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Sensory Perception – Mind and Matter

Mind and Matter

Sensory perception: mind and matter brings together the neurosciences with psychology and philosophy thereby meeting the demand of an interdisciplinary discourse between those fields of interest in order to understand the many facets of sensory perception and their relation to brain functions and cognition. It gives an interdisciplinary insight into the understanding of neurobiology and sensory processing in animals and humans, with leading experts contributing to this discourse.

Features
► Provides access to scientific research on the brain, on topics of both the sciences of the brain and the sciences of the mind ► Builds a truly interdisciplinary bridge between neurobiology, psychology and philosophy ► This volume is unique in its selection of disciplines

Fields of interest
Neurosciences; Philosophy of Mind; Neurobiology

Target groups
Research

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Clinical Neuroanatomy
Brain Circuitry and Its Disorders

Connections define the functions of neurons: information flows along connections, as well as growth factors and viruses, and even neuronal death may progress through connections. Knowledge of how the various parts of the brain are interconnected to form functional systems is a prerequisite for the proper understanding of data from all fields in the neurosciences. Clinical Neuroanatomy: Brain Circuitry and Its Disorders bridges the gap between neuroanatomy and clinical neurology. It emphasizes human and primate data in the context of disorders of brain circuitry which are so common in neurological practice. In addition, numerous clinical cases demonstrate how normal brain circuitry may be interrupted and to what effect. Following an introduction into the organization and vascularisation of the human brain and the techniques to study brain circuitry, the main neurofunctional systems are discussed, including the somatosensory, auditory, visual, motor, autonomic and limbic systems, the cerebral cortex and complex cerebral functions.

Features
► With over 600 excellent illustrations, brain images and graphics ► Includes numerous clinical cases ► Gives a modern approach to understanding brain functions and diseases based on neural connectivity

Contents
Overview of the human brain and spinal cord.- Vascularization of the brain and spinal cord.- Notes on techniques.- The somatosensory system.- The reticular formation.- The cranial nerves.- The auditory system.- The visual system.- Motor systems.- The cerebellum.- The basal ganglia.- The autonomic nervous system.- The hypothalamus and hypothalamohypophyseal systems.- The limbic system.- The cerebral cortex and complex cerebral functions.

Fields of interest
Neurosciences; Neurology

Target groups
Research

Discount group
P

Contract Research and Development Organizations
Their Role in Global Product Development

The last 10 years have seen a seismic shift in therapeutic product development and testing. In both the pharmaceutical (both small and large molecule) and medical device sectors, the vast majority of testing and evaluation of products is not performed within innovator companies, but rather has been outsourced to a growing universe of commercial organizations. The authors both have more than 30 years experience in this field, and both have worked within innovator companies, for CROs, and as consultants in the field.

Features
► Covers the utilization of the full range of contract service providers throughout the process ► This book is international in scope ► Addresses the many new laws, regulations and the new REACH program governing CROs

Contents

Fields of interest
Pharmacology/Toxicology; Biotechnology; Medicinal Chemistry

Target groups
Research

Discount group
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Due July 2011

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► approx. $209.00
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2011. XX, 900 p. 551 illus., 155 in color. Hardcover
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ISBN 978-3-642-19133-6

Due July 2011

2011. IV, 156 p. 4 illus. Hardcover
► $189.00
Designs for Clinical Trials
Perspectives on Current Issues

This book will examine current issues and controversies in the design of clinical trials, including topics in adaptive and sequential designs, the design of correlative genomic studies, and the design of studies in which missing data is anticipated. Each chapter will be written by an expert conducting research in the topic of that chapter. As a collection, the chapters would be intended to serve as a guidance for statisticians designing trials.

Features
► Each chapter will be written by an expert conducting research in the topic of that chapter
► This book examines current issues and controversies in the design of clinical trials, including topics in adaptive and sequential designs, the design of correlative genomic studies, and the design of studies in which missing data is anticipated
► The chapters serve as a guidance for statisticians designing trials

Contents
New designs for phase I dose finding studies.- Phase II/III designs for trials.- Design issues for clinical studies with genomic measurements.- Designing studies with longitudinal measurements subject to dropout.- Issues in sample size re-estimation.- Adaptive designs.- The design of non-inferiority trials.- Issues in the design of HIV prevention trials.- Randomization algorithms.- Sequential designs for phase III studies.- Case studies of difficult designs.- Ethical issues in the design of trials.

Fields of interest
Cancer Research; Pharmacology/Toxicology

Target groups
Research

Discount group
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Due September 2011
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ISBN 978-1-4614-0139-1

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ISBN 978-94-007-1708-4

Due August 2011
2011. XV, 935 p. 54 illus., 36 in color. Hardcover
► approx. $239.00
ISBN 978-94-007-1709-1

M. Hayat, Kean University, Union, NJ, USA (Ed.)

Stem Cells and Cancer Stem Cells, Volume 1
Therapeutic Applications in Disease and Injury

Difference between tissue specific stem cells and embryonic stem cells is explained. The advantages of the latter are included. The application of human pluripotent stem cells, mesenchymal stem cells, and hematopoietic stem cells in cancer therapy and tissue/organ regeneration is detailed. Role of neural cancer stem cells in brain tumors, including their role in brain tumor therapy and the role of CD133 stem cell antigen in glioma patients, is emphasized. Therapeutic role of bone marrow-derived stem cells in myocardial infarction and the role of mesenchymal stem cells in orthopedics are explained. Transplantation of umbilical cord hematopoietic stem cells and allogeneic hematopoietic stem cell transplantation followed by graft-versus-host disease are presented. Role of cancer stem cells specifically in glioblastoma and medulloblastoma is included.

Features
► Tumor to tumor transfer CD133 stem cell marker for gliomas
► Transplantation of embryonic stem cells
► Targeting of cancer stem cells
Tissue engineering

From the contents

Fields of interest
Cancer Research; Neuroradiology; Neurosurgery

Target groups
Research

Discount group
P

Tumors of the Central Nervous System, Volume 4
Brain Tumors (Part 2)

This volume mainly contains information on the diagnosis, therapy, and prognosis of brain tumors. Insights on the understanding of molecular pathways involved in tumor biology are explained, which should lead to the development of effective drugs. Information on pathways (e.g., hedgehog) facilitates targeted therapies in cancer. Tumor models are also presented, which utilize expression data, pathway sensitivity, and genetic abnormalities, representing targets in cancer. For example, rat model of malignant brain tumors using implantation of doxorubicin with drug eluting beads for delivery is explained. The future of pathway-driven therapies for tumors is summarized. The importance of personalizing cancer care is emphasized.

Features
► Personalizing cancer care Role of MicroRNA in distinguishing tumors
► Genomic analysis of glioblastoma Imaging to study brain cancer
► Molecular profiling of brain tumors

Fields of interest
Cancer Research; Neuroradiology; Neurosurgery

Target groups
Research

Discount group
P
Sleep and Anesthesia: Neural Correlates in Theory and Experiment

Sleep and anesthesia resemble in many ways at a first glance. The most prominent common feature of course is the loss of consciousness, i.e. the loss of awareness of external stimuli. However, a closer look at the loss of consciousness reveals already a difference between sleep and anesthesia: anesthesia is induced by an anesthetic drug whereas we may fall asleep without external cause. Other questions may arise about the difference of the two effects: do we dream during surgery under anesthesia, do we feel pain during sleep? Essentially, we may ask: what is common and what are the differences between sleep and anesthesia? To answer these questions, we may take a look at the neural origin of both effects and the involved physiological pathways. In which way do they resemble? Moreover, we ask what are the detailed features of normal sleep and general anesthesia as applied during surgery and which features exist in both phenomena? If yes in which way?

Features
- The book is motivated by two successful workshops on anesthesia and sleep organized during the Computational Neuroscience Conferences in Toronto in 2007 and in Berlin 2009.
- Elucidates important issues in theoretical models that at the same time reflect some current major research interests.
- The book discusses not only neural activity in the brain but also the effects of general anesthesia on the cardiovascular system and the spinal cord in the context of analgesia.

Fields of interest
- Neurosciences;
- Neurology;
- Computation by Abstract Devices

Target groups
- Research

Discount group
- P

Bispecific Antibodies

The concept of using bispecific antibodies for cancer therapy by retargeting immune effector cells was developed several years ago. Initial clinical studies were rather disappointing mainly due to low efficacy, severe side effects and the immunogenicity of the bispecific antibodies. The progress in antibody engineering finally led to the generation of new classes of bispecific antibodies lacking these obstacles. In addition, new applications were established, such as pre-targeting strategies in radioimmunotherapy and dual targeting approaches in order to improve binding, selectivity and efficacy.

In this book, the different ways of generating bispecific antibodies are described, with emphasis on recombinant formats. The various applications of bispecific antibodies, e.g. in cellular cancer immunotherapy, radioimmunotherapy and pretargeting strategies are covered, and emerging applications such as dual targeting strategies, which involve the simultaneous inhibition of two targets, are addressed.

Features
- Presents the recent advances in antibody engineering and in the various clinical applications.
- An invaluable resource for both experts and those new to the field.
- With contributions by international experts from research and biotech companies.

Fields of interest
- Antibodies; Cancer Research; Oncology

Target groups
- Research

Discount group
- P

Current Topics in Innate Immunity II

Mounting evidence in the past decade indicates that innate immunity mediates functions above and beyond first-line defense against infection. It is now appreciated that innate immune mechanisms are critically involved in the development of adaptive immunity and, moreover, the regulation of diverse physiological and homeostatic processes. The latter explains why deregulation of innate immunity may lead to pathological disorders that are not necessarily or directly related to host defense.

Features
- Summary of latest Aegean Conferences meeting - the 7th Innate Immunity Conference.
- Brings together findings of international scientists with different advanced perspectives.

From the contents
- Pentraxins in humoral innate immunity.
- Galectins as pattern recognition receptors: structure, function, and evolution.
- The role of innate immunity in trafficking of hematopoietic stem cells.
- An emerging link between activation of complement cascade and chemotactic gradients of bioactive sphingolipids.
- Interaction of the microbiome with the innate immune response in chronic wounds.
- Keystones species and community service through manipulation of innate immunity.
- A conserved host and pathogen site on immunoglobulins: structural and functional aspects.
- Advances in understanding the structure, function, and mechanism of the scn and elb families of staphylococcal immune evasion proteins.

Fields of interest
- Immunology; Microbiology; Infectious Diseases

Target groups
- Research

Discount group
- P
Interface
A Guide for Professionals Supporting the Criminal Justice System

A wide variety of professionals find themselves intimately involved in the criminal justice system: firefighters, emergency medical providers, nurses, physicians, public health personnel, environmental professionals, public works personnel, and many others. No previous work has attempted to address the criminal justice system in terms relevant to these professionals. Interface: A Guide for Professionals Supporting the Criminal Justice System explains the system, provides the reader with guidance to documenting incidents so that the data is both of value to the professional in the future and for use by the other components of the system. Further, this volume presents evidence from the aspect of these professionals, their needs in handling evidence, and basics of collection and preservation for those instances where it falls to them to do so.

Features
► Designed to introduce the professional to the criminal justice system ► Provides a strong foundation in the documentation needs of the system ► With numerous illustrations

Contents

Fields of interest
Forensic Science; Forensic Medicine

Target groups
Professional/practitioner

Discount group
P

T. Liehr, Universitätsparklinikum Jena, Germany

Small Supernumerary Marker Chromosomes (sSMC)
A Guide for Human Geneticists and Clinicians

Human beings normally have a total of 46 chromosomes, with each chromosome present twice, apart from the X and Y chromosomes in males. Some three million people worldwide, however, have 47 chromosomes: they have a small supernumerary marker chromosome (sSMC) in addition to the 46 normal ones. This sSMC can originate from any one of the 24 human chromosomes and can have different shapes. Approximately one third of sSMC carriers show clinical symptoms, while the remaining two thirds manifest no phenotypic effects. This guide represents the first book ever published on this topic. It presents the latest research results on sSMC and current knowledge about the genotype-phenotype correlation. The focus is on genetic diagnostics as well as on prenatal and fertility-related genetic counseling. A unique feature is that research meets practice: numerous patient reports complement the clinical aspects and depict the experiences of families living with a family member with an sSMC.

Features
► First book on this topic ► The author is a leading expert in the field and his laboratory is collecting all published cases ► With numerous patient reports

Contents
Introduction.- Inheritance of sSMC.- Formation of sSMC.- sSMC in genetic diagnostics and counseling.- sSMC known to be correlated with specific syndromes.- Centric sSMC.- Neocentric sSMC by chromosome.- Multiple sSMC.- sSMC additionally to other chromosomal rearrangements.- Complex sSMC.- sSMC and tumor.- Appendix: Patient organizations in connection with sSMC.- Glossary.

Fields of interest
Human Genetics; Reproductive Medicine; Laboratory Medicine

Target groups
Professional/practitioner

Discount group
P

V. Orgogozo, Université Pierre et Marie Curie, Paris, France; M. V. Rockman, New York University, New York, NY, USA (Eds.)

Molecular Methods for Evolutionary Genetics

We are entering a particularly fruitful period in evolutionary genetics, as rapid technological progress transforms the investigation of genetic variation within and between species. Molecular Methods for Evolutionary Genetics is a collection of advanced molecular biology protocols and general overviews intended to represent the essential methods currently bringing evolutionary genetics to fruition.

Features
► Includes cutting-edge methods and protocols ► Provides step-by-step detail essential for reproducible results ► Contains key notes and implementation advice from the experts

From the contents

Fields of interest
Human Genetics; Gene Function

Target groups
Professional/practitioner

Discount group
P
Chocolate and Health

This is a state-of-the-art text on chocolate and health, including technological developments to improve the health-giving qualities of chocolate. Cocoa and chocolate are the subjects of much research, from food chemistry and technology to health science. Indeed, cocoa contains a remarkable number of bioactive compounds that are being tested in humans to verify their disease-prevention characteristics. The proposed book collects a logical flow of contributions, ranging from historical notes, to food technology aimed at ameliorating chocolate production, to biochemical and clinical trials of cocoa and its components. Readers will be able to assimilate essential information on cocoa and chocolate and gain knowledge on the purported health-giving qualities of this food item and on the advances that are being made in this area.

Features
- State-of-the-art of a very popular topic
- Media often talk about this topic
- Includes biomedical research, psychology, and food technology

From the contents

Fields of interest
Pharmacology/Toxicology: Health Promotion and Disease Prevention; Complementary & Alternative Medicine

Target groups
Professional/practitioner

Discount group
P

DNA Topoisomerases and Cancer

DNA topoisomerases represent an essential family of DNA processing enzymes and a large number of topoisomerase inhibitors are used clinically for the treatment of various human cancers. Novels drugs are in clinical development both against type I and type II topoisomerases. The book will include basic biochemical and structural reviews for the cancer-relevant topoisomerases. It will describe how topoisomerase dysfunctions can damage the genome and increase the risk of cancers, and the involvement of topoisomerases in programmed cell death. The book will also present the various topoisomerase inhibitors in clinical use and development and their molecular and cellular mechanisms of action.

Features
- Structure and mechanism of eukaryotic type IIA topoisomerases
- DNA topoisomerase I and illegitimate recombination
- Mechanism regulating cellular responses to DNA topoisomerase I-targeted agents

From the contents

Fields of interest
Cancer Research; Pharmacology/Toxicology

Target groups
Research

Discount group
P

The Juvenile Skeleton in Forensic Abuse Investigations

Juvenile homicide and fatal maltreatment remain serious and pervasive problems in the developed world and especially in the United States, where in 2005 some 1,500 children died from neglect and physical abuse. Alarming statistics such as this, as well as an upsurge in the media attention paid to all things forensic, underscore the pressing need for the utmost rigor in the scientific investigation of child abuse cases. This well timed volume is a response to the climate of public and press interest in such inquiries, where the forensic aspects of the casework generate an enormous amount of attention.

Features
- Cutting edge research
- Contributions by leading scientists in the field
- High quality images

Contents

Fields of interest
Forensic Science; Forensic Medicine; Laboratory Medicine

Target groups
Professional/practitioner

Discount group
P

Available
2011. XII, 188 p. 30 illus. Hardcover
approx. $189.00

Due October 2011
approx. $209.00

Humana Press
Available
2011. 180 p. 48 illus., 31 in color. Hardcover
$189.00
ISBN 978-1-61779-254-0
Environment and Breast Cancer

Breast cancer is a complex disease caused by multiple environmental and lifestyle factors interacting with genetic susceptibility across the life span. Therefore, environmental factors are of intense interest to both researchers and community members, including women with breast cancer. There is not adequate literature that addresses this issue comprehensively from epidemiological, experimental, and translational research perspective. This book is aiming to fill this gap by gathering chapters from the most recognized experts in the field of breast biology and cancer with special interests in environmental issues.

Features

- Among the first books to Discuss environmental factors of breast cancer
- Addresses breast cancer environment comprehensively from epidemiological, experimental, and translational research perspective
- Includes recognized experts in the field of breast biology and cancer with special interests in environmental issues

Contents

Epidemiologic basis of the role of environmental endocrine disruptors and breast cancer.
- The windows of susceptibility and breast cancer risk.
- The puberty as a window of risk for exposure to environmental agents and its effect in breast development.
- Early life exposure Bisphenol A and breast Neoplasia.
- Genomic changes induced by endocrine disruptors in the mammary gland.
- Proteomic basis for the increase susceptibility across multiple environmental and lifestyle factors.
- Breast cancer is a complex disease caused by environmental agents and its role in breast cancer.
- Effect of Exposure to Perfluorooctanoic Acid (PFOA) in the mammary Gland.
- The effect of radiation in the mammary gland biology and cancer.
- Diet as an environmental stressor in the mammary gland.

Fields of interest

Cancer Research; Pharmacology/Toxicology

Target groups

Research

Discount group

P

Available

2011. 350 p. 36 illus., 23 in color. Hardcover

$189.00
ISBN 978-1-4419-9895-8

$139.00

Pediatric Clinical Pharmacology

The objective of this volume is to give an overview of the present state of the art of pediatric clinical pharmacology including developmental physiology, pediatric-specific pathology, special tools and methods for development of drugs for children (assessment of efficacy, toxicity, long-term safety etc.) as well as regulatory and ethical knowledge and skills. In the future, structural and educational changes have to lead back to a closer cooperation and interaction of pediatrics with (clinical) pharmacology and pharmacy.

Features

- Written by international leading experts in the field
- With numerous illustrations
- Describes the present state of pediatric pharmacology and gives an overview on this fascinating field of research to colleagues from other disciplines

Contents


Fields of interest

Pharmacology/Toxicology; Pediatrics; Laboratory Medicine

Target groups

Research

Discount group

P

Available

2011. 350 p. 26 illus., 9 in color. (Handbook of Experimental Pharmacology, Volume 205) Hardcover

$419.00
ISBN 978-3-642-20194-3

Prepublication price, valid until December 01, 2011

approx. $359.00
Clinical Forensic Medicine
A Physician's Guide

The publication of this third edition of the definitive text on clinical forensic medicine comes at an exciting time for a subject now gaining recognition as a specialty in the medical establishment. This growing acknowledgement reflects the fact that increasing numbers of health professionals are becoming engaged in general forensic services. Nurses and paramedics are more involved than ever in custody care, while nurses themselves are conducting more examinations in cases involving alleged sexual offences. Thus it is vital that those caring for this vulnerable group of patients (whether detainees or complainants) have the tools to master this specialist set of skills.

Features
► Cutting edge research ► Contributions by leading scientists in the field ► High quality images

Contents

Fields of interest
Forensic Science; Forensic Medicine; Pathology

Target groups
Professional/practitioner

Discount group
P

Is this Cell a Human Being?
Exploring the Status of Embryos, Stem Cells and Human-Animal Hybrids

The central question of this book is whether or not particular cell entities of human origin ought to be considered human beings. The answer is crucial for making moral decisions for or against research and experimentation. Experts in the field discuss the production of embryonic-like pluripotent stem cells by altered nuclear transfer, parthenogenesis and reprogramming of adult somatic cells. They thoroughly analyse the biological and moral status of different cell entities, such as human stem cells, embryos and human-animal hybrid embryos, and make a decisive step towards establishing final criteria for what constitutes a human being. The topic is challenging in nature and of broad interest to all those concerned with current bioethical thought on embryonic human life and its implications for society.

Features
► Discusses which embryonic or stem cell entities may be human beings ► Interdisciplinary and international in authorship, drawing together scientists, clinicians, philosophers and historians from throughout Europe and the USA ► Chapters rigorously discussing altered nuclear transfer, parthenotes and interspecies embryos

From the contents
Introduction. - Breakthrough in stem cell research? The reprogramming of somatic cells to pluripotent stem cells. Overview and outlook. - Pre-implantation stages of human development: the biological and moral status of early embryos. - Complete moles and parthenotes are not organisms. - Embryos grown in culture deserve the same moral status as embryos after implantation. - Distinquishing embryos from non-embryos. - Is the human embryo a person? On the status of cell entities produced through ANT.

Fields of interest
Human Genetics; Theory of Medicine/Bioethics; Stem Cells

Target groups
Research

Discount group
P

Forensic Pathology Reviews, Volume 6

Fresh research has opened up new vistas in forensic pathology that are allowing for closer national and international cooperation between pathologists and scientists in a range of medical and scientific disciplines. At the same time, autopsy and laboratory techniques are undergoing rapid evolution, with new procedures coming on stream while existing processes yield additional—and more accurate—results. This sixth volume of reviews in forensic pathology provides professionals working in the field with cutting-edge material on the latest key advances in the fields of traumatic death, sudden natural death and death time estimation. Now with numerous color illustrations, the book gives forensic experts across the world a fully up-to-date guide to contemporary procedures and theory in forensic science and medicine.

Features
► Comprehensive and current ► The volume covers fresh research ► Gives forensic experts across the world a fully up-to-date guide to contemporary procedures and theory in forensic science and medicine

Fields of interest
Forensic Science; Forensic Medicine; Pathology

Target groups
Professional/practitioner

Discount group
P
Chromatographic Fingerprint Analysis of Traditional Herbal Medicines

Thin-layer and High Performance Liquid Chromatography

This manual, to be published in two volumes, provides a condensed overview of the analytical investigation of 80 Chinese Herbal Drugs which are most frequently in use. Thin layer chromatographic-, high pressure liquid chromatographic- and gas chromatographic-fingerprint analytical techniques allow the detection of all main low-molecular constituents of a plant drug and even single constituents can be visualized. Analytical results thereof are shown in numerous color figures. The quality proof of the investigation meets the standard of the European Drug Regulatory Authority. Furthermore, this volume gives a detailed description of the analytical methods used for several drugs. Bioactive constituents, pharmacological and biological activities of several single herbal drug as well as their therapeutic application are discussed.

**Features**
- Description of the 80 mostly used Chinese drugs
- Detailed thin layer and HPLC analytical data
- Contains numerous coloured figures

**Fields of interest**
Pharmaceutical Sciences/Technology; Pharmacology/Toxicology; Plant Biochemistry

**Target groups**
Research

**Discount group**
P

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Inflammation and Atherosclerosis

It has been known for over 150 years that hallmark of inflammation can be observed in the wall of atherosclerotic vessels. It was, however, not clear if this inflammation is the cause or the consequence of atherogenesis. More recently, it has become evident that inflammation mediated both by innate and adaptive immunity is instrumental even in the earliest stages of the development of atherosclerotic lesions, i.e., that it plays an important pathogenetic role.

