backdrop of global change, encounters between hegemonic and non-hegemonic cultures, new territorial dynamics and landscape transformation, migration and the emergence of digital spaces. The intercultural approach is cross-cutting as the object of theoretical reflection, as a theoretical methodology and an epistemic option and as part of the panorama that the research aims to conceptualize.

Sports
Applications of Traditional Equestrian Sports in the World
Adem Kayar, PhD (Assistant Professor, Sport Management, Bowie State University, Maryland, USA) and Mehmet Turkmen, PhD (Director of Traditional Sports and Games Research Institute, Kyrgyz-Turkish Manas University, Bishkek, Kyrgyzstan, Turkey; Professor, Mus Alparslan University, Turkey)
In series: Sports and Athletics Preparation, Performance, and Psychology
Publication Date: 01/05/2023
399 pp.
Hardcover: 979-8-88697-467-6. $280.00
e-book: 979-8-88697-530-7. $280.00
Physical culture and sport, as a product of certain historical conditions for the development of society, form the sum of the historically revealed results of human spiritual activity. Equestrian games were especially popular among the Turkic peoples of South Siberia, Altai, the ancestral home of all Turkic peoples. The horse formed the mobile basis of the nomadic economy and was the personification of beauty, purity, and speed. A symbolic expression of "traditional" sovereign tribal authority depended on the current ruling political framework having quality horses and equestrian skills. It is easy to conclude that this event is formulated again with another tribe or lineage and that the leadership passes to the tribe in which it was formulated. It is clear that in the nomadic ancient Turkic peoples, equestrian activities were not simply an opportunity to reveal their "natural" fighting instincts or to express them through symbols. They are also carefully structured public organizations organized around societal values with broad moral and political repercussions. This book contains twenty chapters reviewing the cultural significance of a variety of traditional equestrian sports around the world, deeply examining the social impacts of the game and the cultural traditions that arise from them.
Fundamentals of Communication in Sports
Dr. Can Cemal Cingi, PhD (Associate Professor, Faculty of Communication Sciences, Communication Design and Management Department, Anadolu University, Eskisehir, Turkey)
In series: Sports and Athletics Preparation, Performance, and Psychology
Publication Date: 10/06/2022
243 pp.
Hardcover: 979-8-88697-178-1. $195.00
e-book: 979-8-88697-279-5. $195.00
Sports are getting more important in every individual's life besides the athletes at all levels. Trainers are guiding, teaching, and motivating athletes. Improving communication skills is very important to achieving a successful result. This book contains communication information for people on a broad spectrum, from those who have disabilities to elite athletes. It aims to increase performance capacity of athletes at all levels with successful communication strategies. It is also a guide for sports professionals, practitioners, and coaches.

Urban Studies

The Morphological Development of Square Victoria in Montreal
Karim W. F. Youssef, PhD (Assistant Professor, College of Architecture, Visual Arts, and Design, California Baptist University, Riverside, CA, USA)
In series: Urban Development and Infrastructure
Publication Date: 07/08/2022
118 pp.
Softcover: 978-1-68507-910-9. $82.00
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Are the criteria by which to judge the validity of new interventions in the urban planning and the urban design of our cities, open spaces, and squares to be based on the historical morphological development of the place? Or is history just a tool by which we justify our interventions so that we may regulate the pace of the inevitable change of the form of our urban places to conserve the urban identity of the place and thereby the social and cultural identity of its inhabitants? The book traces the urban morphological development of Square Victoria in Montreal since its inception as a market-square and assesses the recent reconstruction of Square Victoria considering its historical evolution. The book follows a socio-economic approach for the study of the downtown urban square. The urban morphological development of Square Victoria is divided into three major phases: the pre-industrial, the industrial, and the post-industrial. The development of Square Victoria is examined in relation to the larger context of socio-economic transformations of the city of Montreal. The market-square undergoes a double mutation. The first mutation was due to the Industrial Revolution during which the square was renamed Square Victoria and the hay market was transferred to another location in the city (in St. Ann’s Ward). It was during the Industrial Age that Square Victoria attains its mature form in the years 1930s in two steps; first Square Victoria becomes the commercial downtown city-center and then becomes part of the business city-center. The second mutation of Square Victoria was due to the Informational Technology Revolution and the new principles of modern urbanism. The urban development of the square suffered from this mutation with the direct result of the loss of the quality of enclosure and character of the square. Architects Daouste Lestage and Provencher Roy judiciously decided to retrieve the identity of the square by designing their interventions in conformity with the historical evolution of the square, especially retrieving its outstanding qualities characterizing it at its maturity in the 1930s.
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