**Features**
- Written by experts in the field of atherosclerosis and inflammation
- Comprehensive insight into the history, clinical manifestations, mechanisms and treatment of inflammatory atherosclerotic diseases
- Introduces new concepts and technologies
- Gives a comprehensive account of the concept that inflammatory processes play a crucial role in the development of atherosclerosis
- Describes new vaccination strategies

**From the contents**

**Fields of interest**
Immunology; Human Physiology; Endocrinology

**Target groups**
Research

**Discount group**
P

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Alcohol and Cancer

The World Health Organization has identified chronic alcohol consumption as one of the top ten risk factors for worldwide burden of disease. The International Agency for Research on Cancer has identified alcohol as carcinogenic to humans, including cancers of the upper aerodigestive tract, colon, liver and breast. Alcohol's actions may be direct e.g. effects on retinoic acid and one-carbon metabolism, or indirect, through metabolites such as acetaldehyde and reactive oxygen species or through various signaling pathways that influence cell cycle and apoptosis that may contribute to carcinogenesis. This report reviews the state of the art in alcohol-related cancer research in ten chapters.

**Features**
- Written and edited by internationally recognized leaders in the field of metabolism, alcohol and cancer
- No single comprehensive volume on alcohol and cancer exists
- Will appeal to those working in cancer research and those working in metabolic research

**Contents**
Alcohol as a Human Carcinogen.- Overview of Tumorigenesis.- Alcohol and Cancer Epimediology.- Alcohol Metabolism and Its Implications for Cancer.- Epigenetics, Alcohol, and Cancer.- Alcohol, Cancer Genes, and Signaling Pathways.- Alcohol, Retinoic Acid, and Cancer.- Alcohol, Altered Protein Homeostasis, and Cancer.- Alcohol and the Immunological Function of Immune Cells in Cancer Development.- Immune Surveillance and Tumor Evasion.- Stem Cells and Alcohol-related Cancers.- Epilogue, Consensus Recommendations - Alcohol and Cancer.

**Fields of interest**
Cancer Research; Pharmacology/Toxicology

**Target groups**
Research

**Discount group**
P
## High Performance Through Process Excellence
### From Strategy to Execution with Business Process Management

Continuously changing customer and market requirements as well as new developments in information technology have become a dominating factor in today's business environment. To be successful enterprises have to adapt quickly to new opportunities and threats. They have to take smart decision and execute fast. Innovation and agility become important success factors.

**Features**
- Second edition of Kirchmer’s brilliant introduction into the Management of Process Excellence
- Get to know how to establish a lasting Business Process Management capability that delivers real business value
- Learn how SOA, Web 2.0 or Cloud Computing can be effectively used on the way to the next generation enterprise

**Contents**

**Fields of interest**
Information Systems; Management/Business for Professionals

**Target groups**
Professional/practitioner

**Discount group**
P

## Leadership – What Really Matters
### A Handbook on Systemic Leadership

What does really matter for daily leadership? How would a good and effective manager be characterized? Daniel F. Pinnow describes in a very illustrative way the essentials of collaborating with people in the business environment. This standard reference book exists as a 4th edition in German and is also available in Chinese. It provides a comprehensive and easy-to-understand overview over the most important leadership approaches in theory and practice. The credo of the author is: Leadership is an art of creating a world where others would love to join in.

**Features**
- The first available English book describing the approach of systemic leadership
- Suitable for professionals, trainers, coaches and managers
- The first two chapters could be applicable to graduates
- Fast and easy absorption and understanding of the contents

**Contents**
Leadership in the 21st century - Leadership in a time of crisis? - Occupation or calling? - What makes for good leadership? - Considering the whole - Leading with your heart and head - The instruments of systemic leadership: Employee interview, Coaching, Conflict management, Feedback culture, Goal-setting process, Delegating, Team development - Ten central theses about leadership.

**Fields of interest**
Management/Business for Professionals; Industrial and Organisational Psychology; Administration, Organization and Leadership

**Target groups**
Professional/practitioner

**Discount group**
P
The Timeless Principles of Successful Business Strategy

In recent times, a number of business leaders have forgotten the fundamental rules of business strategy. Consequently they have led their companies to collapse, provoking an economic and financial crisis. Obsessed with short-term returns, they have overlooked the fact that the real purpose of corporate strategy is not only to make quick profit but more importantly to create an organization that will endure. There is much to learn from the experience of established firms that have existed for a hundred years and more. They provide the material for this clear and concise book, which presents ten lessons that detail the main elements of corporate strategy. Recognizing that each firm is unique, the book resists the temptation of quick fixes, instead offering lessons to be pondered and used on a case-by-case basis.

Features
- The book includes all the business strategy concepts and practices that are used by successful everlasting companies
- It excludes to mention specific examples of named companies because the experience from other books shows that they often get quickly outdated and they are usually difficult to extrapolate
- Instead of providing examples to imitate, the book singles out some practices/patterns which are shared by companies who have been successful over more than decades
- It invites the readers to consider if they can use them for their own firm

Contents

Fields of interest
Management/Business for Professionals; Organization/Planning; Business/Management Science, general

Target groups
Professional/practitioner

Discount group
P

Due September 2011
Lanthanide Luminescence
Photophysical, Analytical and Biological Aspects

With contributions by numerous experts

Lanthanides have fascinated scientists for more than two centuries now, and since efficient separation techniques were established roughly 50 years ago, they have increasingly found their way into industrial exploitation and our everyday lives. Numerous applications are based on their unique luminescent properties, which are highlighted in this volume. It presents established knowledge about the photophysical basics, relevant lanthanide probes or materials, and describes instrumentation-related aspects including chemical and physical sensors. The uses of lanthanides in bioanalysis and medicine are outlined, such as assays for in vitro diagnostics and research. All chapters were compiled by renowned scientists with a broad audience in mind, providing both beginners in the field and advanced researchers with comprehensive information on the given subject.

Features
- The first book to present application-oriented knowledge on this topic
- Written by experts
- Richly illustrated

From the contents
Introduction.- Photophysical basics of lanthanides.- Lanthanide probes and materials.- Lanthanide stable chelates and macrocyclic compounds.- Particulate labels.- Chelating particles.- Upconverters.- NIR labels.- Supramolecules and assemblies.- Optical properties and applications of solid lanthanide materials.- Lanthanide based chemical and physical sensors.- Instrumental aspects on measuring lanthanide luminescence.- Direct and time-resolved measurements.- Frequency-domain measurements.- Imaging systems.

Fields of interest
Analytical Chemistry; Molecular Medicine; Medical Biochemistry

Target groups
Research

Discount group
P

Carbon-based Membranes for Separation Processes

This book provides a significant overview of carbon-related membranes. It will cover the development of carbon related membranes and membrane modules from its onset to the latest research on carbon mixed matrix membranes. After reviewing progress in the field, the authors indicate future research directions and prospective development. The authors also attempt to provide a guideline for the readers who would like to establish their own laboratories for carbon membrane research. For this purpose, detailed information on preparation, characterization and testing of various types of carbon membrane is provided. Design and construction of carbon membrane modules are also described in detail.

Features
- This is the first book exclusively dedicated to carbon membranes and the carbon-related membranes
- It contains detailed information on the preparation, characterization and testing of carbon membranes for separation processes
- It includes real life examples and schematics, and details of experimental methods so that readers can conduct experiments themselves after reading the chapters on the experimental methods
- Real experimental data is analyzed in a theoretical framework

Contents

Fields of interest
Industrial Chemistry/Chemical Engineering; Organic Chemistry; Polymer Sciences

Target groups
Research

Discount group
P

Due May 2011
2011. 400 p. (Springer Series on Fluorescence, Volume 7) Hardcover
$409.00
ISBN 978-3-642-21022-8

Due July 2011
$179.00

Due August 2011
2011. 350 p. 376 illus., 83 in color. Hardcover
$189.00
Vanadium: Biochemical and Molecular Biological Approaches

Since the early 1980s, the biochemical behavior of vanadium has been investigated extensively such as its potent inhibitory role for Na+/K+-ATPase and its participation in insulin-mimicking but also because of the more recent findings on the enzymes and compounds containing vanadium. In addition, knowledge of the medicinal applications of vanadium such as the biochemical roles of its compounds in bone development, cellular mechanisms, signaling pathways and anti-cancer agents has increased enormously.

Vanadium: Featuring Biochemical and Molecular Biological Approaches adds to this knowledge by presenting inorganic and redox processes and demonstrating the important use of vanadium in biological systems. Chapters include the following themes: hyper-accumulators of vanadium, enzymatic roles of vanadium, biochemical functions of vanadium and medicinal functions of vanadium. This volume is aimed at pure and applied chemists, biochemists, pharmaceutical and medical scientists.

Contents

Fields of interest
Medicinal Chemistry; Biochemistry, general; Medical Biochemistry

Target groups
Research

Discount group
P

Available
2011. 400 p. 67 illus., 17 in color. Hardcover
Price approx. $189.00
ISBN 978-94-007-0912-6
“Carbon Bonding and Structures: Advances in Physics and Chemistry” features detailed reviews which describe the latest advances in the modeling and characterization of fundamental carbon based materials and recently designed carbon composites. Significant advances are reported and reviewed by globally recognized experts in the field. The quantification, indexing, and interpretation of physical and chemical patterns of carbon atoms in molecules, crystals, and nanosystems is presented. “Carbon Bonding and Structures: Advances in Physics and Chemistry” will be primarily of interest to theoretical physical chemists and computational materials scientists based in academia, government laboratories, and industry.

Features
► Targeted at researchers in academia and industry
► Contains review type contributions
► Chapter contributions from Asia, USA, South America and Europe

From the contents

Fields of interest
Physical Chemistry; Math. Applications in Chemistry; Organic Chemistry

Discount group
Research

Structure and Bonding
Series editor: D. M. Mingos
Volume 138
A. Vegas, Instituto de Química Física “Rocasolano”, Madrid, Spain (Ed.)

Inorganic 3D Structures
The Extended Zintl-Klemm Concept

Features
► This series presents critical reviews of the present position and future trends in modern chemical research concerned with chemical structure and bonding
► Short and concise reports, each written by the world’s renowned experts
► Still valid and useful after 5 or 10 years
► More information as well as the electronic version of the whole content available at: springerlink.com.

Contents

Fields of interest
Inorganic Chemistry; Physical Chemistry

Discount group
Research

Discount group
P'

Due August 2011

2011. DC, 600 p. 171 illus., 48 in color. (Carbon Materials: Chemistry and Physics, Tentative volume 5) Hardcover
► approx. $259.00
ISBN 978-94-007-1732-9

Available

2011. 200 p. Hardcover
► $259.00
ISBN 978-3-642-20340-4

Discount group
P

Due July 2011

2011. 160 p. Hardcover
► approx. $189.00
ISBN 978-3-642-21140-1
Structure and Bonding

Series editor: D. M. Mingos

Volume 140

T. F. Fässler, TU Munich, Germany (Ed.)

Zintl Ions

Principles and Recent Developments


Features

► This series presents critical reviews of the present position and future trends in modern chemical research concerned with chemical structure and bonding
► Short and concise reports, each written by the world’s renowned experts
► Still valid and useful after 5 or 10 years

From the contents


Fields of interest

Inorganic Chemistry; Physical Chemistry

Target groups

Research

Discount group

P

New Series

SpringerBriefs in Molecular Science

SpringerBriefs in Molecular Science present concise summaries of cutting-edge research and practical applications across a wide spectrum of fields centered around chemistry. Featuring compact volumes of 50 to 125 pages, the series covers a range of content from professional to academic.

Typical topics might include:

► A timely report of state-of-the-art analytical techniques
► A bridge between new research results, as published in journal articles, and a contextual literature review
► A snapshot of a hot or emerging topic
► An in-depth case study
► A presentation of core concepts that students must understand in order to make independent contributions
► Best practices or protocols to be followed

Briefs allow authors to present their ideas and readers to absorb them with minimal time investment. Briefs will be published as part of Springer’s eBook collection, with millions of users worldwide. In addition, Briefs will be available for individual print and electronic purchase. Briefs are characterized by fast, global electronic dissemination, standard publishing contracts, easy-to-use manuscript preparation and formatting guidelines, and expedited production schedules. Both solicited and unsolicited manuscripts are considered for publication in this series.

Features

► Latest research results in the mentioned field

Contents

Introduction - Reagent classification - Synthetic strategies - Kinetic aspects - Solid supported Cr(VI) reagents - Chromium in Biology

Fields of interest

Organic Chemistry; Biochemistry, general

Target groups

Research

Discount group

P

Chromium -VI Reagents: Synthetic Applications

Chromic acid and chromium oxide are the two versatile Cr(VI) oxidants known to organic chemists for decades. The introduction of the Core’s reagent, viz. pyridinium chlorochromate, in 1975 followed by the publications on several Cr(VI) oxidizing agents containing the -onium chromates and halochromates in the last three decades have very much changed the chemistry of oxidations with Chromium VI. Several of these new reagents have been shown to be mild so that they can be handled easily and the reacton products may also be controlled. Some of them are highly selective oxidants for positions like allylic hydroxylic group, etc., and some other are highly regioselective. The information on more than 36 such reagents reported in various internationally reputed journals spanning about 280 references have been collected and provided in this book in such a manner that it will be very useful for professionals, researchers, teachers and graduate students working in organic synthesis.

Features

► Best practices or protocols to be followed

Available

2011. 60 p. 50 illus. (SpringerBriefs in Molecular Science) Softcover

► approx. 649.95

ISBN 978-3-642-70816-4

Due July 2011


► approx. $189.00

ISBN 978-3-642-21180-5
**Topics in Organometallic Chemistry**


**Volume 36**

S. Ma, Chinese Academy of Sciences, Shanghai PR China (Ed.)

**Asymmetric Catalysis from a Chinese Perspective**

**Features**
- Each volume of Topics in Organometallic Chemistry provides the broad scientific readership with a comprehensive summary and critical overview of a specific topic in organometallic chemistry
- Research in this rapidly developing transdisciplined field is having profound influence on other areas of scientific investigation, ranging from catalytic organic synthesis to biology, medicine and material science
- With contributions by international experts

**From the contents**

**Fields of interest**
Organometallic Chemistry; Catalysis; Organic Chemistry

**Target groups**
Research

**Discount group**
P

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**Topics in Organometallic Chemistry**


**Volume 37**

T. Ikariya, Tokyo Institute of Technology, Tokyo, Japan; M. Shibasaki, The University of Tokyo, Japan (Eds.)

**Chemistry of Bifunctional Molecular Catalysis**

**Features**
- Each volume of Topics in Organometallic Chemistry provides the broad scientific readership with a comprehensive summary and critical overview of a specific topic in organometallic chemistry
- Research in this rapidly developing transdisciplined field is having profound influence on other areas of scientific investigation, ranging from catalytic organic synthesis to biology, medicine and material science
- With contributions by international experts

**Contents**

**Fields of interest**
Organometallic Chemistry; Catalysis; Organic Chemistry

**Target groups**
Research

**Discount group**
P

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**Selenium and Tellurium Chemistry**

D. Woollins, R. Laitinen (Eds.)

**From Small Molecules to Biomolecules and Materials**

Our knowledge of the chemistry of selenium and tellurium has seen significant progress in the last few decades. This monograph comprises contributions from leading scientists on the latest research into the synthesis, structure and bonding of novel selenium and tellurium compounds. It provides insight into mechanistic studies of these compounds and describes coordination chemistry involving selenium and tellurium containing ligands. Contributions also describe the theoretical and spectroscopic studies of selenium and tellurium compounds.

**Features**
- Offers readers a multidisciplinary approach to the subject
- Highlights significant recent progress in Selenium and Tellurium Chemistry
- Presents both the basic chemistry as well as applications such as in semiconductors, insulators, catalysts, nanotubes, polymers and thin films

**From the contents**

**Fields of interest**
Inorganic Chemistry; Materials Science, general; Biochemistry, general

**Target groups**
Research

**Discount group**
P

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**Due June 2011**

**Available**

2011. XII, 280 p. 258 illus., 6 in color. Hardcover

$309.00
ISBN 978-3-642-19471-9

2011. XII, 200 p. Hardcover

$259.00
ISBN 978-3-642-20730-3

2011. 350 p. 400 illus. in color. Hardcover

$189.00
ISBN 978-3-642-20698-6
Affective Computing and Sentiment Analysis

Metaphor, Ontology, Affect and Terminology

This volume maps the watershed areas between two `holy grails' of computer science: the identification and interpretation of affect – including sentiment and mood. The expression of sentiment and mood involves the use of metaphors, especially in emotive situations. Affect computing is rooted in hermeneutics, philosophy, political science and sociology, and is now a key area of research in computer science. The 24/7 news sites and blogs facilitate the expression and shaping of opinion locally and globally. Sentiment analysis, based on text and data mining, is being used in the looking at news and blogs for purposes as diverse as: brand management, film reviews, financial market analysis and prediction, homeland security. There are systems that learn how sentiments are articulated. This work draws on, and informs, research in fields as varied as artificial intelligence, especially reasoning and machine learning, corpus-based information extraction, linguistics, and psychology.

Features
- Intellectual Challenge: Research on sentiment analysis is rooted in the ancient arts of hermeneutics and linguistic philosophy
- Academic Relevance: Sentiment analysis is exemplar qualitative analysis that has been automated
- Semantic Web: Sentiment analysis is key to `intelligent' search and retrieval especially in the mission critical area of surveillance and law & order
- Financial Reward: Sentiment analysis is the missing link between fundamental analysis and technical analysis for financial markets

Fields of interest
- Data Mining and Knowledge Discovery
- Computational Linguistics
- User Interfaces and Human Computer Interaction

Target groups
- Research

Discount group
- P

Visualization of Time-Oriented Data

Time is an exceptional dimension that is common to many application domains such as medicine, engineering, business, or science. Due to the distinct characteristics of time, appropriate visual and analytical methods are required to explore and analyze them. This book starts with an introduction to visualization and historical examples of visual representations. At its core, the book presents and discusses a systematic view of the visualization of time-oriented data along three key questions: what is being visualized (data), why something is visualized (user tasks), and how it is presented (visual representation). To support visual exploration, interaction techniques and analytical methods are required that are discussed in separate chapters. A large part of this book is devoted to a structured survey of 101 different visualization techniques as a reference for scientists conducting related research as well as for practitioners seeking information on how their time-oriented data can best be visualized.

Features
- A comprehensive overview of the field
- Includes a survey of cutting-edge, interactive Information Visualization techniques for time-oriented data
- Researchers, students and practitioners will benefit from the categorization scheme that makes the field graspable
- Unified characterization of techniques enables the comparison of different methods along distinct attributes

Contents
- Introduction.
- Historical Background.
- Time & Time-Oriented Data.
- Visualization Aspects.
- Interaction Support.
- Analytical Support.
- Survey of Visualization Techniques.
- Conclusion.

Fields of interest
- User Interfaces and Human Computer Interaction
- Image Processing and Computer Vision
- Information Systems and Communication Service

Target groups
- Research

Discount group
- P
Digital Privacy

PRIME – Privacy and Identity Management for Europe

This book documents the R&D outcome of the PRIME Project, an R&D project partially funded by the European Union’s Sixth Framework Programme and the Swiss Federal Office for Education and Science. PRIME has focused on privacy-enhancing identity management techniques and systems to support users’ sovereignty over their personal privacy and enterprises’ privacy-compliant data processing.

Features
► State-of-the-art research ► First coherent presentation of the topic

From the contents

Fields of interest
Computers and Society; Management of Computing and Information Systems; Information Systems Applications (incl.Internet)

Target groups
Research

Discount group
P

Due May 2011
2011. Approx. 800 p. (Lecture Notes in Computer Science / Security and Cryptology, Volume 6545) Softcover
► $131.00
ISBN 978-3-642-19049-0

Grid and Cloud Database Management

Since the 1990s Grid Computing has emerged as a paradigm for accessing and managing distributed, heterogeneous and geographically spread resources, promising that we will be able to access computer power as easily as we can access the electric power grid. Later on, Cloud Computing brought the promise of providing easy and inexpensive access to remote hardware and storage resources. Exploiting pay-per-use models and virtualization for resource provisioning, cloud computing has been rapidly accepted and used by researchers, scientists and industries.

Features
► Provides broad coverage of all aspects related to grid and cloud data management ► Includes detailed descriptions of research prototypes in application areas with spatiotemporal or genomic data ► Describes relevant OGF standards and specifications like OCCI and WS-DAI

From the contents

Fields of interest
Database Management; Computer Applications in Earth Sciences; Computer Appl. in Life Sciences

Target groups
Research

Discount group
P

Due July 2011
2011. 350 p. Hardcover
► $129.00
ISBN 978-3-642-20044-1

Ontologies in Urban Development Projects

Ontologies are increasingly recognized as essential tools in information science. Although the concepts are well understood theoretically, the practical implementation of ontologies remains challenging. In this book, researchers in computer science, information systems, ontology engineering, urban planning and design, civil and building engineering, and architecture present an interdisciplinary study of ontology engineering and its application in urban development projects.

Features
► This book shows why and how to use ontologies in a specific area, namely, urban development ► Offers a multidisciplinary view of ontologies in urban development ► The authors are from several disciplines such as architecture, construction, civil engineering, geography, information systems, artificial intelligence ► Investigates many aspects of ontological engineering, such as semantic heterogeneity, multilingualism, re-use of knowledge sources, etc. that are rarely put together

Contents

Fields of interest
Computer-Aided Engineering (CAD, CAE) and Design; Models and Principles; Information Storage and Retrieval

Target groups
Research

Discount group
P

Available
2011. VI, 237 p. 80 Illus. (Advanced Information and Knowledge Processing) Hardcover
► approx. $99.00
ISBN 978-0-85729-773-4
**Handbook of Augmented Reality**

Augmented Reality (AR) refers to the merging of a live view of the physical, real world with context-sensitive, computer-generated images to create a mixed reality. Through this augmented vision, a user can digitally interact with and adjust information about their surrounding environment on-the-fly. Handbook of Augmented Reality provides an extensive overview of the current and future trends in Augmented Reality, and chronicles the dramatic growth in this field. The book includes contributions from world experts in the field of AR from academia, research laboratories and private industry. Case studies and examples throughout the handbook help introduce the basic concepts of AR, as well as outline the Computer Vision and Multimedia techniques most commonly used today.

**Features**
- Provides an extensive overview of the key concepts behind Augmented Reality, as well as its current systems and applications
- Explores the new trends in AR, including Wireless AR and 3D Technologies
- Serves as a guide for current, on-going AR research, and forecasts future trends in the field
- Presents case studies and examples from leading experts in AR

**Fields of interest**
- Computer Imaging, Vision, Pattern Recognition and Graphics; User Interfaces and Human Computer Interaction; Multimedia Information Systems

**Target groups**
- Professional/practitioner

**Discount group**
- P

**Visual Analysis of Behaviour From Pixels to Semantics**

This book presents a comprehensive treatment of visual analysis of behaviour from computational-modelling and algorithm-design perspectives. Topics: covers learning-group activity models, unsupervised behaviour profiling, hierarchical behaviour discovery, learning behavioural context, modelling rare behaviours, and “man-in-the-loop” active learning; examines multi-camera behaviour correlation, person re-identification, and “connecting-the-dots” for abnormal behaviour detection; discusses Bayesian information criterion, Bayesian networks, “bag-of-words” representation, canonical correlation analysis, dynamic Bayesian networks, Gaussian mixtures, and Gibbs sampling; investigates hidden conditional random fields, hidden Markov models, human silhouette shapes, latent Dirichlet allocation, local binary patterns, locality preserving projection, and Markov processes; explores probabilistic graphical models, probabilistic topic models, space-time interest points, spectral clustering, and support vector machines.

**Features**
- Presents a comprehensive and unified treatment of visual analysis of behaviour from computational-modelling and algorithm-design perspectives
- Provides analysis of current benchmarking databases and commercial systems
- Includes a helpful list of acronyms

**From the contents**
**Part I: Introduction**
- About Behaviour
- Behaviour in Context
- Towards Modelling Behaviour

**Part II: Single-Object Behaviour**
- Understanding Facial Expression
- Modelling Gesture
- Action Recognition
- Part III: Group Behaviour
- Supervised Learning of Group Activity
- Unsupervised Behaviour Profiling
- Hierarchical Behaviour Discovery
- Learning Behavioural Context

**Fields of interest**
- Computer Imaging, Vision, Pattern Recognition and Graphics; Image Processing and Computer Vision; Biometrics

**Target groups**
- Research

**Discount group**
- P

**Multiparadigm Constraint Programming Languages**

Programming languages are often classified according to their paradigms, e.g. imperative, functional, logic, constraint-based, object-oriented, or aspect-oriented. A paradigm characterizes the style, concepts, and methods of the language for describing situations and processes and for solving problems, and each paradigm serves best for programming in particular application areas. Real-world problems, however, are often best implemented by a combination of concepts from different paradigms, because they comprise aspects from several realms, and this combination is more comfortably realized using multiparadigm programming languages. This book deals with the theory and practice of multiparadigm constraint programming languages. The author first elaborates on programming paradigms and languages, constraints, and the merging of programming concepts which yields multiparadigm (constraint) programming languages. In the second part the author inspects two concrete approaches on multiparadigm constraint programming – the concurrent constraint functional language CCFL, which combines the functional and the constraint-based paradigms and allows the description of concurrent processes; and a general framework for multiparadigm constraint programming and its implementation, Meta-S. The book is appropriate for researchers and graduate students in the areas of programming and artificial intelligence.

**Features**
- Suitable for researchers and graduate students working in the areas of programming and constraints
- Introduces new approaches
- Demonstrates results on real-world problems

**From the contents**
**Part I: Introduction**
- About Behaviour
- Behaviour in Context
- Towards Modelling Behaviour

**Part II: Single-Object Behaviour**
- Understanding Facial Expression
- Modelling Gesture
- Action Recognition
- Part III: Group Behaviour
- Supervised Learning of Group Activity
- Unsupervised Behaviour Profiling
- Hierarchical Behaviour Discovery
- Learning Behavioural Context

**Fields of interest**
- Artificial Intelligence (incl. Robotics); Programming Techniques

**Target groups**
- Research

**Discount group**
- P
The Language Grid
Service-Oriented Collective Intelligence for Language Resource Interoperability

There is increasing interaction among communities with multiple languages, thus we need services that can effectively support multilingual communication. The Language Grid is an initiative to build an infrastructure that allows end users to create composite language services for intercultural collaboration. The aim is to support communities to create customized multilingual environments by using language services to overcome local language barriers. The stakeholders of the Language Grid are the language resource providers, the language service users, and the language grid operators who coordinate the former.

Features
► This is the first book describing the Language Grid, an infrastructure that allows end users to create composite language services for intercultural collaboration ► The book will be valuable for researchers in artificial intelligence, particularly in the areas of machine translation and human-computer interaction

From the contents

Fields of interest
Language Translation and Linguistics; Artificial Intelligence (incl. Robotics); Computational Linguistics

Target groups
Research

Discount group
P

Network Performance Engineering
A Handbook on Convergent Multi-Service Networks and Next Generation Internet

During recent years a great deal of progress has been made in performance modelling and evaluation of the Internet, towards the convergence of multi-service networks of diverging technologies, supported by internetworking and the evolution of diverse access and switching technologies.

Features
► A handbook on convergent multi-service networks and next generation internet ► State-of-the-Art-SurveyInvited works drawn from PhD courses held at recent HETNETs International Working Conferences on Performance Modelling and Evaluation of Heterogeneous Networks

From the contents

Fields of interest
Computer Science, general

Target groups
Research

Discount group
P

Web Data Mining
Exploring Hyperlinks, Contents, and Usage Data

Web mining aims to discover useful information and knowledge from Web hyperlinks, page contents, and usage data. Although Web mining uses many conventional data mining techniques, it is not purely an application of traditional data mining due to the semi-structured and unstructured nature of the Web data. The field has also developed many of its own algorithms and techniques.

Features
► Covers all key tasks and techniques of Web search and Web mining, i.e., structure mining, content mining, and usage miningIncludes major algorithms from data mining, machine learning, information retrieval and text processing, which are crucial for many Web mining tasks ► Contains a rich blend of theory and practice, addressing seminal research ideas and also looking at the technology from a practical point of view ► Second edition includes new/revised sections on supervised learning, opinion mining and sentiment analysis, recommender systems and collaborative filtering, and query log miningIdeally suited for classes on data mining, Web mining, Web search, and knowledge discovery in data bases ► Provides internet support with lecture slides and project problems

From the contents

Fields of interest
Information Storage and Retrieval; Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences; Data Mining and Knowledge Discovery

Target groups
Graduate

Discount group
P

Due August 2011
► approx. $69.95
ISBN 978-3-642-21177-5

Due May 2011
2011, XVIII, 1080 p. (Lecture Notes in Computer Science / Computer Communication Networks and Telecommunications, Volume 5233) Softcover
► $143.00
ISBN 978-3-642-02741-3

Due June 2011
2nd Ed. 2011. 600 p. 189 illus., 19 in color. (Data-Centric Systems and Applications) Hardcover
► $59.95
ISBN 978-3-642-19459-7
Recent Trends in Information Reuse and Integration

The present text aims at helping the reader to maximize the reuse of information. Topics covered include tools and services for creating simple, rich, and reusable knowledge representations to explore strategies for integrating this knowledge into legacy systems. The reuse and integration are essential concepts that must be enforced to avoid duplicating the effort and reinventing the wheel each time in the same field. This problem is investigated from different perspectives. in organizations, high volumes of data from different sources form a big threat for filtering out the information effective decision making. the reader will be informed of the most recent advances in information reuse and integration.

Features

- Information capture representation with simple, rich and maximal reusability information maintenance, validation and integration
- Reusable systems including software tools, web services and mining techniques

Fields of interest

Information Storage and Retrieval; Data Mining and Knowledge Discovery

Target groups

Research

Discount group

P

Grid Computing
Towards a Global Interconnected Infrastructure

This book presents research from many of the major projects involved in the emerging global grid infrastructure. With a particular focus on the practical advantages and applications of grid computing – including real case studies – the book provides an in-depth study of grid technology for a wide range of different needs.

Features

- Provides an in-depth study of grid technology for a wide range of different needs, with a particular focus on the practical advantages and applications of grid computing
- Presents contributions from an international selection of experts in the field
- Provides summarizing abstracts and conclusions for each chapter

Contents


Fields of interest

Computer Communication Networks

Target groups

Research

Discount group

P

Compiler Design
Analysis and Transformation

While compilers for high-level programming languages are large complex software systems, they have particular characteristics that differentiate them from other software systems. Their functionality is almost completely well-defined - ideally there exist complete precise descriptions of the source and target languages. Additional descriptions of the interfaces to the operating system, programming system and programming environment, and to other compilers and libraries are often available. The book deals with the optimization phase of compilers. In this phase, programs are transformed in order to increase their efficiency. To preserve the semantics of the programs in these transformations, the compiler has to meet the associated applicability conditions. These are checked using static analysis of the programs. In this book the authors systematically describe the analysis and transformation of imperative and functional programs. In addition to a detailed description of important efficiency-improving transformations, the book offers a concise introduction to the necessary concepts and methods, namely to operational semantics, lattices, and fixed-point algorithms. This book is intended for students of computer science. The book is supported throughout with examples, exercises and program fragments.

Features

- Written by established experts
- Illustrated with many examples, exercises and program fragments
- Third book in a 4-volume set

Contents

Introduction.- Program Semantics.- Transformations.- Static Analysis.- Imperative Programs.- Functional Programs.- References.- Index.

Fields of interest

Programming Techniques; Programming Languages, Compilers, Interpreters

Target groups

Upper undergraduate

Discount group

P

Due October 2011

2011. XVI, 326 p. 114 illus., 62 in color. (Computer Communications and Networks) Hardcover

$129.00


Available

2012. 1 p. 100 illus. Hardcover

$129.00

ISBN 978-3-7908-0737-9

Due October 2011


approx. $59.95

ISBN 978-3-642-17547-3
Principles of Compilers
A New Approach to Compilers Including the Algebraic Method

"Principles of Compilers: A New Approach to Compilers Including the Algebraic Method" introduces the ideas of the compilation from the natural intelligence of human beings by comparing similarities and differences between the compilations of natural languages and programming languages. The notation is created to list the source language, target languages, and compiler language, vividly illustrating the multilevel procedure of the compilation in the process. The book thoroughly explains the LL(1) and LR(1) parsing methods to help readers to understand the how and why. It not only covers established methods used in the development of compilers, but also introduces an increasingly important alternative — the algebraic formal method.

Features
► New approach to compilers ► Discusses established and new methods Co-authored by two leading experts from China and the UK/USA

Contents

Fields of interest
Computer Science, general; Coding and Information Theory

Target groups
Research

Discount group
P

Quaternions for Computer Graphics

Sir William Rowan Hamilton was a genius, and will be remembered for his significant contributions to physics and mathematics. The Hamiltonian, which is used in quantum physics to describe the total energy of a system, would have been a major achievement for anyone, but Hamilton also invented quaternions, which paved the way for modern vector analysis. Quaternions are one of the most documented inventions in the history of mathematics, and this book is about their invention, and how they are used to rotate vectors about an arbitrary axis. Apart from introducing the reader to the features of quaternions and their associated algebra, the book provides valuable historical facts on the features of quaternions their associated algebra and how they can be used in computer graphics ► Provides valuable historical facts on the features of quaternions their associated algebra and how they can be used in computer graphics ► Describes the concepts of sets, groups, fields and rings in order to enable the reader to design and code quaternion algorithms ► Contains many illustrations and worked examples.

Contents
Introduction.- Number Sets and Algebra.- Complex Numbers.- The Complex Plane.- Quaternion Algebra.- 3D Rotation Transforms.- Quaternions in Space.- Conclusion.

Fields of interest
Arithmetic and Logic Structures; Mathematical Logic and Formal Languages; Mathematics of Computing

Target groups
Graduate

Discount group
P
Online social media have transformed the face of human interaction in the 21st century. Wikis, blogs, online groups and forums, podcasts, virtual worlds, and social tagging are but a few of the applications enabling innovative behaviors that support acquisition, access, manipulation, retrieval, and visualization of information. It is, therefore, no surprise that educational practitioners and theorists have begun to explore how social media can be harnessed to describe and implement new paradigms for communication, learning, and education.

Features
- Discusses opportunities and challenges for “Education 2.0”
- Gives a State-of-the-art report on current research on social media in learning environments
- Deals both with technologies as well as social factors and policies
- Includes a large section on case studies and experience reports

From the contents
Revitalize Your Teaching: Creative Approaches to Applying Social Media in the Classroom.
Teaching and Learning in a Social Software Development Tool.
Collective Learning – An Integrated Use of Social Media in Learning Environment.
States and Processes of Learning Communities. Engaging Students in Meaningful Reflection and Learning.
How to Foster Creativity in Technology Enhanced Learning.

Fields of interest
Computers and Education; Information Systems Applications (incl.Internet); Educational Technology

Target groups
Research

Discount group
P

Available
2011. 400 p. Hardcover
$129.00
ISBN 978-3-642-20391-6

Rigorous Software Engineering for Service-Oriented Systems
Results of the SENSORIA Project on Software Engineering for Service-Oriented Computing

Service-Oriented Computing is a paradigm for developing and providing software that can address many IT challenges, ranging from integrating legacy systems to building new, massively distributed, interoperable, evaluable systems and applications. The widespread use of SOC demonstrates the practical benefits of this approach. Furthermore it raises the standard for reliability, security, and performance for IT providers, system integrators, and software developers.

Features
- High-quality selected papers
- Covers state-of-the-art research
- Uniquely high-profile

Contents
SENSORIA – Software Engineering for Service-Oriented OverlayComputers.
A Unifying Formal Basis for the SENSORIA Approach: A White Paper.
Introduction to the SENSORIA Case Studies.
UML Extensions for Service-Oriented Systems.
The SENSORIA Reference Modeling Language.
Model-Driven Development of Adaptable Service-Oriented Business Processes.
A Formal Support to Business and Architectural Design for Service-Oriented Systems.
Core Calculi for Service-Oriented Computing.
Behavioral Theory for Session-Oriented Calculi.
Static Analysis Techniques for Session-Oriented Calculi.
Call-by-Contract for Service Discovery, Orchestration and Recovery.
CC-Pi: A Constraint Language for Service Negotiation and Composition.
Advanced Mechanisms for Service Composition, Query and Advanced Mechanisms for Service Combination and Transactions.

Fields of interest
Software Engineering; Programming Languages, Compilers, Interpreters

Target groups
Research

Discount group
P

Available
2011. X, 737 p. (Lecture Notes in Computer Science / Programming and Software Engineering, Volume 6582)
Softcover
$131.00
ISBN 978-3-642-20400-5
Plurigaussian Simulations in Geosciences

Simulation is the fastest developing branch of geostatistics and simulating facies inside reservoirs and orebodies is the most exciting part of this. Several methods have been developed to do this (sequential indicator simulations, Boolean simulations, Markov chains and plurigaussian simulations). This book focuses on the last type of simulations. It presents the theory required to understand the method, along practical examples of applications in mining and the oil industry as well as tutorial exercises. An accompanying CD features demonstration software to illustrate how these simulations work. Since the publication of the first edition, enormous numbers of papers have appeared in the literature on the subject. Plurigaussian simulations are now the preferred method for simulating facies in both mining & the oil industry. The new edition contains new case studies in both mining petroleum, together with an extensively updated theory section.

Features
- Plurigaussian simulations, now the preferred method for simulating facies, are presented here with new case studies for both the mining & petroleum industries
- Long awaited 2nd edition contains many updates in particular in the theory section
- A must for geostatistics practitioners and simulation novices alike

Contents

Fields of interest
Mathematical Applications in Earth Sciences; Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences

Target groups
Professional/practitioner

Discount group
P

Due August 2011

Only available in print

Due June 2011

2nd ed. 2011. 200 p. 102 illus., 48 in color. Hardcover

P 139.00
ISBN 978-3-642-19606-5

The Wenchuan Earthquake of 2008
Anatomy of a Disaster

“The Wenchuan Earthquake of 2008: Anatomy of a Disaster” gives a detailed account of the damage, seismology and tectonics of the event and discusses earthquake prediction, seismic hazard and risk management, the creation and implementation of building codes, and new practices used in rescue, relief and reconstruction. It will be of significant interest to researchers and practitioners engaged in geosimulation, geophysics, engineering, the social sciences, and disaster management recovery. It also offers a valuable new and uniquely Chinese perspective with many insights for future mitigation of earthquake risk. Professor Yong Chen works for the China Earthquake Administration; Dr David C. Booth works for the British Geological Survey.

Features
- The first study includes all aspects of the disaster, details of rescue and recovery operations in seismological and engineering aspects
- The most recent objective view of Chinese earthquake prediction to emanate from the China Earthquake Administration
- The first exposition of the lessons learned from the earthquake by Chinese seismologists, engineers and administrators

Contents

Fields of interest
Natural Hazards; Geotechnical Engineering; Structural Foundations, Hydraulic Engineering

Target groups
Research

Discount group
P

G. Gramelsberger, Free University Berlin, Germany; J. Feichter, Max Planck Institute for Meteorology, Hamburg, Germany (Eds.)

Climate Change and Policy
The Calculability of Climate Change and the Challenge of Uncertainty

The debate on how mankind should respond to climate change is diverse, as the appropriate strategy depends on local as well as local circumstances. As scientists are denied the possibility of conducting experiments with the real climate, only climate models can give insights into man-induced climate change, by experimenting with digital climates under varying conditions and by extrapolating past and future states into the future. But the ‘nature’ of models is a purely representational one. A model is good if it is believed to represent the relevant processes of a natural system well. However, a model and its results, in particular in the case of climate models which interconnect countless hypotheses, is only to some extent testable, although an advanced infrastructure of evaluation strategies has been developed involving strategies of model intercomparison, ensemble projections, uncertainty metrics on the system and component levels.

Features
- Discussion of most important topic in current climate research
- Bridges the gap between climate modellers and policy-/decision makers
- Calculability of uncertainty and its influence on society

Contents
1 Introduction to the Volume. - 2 Modelling the Climate System – An Overview. - 3 Climate Simulation, Uncertainty, and Policy Advice - The Case of the IPCC. - 4 Dealing with Uncertainty – Simulation, Uncertainty, and Policy Advice - The Challenge of Uncertainty
5 From climate research to integrated assessment of climate change. - 6 Insuring the Climate System – An Overview. - 7 Calculability of uncertainty and its influence on society

Fields of interest
Meteorology/Climatology; Political Science; Climate Change

Target groups
Research

Discount group
P

Available

$129.00
ISBN 978-3-642-17609-9

Due 2011

Only available in print
Long-range Transport of Man-made Contamination into the Arctic and Antarctica

The first volume of the series focuses on the history of the IPYs (International Polar Years). Achieving the central and original IPY idea, that it requires international coordination and collaboration among many national and institutional partners to realize an improved and renewed understanding of polar regions, has required differing strategies and tactics according to the political, economic, technical and scientific conditions and expectations extant at the time of each IPY. The history recounted here shows clearly the urgency of this IPY, the necessity of including biological and social sciences, and the key role of outreach, features to be well represented by the contents of subsequent volumes and by the series itself.

Features
- Presents the history of the first three International Polar Years (IPYs)
- Provides an overview of the 4th Polar Year
- Provides new evaluations of the Polar Years from the viewpoint of the 21st century

Contents

Fields of interest
Geophysics/Geodesy; Geochemistry; Ecotoxicology

Target groups
Research

Discount group
P

Geo-information

Technologies, Applications and the Environment

Geomatics, the handling and processing of information and data about the Earth, is one geoscience discipline that has seen major changes in the last decade, as mapping and observation systems become ever more sensitive and sophisticated. This book is a unique and in-depth survey of the field, which has a central role to play in tackling a host of environmental issues faced by Man. Covering all three strands of geomatics - applications, information technology and surveying - the chapters cover the history and background of the subject, the technology employed both to collect and disseminate data, and the varied applications to which geomatics can be put, including urban planning, assessment of biodiversity, disaster management and land administration.

Features
- Comprehensive overview of the entire geomatics discipline, suited not only for professionals but also for knowledgeable individuals
- The theory is supported by a lot of facts, examples, vision and opinions
- Discussion of societal consequences of using geo-informatics technology in developing countries

From the contents

Fields of interest
Remote Sensing/Photogrammetry; Geographical Information Systems/Cartography; Monitoring/Environmental Analysis

Target groups
Professional/practitioner

Discount group
P

Forest Hydrology and Biogeochemistry

Synthesis of Past Research and Future Directions

Forest Hydrology and Biogeochemistry: Synthesis of Past Research and Future Directions is an advanced text and reference work for advanced undergraduates, graduate students, and researchers in the fields of hydrology, biogeosciences, ecology, plant science, forestry, boundary-layer meteorology, and geography. The book aims to advance forest hydrology and biogeochemistry by providing cogent and critical syntheses of past research and charting future research directions. This book will be of great value to researchers and practitioners as it provides a concise assessment of current knowledge and identifies areas in need of further research in a single comprehensive source.

Features
- Comprehensive and critical review of the past and recent research and identification of knowledge gaps and recommendations of areas in need of further research
- Promotion of novel instrumentation and techniques to advance research
- A valuable reference tool for forest hydrologists and biogeochemists

From the contents

Fields of interest
Biogeosciences; Ecosystems; Physical Geography
History of Cartography

This volume deals with cartography in the 19th and 20th centuries, a period in the history of cartography on which very little has been published. The ICA Commission on Maps and Society participated as its field of study often overlaps with that of the ICA Commission on the History of Cartography. The USGS which is the official USA mapping organisation, was invited to emphasise that the ICA Commission on the History of Cartography is not only interested in historical maps, but also has as mandate the research and document the history of Geographical Information Science.

Contents

- Early Explorative Cartography
- United States in the 19th Century
- United States Geological Survey
- New Mexico
- Brazilian Cartography
- Southern Africa
- General Cartography

Fields of interest

- Geographical Information Systems/Cartography
- Target groups
  - Research
- Discount group
  - P

Inside Risk: A Strategy for Sustainable Risk Mitigation

This book comprises the main results of the Scenario (Support on Common European Strategy for sustainable natural and induced technological hazards mitigation) project, funded as a Specific Support Action under the VI FP. This book addresses three main needs: first, it constitutes an assessment of the situation of Europe as far as natural na-tech risks are considered; second, it suggests future research themes to be opened of widened so as to tackle new and emerging threats as well as changes in the potential response to risk governance, in order to improve the way scientific and technical expertise informs decision making regarding all fields of mitigation, ranging from structural to non structural measures, such as training, education and land use planning.

Contents

- Introduction to Sustainable Risk Mitigation for a More Resilient Europe
- Europe at Risk (Following EU Funded Research on Hazar and Risks)
- Impact and Losses of Natural and Na-Tech Disasters in Europe
- Current Mitigation Practices in the EU
- Risk Futures in Europe
- From Global to Local and from Local to Global: Examples of Event Scenarios in Europe

Features

- The first attempt to provide a picture of Europe at risk, not as individual states, but at a European level
- Attempts to provide a state of art of knowledge of present risks, scenarios regarding future risks including climate change, suggestions for the future
- An internal quality review process has been carried out

Polarimetric Detection, Characterization, and Remote Sensing

Proceedings of the NATO Advanced Study Institute on Special Detection Technique (Polarimetry) and Remote Sensing Yalta, Ukraine, 20 September – 1 October 2010

As the need for accurate and non-invasive optical characterization and diagnostic techniques is rapidly increasing, it is imperative to find improved ways of extracting the additional information contained within the measured parameters of the scattered light. This is the first specialized monograph on photopolarimetry, a rapidly developing, multidisciplinary topic with numerous military, ecological remote-sensing, astrophysical, biomedical, and technological applications.

Features

- The first specialized book on all aspects of polarimetric optical characterization
- Represents state-of-the-art in polarimetric characterization and remote sensing
- Thoroughly interdisciplinary
- Contains only invited review chapters written by leading experts in the respective fields

Available


- Hardcover
  - $129.00
  - ISBN 978-94-007-1638-4

Also available as Softcover

- $269.00
  - ISBN 978-94-007-1639-1
N. Mölders, University of Alaska, Fairbanks, AK, USA

**Land-Use and Land-Cover Changes**

**Impact on Climate and Air Quality**

Wildfires, changing glaciers, deforestation, open-pit mining, increasing demands for food and bio-fuel production and the growth of megacities change our landscape. The book comprehensively reviews the current knowledge on how natural and anthropogenic land-use/cover changes affect weather, air quality and climate worldwide and explains how these changes may trigger further land-use/cover changes. It discusses how anthropogenic land-use/cover changes have affected local and regional climate and air quality since the settlement of America and the industrialisation. It addresses the topic how long-range transport of pollutants and dust of devastated areas as well as teleconnections may cause changes far away from the areas where the land-use/cover changes occurred, for which land-use/cover change may become an international issue similar to CO2. It also discusses relations to global change and future societal and scientific challenges related to land-use/cover changes.

**Features**
- Discusses the impact of land-use/cover changes on the atmosphere, considering the water, energy and trace gas cycle
- Discusses the impact of land-use/cover changes on the atmosphere in various climate regions of the world including the polar regions
- Explores climate and air quality impacts of land-use/cover changes in relation to global change

**Contents**
1. Introduction
2. Physical and chemical principles
3. Impact of land-cover and land-cover changes
4. Future challenges
5. Conclusions
Appendix: List of abbreviations
Index

**Fields of interest**
Meteorology/Climatology; Atmospheric Protection/Air Quality Control/Air Pollution; Physical Geography

**Target groups**
Research

**Discount group**
P

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L. Rivard, Saint-Lambert, Québec QC Canada

**Integration of Satellite and Photo Geomorphology for Preliminary Terrain Evaluation**

**Visual interpretation techniques**

The twin sets of Figures in the manual are to be presented as examples that demonstrate how the interfacing of stereo airphotos and satellite images in visual qualitative photogeomorphology studies can yield more geospatial information than can be derived from either source independently. The airphoto coverage in each satellite image will be indicated by a frame. The sets are preceded by some definition of the necessary background. They are ordered into ten sections according to the author’s taxonomic classification of genetic groups as used in his Atlas and Glossary of Geohazard-associated Geounits. The majority of airphotos are taken from those used in the Atlas, the satellite images have been down loaded from Google Earth without processing.

**Features**
- The only book dealing with the systematic integration of both airphotos and satellite images in geological terrain evaluation
- The only text that explains the combined method of visual, qualitative analysis and interpretation of photo and image data sets
- The only text to demonstrate with some 100 examples the application of the integration method
- The facing page viewing layout of the data sets is unique

**Fields of interest**
Earth Sciences, general; Physical Geography; Civil Engineering

**Target groups**
Research

**Discount group**
P

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A. Ruas, Laboratoire COGIT-IGN, Saint Mandé, France (Ed.)

**Advances in Cartography and GIScience. Volume 1**

**Selection from ICC 2011, Paris**

This book is comprised of a selection of the best papers presented during the 25th International Cartography Conference which was held in Paris between 3rd and 8th July 2011. The scope of the conference covers all fields of relevant GIS and Mapping research subjects, such as geovisualization, semiotics, SDI, standards, data quality, data integration, generalization, use and user issues, spatio-temporal modelling and analysis, open source technologies and web services, digital representation of historical maps, history of GIS and cartography as well as cartography for school children and education.

**Features**
- Gives a comprehensive account of GIS and Mapping research, A selection of the best papers presented at the 25th International Cartography Conference
- First volume of the new subseries of the International Cartographic Association

**Contents**
Map Design and Map Analysis.- Use and User Issues.- Historical Data.- Map Projection.

**Fields of interest**
Geographical Information Systems/Cartography; Computer Applications in Earth Sciences

**Target groups**
Research

**Discount group**
P

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2011. X, 200 p. 70 illus. (Atmospheric and Oceanographic Sciences Library, Volume 44) Hardcover

**Available**
$129.00
ISBN 978-3-642-20607-8

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**Available**
$139.00
ISBN 978-3-642-19142-8

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**Due May 2011**

**Available**
$229.00
ISBN 978-3-642-19143-5

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2011. X, 200 p. 70 illus. (Atmospheric and Oceanographic Sciences Library, Volume 44) Hardcover

**Available**
$129.00
ISBN 978-3-642-20607-8
Active tectonics of the Hellenic tectonic subduction zone

This thesis is remarkable for the wide range of the techniques and observations used and for its insights, which cross several disciplines. It begins by solving a famous puzzle of the ancient world, which is what was responsible for the tsunami that destroyed settlements in the eastern Mediterranean in 365 AD. By radiocarbon dating of preserved marine organisms, Shaw demonstrates that the whole of western Crete was lifted out of the sea by up to 10 meters in a massive earthquake at that time, which occurred on a previously unknown fault. The author shows that the resulting tsunami would have the characteristics described by ancient writers, and uses modern GPS measurements and coastline geomorphology to show that the strain build-up near Crete requires such a tsunami-earthquake about every 6,000 years - a major insight into Mediterranean tsunami hazard. A detailed seismological study of earthquakes in the Cretan arc over the last 50 years reveals other important features of its behaviour that were previously unknown. Finally, she provides fundamental insights into the limitations of radiocarbon dating marine organisms, relating to how they secrete carbon into their skeletons. The thesis resulted in three major papers in top journals.

Features
► Nominated by University of Cambridge for a Springer Theses Prize
► The work solves a famous puzzle of the ancient world, which is what was responsible for the tsunami that destroyed settlements in the eastern Mediterranean in 365 AD
► The thesis resulted in three major papers in top journals

From the contents

Fields of interest
Geology; Structural Geology; Natural Hazards

Target groups
Research

Discount group
P

Geospatial Techniques in Urban Planning

This work presents cases studies of applications of Geotechnology such as Geography Information Systems, virtual reality and cellular automation and multi-agent systems in the field of urban planning and design. These are joint research presentations with students and colleagues from Kanazawa University. All these case studies are about application in Japanese or Chinese cities, which are on-field examples reflecting the enormous spread of geo-computation technology. Nevertheless, the concepts have wide applicability to other contexts. The works can be classified into three types of Geotechnological applications at different levels of urban spaces, which are relevant to different kinds of urban planning and development projects. The book is comprised of three parts: Part 1: Geosimulation and land use plan - Part 2: Geo Visualization and urban design - Part 3: Geography information system and planning support

Features
► First book of this kind! Unique study for those new to urban planning
► Provides a comprehensive overview

Contents
Part 1: Geosimulation and land use plan - Part 2: Geo Visualization and urban design - Part 3: Geography information system and planning support

Fields of interest
Geographical Information Systems/Cartography; Remote Sensing/Photogrammetry; Environmental Management

Target groups
Professional/practitioner

Discount group
P

Modelling of Hydrological Processes in the Narew Catchment

Since climate and land use strongly affect the runoff pattern and intensity of solute export, it is likely that some observations and conclusions formulated on the basis of investigations carried out in forested catchment may not be fully adequate to describe controls on solute export from agricultural watersheds. The primary objective of the present research is to better understand the flow paths that affect the fluxes of dissolved compounds from a small agricultural catchment during snowmelt. This book focuses on spring snowmelt, because this is the dominant hydrological event in many moderate and high latitude catchments and, thus, is regarded as a prominent factor influencing the quality of surface waters

Features
► Helps to better understand the flow paths that affect the fluxes of dissolved compounds from a small agricultural catchment during snowmelt
► Focuses on spring snowmelt which is the dominant hydrological event in many moderate and high latitude catchments
► Emphasizes the importance of hydrological events in effecting both the hydrological and chemical response of surface waters

Contents
Operational Rainfall/Snowmelt-runoff Model for Upper Narew River - Multi-site Calibration and Validation of the Hydrological Component of SWAT in a large Lowland Catchment - Automatic Calibration of the WetSpa Distributed Hydrological Model for small Lowland Catchments - Modelling Hydrological Flow Paths during Snowmelt induced high flow event

Fields of interest
Hydrogeology; Soil Science & Conservation; Agriculture

Target groups
Research

Discount group
P
Linear Algebra for Economists

This textbook introduces students of economics to the fundamental notions and instruments in linear algebra. Linearity is used as a first approximation to many problems that are studied in different branches of science, including economics and other social sciences. Linear algebra is also the most suitable to teach students what proofs are and how to prove a statement. The proofs that are given in the text are relatively easy to understand and also endow the student with different ways of thinking in making proofs. Theorems for which no proofs are given in the book are illustrated via figures and examples. All notions are illustrated appealing to geometric intuition. The book mainly addresses students in economics who need to build up skills in understanding mathematical reasoning. Students in mathematics and informatics may be interested in learning about the use of mathematics in economics.

Features
- Textbook on linear algebra for undergraduate level in economics
- Teaches mathematical thinking and how to prove statements
- Based on mathematical explanations in combination with economic applications

Contents

Fields of interest
Game Theory/Mathematical Methods; Linear and Multilinear Algebras, Matrix Theory; Game Theory, Economics, Social and Behav. Sciences

Target groups
Upper undergraduate

Discount group
P

Emissions Trading
Institutional Design, Decision Making and Corporate Strategies

Emissions trading challenges the management of companies in an entirely new manner: Not only does it, like other market-based environmental policy instruments, allow for a bigger flexibility in management decisions concerning emission issues. More importantly, it shifts the mode of governance of environmental policy from hierarchy to market. But how is this change reflected in management processes, decisions and organizational structures? The contributions in this book discuss the theoretical implications of different institutional designs of emissions trading schemes, review schemes that have been implemented in the US and Europe, and evaluate the range of investment decisions and corporate strategies which have resulted from the new policy framework.

Features
- A look at emissions trading mainly from a business perspective
- Analyzes the functioning of emissions trading markets in different industry sectors, and countries
- Corporate responses to emissions trading and new technologies and instruments

Fields of interest
Environmental Economics; Management/Business for Professionals

Target groups
Professional/practitioner

Discount group
P
Stochastic Optimization Methods in Finance and Energy

New Financial Products and Energy Market Strategies

This volume presents a collection of contributions dedicated to applied problems in the financial and energy sectors that have been formulated and solved in a stochastic optimization framework. The invited authors represent a group of scientists and practitioners, who cooperated in recent years to facilitate the growing penetration of stochastic programming techniques in real-world applications, inducing a significant advance over a large spectrum of complex decision problems.

Features
- First collection of real-world case studies formulated and solved as multistage stochastic programs in both the energy and financial sectors
- Extended analysis of new financial products and related dynamic optimization problems for institutional investors such as pension funds and insurance companies
- Editors and contributors are leaders in the field

From the contents

Fields of interest
Operations Research/Decision Theory; Energy Economics; Financial Economics

Target groups
Professional/practitioner

The Economics of Tourism Destinations

The book aims at providing an overview of the main economic issues related to tourism activities. While tourism is an important sector, contributing to more than 10% of the European Union’s GDP, research and teaching at the university level has only recently grown to a considerable level, and the field still lacks a firm research methodology. This book approaches tourism economics as an applied field of study in which tourism markets are represented as imperfect markets, with asymmetric and incomplete information among agents, bounded rationality, and with a strong presence of externalities and public goods. The economic issues studied in the book are approached both intuitively, largely using examples and case studies, and formally, with mathematical formalizations in text boxes.

Features
- Use of applied economics tools (not only the standard perfect competition model) to analyze the tourism sector
- Particular emphasis on tourism destinations Includes summary questions, exercises, case studies, analytical boxes

From the contents

Fields of interest
Microeconomics; International Economics; Regional/ Spatial Science

Target groups
Upper undergraduate

Discount group
P

EU Eastern Neighborhood Economic Potential and Future Development

The selected papers in this volume were prepared under the research project on “EU Eastern Neighborhood: Economic Potential and Future Development (ENEPO)” funded by the EU Sixth Framework Program. They discuss the broad spectrum of development issues in the EU Eastern Neighborhood and economic relations between the enlarged EU and its Eastern neighbors in the former USSR. Individual chapters address areas of economic and social development, trade, energy, investment, migration, costs and benefits of economic reforms, development assistance and political economy of policy reforms. In particular, they examine interrelations and mutual synergies between trade liberalization, inflow of foreign investment, economic and institutional reforms and a reduction of income and development disparities. The publication thus closes an important knowledge gap in respect to the economic, social and institutional development of the CIS region and its economic relations with the EU.

Features
- Represents the most comprehensive and updated study on economic and social development of the CIS region and its economic relations with the EU
- Provides the state-of-the-art to scientists
- Offers easily accessible information to policy-makers and other practitioners
- Makes useful recommendations for economic policy-making on international, European and national levels

Fields of interest
European Integration; Economic Policy; Economic Systems

Target groups
Research

Discount group
P
Macroeconomics from the Bottom-up

This book arose from our conviction that the NNS-DGSE approach to the analysis of aggregate market outcomes is fundamentally flawed. The practice of overcoming the SMD result by recurring to a fictitious RA leads to insurmountable methodological problems and lies at the root of DGSE models’ failure to satisfactorily explain real-world features, like exchange rate and banking crises, bubbles and herding in financial markets, swings in the sentiment of consumers and entrepreneurs, asymmetries and persistence in aggregate variables, and so on. At odds with this view, our critique rests on the premise that any modern macroeconomy should be modeled instead as a complex system of heterogeneous interacting individuals, acting adaptively and autonomously according to simple and empirically validated rules of thumb.

Features
- Two foundational chapters on Bottom-up Adaptive Macroeconomics
- First complete analysis of an agent-based macroeconomic model from theoretical foundation to empirical testing
- Chapter on agent-based models’ validation

Contents

Fields of interest
Macroeconomics; Economic Growth; Statistics for Business/Economics/Mathematical Finance/Insurance

Target groups
Graduate

Discount group
P

A. Dolgin, Moscow State School of Economics, Moscow, Russia

Manifesto of the New Economy
Institutions and Business Models of the Digital Society

The book describes the main directions for the development of the digital society. The author angles its book to those who are interested to know what would replace search engines, and how social networks would evolve; what profit can be made of different forms of informational collaboration (crowdsourcing, collaborative filtering). And, the main thing, how it will influence the structure of the society and human pursuit for happiness. The author does not confine himself to a theory, he sets and solves practical questions: How talent, success and “stardom” are interconnected, how to make money in social networks, what is the business model for the development of entertainment and media, how to measure cultural values, and what is the subjective time of the individual and how to make it qualitative? There have been no answers to these questions before. Internet and social networks have provided tools and data that Alexander Dolgin was the first to use in economics.

Features
- The book is about the future development of the digital society, social search engines of the new generation, and crowdsourcing (collaboration) in information processing
- The book examines future development of social networks and their way to monetization
- It presents the business model for content producing industries, which further existence is questionable due to rapidly decreasing copyright working capacity
- Some chapters are about the economics of people’s personal time and laws of emotional asymmetry in information perception – knowledge of such laws helps people to manage their subjective sensation of happiness

Fields of interest
Economic Theory; Methodology and the History of Economic Thought; Business/Management Science, general

Target groups
Research

Discount group
P

R. Espejo, Syncho Ltd, Lincoln, UK; A. Reyes, President of University of Ibague, Colombia

Organizational Systems
Managing Complexity with the Viable System Model

Organizational Systems clarifies the application of cybernetic ideas, particularly those of Beer’s Viable System Model, to organizational diagnosis and design. Readers learn to appreciate the relevance of seeing the systemic coherence of the world. The book argues that many of the problems we experience today are routed in our practice of fragmenting that needs to be connected as a whole. It offers a method to study and design organizations and a methodology to deal with implementation problems. It is the outcome of many years of working experience with government offices as well as with all kinds of public and private enterprises. At a more detailed level this book offers an in-depth discussion of variety engineering that is not available either in the primary or secondary literature.

Features
- Offers a system of ideas and methods that so far have not been presented together
- Develops in detail a theory of complexity that helps understanding Stafford Beer’s Viable System Model
- It offers Espejo’s Viplan Method to diagnose and design organizations and Espejo’s Viplan Methodology to deal with problems of implementation in organizations

Contents
Part I Concepts and the Viable System Model. - Part II Viplan Method. - Part III Methodology and Systemic Thinking.

Fields of interest
Organization/Planning; Economics/Management Science, general; Social Sciences, general

Target groups
Graduate

Discount group
P
Life Insurance Risk Management Essentials

The aim of the book is to provide an overview of risk management in life insurance companies. The focus is twofold: (1) to provide a broad view of the different topics needed for risk management and (2) to provide the necessary tools and techniques to concretely apply them in practice. Much emphasis has been put into the presentation of the book so that it presents the theory in a simple but sound manner.

Features
- Holistic treatment of insurance risk management
- Market consistent valuation
- Real case studies
- Real reporting templates

Contents

Fields of interest
Game Theory/Mathematical Methods; Financial Economics; Insurance

Target groups
Graduate

Discount group
P

Transitions Towards Sustainable Mobility

New Solutions and Approaches for Sustainable Transport Systems

Delivering a sustainable transport system is not just a matter of adopting a number of technological innovations to improve performance in terms of people, planet, and profits. A broader structural and societal transition is needed in technology, as well as in institutions, behavioural patterns, and the economy as a whole. In this broader view, neither the free market nor the public sector will be the unique key player in making this transition happen. Elements of such an approach are presented in this book in a number of domains: integrating transport infrastructure and land use planning, thus connecting fields that are rather unconnected in day-to-day policies; experiments with dynamic transport optimization, including reports on pilot projects to test the viability of transitions; towards reliable transport systems, describing a reversal from supply-driven towards demand-driven approaches; and sustainable logistics and traffic management, from ‘local’ city distribution to global closed supply chain loops.

Features
- Multidisciplinary approaches to transition in transport
- Examples of reversal from supplier orientation towards consumer orientation in public transport
- Several detailed analyses of pilots on time-differentiated pricing of road use and deliveries by private suppliers

Contents

Fields of interest
Regional/Spatial Science; Production/Logistics; Supply Chain Management; Environmental Economics

Target groups
Research

Discount group
P

Evolutionary Psychology in the Business Sciences

All individuals who operate in the business sphere, whether as consumers, employers, employees, entrepreneurs, or financial traders to name a few constituents, share a common biological heritage and are defined by a universal human nature. As such, it is surprising that so few business scholars have incorporated biological and evolutionary-informed theories within their conceptual toolboxes. This edited book addresses this lacuna by culling chapters at the intersection of the evolutionary behavioral sciences and specific business contexts including in marketing, consumer behavior, advertising, innovation and creativity, intertemporal choice, negotiations, competition and cooperation in organizational settings, sex differences in workplace patterns, executive leadership, business ethics, store design, behavioral decision making, and electronic communication. To reword the famous aphorism of T. G. Dobzhansky, nothing in business makes sense except in the light of evolution.

Features
- Chapters at the intersection of the evolutionary behavioral sciences
- Specific business contexts
- Business in the light of evolution

Fields of interest
Marketing; Business/Management Science, general

Target groups
Research

Discount group
P
Asset Prices, Booms and Recessions
Financial Economics from a Dynamic Perspective

This financial economics text focuses on the dynamic interaction of financial markets and economic activity. The financial market to be studied here encompasses the money and bond market, credit market, stock market and foreign exchange market; economic activity includes the actions and interactions of firms, banks, households, governments and countries. The book shows how economic activity affects asset prices and the financial market, and how asset prices and financial market volatility and crises impact economic activity.

Features
► Focuses on the dynamic interaction of financial markets and economic activity ► Explores theories, dynamic models and empirical evidence ► Includes completely new section dedicated to the recent financial market meltdown of the years 2007-2009 ► Written for advanced undergraduate and graduate students in Finance and Economics as well as researchers in the fields

From the contents

Features
► Enables energy asset managers to better understand how operational targets and strategic direction setting can be merged for enhanced business success ► Describes how to integrate useful knowledge resources to build intelligent organizationsIncludes a corporate IQ test to help readers gain insight into how their organization can stay at the competitive frontier. Illustrated with case studies from the energy sector, Building Corporate IQ - Moving the Energy Business from Smart to Genius explains the guiding principles of organizational learning, with the goal of developing better organizational intelligence.

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From the contents

Fields of interest
Insurance; Social Policy; Actuarial Sciences

Target groups
Upper undergraduate
Discount group
P

Insurance Economics

This text introduces the reader to the core issues and analytical tools of insurance economics. It examines in detail the supply and demand of insurance, insurance regulation and social insurance in a uniform style, bringing together contributions to the literature that to date have only been available through journal articles and handbook chapters. Wherever possible, the authors derive predictions from the theory presented and compare them with empirical research results. Extensive, precise conclusions summarize the topics, helping readers to check their understanding as they advance through the book.

Features
► First textbook on Insurance Economics
Introduces into the supply and demand of insurance, insurance regulation, and social insurance ► Presents theoretical foundation and empirical research results

Contents

Fields of interest
Insurance; Social Policy; Actuarial Sciences

Target groups
Upper undergraduate
Discount group
P

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► approx. $139.00
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2011, XXVI, 310 p. 186 Illus., 8 in color. Hardcover
► approx. $139.00
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Only available in print

Original German edition published with title “Versicherungswirtschaft”.

2011, 550 p. 50 Illus. (Springer Texts in Business and Economics) Hardcover
► approx. $129.00
ISBN 978-3-642-20547-7
C. Batanero, University of Granada, Spain; G. Burrill, Michigan State University, East Lansing, MI, USA; C. Reading, University of New England, Madgwick, NSW, Australia (Eds.)

Teaching Statistics in School Mathematics-Challenges for Teaching and Teacher Education
A Joint ICMI/IASE Study: The 18th ICMI Study

Teaching Statistics in School Mathematics-Challenges for Teaching and Teacher Education results from the Joint ICMI/IASE Study Teaching Statistics in School Mathematics: Challenges for Teaching and Teacher Education. Oriented to analyse the teaching of statistics in school and to recommend improvements in the training of mathematics teachers to encourage success in preparing statistically literate students, the volume provides a picture of the current situation in both the teaching of school statistics and the pre-service education of mathematics teachers.

Fields of interest
Mathematics Education; Statistics for Social Science, Behavioral Science, Education, Public Policy, and Law

Target groups
Research

Assessment Reform in Education
Policy and Practice

This book discusses the recent assessment movements in the eastern and western worlds with particular focuses on the policies, implementation, and impacts of assessment reform on education. A new perspective of assessment sees assessment as a means to enhance learning. This book examines the tensions, challenges and outcomes (intended and unintended) of assessment reform arising at the interface of policy and implementation, and implementation and student learning. The book reviews the experiences insights gained from research, and identifies the facilitators and hindrances to effective change. It reflects current thinking of assessment and provides the readers with ample background information of assessment development in many countries including USA, England, Scotland, Wales, Northern Ireland, Australia, Singapore, Taiwan, and Hong Kong.

Features
- Focused on the elements needed to train teachers to teach statistics, as opposed to focusing on students’ reasoning or learning
- Centered on teaching statistics at the primary and secondary school level while most literature in statistics education only consider school level in a very tangential way

Fields of interest
Assessment, Testing and Evaluation; Educational Policy; Teaching and Teacher Education

Target groups
Research

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Features
- Is the first work that has brought together the perspectives, practices, and national policies related to assessment and assessment reform
- Comparative approach to recent assessment movements in the Eastern and Western world
- Examines the tensions, challenges and outcomes (intended and unintended) of assessment reform arising at the interface of policy and implementation, and implementation and student learning

Fields of interest
Assessment, Testing and Evaluation; Educational Policy; Teaching and Teacher Education

Target groups
Research

Discount group
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Fields of interest
Assessment, Testing and Evaluation; Educational Policy; Teaching and Teacher Education

Target groups
Research

Discount group
P

Mathematics Education and Subjectivity
Cultures and Cultural Renewal

This book is centrally concerned with how mathematics education is represented and how we understand mathematical teaching and learning with view to changing them. It considers teachers, students and researchers. It explores their mathematical thinking and the concepts that this thought produces. But also how these concepts acquire cultural layers that mediate our apprehension. The book examines some of the linguistic and socio-cultural filters that influence mathematical understanding. But above all it introduces some contemporary theories of human subjectivity, in which subjectivity is seen primarily as consequential to, rather than productive of, our attempts to represent or categorise the world in which we live.

Features
- Considers how learners and teachers in different cultural settings construct mathematical knowledge as a result of their socially determined needs
- Introduces cutting edge theories of subjectivity shows how mathematics can provoke alternative ways of thinking towards enlivening our transformative capacities

Contents

Field of interest
Mathematics Education

Target groups
Research

Discount group
P
Schooling for Sustainable Development in South America

Policies, Actions and Educational Experiences

This book supplies both empirical evidence and scholarly analysis that exemplify successful innovation in South America in the field of sustainability education. Examining the issues from a three-fold perspective, of national policy, regional planning and grassroots projects in schools and communities, the volume offers a comprehensive overview of the contemporary situation in Brazil, Chile, Bolivia, Argentina and Venezuela. It provides case studies as detailed illustrations of the recipe for success as well as to inform researchers and practitioners of the kinds of obstacles and challenges they might face in seeking to manifest sustainability and the result of that development is underpinned by ‘Western’ norms and culture.

Features
► Expert authorship from several South American countries
► Includes authoritative presentations by directors of influential recent projects
► Balances case study details and more general national and regional discussions

Fields of interest
Educational Policy; Sustainable Development

Target groups
Research

Discount group
P

Surgical Education

Theorising an Emerging Domain

Surgical Education: Theorising an Emerging Domain delineates surgical (as opposed to medical) education as a new and emerging field of academic inquiry. This reflects profound changes in healthcare training and practice on an international basis. As such, this book introduces, examines and explores the contribution of selected concepts and theories to surgical learning and practice. The first four chapters consider core facets of surgical education, such as simulation, while subsequent chapters take a key idea, often well known in another field, and examine its relevance to surgical education.

Features
► Addresses need for surgical education material
► Applies to related fields such as medical education
► Includes contributions from well-respected authors
► Emerging as distinct field with its own identity

From the contents
1. The environment of surgical education and training: Roger Kneebone and Heather Fry.
2. Educational ideas and surgical education: Heather Fry.
7. The surgeon’s expertise: K Anders Ericsson.
9. The role of patients: Debra Nestel and Linda Bentley.
10. Self-monitoring in surgical practice: slowing down when you should: Carol-Ann Moulton and Ron Epstein.

Fields of interest
Medical Education; Surgery

Target groups
Research

Discount group
P

Equity in Discourse for Mathematics Education

Theories, Practices, and Policies

This book covers the discourse and equity in mathematics education research. Given the inherent connection between discourse and equity, this book focuses on two approaches to the connection. Contributors consider the ways in which the social, mathematical, cultural, and political aspects of classroom interactions impact students’ opportunities to participate in the kinds of discourse practices that provide access to resources. Contributors also consider the perceptions and practices of educators, particularly the extent to which they view diversity as a resource and to which they are aware of structural inequities in the ways they perceive and design classroom discourse practices.

Features
► Investigates the complex connections between equity and discourse
► Makes explicit connections between discourse and equity in mathematics education research
► Connects the research to policy implications

From the contents
Introduction.
1. Inherent connections between discourse and equity in mathematics classrooms.
   Section 1: Equity Concerns Drawing Attention to Discourse.
   2. How should we conceptualize equity in mathematics education research?
   3. Intersections of local mathematical knowledge and school academic traditions.
   5. Aiming for equity in mathematics education research amongst marginalized communities.
   6. From equity to discourse.
   Section 2: Attention to Discourse Highlighting Equity Concerns.

Fields of interest
Mathematics Education

Target groups
Research

Discount group
P

Due August 2011

2011. X, 190 p. (Schooling for Sustainable Development, Volume 2) Hardcover
► approx. $139.00
ISBN 978-94-007-1753-4

2011. X, 290 p. 50 illus. (Advances in Medical Education, Volume 2) Hardcover
► approx. $129.95
ISBN 978-94-007-1681-0

Due May 2011

2011. X, 190 p. 20 illus. (Mathematics Education Library, Volume 52) Hardcover
► approx. $139.00
Citizenship Pedagogies in Asia and the Pacific

How are students in Asia and the Pacific taught to be effective citizens? Following two successful volumes previously published in this series, Citizenship Education in Asia and the Pacific: Concepts and Issues and Citizenship Curriculum in Asia and the Pacific, this volume focuses on citizenship pedagogies that are promoted by governments in the region, advocated by scholars, and adapted in the schools and classrooms where citizenship education takes place every day. Thirteen case studies from diverse societies in Asia and the Pacific highlight the ways in which teachers and students think about, experience or plan for citizenship teaching and learning. Different methods – vignettes, student surveys, case studies and literature reviews – are used to portray these experiences, from both macro- and micro-analytic perspectives. The wide array of case studies provides rich information and insights into the realities and possibilities of pedagogies for citizenship across the region.

Features
- Expands the study of citizenship education pedagogies to world’s most dynamic region and societies
- Presents a complex picture that show an interesting array of both similarities and differences in approaches to the citizenship education pedagogies across the region
- Provides new insights into the global, national, and local dynamics that shape citizenship education across Asia and the Pacific
- Reveals critical tensions between global and national forces over the shaping of the citizenship education pedagogies

Fields of interest
- International and Comparative Education;
- Curriculum Studies;
- Educational Policy

Target groups
- Research

Discount group
- P

Learning Trajectories, Innovation and Identity for Professional Development

Education in the professions has always had unique demands placed upon it. These include the need to: keep pace with rapidly evolving knowledge bases, developing skills and attitudes appropriate to practice, learning in the workplace and fostering public confidence. Over the past twenty years, new demands have created additional educational imperatives. Public accountability has become more intensive and extensive. Practitioners practice in climates more subject to scrutiny and less forgiving of error. The contexts in which professionals practice and learn have changed and will continue to change, globally. This book explores the pedagogic implications of these challenges internationally for a wide range of professions which include: accountants, military company commanders, surgeons, nurse practitioners, academics, managers, community physicians and dentists; examining learning across the professional lifespan.

Features
- Extends scholarly attention to lifespan development of professionals
- Supports learning: cross-professional and inter-disciplinary in relation to research and learning and teaching practices
- Extends understanding of the complexities of professional practice Enables learning from the experience and contexts of a range of professions
- Develops new approaches to empirical educational research in professional education and emergent methodologies.

Fields of interest
- Professional and Vocational Education;
- Medical Education

Target groups
- Research

Discount group
- P

Educational Encounters: Nordic Studies in Early Childhood Didactics

Qualitative analyses of young children’s learning in natural settings are rare, so this new book will make educators sit up and pay attention. It lays out a Nordic, or continental European teaching and learning paradigm whose didactic framework is distinct from the Anglo-American system. This analysis, which features contributions and case studies from researchers in a range of subjects, is built on principles such as the learner’s perspective, establishing sufficient intersubjectivity, ‘pointing out’, and informing experience linguistically. After clarifying some historical background, the book discusses the contemporary emphasis in early childhood education on pedagogy/learning. What should ‘didactics’ mean in educating young children? The book examines the opportunities for learning that teachers provide for children in early childhood education, as well as how children respond to these opportunities. It presents empirical studies from a variety of naturalistic settings, including mathematics, making visual art, ecology, music, dance, literacy and story-telling, as well as learning about gender, morality and democracy.

Features
- Presents a new perspective on early childhood education (didactics), based on empirical research in naturalistic settings with children 1-8 years old
- Introduces the concept of didactics in a form relevant to early childhood education
- Presents illustrations of Nordic early childhood education, for which there is an international interest
- Covers a number of theoretical frameworks for studying and conceptualising children’s learning and development

Fields of interest
- Childhood Education;
- Art Education;
- Language Education

Target groups
- Research

Discount group
- P
Innovative Tools for Business Coalitions in B2B Applications
How Negotiation, Auction and Game Theory Can Support Small- and Medium-sized Business in E-business

The manufacturing industry is facing the challenges of shifting its operations from the traditional factory integration philosophy to a supply chain based e-factoyr philosophy, and of transforming the focus of companies from the local factory to global enterprise and business. Innovative Tools for Business Coalitions in B2B Applications presents a set of innovative methodologies that can be used to face all the issues that stem from the interaction of customers and suppliers in an e-marketplace environment.

**Features**
- Discussion of how to implement innovative tools makes the book relevant to both researchers and managers.
- The simulation environment allows the reader to evaluate the performance of the approaches proposed.
- Includes methodologies to improve e-marketplace performances through coalition.

**Contents**
3. Game Theory Overview.
7. Simulation Results.

**Fields of interest**
Engineering Economics, Organization, Logistics, Marketing; Organization/Planning; Game Theory/ Mathematical Methods

**Target groups**
Research

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Cooperative Control Design
A Systematic, Passivity-Based Approach

Cooperative Control Design: A Systematic, Passivity-Based Approach discusses multi-agent coordination problems, including formation control, attitude coordination, and synchronization. The goal of the book is to introduce passivity as a design tool for multi-agent systems, to provide exemplary work using this tool, and to illustrate its advantages in designing robust cooperative control algorithms. The discussion begins with an introduction to passivity and demonstrates how passivity can be used as a design tool for motion coordination. Followed by the case of adaptive redesigns for reference velocity recovery while describing a basic design, a modified design and the parameter convergence problem. Formation control is presented as it relates to relative distance control and relative position control. The coverage is concluded with a comprehensive discussion of agreement and the synchronization problem with an example using attitude coordination.

**Features**
- Provides a unified passivity-based framework for multi-agent coordination problems including formation control, attitude coordination, and synchronization.
- Discusses control algorithms that are modular, scalable, and decentralized and can be easily refined and used again.
- Covers complex and heterogeneous nonlinear agent dynamics, including Lagrangian and Hamiltonian systems.
- Includes a framework that offers design.

**Fields of interest**
Control; Vibration, Dynamical Systems, Control; Systems Theory, Control

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High Voltage Power Device Concepts

The devices described in “Advanced MOS-Gated Thyristor Concepts” are utilized in microelectronics production equipment, in power transmission equipment, and for very high power motor control in electric trains, steel-mills, etc. Advanced concepts that enable improving the performance of power thyristors are described here, along with devices with blocking voltage capabilities of 5,000-V, 10,000-V and 15,000-V. Throughout the book, analytical models are generated to allow a simple analysis of the structures and to obtain insight into the underlying physics. The results of two-dimensional simulations are provided to corroborate the analytical models and give greater insight into the device operation.

**Features**
- Provides the first comprehensive treatment of high voltage (over 5000-volts) power devices suitable for the power distribution, traction, and motor-control markets.
- Includes analytical formulations for all the device structures with validation performed using numerical simulations.
- Analyzes potential silicon carbide structures that could compete with the silicon devices and includes a comparison of the devices.

**Contents**
1. Introduction.
2. Silicon Thyristors.
3. Silicon GTO.
4. Silicone GTO.
5. SiC Planar MOSFET Structures.
6. Silicon Carbide IGBT.
7. Silicon Carbide IGBT.
8. Silicon MCT.
9. Silicon BRT.
10. Silicon EST.
11. Synopsis.

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**About the Authors**

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**Nanotribology and Nanomechanics II**
**Nanotribology, Biomimetics, and Industrial Applications**

The comprehensive reference and textbook serves as a timely, practical introduction to the principles of nanotribology and nanomechanics. Assuming some familiarity with macroscopic tribology, the book comprises chapters by internationally recognized experts, who integrate knowledge of the field from the mechanics and materials-science perspectives. They cover key measurement techniques, their applications, and theoretical modelling of interfaces, each beginning their contributions with macro- and progressing to microconcepts.

**Features**
- Subset of the "Springer Handbook of Nanotechnology" addressed to a select audience
- For teaching and self-study purposes
- Focusing on the Nanomechanics and Nanotribology area
- With a foreword by Physics Nobel Laureate Gerd Binnig

**From the contents**
Nanotribology, Nanomechanics, and Materials Characterization.
- Surface Forces and Nanomechanology of Molecularly Thin Films.
- Interfacial Forces and Spectroscopic of Confined Fluids.
- Friction and Wear on the Atomic Scale.
- Mechanical Properties of Nanostructures.
- Scale Effect in Mechanical Properties and Tribology.
- Nanotribology of Ultrathin and Hard Amorphous Carbon Films.
- Self-Assembled Monolayers for Nanotribology and Surface Protection.
- Nanoscale Boundary Lubrication Studies.
- "Lotus Effect": Roughness-Induced Superhydrophobic Surfaces.
- Gecko Feet.
- Micro/Nanotribology and Micro/Nanomechanics of Magnetic Storage Devices.
- MEMS/NEMS and BioMEMS/NEMS: Materials and Devices and Biomimetics.

**Fields of interest**
Nanotechnology and Microengineering; Nanotechnology; Nanoscale Science and Technology

**Target groups**
Graduate

**Discount group**
P

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**Plate Structures**
Plate structures are used in almost every area of engineering, including aerospace and naval architecture, civil engineering, and electronics. These structures have diverse geometries and have to withstand a wide range of loading conditions. This book provides the theoretical foundations of the theories of plates manufactured from various materials, outlines and illustrates the methods used for the analysis of these structures, and emphasizes designs and solution techniques available to an engineer. The book is written for engineers working in industry, graduate students at aerospace, mechanical, civil engineering and naval architecture departments, and investigators interested in the development of the theory of plates and related subjects. While the mathematical modeling employed in the book is understandable to both engineers and graduate students, the book also provides insight into relevant phenomena and theories underlying plate structures. Thus, the reader is equipped with a thorough understanding of the problems and appropriate assumptions, even if the analysis is conducted using commercially available software codes. In addition, the book includes numerous analytical solutions that can confidently be used in the design of plate structures. The combination of theoretical insight and references to practical problems makes the book equally attractive to academia and industry.

**Features**
- Presents a comprehensive description of mechanics of plates
- Describes engineering design applications and recommendations
- Combined theoretical insight and practicality should make the book equally attractive to academia and industry

**Fields of interest**
Theoretical and Applied Mechanics; Continuum Mechanics and Mechanics of Materials; Structural Mechanics

**Target groups**
Research

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**Warranty Data Collection and Analysis**
Warranty Data Collection and Analysis deals with warranty data collection and analysis and the problems associated with these activities. The book is a both a research monograph and a handbook for practitioners. As a research monograph, it unifies the literature on warranty data collection and analysis, and presents the important results in an integrated manner. In the process, it highlights topics that require further research. As a handbook, it provides the essential methodology needed by practitioners involved with warranty data collection and analysis, along with extensive references to further results. Models and techniques needed for proper and effective analysis of data are included, together with guidelines for their use in warranty management, product improvement, and new product development.

Warranty Data Collection and Analysis will be of interest to researchers (engineers and statisticians) and practitioners (engineers, applied statisticians, and managers) involved with product warranty and reliability. It is also suitable for use as a reference text for graduate-level reliability programs in engineering, applied statistics, operations research, and management.

**Features**
- Unifies the literature on warranty data collection and analysis
- Presents important results in an integrated manner
- Written by experts in warranty data analysis

**Fields of interest**
Quality Control, Reliability, Safety and Risk; Engineering Economics, Organization, Logistics, Marketing; Industrial Organization

**Target groups**
Research

**Discount group**
P

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**Due June 2011**
- $139.00
  ISBN 978-3-642-15262-7

**Due June 2011**
- approx $199.00

**Available**
2011. XXXII, 609 p. 167 illus., 18 in color. (Springer Series in Reliability Engineering) Hardcover
- $239.00
New Series

Communications in Medical and Care Compunetics

Series editor: L. Bos

The goal of this book series is the supply and dissemination of information on the social, societal and ethical implications of the use of computing and networking (compunetics) in medicine and care. The series is a scientific organ of the ICMCC – the international council on medical & care compunetics, and creates a scientific addition to the ICMCC’s internet News and Science information services. Some of the subjects that are covered are: Digital Homecare, Electronic Health Records and Developments in Telemedicine and Mhealth. The series is a fundamental source for Scientists, medical and care professionals, and patients or citizens.

Future Visions on Biomedicine and Bioinformatics

A Liber Amicorum in Memory of Swamy Laxminarayan

Swamy Laxminarayan was an outstanding researcher active in many diverse fields of science and technology. This liber amicorum in memory of Swamy Laxminarayan collects Medical and Biological Engineering and Informatics contributions to the Safety and Security of Individuals and Society. The authors are renowned scientists and the aim of their writing is to recall the enormous personal and scientific achievement of Swamy Laxminarayan.

Features
► Collects Medical and Biological Engineering
► Contributions on the Safety and Security of Individuals and Society
► Written by very renowned scientists from Biomedical Engineering and Medical Informatics
► Recounts and memorializes the enormous personal and scientific achievements of Swamy Laxminarayan

Fields of interest
Biomedical Engineering

Target groups
Research

Discount group
P

Unmanned Rotorcraft Systems

Unmanned Rotorcraft Systems explores the research and development of fully-functional miniature UAV (unmanned aerial vehicle) rotorcraft, and provides a complete treatment of the design of autonomous miniature rotorcraft UAVs. The unmanned system is an integration of advanced technologies developed in communications, computing, and control areas, and is an excellent testing ground for trialing and implementing modern control techniques. Included are detailed expositions of systematic hardware construction, software systems integration, aero-dynamic modeling; and automatic flight control system design.

Features
► Provides the reader with a good complete reference for creating fully autonomous rotorcraft systems
► Can be easily adapted to the development of fixed- and flappy-winged unmanned aerial vehicles
► Gives the reader a good source of ideas and open problems for future research

Contents

Fields of interest
Control; Artificial Intelligence (incl. Robotics); Aerospace Technology and Astronautics

Target groups
Research

Discount group
P

Due May 2011

2011. Approx. 350 p. (Communications in Medical and Care Compunetics, Volume 1) Hardcover
► $179.00
ISBN 978-3-642-15050-0

Available

2011. XVIII, 274 p. 185 illus., 153 in color. (Advances in Industrial Control) Hardcover
► $129.00
ISBN 978-0-85729-634-4
Supply Chain Simulation
A System Dynamics Approach for Improving Performance

Supply Chain Simulation allows readers to practice modeling and simulating a multi-level supply chain. The chapters are a combination of the practical and the theoretical, covering knowledge of simulation methods and techniques, the conceptual framework of a typical supply chain, the main concepts of system dynamics, and a set of practice problems with their corresponding solutions. The problem set includes illustrations and graphs related to the simulation results of the Vensim program, whose main code is also provided. The examples used are a valuable simulation tool that can be modified and extended according to user requirements.

Features
► Shows readers how to simulate a multi-level supply chain by using the system dynamics methodology ► Includes illustrations and graphs related to simulation results from the Vensim program, whose main programming code is also provided ► Contains practice problems and solutions

Contents

Fields of interest
Engineering Economics, Organization, Logistics, Marketing; Production/Logistics/Supply Chain Management; Simulation and Modeling

Target groups
Research

Discount group
P

Assessment of Power System Reliability
Methods and Applications

The importance of power system reliability is demonstrated when our electricity supply is disrupted, whether it decreases the comfort of our free time at home or causes the shutdown of our companies and results in huge economic deficits. The objective of Assessment of Power System Reliability is to contribute to the improvement of power system reliability. It consists of six parts divided into twenty chapters. The first part introduces the important background issues that affect power system reliability. The second part presents the reliability methods that are used for analyses of technical systems and processes. The third part discusses power flow analysis methods, because the dynamic aspect of a power system is an important part of related reliability assessments. The fourth part explores various aspects of the reliability assessment of power systems and their parts. The fifth part covers optimization methods. The sixth part looks at the application of reliability and optimization methods. Assessment of Power System Reliability has been written in straightforward language that continues into the mathematical representation of the methods. Power engineers and developers will appreciate the emphasis on practical usage, while researchers and advanced students will benefit from the simple examples that can facilitate their understanding of the theory behind power system reliability and that outline the procedure for application of the presented methods.

Features
► Provides varied examples for both novice and advanced practitioners ► Features tables of sample data that enable traceability of the given results ► Written in straightforward language

Fields of interest
Power Electronics, Electrical Machines and Networks; Quality Control, Reliability, Safety and Risk; Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences

Target groups
Research

Discount group
P

Solutions on Embedded Systems

Embedded systems have an increasing importance in our everyday lives. The growing complexity of embedded systems and the emerging trend to interconnections between them lead to new challenges. Intelligent solutions are necessary to overcome these challenges and to provide reliable and secure systems to the customer under a strict time and financial budget. Solutions on Embedded Systems documents results of several innovative approaches that provide intelligent solutions in embedded systems. The objective is to present mature approaches, to provide detailed information on the implementation and to discuss the results obtained.

Features
► Helpful for students researching in embedded systems because it provides many examples of applications implemented in an industrial context ► Used as a source to support seminar work and class preparation for master students in computer science with focus on embedded systems ► Industrial engineers will find several examples of prototype implementations dedicated to specific topics in embedded systems

Fields of interest
Electronics and Microelectronics, Instrumentation; Processor Architectures

Target groups
Research

Discount group
P
Navigation in Space by X-ray Pulsars

Navigation in Space by X-ray Pulsars will consist of two parts. One is on modeling of X-ray pulsar signals. The second part explains how X-ray pulsar signals can be used to solve the relative navigation problem. This book formulates the problem, proposes a recursive solution, and analyzes different aspects of the navigation system. This book will be a comprehensive source for researchers. It provides new research results on signal processing techniques needed for X-ray pulsar based navigation in deep space.

Features
- Provides a comprehensive framework for X-ray pulsar signal processing techniques
- Formulates the relative navigation problem between two spacecraft based on X-ray pulsar measurements
- Examines solutions to X-ray pulsar based relative navigation integrating the navigation system with Inertial Measurement Units (IMUs)

From the contents

Fields of interest
Aerospace Technology and Astronautics; Signal, Image and Speech Processing; Control

Target groups
Research

Discount group
P

Service Robotics within the Digital Home

Applications and Future Prospects

This book provides the reader with a clear and precise description of robotics and other systems for home automation currently on the market, and discusses their interoperability and perspectives for the near future. It shows the different standards and the development platforms used by the main service robots in an international environment. This volume provides a scientific basis for the user who is looking for the best option to suit his or her needs from the available alternatives to integrate modern technology in the digital home.

Features
- Describes the importance of interoperability standards
- Explains the characteristics of robotics platforms
- State of the art overview

Contents
Standards for interoperability among heterogeneous systems - Development Platforms for Digital Homes - Autonomous robots and their evolution in the international environment - Standards Integration for mobile robots - Recommendations for the standards development.

Fields of interest
Control, Robotics, Mechatronics; Artificial Intelligence (incl. Robotics); Computers and Society

Target groups
Research

Discount group
P

Intelligent Systems

A Modern Approach

Computational intelligence is a well-established paradigm, where new theories with a sound biological understanding have been evolving. The current experimental systems have many of the characteristics of biological computers (brains in other words) and are beginning to be built to perform a variety of tasks that are difficult or impossible to do with conventional computers. As evident, the ultimate achievement in this field would be to mimic or exceed human cognitive capabilities including reasoning, recognition, creativity, emotions, understanding, learning and so on.

Features
- Covering all recent topics in the area of computational Intelligence in a well structured way
- The state of the art of intelligent systems usable for researchers and graduate students
- Written by leading experts in this field

Contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups
Research

Discount group
P
Global Claims in Construction

In recent years, a number of global claims have failed because they were presented without any systematic analysis, justification or proper calculation of losses. Hence, Global Claims in Construction highlights these issues as well as the importance of understanding causation, factual necessity and the courts’ attitude and approach to global claims. Global Claims in Construction addresses the principles of global claims and their calculation methodologies in detail through extensive references to literature, case law and a real world case study. It aims to be a valuable resource for professionals working in the construction industry, as well as students in construction and engineering.

Features
▶ Includes a full claim presented as a real life case study
▶ Examines how to apply scheduling techniques in a legal framework to prove global claims
▶ Provides readers with the expertise required to apply delay analysis techniques to the analysis and presentation of the issues in disputes

Contents
1. Introduction.
2. Contract Law – Principles and Doctrines.
5. Damages and Calculations, Vitiations and Remedies.
8. Global Claim _ A Case Study.

Fields of interest
Construction Management; Civil Law; Organization/Planning

Target groups
Professional/practitioner

Discount group
P

Energy and the Wealth of Nations

Understanding the Biophysical Economy

For the past 150 years, economics has been treated as a social science in which economies are modeled as a circular flow of income between producers and consumers. In this “perpetual motion” of interactions between firms that produce and households that consume, little or no accounting is given of the flow of energy and materials from the environment and back again. In the standard economic model, energy and matter are completely recycled in these transactions, and economic activity is seemingly exempt from the Second Law of Thermodynamics. As we enter the second half of the age of oil, and as energy supplies and the environmental impacts of energy production and consumption become major issues on the world stage, this exemption appears illusory at best. In Energy and the Wealth of Nations, concepts such as energy return on investment (EROI) provide powerful insights into the real balance sheets that drive our “petroleum economy.”

Features
▶ Integrates energy and economics
▶ Uses predictive tools and measures, such as EROI, to show how the economy is embedded in a biophysical world subject to scientific rules and constraints
▶ Provides a fresh approach to economics for those wondering “What’s next?” after the Great Recession and the recent increases in oil prices
▶ Assesses energy sources from the perspective of peak oil, the role of alternatives, and potential impacts such as climate change

Fields of interest
Energy Economics; Sustainable Development; Environmental Economics

Target groups
Research

Discount group
P

Consensual Processes

Consensus has been a much talked about word for centuries, maybe millennia since people have always been aware of its importance for arriving at proper decisions which have had a long lasting impact on life of groups of people, countries or even civilizations. Needless to say that the growing complexity of the present world, in all its social, economic and technological dimensions, has made the word to be used so frequently nowadays. What concerns the way consensus is usually meant, by consensus it is meant, on the one hand, a general agreement within the group of people, or agents, both human and software. Clearly, in the strict meaning the general agreement has been viewed in the sense of a full and unanimous agreement. Since this may be an unreachable ideal, people have replaced this ideal concept by a more realistic one that encompasses all forms of partial, graded, etc. agreements within a group.

Features
▶ Concerned with consensus reaching processes occurring both within human groups and groups of intelligent agents
▶ Comprehensive coverage of various issues related to consensus and consensual processes
▶ Written by leading experts in the field

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups
Research

Discount group
P
Minimizing Spurious Tones in Digital Delta-Sigma Modulators

This book describes several Digital Delta-Sigma Modulator (DDSM) architectures, including multi-stage noise shaping (MASH), error feedback modulator (EFM) and single quantizer (SQ)-DDSM modulators, with a focus on predicting and maximizing their cycle lengths. The authors aim to demystify an important aspect of these particular DDSM structures, namely the existence of spurs resulting from the inherent periodicity of DDSMs with constant inputs. Simulink and MATLAB models and code are presented in Chapters 2–5 to enable the reader to reproduce the results in this work and to explore further. These examples will also be helpful for first-time designers of DDSMs.

Features
- Provides a clear explanation of the cause of spurious tones in digital delta-sigma modulators
- Includes formulae to predict the positions of spurious tones
- Describes sample architectures to remove spurious tones
- Presents Simulink and Matlab code to reproduce the examples in the book

Contents

Fields of interest
Circuits and Systems; Electronics and Microelectronics; Instrumentation; Signal, Image and Speech Processing

Target groups
Research

Discount group
P

Greening Airports
Advanced Technology and Operations

Greening Airports considers the "greening", i.e., more sustainable development, of the entire air transport system – airports, air traffic control, and airlines – that could be achieved by the development and implementation of advanced operations and technologies. A broad overview of the general concept is given at the start of Greening Airports, which then goes on to provide a system for monitoring and assessing the level of greening of both the air transport system and individual airports. These are followed by analysis and modelling of the potential effects of particular advanced operations and technologies on the greening of airports and their local airspace.

Features
- Develops original dedicated methodologies for assessing the contribution of advanced operations and technologies to sustainable development of expanding airports
- Develops and tests ideas for the future (green) development of airports
- Introduces new concepts for a holistic perspective

Contents

Fields of interest
Facility Management; Construction Management; Sustainable Development

Target groups
Research

Discount group
P

Meta-Learning in Computational Intelligence

Computational Intelligence (CI) community has developed hundreds of algorithms for intelligent data analysis, but still many hard problems in computer vision, signal processing or text and multimedia understanding, problems that require deep learning techniques, are open. Modern data mining packages contain numerous modules for data acquisition, pre-processing, feature selection and construction, instance selection, classification, association and approximation methods, optimization techniques, pattern discovery, clusterization, visualization and post-processing. A large data mining package allows for billions of ways in which these modules can be combined. No human expert can claim to explore and understand all possibilities in the knowledge discovery process. This is where algorithms that learn how to learn come to rescue. Operating in the space of all available data transformations and optimization techniques these algorithms use meta-knowledge about learning processes automatically extracted from experience of solving diverse problems.

Features
- Recent research in Meta-learning in computational intelligence
- Presents new Developments and Trends in Computational Intelligence and Learning
- Written by leading experts in the field

From the contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups
Research

Discount group
P
Look-Ahead Based Sigma-Delta Modulation

The aim of this book is to expand and improve upon the existing knowledge on discrete-time 1-bit look-ahead sigma-delta modulation in general, and to come to a solution for the above mentioned specific issues arising from 1-bit sigma-delta modulation for SA-CD. In order to achieve this objective an analysis is made of the possibilities for improving the performance of digital noise-shaping look-ahead solutions. On the basis of the insights obtained from the analysis, several novel generic 1-bit look-ahead solutions that improve upon the state-of-the-art will be derived and their performance will be evaluated and compared. Finally, all the insights are combined with the knowledge of the SA-CD lossless data compression algorithm to come to a specifically for SA-CD optimized look-ahead design.

Features
- Presents a theoretical overview of Analog to Digital, and Digital to Analog Converters
- Practical applications such as use in the Super Audio CD’s are explained
- Covers a multidiscipline topic, being of interest to Electrical Engineers and Computer Scientists

Contents
1. Introduction
2. Basics of sigma-delta modulation
3. Transient SDM performance
4. Noise-shaping quantizer model
5. Look-ahead sigma-delta modulation
6. Reducing the complexity of LA DD conversion
7. Trellis sigma-delta modulation
8. Efficient Trellis sigma-delta modulation
9. Pruned Tree sigma-delta modulation
10. Pruned Tree sigma-delta modulation for SA-CD
11. Comparison of look-ahead SDM techniques
12. Maximum SNR analysis
13. General Conclusions
Appendix A: FFT calculations - coherent and power averaging
Appendix B: Descriptions of the used Sigma-Delta Modulators

Fields of interest
Circuits and Systems; Computer Systems Organization and Communication Networks

Target groups
Research

Discount group
P

The Simple Art of SoC Design
Closing the Gap between RTL and ESL

This book tackles head-on the challenges of digital design in the era of billion-transistor SoCs. It discusses fundamental design concepts in design and coding required to produce robust, functionally correct designs. It also provides specific techniques for measuring and minimizing complexity in RTL code. Finally, it discusses the tradeoff between RTL and high-level (C-based) design and how tools and languages must progress to address the needs of tomorrow’s SoC designs.

Features
- Provides an easily accessible guide that enables readers to write better, more verifiable code for complex SoCs
- Describes techniques for successful SoC design, including simplifying RTL design, reducing complexity in control-dominated designs, reducing complexity in data path dominated designs, and simplifying interfaces
- Discusses the tradeoff between RTL and high-level (C-based) design and how tools and languages should develop to fill future needs

Contents
The Challenges of Complex Design; Simplifying RTL Design; Reducing Complexity in Control-Dominated Designs; Hierarchical State Machines; More on State Space; Verification; Reducing Complexity in Data Path Dominated Designs; Simplifying Interfaces; Complexity at the Chip Level; Raising Abstraction Above RTL; SystemVerilog Extensions; The Future of Design

Fields of interest
Circuits and Systems; Computer-Aided Engineering (CAD, CAE) and Design

Target groups
Professional/practitioner

Available
2011. XII, 247 p. 147 illus. (Analog Circuits and Signal Processing) Hardcover
$129.00
ISBN 978-94-007-1386-4

Discount group
P

Due April 2011
2011. X, 220 p. 56 illus., 12 in color. Hardcover
$139.00

Available
approx. $279.00
ISBN 978-3-642-20604-7

Multiphase Flow Dynamics 1
Fundamentals

In Volume 1 the concept of three-fluid modeling is presented in detail “from the origin to the applications”. This includes derivation of local volume- and time-averaged equations and their working forms, development of methods for their numerical integration and finally finding a variety of solutions for different problems of practical interest. Special attention is paid in Volume 1 to the link between the partial differential equations and the constitutive relations called closure laws without providing any information on the closure laws.

Features
- Fundamentals of multiphase dynamics are provided
- Includes various interactive multimedia demonstrations
- This fourth edition includes various updates, extensions and improvements in all book chapters

Contents
From the content: Mass conservation
- Momentum conservation
- Derivatives for the equations of state
- On the variety of notations of the energy conservation for single-phase flow
- First and second laws of the thermodynamics
- Some simple applications of the mass and energy conservation
- Exergy of multi-phase multi-component systems
- One-dimensional three-fluid flows
- Detonation waves caused by chemical reactions or by melt-coolant interactions
- Conservation equations in general curvilinear coordinate systems

Fields of interest
Engineering Fluid Dynamics; Engineering Thermodynamics; Heat and Mass Transfer; Fluid- and Aerodynamics

Target groups
Research

Discount group
P
Multiphase Flow Dynamics 2
Mechanical Interactions

Volume 2 is devoted to these important constitutive relations for mathematical description of the mechanical and thermal interactions. The structure of the volume is in fact a state-of-the-art review and selection of the best available approaches for describing interfacial transfer processes. In many cases the original contribution of the author is incorporated in the overall presentation. The most important aspects of the presentation are that it stems from the author’s long years of experience developing computer codes. The emphasis is on the practical use of these relationships: either as stand-alone estimation methods or within a frame-work of computer codes.

Features
- Fundamentals of multiphase dynamics are provided
- Provides mechanical and thermal interactions in multiphase dynamics are provided
- This fourth edition includes various updates, extensions and improvements in all book chapters as well as a new chapter on bubble dynamics in single component fluids

Contents
Flow regime transition criteria.- Drag, lift and virtual mass forces.- Friction pressure drop.- Diffusion velocities for algebraic slip models.- Entrainment in annular two-phase flow.- Deposition in annular two-phase flow.- Introduction to fragmentation and coalescence.- Acceleration induced droplet and bubble fragmentation.- Turbulence induced particle fragmentation and coalescence.- Liquid and gas jet disintegration.- Fragmentation of melt in coolant.

Fields of interest
Engineering Fluid Dynamics; Engineering Thermodynamics; Heat and Mass Transfer; Fluid- and Aerodynamics

Target groups
Research

Discount group
P

Multiphase Flow Dynamics 4
Turbulence, Gas Adsorption and Release, Diesel Fuel Properties

Volume 3 is devoted to the turbulence in multiphase flows. The nuclear thermal hydraulic is the science providing knowledge about the physical processes occurring during the transsfring the fission heat released in structural materials due to nuclear reactions into its environment. Along its way to the environment the thermal energy is organized to provide useful mechanical work or useful heat or both. Volume 4 is devoted to the nuclear thermal hydraulics. In a way this is the most essential application of the multiphase fluid dynamics in analyzing steady and transient processes in nuclear power plants.

Features
- Fundamentals of multiphase dynamics are provided
- Presents the state of the art of the turbulence modeling in multiphase flows
- Basics of the single-phase boundary layer theory including some important scales and flow oscillation characteristics in pipes and rod bundles
- Devoted to selected chapters of the multiphase fluid dynamics that are important for practical applications

Contents

Fields of interest
Engineering Fluid Dynamics; Engineering Thermodynamics; Heat and Mass Transfer; Fluid- and Aerodynamics

Target groups
Research

Discount group
P

Multiphase Flow Dynamics 5
Nuclear Thermal Hydraulics

This monograph contains theory, methods and practical experience for describing complex transient multi-phase processes in arbitrary geometrical configurations. It is intended to help applied scientists and practicing engineers to understand better natural and industrial processes containing dynamic evolutions of complex multi-phase flows. The book is also intended to be a useful source of information for students in the high semesters and in PhD programs.

Features
- Devoted to nuclear thermal hydraulics which is a substantial part of nuclear reactor safety
- Provides knowledge and mathematical tools for adequate description of the process of transferring the fission heat released in materials due to nuclear reactions into its environment
- This second edition includes various updates, extensions and improvements in all book chapters as well as a new contents on steam generators and emergency condensers

Contents

Fields of interest
Engineering Fluid Dynamics; Engineering Thermodynamics; Heat and Mass Transfer; Fluid- and Aerodynamics

Target groups
Research

Discount group
P
Robust Speech Recognition of Uncertain or Missing Data
Theory and Applications

Automatic speech recognition suffers from a lack of robustness with respect to noise, reverberation and interfering speech. The growing field of speech recognition in the presence of missing or uncertain input data seeks to ameliorate those problems by using not only a preprocessed speech signal but also an estimate of its reliability to selectively focus on those segments and features that are most reliable for recognition. This book presents the state of the art in recognition in the presence of uncertainty, offering examples that utilize uncertainty information for noise robustness, reverberation robustness, simultaneous recognition of multiple speech signals, and audiovisual speech recognition. The book is appropriate for scientists and researchers in the field of speech recognition who will find an overview of the state of the art in robust speech recognition, professionals working in speech recognition who will find strategies for improving recognition results in various conditions of mismatch, and lecturers of advanced courses on speech processing or speech recognition who will find a reference and a comprehensive introduction to the field. The book assumes an understanding of the fundamentals of speech recognition using Hidden Markov Models.

Features

- Scientists and researchers in the field of speech recognition will find an overview of the state of the art in robust speech recognition
- Professionals working in speech recognition will find strategies for improving results in various conditions of mismatch
- The contributing authors are among the leading researchers in this field

Fields of interest

- Signal, Image and Speech Processing; Artificial Intelligence (incl. Robotics); Computational Linguistics

Target groups

- Research

Discount group

- P

Reliability and Safety of Complex Technical Systems and Processes
Modeling – Identification – Prediction - Optimization

Reliability and Safety of Complex Technical Systems and Processes offers a comprehensive approach to the analysis, identification, evaluation, prediction and optimization of complex technical systems operation, reliability and safety. Its main emphasis is on multistate systems with ageing components, changes to their structure, and their components reliability and safety parameters during the operation processes. Reliability and Safety of Complex Technical Systems and Processes presents integrated models for the reliability, availability and safety of complex non-repairable and repairable multistate technical systems, with reference to their operation processes and their practical applications to real industrial systems. The authors consider variables in different operation states, reliability and safety structures, and the reliability and safety parameters of components, as well as suggesting a cost analysis for complex technical systems. Researchers and industry practitioners will find information on a wide range of complex technical systems in Reliability and Safety of Complex Technical Systems and Processes. It may prove an easy-to-use guide to reliability and safety evaluations of real complex technical systems, both during their operation and at the design stages.

Features

- Semi-Markov modelling provides the reader with the tools necessary to analyse reliability problems
- Problems and solutions provide readers with a frame of reference for their own work
- Applications allow the reader to connect theory to practice

Fields of interest

- Quality Control, Reliability, Safety and Risk; Facility Management; Probability Theory and Stochastic Processes

Target groups

- Research

Discount group

- P

Computational Optimization, Methods and Algorithms

Computational optimization is an important paradigm with a wide range of applications. In virtually all branches of engineering and industry, we almost always try to optimize something - whether to minimize the cost and energy consumption, or to maximize profits, outputs, performance and efficiency. In many cases, this search for optimality is challenging, either because of the high computational cost of evaluating objectives and constraints, or because of the nonlinearity, multimodality, discontinuity and uncertainty of the problem functions in the real-world systems. Another complication is that most problems are often NP-hard, that is, the solution time for finding the optimum increases exponentially with the problem size. The development of efficient algorithms and specialized techniques that address these difficulties is of primary importance for contemporary engineering, science and industry.

Features

- State of the art in Computational Optimization
- Presents various Applications in Engineering and Industry
- Written by leading experts in the field

From the contents


Fields of interest

- Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups

- Research

Discount group

- P
Vulnerable Systems

The safe management of the complex distributed systems and critical infrastructures which constitute the backbone of modern industry and society entails identifying and quantifying their vulnerabilities to design adequate protection, mitigation, and emergency action against failure. In practice, there is no fail-safe solution to such problems and various frameworks are being proposed to effectively integrate different methods of complex systems analysis in a problem-driven approach to their solution. Vulnerable Systems reflects the current state of knowledge on the procedures which are being put forward for the risk and vulnerability analysis of critical infrastructures. Classical methods of reliability and risk analysis, as well as new paradigms based on network and systems theory, including simulation, are considered in a dynamic and holistic way. Readers of Vulnerable Systems will benefit from its structured presentation of the current knowledge base on this subject. It will enable graduate students, researchers and safety and risk analysts to understand the methods suitable for different phases of analysis and to identify their criticalities in application.

Features
- Discusses new paradigms for reliability and risk analysis
- Provides current research on risk and vulnerability analysis of critical infrastructures
- Written by experts on vulnerable systems

Contents

Fields of interest
- Quality Control, Reliability, Safety and Risk
- Complexity; Power Electronics, Electrical Machines and Networks

Target groups
- Research

Discount group
- P

Available
2011. XIV, 234 p. 63 illus., 6 in color. Hardcover

$129.00
ISBN 978-94-007-1584-4

Sharing RF Spectrum with Commodity Wireless Technologies

Theory and Practice

Much energy has been spent on the subject of spectrum scarcity that would threaten to stunt the growth of wireless technologies and services. This concern comes on the heels of the great successes of both cellular communications and consumer oriented communications like Wi-Fi and Bluetooth that have changed the way people use computers and communications and that have led to the creation of large new markets for products and services. The response of many spectrum regulators throughout the world in addressing these concerns has been to consider releasing more spectrum for unlicensed or for shared use.

Features
- Provides an in-depth review of the subject
- Supported by practical case studies
- Only book combining theoretical analysis, regulatory context and practical case studies

From the contents

Fields of interest
- Communications Engineering, Networks; Microwave; RF and Optical Engineering; Applied and Technical Physics

Target groups
- Research

Discount group
- P

Available
2011. XIV, 279 p. 50 illus. (Signals and Communication Technology) Hardcover

$129.00
ISBN 978-0-85729-663-4

Adaptive Control

Adaptive Control (second edition) shows how a desired level of system performance can be maintained automatically and in real time, even when process or disturbance parameters are unknown and variable. It is a coherent exposition of the many aspects of this field, setting out the problems to be addressed and moving on to solutions, their practical significance and their application. Discrete-time aspects of adaptive control are emphasized to reflect the importance of digital computers in the application of the ideas presented. The second edition is thoroughly revised to throw light on recent developments in theory and applications with new chapters on: multimodel adaptive control with switching, direct and indirect adaptive regulation and adaptive feedback disturbance compensation. Many algorithms are newly presented in MATLAB® m-file format to facilitate their employment in real systems. Classroom-tested slides for instructors to use in teaching this material are also now provided. All of this supplementary electronic material can be downloaded from fill in URL.

Features
- Provides the reader with a systematic and rigorous treatment of adaptive control theory for discrete-time systems
- Frequent illustration with examples and applications is a constant reminder of the practical nature of adaptive control
- Inclusion of examples and problems provides teachers with a useful source of class-teaching material

Fields of interest
- Control; Systems Theory; Control; Signal, Image and Speech Processing

Target groups
- Graduate

Discount group
- P

Available
2nd Ed. 2011. XXII, 594 p. 176 illus., 11 in color. With online files/update. (Communications and Control Engineering) Hardcover

$229.00
ISBN 978-0-85729-663-4

Available

Available

Available
Advanced Sliding Mode Control for Mechanical Systems
Design, Analysis and MATLAB Simulation

“Advanced Sliding Mode Control for Mechanical Systems: Design, Analysis and MATLAB Simulation” takes readers through the basic concepts, covering the most recent research in sliding mode control. The book is written from the perspective of practical engineering and examines numerous classical sliding mode controllers, including continuous time sliding mode control, discrete time sliding mode control, fuzzy sliding mode control, neural sliding mode control, backstepping sliding mode control, dynamic sliding mode control, sliding mode control based on observer, terminal sliding mode control, sliding mode control for robot manipulators, and sliding mode control for aircraft.

Features
► Offers practical perspective and examines numerous classical sliding mode controllers
► Provides concrete stability analysis for each method and complete MATLAB simulation programs
► Chapters deliver self-contained coverage, so they can be read independently

From the contents

Fields of interest
Control; Vibration, Dynamical Systems, Control; Systems Theory, Control

Target groups
Research

Discount group
P

Modern Mathematical Tools and Techniques in Capturing Complexity

Real-life problems are often quite complicated and, for centuries, Mathematics has provided the necessary tools and ideas to formulate these problems mathematically and then help in solving them either exactly or approximately. This book aims to gather a collection of papers dealing with several different problems arising from many disciplines and some modern mathematical approaches to handle them. In this respect, the book offers a wide overview on many of the current trends in Mathematics as valuable formal techniques in capturing and exploiting the complexity involved in real-world situations.

Features
► Presents modern Mathematical Tools and Techniques in Capturing Complexity
► Recent research in applied complex system
► Written by leading experts in the field

Contents

Fields of interest
Complexity; Nonlinear Dynamics; Systems Theory, Control

Target groups
Research

Discount group
P

Customer-driven Supply Chains
From Glass Pipelines to Open Innovation Networks

The supply chain has become key to the survival of organisations in different industries. Organisations in dynamic business environments demand supply chains that support the satisfaction of customer needs. The principles of lean thinking have now been transferred to the supply chain, making imperative the development of new approaches to supply chain management. This book reviews the concept of lean thinking in relation to other initiatives to do with supply chain management. Industrial case studies illustrate the principles of lean supply chains. A series of diagrams illustrates critical concepts and supply chain architectures. The importance of transferring lean principles from the organisational level to the supply chain level is emphasised. Mass customisation, agility, information sharing and the bullwhip effect are discussed.

Fields of interest
Engineering Economics, Organization, Logistics, Marketing; Operating Procedures, Materials Treatment; Manufacturing, Machines, Tools

Target groups
Research

Discount group
P
Developing Concepts in Applied Intelligence

The series Studies in Computational Intelligence (SCI) publishes new developments and advances in the various areas of computational intelligence – quickly and with a high quality. The intent is to cover the theory, applications, and design methods of computational intelligence, as embedded in the fields of engineering, computer science, physics and life science, as well as the methodologies behind them. The series contains monographs, lecture notes and edited volumes in computational intelligence spanning the areas of neural networks, connectionist systems, genetic algorithms, evolutionary computation, artificial intelligence, cellular automata, self-organizing systems, soft computing, fuzzy systems and hybrid intelligent systems.

Features
- Recent research on Developing Concepts in Applied Intelligence
- Selected papers of the IEA/AIE-2011 International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems, held at June 28 - July 1, 2011 Syracuse, New York, USA
- Written by leading experts in the field

From the contents

Fields of interest
Engineering, general; Artificial Intelligence (incl. Robotics)

Target groups
Research

Discount group
P

Bio-Inspired Self-Organizing Robotic Systems

Self-organizing approaches inspired from biological systems, such as social insects, genetic, molecular and cellular systems under morphogenesis, and human mental development, has enjoyed great success in advanced robotic systems that need to work in dynamic and changing environments. Compared with classical control methods for robotic systems, the major advantages of bio-inspired self-organizing robotic systems include robustness, self-repair and self-healing in the presence of system failures and/or malfunctions, high adaptability to environmental changes, and autonomous self-organization and self-reconfiguration without a centralized control. “Bio-inspired Self-organizing Robotic Systems” provides a valuable reference for scientists, practitioners and research students working on developing control algorithms for self-organizing engineered collective systems, such as swarm robotic systems, self-reconfigurable modular robots, smart material based robotic devices, unmanned aerial vehicles, and satellite constellations.

Features
- State-of-the-art research inspired by biological principles for self-organizing robotic systems
- Bridges multi-disciplinary research areas such as robotics, artificial life, systems biology, and evolutionary computation
- Written by experts in the field

Contents

Fields of interest
Computational Intelligence; Robotics and Automation; Artificial Intelligence (incl. Robotics)

Target groups
Research

Discount group
P

Nanometer CMOS Sigma-Delta Modulators for Software Defined Radio

This book presents innovative solutions for the implementation of Sigma-Delta Modulation (SDM) based Analog-to-Digital Conversion (ADC), required for the next generation of wireless hand-held terminals. These devices will be based on the so-called multi-standard transceiver chipsets, integrated in nanometer CMOS technologies. One of the most challenging and critical parts in such transceivers is the analog-digital interface, because of the assorted signal bandwidths and dynamic ranges that can be required to handle the A/D conversion for several operation modes. This book describes new adaptive and reconfigurable SDM ADC topologies, circuit strategies and synthesis methods, specially suited for multi-standard wireless telecom systems and future Software-defined-radios (SDRs) integrated in nanoscale CMOS.

Features
- Provides tutorial presentation of innovative SDM-based solutions for the next generation of wireless telecom systems
- Presents a systematic design methodology, based on the combined use of optimization and behavioral simulation
- Gives practical guidelines on the architecture selection, sizing, and electrical implementation of several SD ICs integrated in nanometer CMOS
- Provides readers with a comprehensive overview of the basics, state-of-the-art performance, applications, challenges and solutions

Fields of interest
Circuits and Systems; Computer-Aided Engineering (CAD, CAE) and Design

Target groups
Research

Discount group
P

K. G. Mehrotra, C. Mohan, J. C. Oh, P. K. Varshney, Syracuse University, NY, USA; M. Ali, Texas State University, San Marcos, TX, USA (Eds.)

Y. Meng, Stevens Institute of Technology, Hoboken, NJ, USA; Y. Jin, University of Surrey, Surrey, UK (Eds.)

A. Morgado, R. del Río, J. M. Rosa, IMSE-CNM (CSIC / Universidad de Sevilla), Sevilla, SPAIN
Combinatorial Machine Learning
A Rough Set Approach

Decision trees and decision rule systems are widely used in different applications as algorithms for problem solving, as predictors, and as a way for knowledge representation. Reducts play a key role in the problem of attribute (feature) selection. The aims of this book are (i) the consideration of the set of decision trees, rules and reducts; (ii) study of relationships among these objects; (iii) design of algorithms for construction of trees, rules and reducts; and (iv) obtaining bounds on their complexity. Applications for supervised machine learning, discrete optimization, analysis of acyclic programs, fault diagnosis, and pattern recognition are considered also. This is a mixture of research monograph and lecture notes. It contains many unpublished results. However, proofs are carefully selected to be understandable for students. The results considered in this book can be useful for researchers in machine learning, data mining and knowledge discovery, especially for those who are working in rough set theory, test theory and logical analysis of data. The book can be used in the creation of courses for graduate students.

Features
► A rough set approach to combinatorial machine learning
► Presents applications for supervised machine learning, discrete optimization, analysis of acyclic programs, fault diagnosis and pattern recognition
► Written by leading experts in the field

Contents
Part I Tools.— Part II Applications.

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups
Research

Discount group
P

S. C. Mukhopadhyay, Massey University, Palmerston North, New Zealand (Ed.)

New Developments in Sensing Technology for Structural Health Monitoring

The book has focused on the different aspects of sensing technology, i.e., high reliability, adaptability, recalibration, information processing, data fusion, validation and integration of novel and high performance sensors specifically aiming to use to inspect mechanical health of structure and similar applications. This book is dedicated to Sensing systems for Structural Health Monitoring offers to variety of users, namely, Master and PhD degree students, researchers, practitioners, especially Civil and Construction engineers. The book will provide an opportunity of a dedicated and a deep approach in order to improve their knowledge in this specific field.

Features
► Recent research in Sensing Technology for Structural Health Monitoring
► Focus on the different aspects of sensing technology, i.e. high reliability, adaptability, recalibration, information processing, and data fusion
► Written by leading experts in the field

From the contents

Fields of interest
Signal, Image and Speech Processing; Biomedical Engineering; Electrical Engineering

Target groups
Research

Discount group
P

N. Nedjah, State University of Rio de Janeiro, Brazil; L. Santos Coelho, Pontifical University, Curitiba, Brazil; V. Cocca Mariani, Pontifical Catholic University, Curitiba, Brazil; L. d. Macedo Mourelle, Rio de Janeiro State University, Brazil (Eds.)

Innovative Computing Methods and their Applications to Engineering Problems

The design of most modern engineering systems entails the consideration of a good trade-off between the several targets requirements to be satisfied along the system life such as high reliability, low redundancy and low operational costs. These aspects are often in conflict with one another, hence a compromise solution has to be sought. Innovative computing techniques, such as genetic algorithms, swarm intelligence, differential evolution, multi-objective evolutionary optimization, just to name few, are of great help in founding effective and reliable solution for many engineering problems. Each chapter of this book attempts to use an innovative computing technique to elegantly solve a different engineering problem.

Features
► Recent research on Innovative Computing Methods and their Applications to Engineering Problems
► Concentrates on Computing Methodology for Engineering
► Written by leading experts in the field

From the contents
1- A discrete differential evolution approach with local search for traveling salesman problems.— 2- Genetic Algorithm based Reliability Optimization in Interval Environment.— 3- PSO for Building Fuzzy Systems.— 4- Maintenance optimization of wind turbine systems based on intelligent prediction tools.— 5- Clonal selection algorithm applied to economic dispatch optimization of electrical energy.

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups
Research

Discount group
P
Finite Element Modeling for Materials Engineers Using MATLAB®

The finite element method is often used for numerical computation in the applied sciences. It makes a major contribution to the range of numerical methods used in the simulation of systems and irregular domains, and its importance today has made it an important subject of study for all engineering students. While treatments of the method itself can be found in many traditional finite element books, Finite Element Modeling for Materials Engineers Using MATLAB® combines the finite element method with MATLAB to offer materials engineers a fast and code-free way of modeling for many materials processes. Finite Element Modeling for Materials Engineers Using MATLAB® covers such topics as: developing a weak formulation as a prelude to obtaining the finite element equation, interpolation functions, derivation of elemental equations, and use of the Partial Differential Equation Toolbox®.

Features
► Discusses the finite element method with a particular focus on the requirements of materials engineers
► Uses the MATLAB® pdetool to develop a code-free way of modelling
► Contains exercises to help develop the reader’s understanding

Contents
1. The Weak Formulation
2. Linear Interpolation Functions
3. Derivation of Element Matrices and Solution of the Finite Element Equation
4. Steps to Modeling Using PDEToolBox Graphics Interface
5. Application of PDEToolBox to Heat Transfer Problems
6. Application of PDEToolBox to Elasticity Problems

Fields of interest
Computational Intelligence; Simulation and Modeling; Computational Science and Engineering

Target groups
Research

Discount group
P

Iron Phosphate Materials as Cathodes for Lithium Batteries

The Use of Environmentally Friendly Iron in Lithium Batteries

Iron Phosphate Materials as Cathodes for Lithium Batteries describes the synthesis and the chemical-physical characteristics of iron phosphates, and presents methods of making LiFePO4 a suitable cathode material for lithium-ion batteries. The author studies carbon's ability to increase conductivity and to decrease material grain size, as well as investigating the electrochemical behaviour of the materials obtained. Iron Phosphate Materials as Cathodes for Lithium Batteries also proposes a model to explain lithium insertion/extraction in LiFePO4 and to predict voltage profiles at various discharge rates. Iron Phosphate Materials as Cathodes for Lithium Batteries is written for postgraduate students and researchers in electrochemistry, R & D professionals and experts in electrochemical storage.

Features
► Gives a modern approach
► Presents a new approach to obtaining carbon doped material
► Written by an expert

Contents
1. Electrode Materials for Lithium-Ion Batteries
2. Triphylite
3. Determination of the Diffusion Coefficient of LiFePO4
4. Vivianite and Beraunite
5. Amorphous Iron Phosphate
6. Nano-crystalline LiFePO4
7. Long-Term Cyclability of Nano-crystalline LiFePO4
8. Factors Affecting the Rate Performance of LiFePO4
9. Versatile Synthesis of Carbon-Rich LiFePO4
10. Modeling the Voltage Profile for LiFePO4

Fields of interest
Energy Technology; Metallic Materials; Electrochemistry

Target groups
Research

Discount group
P
Embedded Systems Design Based on Formal Models of Computation

“Models of Computation for Heterogeneous Embedded Systems” presents a model of computation for heterogeneous embedded systems called DFCharts. It targets heterogeneous systems by combining finite state machines (FSM) with synchronous dataflow graphs (SDFG). FSMs are connected in the same way as in Argos (a Staticchart variant with purely synchronous semantics) using three operators: synchronous parallel, refinement and hiding. The fourth operator, called asynchronous parallel, is introduced in DFCharts to connect FSMs with SDFGs. In the formal semantics of DFCharts, the operation of an SDFG is represented as an FSM. Using this representation, SDFGs are merged with FSMs so that the behaviour of a complete DFCharts specification can be expressed as a single, flat FSM. This allows system properties to be verified globally. The practical application of DFCharts has been demonstrated by linking it to widely used system-level languages Java, Esterel and SystemC.

Features
► Presents a complete design flow from specification to synthesis on multiprocessor architectures
► Presents a model of computation which handles heterogeneous embedded systems consisting of both control-driven and data-driven parts
► Demonstrates how modelling techniques presented can be used to improve design with System C and Esterel

From the contents

Fields of interest
Engineering, general; Special Purpose and Application-Based Systems

Target groups
Research

Discount group
P

Multicriteria Analysis and LCA Techniques

With Applications to Agro-Engineering Problems

Multicriteria Analysis and LCA Techniques introduces the reader to the basic principles of multicriteria analysis (MCA) and life cycle assessment (LCA) techniques. The use of these tools is rapidly becoming essential in any feasibility study for comparing different solutions, selecting the most suitable ones, and for analyzing the interface of economy and environment. The main feature of Multicriteria Analysis and LCA Techniques is the application of a new approach to the analysis of energy balance and environmental impact of agro-industrial production chains. It gives detailed descriptions of a number of food and non-food agro-industrial applications of MCA and LCA, thereby providing the reader with practical examples of the implementation of these tools in the field of agro-industry. Multicriteria Analysis and LCA Techniques represents a subsidiary reference book for both undergraduate and graduate students, and can also be used for basic or applied academic research.

Features
► Includes a number of agro-industrial applications ► Proposes a new approach to the analysis of energy balance and environmental impact of agro-industrial production chains ► Written by experts in agricultural analysis

Contents

Fields of interest
Engineering, general; Engineering Economics, Organization, Logistics, Marketing; Energy Economics

Target groups
Research

Discount group
P

Dynamic Response of Pre-Stressed Spatially Curved Thin-Walled Beams of Open Profile

This short book analyses the dynamic stability with respect to small perturbations, as well as the local damage of geometrically nonlinear elastic, spatially curved, open section beams with axial precompression. Transient waves, which are the surfaces of strong discontinuity and wherein the stress and strain fields experience discontinuities, are used as small perturbations; in so doing the discontinuities are considered to be of small magnitude. Such waves are initiated during low-velocity impacts upon thin-walled beams. The theory of discontinuities and the method of ray expansions which allow one to find the desired fields behind the fronts of the transient waves in terms of discontinuities in time-derivatives of the values to be found, are used as the methods of solution for short-time dynamic processes.

Features
► Analyses the dynamic stability with respect to small perturbations ► Examines the local damage of geometrically nonlinear elastic, spatially curved, open section beams with axial precompression

Contents

Fields of interest
Continuum Mechanics and Mechanics of Materials; Computational Science and Engineering; Mechanics

Target groups
Research

Discount group
P
Plastics End Use Applications
D. V. Rosato, PlastiSource, Inc., Concord, MA, USA

Plastics End Use Applications is a SpringerBrief designed to keep professionals in the plastics industry abreast of key technical developments, business strategies and marketing initiatives in plastics and competitive materials that impact sales and usage. It is concisely focused on the five major competitive material areas—plastic, metal, paper and wood, rubber, and glass and ceramic—and how they interact in the twenty major plastic end-use market segments. For the global plastics professional, this book offers a way to enhance plastics technical and marketing insights. Plastics End Use Applications is of most value to manufacturing engineers, research and development professionals and general researchers interested in plastics and materials science.

Features
- This SpringerBrief provides a simplified, practical and innovative approach to understanding the design and manufacture of plastic products

Contents
1 Executive Summary.
2 Plastic End Use Application Fundamentals.
3 Electrical and Electronic End Use Applications.
4 Industrial End Use Applications.
5 Transportation End Use Applications.
6 Consumer Products End Use Applications.
7 Medical, Emerging and Other End Use Applications.
8 Plastics End Use Applications Company Source Guide.

Fields of interest
Industrial and Production Engineering; Characterization and Evaluation of Materials; Manufacturing, Machines, Tools

Target groups
Research

Discount group
P

Trustworthy Internet
L. Salgarelli, University of Brescia, Italy; G. Bianchi, N. Blefari-Melazzi, University of Rome, Tor Vergata, Italy (Eds.)

This book collects a selection of the papers presented at the 21st International Tyrrhenian Workshop on Digital Communications, organized by CNIT and dedicated this year to the theme “Trustworthy Internet”. The workshop provided a lively discussion on the challenges involved in reshaping the Internet into a trustworthy reality, articulated around the Internet by and for People, the Internet of Contents, the Internet of Services and the Internet of Things, supported by the Network Infrastructure foundation. The papers have been revised after the workshop to take account of feedbacks received by the audience.

Features
- Scholarly articles from leading experts ensure a thorough review of the state of the art on Trustworthy Internet subjects
- Links between theory and practice provided by contributions from key projects of the EU 7th Framework Programme
- A thoroughly cross-disciplinary coverage of all the key technical advances that will make the future Internet a truly trustworthy infrastructure

From the contents

Fields of interest
Communications Engineering, Networks; Computer Communication Networks; Performance and Reliability

Target groups
Research

Discount group
P

Due July 2011

Due May 2011

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$179.00
ISBN 978-88-470-1817-4
Lyapunov Functionals and Stability of Stochastic Difference Equations

Hereditary systems (or systems with either delay or after-effects) are widely used to model processes in physics, mechanics, control, economics and biology. An important element in their study is their stability. Stability conditions for difference equations with delay can be obtained using a Lyapunov functional. Lyapunov Functionals and Stability of Stochastic Difference Equations describes a general method of Lyapunov functional construction to investigate the stability of discrete-and continuous-time stochastic Volterra difference equations. The method allows the investigation of the degree to which the stability properties of differential equations are preserved in their difference analogues.

Features
► Detailed description of Lyapunov functional construction will allow researchers to analyse stability results for hereditary systems more easily
► Profuse analytical and numerical examples help to explain the methods used
► Demonstrates a method that can be usefully applied in economic, mechanical, biological and ecological systems

Contents

Fields of interest
Control; Difference and Functional Equations; Calculus of Variations and Optimal Control; Optimization

Target groups
Research

Discount group
P

Available
2011. VI, 284 p. 119 illus., 117 in color. Hardcover
$129.00
ISBN 978-3-642-17930-3

Intelligent-Based Systems Engineering

The International Council on Systems Engineering (INCOSE) defines Systems Engineering as an interdisciplinary approach and means to enable the realization of successful systems. Researchers are using intelligence-based techniques to support the practices of systems engineering in an innovative way. This research volume includes a selection of contributions by subject experts to design better systems.

Features
► Covering all recent topics on systems engineering
► Presents the methodology of intelligent paradigms in systems engineering
► Demonstrates the implementation of complex systems in practical applications

Contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups
Research

Discount group
P

Available
2011. XXIV, 344 p. 112 illus., 11 in color. (Intelligent Systems Reference Library, Volume 10) Hardcover
$129.00
ISBN 978-3-642-17930-3

Robust Sigma Delta Converters And Their Application in Low-Power Highly-Digitized Flexible Receivers

Sigma Delta converters are a very popular choice for the A/D converter in multi-standard, mobile and cellular receivers. Key A/D converter specifications are high dynamic range, robustness, scalability, low-power and low EMI. Robust Sigma Delta Converters presents a request derivation of a Sigma Delta modulator applied in a receiver for cellular and connectivity, and shows trade-offs between RF and ADC. The book proposes to categorize these requirements in 5 quality indicators which can be used to qualify a system, namely accuracy, robustness, flexibility, efficiency and emission. In the book these quality indicators are used to categorize Sigma Delta converter theory.

Features
► Extends Sigma Delta Converter theory
► Describes application, theory, and implementation of Sigma Delta Modulators
► Describes various analytical models for clock jitter and successfully verifies with measurements
► Shows different and competitive implementations of SDM

From the contents

Fields of interest
Circuits and Systems; Solid State Physics; Input/Output and Data Communications

Target groups
Research

Discount group
P

Available
$129.00
ISBN 978-94-007-0643-9
Vibration and Structural Acoustics Analysis

Current Research and Related Technology

Vibration and structural acoustics analysis has become an essential requirement for high-quality structural and mechanical design in order to assure acoustic comfort and the integrity, reliability and fail-safe behavior of structures and machines. The underlying technologies of this field of multidisciplinary research are evolving very fast and their dissemination is usually scattered over different and complementary scientific and technical publication means. In order to make it easy for developers and technology end-users to follow the latest developments and news in the field, this book collects into a single volume selected, extended, updated and revised versions of papers presented at the Symposium on Vibration and Structural Acoustics Analysis.

Features

- Differs from other vibration and acoustics related books by addressing current and future challenges in this field organized and compiled into a single volume
- Synergetic combination of efforts of the authors and editors for each research topic presented
- A concise introduction to the field for the less experienced readers is provided along with a deeper and more technically demanding critical analysis and dissemination of the results for both the newcomers and experienced readers

Fields of interest

Vibration, Dynamical Systems, Control; Acoustics; Mechanical Engineering

Target groups

Research

Discount group

P

Introduction to Hydro Energy Systems

Basics, Technology and Operation

The authors have tried to strike a balance between a short book chapter and a very detailed book for subject experts. There are three prime reasons behind for doing so: first, the field is quite interdisciplinary and requires simplified presentation for a person from non-parent discipline. The second reason for this short-version of a full book is that both the authors have seen students and technically oriented people, who were searching for this type of book on hydro energy. The third reason and motivation was considering engineers who are starting their career in hydro energy sector. This book is targeted to present a good starting background and basic understanding for such professionals.

Features

- Shows a strict balance between a short book chapter and very detailed book for subject experts
- Hydropower is quite interdisciplinary and book gives simplified presentations for persons from non-parent discipline
- It meets requirements of starting students from different disciplines: mechanical, electrical, civil, law

Contents


Fields of interest

Renewable Energy Sources; Mechanical Engineering; Civil Engineering

Target groups

Professional/practitioner

Discount group

P

Design and Implementation of Fully-Integrated Inductive DC-DC Converters in Standard CMOS

CMOS DC-DC Converters aims to provide a comprehensive dissertation on the matter of monolithic inductive Direct-Current to Direct-Current (DC-DC) converters. For this purpose seven chapters are defined which will allow the designer to gain specific knowledge on the design and implementation of monolithic inductive DC-DC converters, starting from the very basics.

Features

- Treats DC-DC Converters, which are the new hot topic within the Data Converters field
- First monograph to cover key design and implementation insights
- Delivers a comprehensive theoretical overview of this topic

Contents


Fields of interest

Circuits and Systems; Input/Output and Data Communications; Solid State Physics

Target groups

Research

Discount group

P
Atomic Force Microscopy Based Nanorobotics

Modelling, Simulation, Setup Building and Experiments

The atomic force microscope (AFM) has been successfully used to perform nanorobotic manipulation operations on nanoscale entities such as particles, nanotubes, nanowires, nanocrystals, and DNA since 1990s. There have been many progress on modeling, imaging, teleoperated or automated control, human-machine interfacing, instrumentation, and applications of AFM based nanorobotic manipulation systems in literature.

Features

- Presents new ideas for three-dimensional and high-efficiency parallel nanomanipulation using newly developed nanorobots based on the principle of atomic force microscopy
- Clearly written and well-organized, this text introduces designs and prototyes of the nanorobotic systems
- Extensive review of nanorobotic history, principles of atomic force microscopy, modelling of pick-and-place nanomanipulation, and design and development of nanorobotic systems
- Includes experimental results and extended applications of the proposed nanorobotic systems

Contents

Descriptions and challenges of AFM based nanorobotic systems - Instrumentation issues of an AFM based nanorobotic system - Nanomechanics of AFM based manipulation - Teleoperation based AFM manipulation control - Automated control of AFM based nanomanipulation - Applications of AFM based nanorobotic systems.

Fields of interest

Robotics and Automation; Artificial Intelligence (incl. Robotics); Nanotechnology and Microengineering

Discount group

P

Design, Modeling and Experiments of 3-DOF Electromagnetic Spherical Actuators

A spherical actuator is a novel electric device that can achieve 2/3-DOF rotational motions in a single joint with electric power input. It has advantages such as compact structure, low mass/moment of inertia, fast response and non-singularities within the workspace. It has promising applications in robotics, automobile, manufacturing, medicine and aerospace industry. This is the first monograph that introduces the research on spherical actuators systematically. It broadens the scope of actuators from conventional single-axis to multi-axis, which will help both beginners and researchers to enhance their knowledge on electromagnetic actuators. Generic analytic modeling methods for magnetic field and torque output are developed, which can be applied to the development of other electromagnetic actuators.

Features

- First monograph which systematically treats multi-DOF spherical actuators
- Important in the development of applications in the fields of robotics, automobile, aerospace, manufacturing and medicine industry
- Will broaden the scope of future research

Fields of interest

Control, Robotics, Mechatronics; Electrical Engineering; Mechanical Engineering

Target groups

Research

Discount group

P

Computational Optimization and Applications in Engineering and Industry

Contemporary design in engineering and industry relies heavily on computer simulation and efficient algorithms to reduce the cost and to maximize the performance and sustainability as well as profits and energy efficiency. Solving an optimization problem correctly and efficiently requires not only the right choice of optimization algorithms and simulation methods, but also the proper implementation and insight into the problem of interest. This book consists of ten self-contained, detailed case studies of real-world optimization problems, selected from a wide range of applications and contributed from worldwide experts who are working in these exciting areas. Optimization topics and applications include gas and water supply networks, oil field production optimization, microwave engineering, aerodynamic shape design, structural engineering, waveform design for radar and communication systems, parameter estimation in laser experiment and measurement, engineering materials and network scheduling.

Fields of interest

Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups

Research

Discount group

P
VCO-Based Quantizers Using Frequency-to-Digital and Time-to-Digital Converters

This book introduces the concept of voltage-controlled-oscillator (VCO)-based analog-to-digital converters (ADCs). Detailed explanation is given of this promising new class of high resolution and low power ADCs, which use time quantization as opposed to traditional analog-based (i.e. voltage) ADCs.

Features
- Describes the use of Time-to-Digital Converters (TDC) in VCO-based quantizers
- Uses VerilogA to model system non-idealities and develops behavioral models to capture the impact of both close-in and far-out phase noise of the VCO on both FDC and TDC based quantizers
- Develops closed-form expressions to analyze the performance of the quantizers in the presence of non-idealities

Contents
Introduction. - VCO-Based Quantizers. - Limitations of the VCO Based Quantizer. - VCO-based Quantizer in DS Modulator. - Conclusions and Future Work.

Fields of interest
Circuits and Systems; Electronics and Microelectronics, Instrumentation; Microwaves, RF and Optical Engineering

Target groups
Research

Discount group
P

Second-Generation High-Temperature Superconducting Coils and Their Applications for Energy Storage

Second-Generation High-Temperature Superconducting Coils and Their Applications for Energy Storage addresses the practical electric power applications of high-temperature superconductors. It validates the concept of a prototype energy storage system using newly available 2G HTS conductors by investigating the process of building a complete system from the initial design to the final experiment. It begins with a clear introduction of the related background and then presents a comprehensive design of a superconducting energy storage system that can store maximum energy using a limited length of superconductors. The author has created a modeling environment for analysis of the system and also presents experimental results that are highly consistent with his theoretical calculations.

Features
- Validates the concept of a prototype energy storage system using newly available 2G HTS conductors
- Presents a comprehensive design of a superconducting energy storage system
- Presented experimental results that are highly consistent with theoretical calculations

Contents

Field of interest
Renewable Energy Sources

Target groups
Research

Discount group
P

Energy Efficiency and Renewable Energy Through Nanotechnology

Reflecting the rapid growth of nanotechnology research and the potential impact of the growing energy crisis, Energy Efficiency and Renewable Energy Through Nanotechnology provides comprehensive coverage of cutting-edge research in the energy-related fields of nanoscience and nanotechnology, which aim to improve energy efficiency and the generation of renewable energy. Energy Efficiency and Renewable Energy Through Nanotechnology tightly correlates nanotechnology with energy issues in a general, comprehensive way that makes it not only suitable as a desk reference for research, but also as a knowledge resource for the non-expert general public. Readers will find Energy Efficiency and Renewable Energy Through Nanotechnology useful in a variety of ways, ranging from the creation of energy policy, to energy research development, and to education in nanotechnology and its application to energy-related problems. It can also be used as a primary or supplementary textbook for energy-related courses for advanced undergraduate and graduate students.

Features
- Provides cutting-edge research on energy-related nanotechnology
- Offers a comprehensive look at energy-related nanotechnology as a whole, rather than covering highly-specialised topics
- Written by international experts in energy-related nanotechnology

Fields of interest
Renewable Energy Sources; Nanotechnology and Microengineering; Renewable and Green Energy

Target groups
Research

Discount group
P
**Navier-Stokes-Fourier Equations**

*A Rational Asymptotic Modelling Point of View*

This research monograph deals with a modeling theory of the system of Navier-Stokes-Fourier equations for a Newtonian fluid governing a compressible viscous and heat conducting flows. The main objective is threefold. First, to deconstruct this Navier-Stokes-Fourier system in order to unify the puzzle of the various partial simplified approximate models used in Newtonian Classical Fluid Dynamics and this, first facet, have obviously a challenging approach and a very important pedagogic impact on the university education. The second facet of the main objective is to outline a rational consistent asymptotic/mathematical theory of the fluid flows modeling on the basis of a typical Navier-Stokes-Fourier initial and boundary value problem. The third facet is devoted to an illustration of our rational asymptotic/mathematical modeling theory for various technological and geophysical stiff problems from: aerodynamics, thermal and thermocapillary convections and also meteofluid dynamics.

**Features**

- Provides a good foundation in the modelling of Newtonian fluid flows
- Outlines a rationally consistent asymptotic/mathematical theory for various technological and geophysical stiff problems
- Based on elementary, but logical, ideas

**Contents**


**Fields of interest**

Engineering Fluid Dynamics; Fluid- and Aerodynamics; Partial Differential Equations

**Target groups**

Research

**Discount group**

P

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**Vehicle Power Management**

*Modeling, Control and Optimization*

Vehicle Power Management addresses the challenge of improving vehicle fuel economy and reducing emissions without sacrificing vehicle performance, reliability and durability. It opens with the definition, objectives, and current research issues of vehicle power management, before moving on to a detailed introduction to the modeling of vehicle devices and components involved in the vehicle power management system, which has been proven to be the most cost-effective and efficient method for initial-phase vehicle research and design. Specific vehicle power management algorithms and strategies, including the analytical approach, optimal control, intelligent system approaches and wavelet technology, are derived and analyzed for realistic applications. Vehicle Power Management also gives a detailed description of several key technologies in the design phases of hybrid electric vehicles containing battery management systems, component optimization, hardware-in-the-loop and software-in-the-loop. Vehicle Power Management provides graduate and upper level undergraduate students, engineers, and researchers in both academia and the automotive industry, with a clear understanding of the concepts, methodologies, and prospects of vehicle power management.

**Features**

- Brings together the concepts, purposes, methodologies and prospects for vehicle power management

**Fields of interest**

Automotive Engineering; Mechanical Engineering

**Target groups**

Research

**Discount group**

P

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**Injection Molding**

*Integration of Theory and Modeling Methods*

This book covers fundamental principles and numerical methods relevant to the modeling of the injection molding process. As injection molding processing is related to rheology, mechanical and chemical engineering, polymer science and computational methods, and is a rapidly growing field, the book provides a multidisciplinary and comprehensive introduction to the subjects required for an understanding of the complex process. It addresses the up-to-date status of fundamental understanding and simulation technologies, without losing sight of still useful classical approaches. The main chapters of the book are devoted to the currently active fields of flow-induced crystallization and orientation evolution of fiber suspensions, respectively, followed by detailed discussion of their effects on mechanical property, shrinkage and warpage of injection molded products. The level of the proposed book will be suitable for interested scientists, R D engineers, application engineers, and graduate students in engineering.

**Features**

- Covers fundamental principles and numerical methods
- Provides a multidisciplinary and comprehensive introduction
- Addresses the up-to-date status simulation technologies

**Contents**


**Fields of interest**

Operating Procedures, Materials Treatment; Industrial Chemistry/Chemical Engineering; Structural Materials

**Target groups**

Research

**Discount group**

P
**Towards a Sustainable Asia**

**The Cultural Perspectives**

This series of books are the output of the research project called “Sustainable Development in Asia (SDA)”, which was initiated by the Association of Academies of Sciences in Asia (AASA). They are comprised of one synthesis report, which entitled “Towards a Sustainable Asia: Green Transition and Innovation”, and four thematic reports on natural resources, energy, the environment and climate change, and culture from particular perspectives of agriculture.

**Features**
- Discuss major problems and challenges of agriculture in Asia
- Introduces successful experience and lessons of the agriculture in typical countries and regions in Asia
- Explore Asian cultural characteristics and its role in the sustainable development in Asia

**Contents**
Introduction.- Asian History and Culture Overview.- Agrarian culture is the basis of Asian culture.- The differences between Eastern and Western civilizations and conflicts.- Review and Prospects.

**Fields of interest**
Sustainable Development; Agriculture; Cultural Heritage

**Target groups**
Research

**Discount group**
P

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**Sustainability Communication**

**Interdisciplinary Perspectives and Theoretical Foundation**

Modern and professional communication is required to realise the goal of sustainability in society. This book develops a theoretical and empirical framework, integrating interdisciplinary perspectives from communications theory, psychology, sociology, educational sciences, systems theory and constructivism. Its aim is to inform the establishment of sustainability communication. Complementing this theoretical framework, the book provides methods and concepts in a range of fields such as corporate practice, education and media.

**Features**
- No comparable publication on an international level
- Offers inter- and transdisciplinary perspectives on the topic
- Combines theoretical and practical applications
- Provides overviews of the main discourses which are useful for academics and practitioners alike

**Fields of interest**
Sustainable Development; Environment, general; Social Sciences, general

**Target groups**
Research

**Discount group**
P

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Kind permission was given for use of parts of chapters published in 2005 by Oekom Verlag GmbH, München, Germany from “Handbuch Nachhaltigkeitskommunikation: Grundlagen und Praxis” in chapters 3, 5, 6, 7, 8, 10, and 16 in this volume.
Integrating Ecology and Poverty Reduction

Application of Ecology in Development Solutions

The second volume of this series, Integrating Ecology into Global Poverty Reduction Efforts: Opportunities and solutions, builds upon the first volume, Integrating Ecology into Global Poverty Reduction Efforts: The ecological dimensions to poverty, by exploring the way in which ecological science and tools can be applied to address major development challenges associated with rural poverty. In volume 2, we explore how ecological principles and practices can be integrated, conceptually and practically, into social, economic, and political norms and processes to positively influence poverty and the environment upon which humans depend.

Features
► Explores the way in which ecological science and tools can be applied to address major development challenges associated with rural poverty
► Details how ecological principles and practices can be integrated, conceptually and practically, into social, economic, and political norms and processes to positively influence poverty and the environment upon which humans depend
► Illustrates how traditional paradigms and forces guiding development can be steered along more sustainable trajectories by utilizing ecological science to inform project planning, policy development, market development and decision making

Fields of interest
Environmental Management; Sustainable Development; Environmental Law/Policy/Ecojustice

Target groups
Graduate

Discount group
P

Water, Cultural Diversity, and Global Environmental Change
Emerging Trends, Sustainable Futures?

A product of the UNESCO-IHP project on Water and Cultural Diversity, this book represents an effort to examine the complex role water plays as a force in sustaining, maintaining, and threatening the viability of culturally diverse peoples. It is argued that water is a fundamental human need, a human right, and a core sustaining element in biodiversity and cultural diversity. The core concepts utilized in this book draw upon a larger trend in sustainability science, a recognition of the synergism and analytical potential in utilizing a coupled biological and social systems analysis, as the functioning viability of nature is both sustained and threatened by humans.

Features
► A UNESCO-IHP project exploring the linkages between water, cultural diversity and environmental change
► This book offers an array of ideas, concepts, and tools to understand and manage the sociocultural implications of the growing water crisis
► Includes discussions on how water resource, cultural diversity and biodiversity concerns can be met in a peaceful and sustainable fashion

Contents

Fields of interest
Marine & Freshwater Sciences; Sustainable Development; Environment, general

Target groups
Research

Discount group
P

Greenhouse Gas Inventories
Dealing With Uncertainty

The assessment of greenhouse gases emitted to and removed from the atmosphere is high on the international political and scientific agendas. Growing international concern and cooperation regarding the climate change problem have increased the need for policy-oriented solutions to the issue of uncertainty in, and related to, inventories of greenhouse gas (GHG) emissions. The approaches to addressing uncertainty discussed here reflect attempts to improve national inventories, not only for their own sake but also from a wider, systems analytical perspective — a perspective that seeks to strengthen the usefulness of national inventories under a compliance and/or global monitoring and reporting framework.

Features
► This is a reference book for dimensioning building and managing eddy covariance systems
► This is a reference book for setting up rational data treatment procedures
► This is a handy reference book for students that want to study the bases of eddy covariance, while at the same time rational and accessible to non-specialists in micro-meteorology
► This is a reference book for all the research groups in the world starting or wanting to address uncertainty discussed here reflect attempts to improve national inventories, not only for their own sake but also from a wider, systems analytical perspective — a perspective that seeks to strengthen the usefulness of national inventories under a compliance and/or global monitoring and reporting framework.

Fields of interest
Climate Change; Fossil Fuels (incl. Carbon Capture); Monitoring/Environmental Analysis

Target groups
Research

Available
Reprinted from journal Climatic Change (Vol. 103: 1–2).
**Produced Water**

Environmental Risks and Advances in Mitigation Technologies

A state-of-the-art review of scientific knowledge on the environmental risk of ocean discharge of produced water and advances in mitigation technologies. In offshore oil and gas operations, produced water (the water produced with oil or gas from a well) accounts for the largest waste stream (in terms of volume discharged). Its discharge is continuous during oil and gas production and typically increases in volume over the lifetime of an offshore production platform. Produced water discharge as waste into the ocean has become an environmental concern because of its potential contaminant content. Environmental risk assessments of ocean discharge of produced water have yielded different results. For example, several laboratory and field studies have shown that significant acute toxic effects cannot be detected beyond the “point of discharge” due to rapid dilution in the receiving waters.

**Features**

- Overview of produced water fates and effects
- Evaluates produced water from various offshore platforms
- Looks at different methods of risk assessment and management

**Contents**


**Fields of interest**

Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution; Biogeo sciences; Monitoring/Environmental Analysis

**Target groups**

Professional/practitioner

**Discount group**

P

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**Environmental Sensing**

Analytical Techniques for Earth Observation

Remote sensing has witnessed a renaissance as new sensor systems, data collection capabilities and image processing methodologies have expanded the technological capabilities of this science into new and important applications areas. Perhaps nowhere has this trend been more evident than in the study of earth environments. Within this broad application area remote sensing has proven to be an invaluable asset supporting timely data gathering at a range of synoptic scales, facilitating the mapping of complex landscapes and promoting the analysis of environmental processes. Yet remote sensing’s contribution to the study of human/environmental interaction is scattered throughout a rich and diverse literature spanning the social and physical sciences, which frustrates access to, and the sharing of the knowledge gained through, these recent advances, and inhibits the operational use of these methods and techniques in day to day environmental practice, a recognized gap that reduces the effectiveness of environmental management programs.

**Features**

- Demonstrates that remote sensing science is affable
- Highlights where and how remote sensing can make valuable contributions to the study of our environment
- Represents a synopsis of the current approaches to the emerging science of earth observation

**Contents**


**Fields of interest**

Environmental Management; Geographical Information Systems/Cartography; Monitoring/Environmental Analysis

**Target groups**

Research

**Discount group**

P

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**Environmental Protection Strategies for Sustainable Development**

The environment of our planet is degrading at an alarming rate because of non-sustainable urbanization, industrialization and agriculture. Unsustainable trends in relation to climate change and energy use, threats to public health, poverty and social exclusion, demographic pressure and ageing, management of natural resources, biodiversity loss, land use and transport still persist and new challenges are arising. Since these negative trends bring about a sense of urgency, short term action is required, whilst maintaining a longer term perspective. The main challenge is to gradually change our current unsustainable consumption and production patterns and the nonintegrated approach to policy-making.

**Features**

- Serves as an important source to prevent and reduce environmental pollution
- Promotes sustainable consumption and production in order to break the link between economic growth and environmental degradation
- Offers a unique treatment of the subject, linking various protection strategies for sustainable development

**From the contents**

1. Environmental Protection Strategies: An overview
2. The potential of rhizospheric microorganisms to promote the plant growth in disturbed soils
3. Sustainable solutions for agro processing waste management: An overview
4. Dyes - Environmental Impact and Remediation
5. Molecular detection of resistance and transfer genes in environmental samples
6. Key biochemical attributes to assess soil ecosystem sustainability
7. Methods for Genotoxicity testing of environmental pollutants

**Fields of interest**

Sustainable Development; Environmental Management; Agriculture

**Target groups**

Professional/practitioner

**Discount group**

P

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**Due August 2011**


- approx. $179.00


**Due September 2011**

2011. X, 260 p. 50 illus. Hardcover

- approx. $129.00

ISBN 978-1-4614-0142-1

**Available**

2011. 560 p. 30 illus. in color. (Strategies for Sustainability) Hardcover

- $229.00

ISBN 978-94-007-1500-7
The Pollution Biology of Aquatic Oligochaetes

In aquatic ecosystems, the oligochaetes are often a major component of the community. Their relevance in sediment quality assessment is largely related to their benthic and detritivorous life habit. In this book, we aim to present the state of the art of Pollution Biology using oligochaete worms in laboratory and field studies. Future research will require the combination of a variety of methodological approaches and the integration of the resulting information, avoiding fragmented and often conflicting visions of the relationships of the species with their environment. Current approaches to ecotoxicology and bioaccumulation using ecological risk assessment provide the opportunity to relate community studies with probability of effects.

Features
► First book devoted to the pollution biology of aquatic oligochaetes  ► First book devoted to field community studies, ecotoxicity and bioaccumulation of aquatic oligochaetes  ► Helpful book for those working in environmental agencies and research laboratories with pollution biology, and in risk assessment of polluted sediments

Contents
Introduction.-Taxonomy of Aquatic Oligochaetes.-Ecology and field studies.-Toxicology and laboratory studies.-Bioaccumulation and trophic transfer.-Methodological issues.

Fields of interest
Marine & Freshwater Sciences; Freshwater & Marine Ecology; Ecotoxicology

Target groups
Research

Discount group
P

Water Security in the Mediterranean Region

An International Evaluation of Management, Control, and Governance Approaches

The role of water in our communities, from local to regional and right up to global levels, poses a series of key questions about climate change, about the anthropogenic impact on the environment, and about all the interconnected actions and events that affect the availability and quality of the resource. All these questions share a common demand for more scientific knowledge and information. In this particular context the disciplinary boundaries are fading, and there is a growing need to create broader connections and wider collaborative interdisciplinary groups, aimed at building an integrated knowledge-base to serve not only stakeholders but also the whole of society. Only in this way can we hope to respond effectively to the challenges and changing dynamics of human-hydrologic systems.

Features
► Environmental security and water security are hot topics for future science developments  ► Wide interdisciplinary coverage  ► Easy language, to enhance true cross-disciplinary communication

Fields of interest
Environmental Management; Monitoring/Environmental Analysis; Environmental Law/Policy/Environmental Justice

Target groups
Graduate

Discount group
P

Drilling Down
The Gulf Oil Debacle and Our Energy Dilemma

For more than a century, oil has been the engine of growth for a society that delivers an unprecedented standard of living to many. We now take for granted that economic growth is good, necessary, and even inevitable, but also feel a sense of unease about the simultaneous growth of complexity in the processes and institutions that generate and manage that growth. As societies grow more complex through the bounty of cheap energy, they also confront problems that seem to increase in number and severity. In this era of fossil fuels, cheap energy and increasing complexity have been in a mutually-reinforcing spiral. The more energy we have and the more problems our societies confront, the more we grow complex and require still more energy. How did our demand for energy, our technological prowess, the resulting need for complex problem solving, and the end of easy oil conspire to make the Deepwater Horizon oil spill increasingly likely, if not inevitable? This book explains the real causal factors leading up to the worst environmental catastrophe in U.S. history, a disaster from which it will take decades to recover.

Features
► A world expert on oil technology and one of our foremost social commentators, the author of “The Collapse of Complex Societies,” join forces to: Lead you on a fascinating tour from the events on the Deepwater Horizon to the processes in society that made the tragedy nearly inevitable  ► Explain the energy-complexity spiral that governs our way of life  ► Take you beyond the headlines, finger pointing, and political punditry to the underlying causes of the Gulf catastrophe  ► Help decision-makers from all walks of life to understand the risks and challenges of managing complex organizations  ► Discuss energy options for the future

Fields of interest
Environmental Management; Energy Economics; Operations Research/Decision Theory

Target groups
Popular/general

Discount group
T

Available

► approx. $229.00
ISBN 978-94-007-1623-3
Also available as Softcover
► approx. $69.95
ISBN 978-94-007-1625-4
Soil Enzymology in the Recycling of Organic Wastes and Environmental Restoration

Soil enzymes play a fundamental role in many soil processes such as the mineralization of organic matter, the synthesis of humic substances, the degradation of xenobiotics or the mechanisms involved in the biocontrol of plant pathogens. Their direct link with soil microorganisms gives them a key role as biomarkers of the evolution of soil quality or in the monitoring of the application of organic amendments to degraded soils. As a consequence of the importance of soil enzymes on soil processes, there is an increasing interest in their study, as well as in the application of molecular techniques as diagnostic tools.

Features
- Concerns multiple aspects of applied soil enzymology and molecular biology and their ecological and environmental relevance
- Emphasizes the importance of soil enzymes on soil processes
- Describes the application of molecular techniques as diagnostic tools

Contents
General Presentation.- Enzymes as indicators of environmental soil quality.— Applied enzymology for monitoring of soil contamination and soil restoration.— New applications of enzymes and other molecular techniques.

Fields of interest
Soil Science & Conservation; Sustainable Development; Nature Conservation

Target groups
Research

Discount group
P

Transnational Migration and Human Security

The Migration-Development-Security-Nexus

The volume places the migration-development-security nexus in the field of transnational studies. Rather than treating these three categories as self-evident, the essays excavate aspects of power and privilege built into their governing frameworks and conflicting rationales apparent in practices of control. Bringing together diverse experiences and case studies, the volume highlights the problematic nature of maintaining distinct and disconnected frameworks of governance. It argues for a new approach that demonstrates the significance and usefulness of comparative ethics in conceptualising migration from a human-centered and gendered perspective in order to address the multi-facetted and multi-dimensional nature and meanings of "security".

Features
- Addresses the multi-facetted and multi-dimensional nature and meaning of "security"

Contents

Fields of interest
Environmental Law/Policy/Ecojustice; Political Science; Environmental Economics

Target groups
Research

Discount group
P
### Counterclaims before the International Court of Justice

Counterclaims, the right of a State sued by another State to bring its own counter-suit in the course of the same trial, may offer an opportunity to mitigate the effects of the original suit and help to resolve disputes between States that have more than one aspect. In recent years, counterclaims have been frequently presented at the International Court of Justice (ICJ).

This book examines the counterclaims presented at the ICJ and at its predecessor, the Permanent Court of International Justice (PCIJ), during its 65 years of existence. It is the first study that focuses exclusively on the subject of counterclaims. It analyses the evolution of the germane provisions in the PCIJ and ICJ Rules of Procedure and the practice of the Court, especially in light of the relevant case-law of the ICJ.

A useful source for academics and practitioners in International law.

**Features**
- First and comprehensive book on counterclaims at the ICJ
- Up-to-date analytical review of case law
- Useful source for further research

**Contents**
1. Introduction
2. The Concept of Counterclaims in International Litigation
3. Counterclaims before the ICJ: Evolution and Definition
4. Admissibility of Counterclaims
5. Procedure
6. Conclusions

**Fields of interest**
- Public Law; General Law/Fundamentals

**Target groups**
- Research

**Discount group**
- P

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### The Europeanisation of International Family Law

Choice of law determines which national legal system applies to an international case. Currently, many choice of law rules in the field of family law are regulated by national law. However, these national rules of the EU Member States are more and more displaced by common European rules.

This book describes the changes brought by the Europeanisation of the choice of law on divorce. From the conclusions drawn in the field of divorce, the concluding chapter discusses the changes of Europeanisation of international family law in a broader perspective.

**Features**
- Only book that discusses the theoretical foundation of European international family law
- Clear insight in the changes brought about by the change from a national to a supranational choice of law approach in the field of divorce
- Explains the resistance the EU faces when unifying issues of international family law

**Field of interest**
- International & Foreign Law/Comparative Law

**Target groups**
- Research

**Discount group**
- P

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### Layered Global Player

Layered Global Player offers a concise but thorough overview of the principles of EU external relations law. By closely examining the role of the European Union on the global scene, it aims to provide a systematic overview of the relevant rules and competences, reflecting the legal developments in their historical and political context.

The book contains up-to-date analyses of topics such as the Common Foreign and Security Policy, the Common Security and Defence Policy and the Common Commercial Policy. Moreover, it devotes specific attention to the EU’s external powers with regard to the environment, fundamental human rights and development cooperation. It also includes a dedicated chapter exploring the relations with neighbouring countries, as well as one that elucidates the complex interplay between rules of domestic, European and international provenance.

Overall, this book couples an innovative design with comprehensive coverage and an engaging style of writing. Its compactness and accessibility enable readers to master the main features of this dynamic field of law with ease, making it an indispensable resource for scholars and practitioners alike.

**Features**
- Unique handbook in this particular field of law, offering basic insight, more detailed discussion and suggestions for further reading at the same time
- Highly compact volume, more versatile and accessible for the non-expert than competing titles
- One of the few textbooks on EU external relations law that is completely up-to-date: all the changes in EU law pursuant to the entry into force of the Treaty of Lisbon have been incorporated, and the latest legal and political developments are covered
- Superbly engaging style of writing, making it suitable for use in both undergraduate and postgraduate courses

**Field of interest**
- European Law/Public International Law

**Target groups**
- Research

**Discount group**
- P
M. Ruffert, Friedrich-Schiller-Universität Jena, Jena, Germany; S. Steinecke, Thuringian Ministry of Education, Science and Culture, Erfurt, Germany

The Global Administrative Law of Science

In cooperation with: J. Mühlisch, Friedrich-Schiller-Universität Jena, Jena, Germany

We live in a world of science. This is impossible without a legally guaranteed freedom to exercise it. Findings with regard to the elements of such freedom can be deduced from an analysis of international and domestic provisions and principles. There exists a plethora of international institutions, legal rules and global norms for the purpose of the international governance of science. The institutions and rules are to be constructed and interpreted in light of this freedom to guarantee the continuous existence of the knowledge-based society by means of a global administrative law of science. These aspects were analysed in a research project funded by the German Research Foundation. The book's purpose is to present the jurisprudential results. In addition, empirical results are collected in a free available database. The study is composed of 5 parts: The Concept of Science/Global Administrative Law/Constitutional Basis: The Freedom of Science/Institutional Design/Governance Mechanisms.

Contents

Fields of interest
Law, general; Administrative Law; European Law/Public International Law

Target groups
Research

Discount group
P

Anticipatory Action in Self-Defence

Essence and Limits under International Law

The legality of preemptive strikes is one of the most controversial questions of contemporary international law. At the core of this controversy stands the temporal dimension of self-defence: when and for how long can a state defend itself against an armed attack? Can it resort to armed force before such an attack occurs? Is anticipatory action covered by the rules of self-defence or should it be treated as a different concept?

This book examines whether anticipatory action in self-defence is part of customary international law and, if so, under what conditions. The pre-Charter concept of anticipatory action is demarcated and then assessed against post-Charter state practice. Several instances of self-defence – both anticipatory and remedial – are examined to elucidate the rules governing the temporal dimension of the right. The Six-Day War (1967), the Israeli bombing of an Iraqi reactor (1981), the US invasion of Iraq (2003) and other instances of state practice are given thorough attention.

Features
► Comprehensive, historical and legal analysis on preemptive strikes
► Focus on temporal dimension and anticipatory aspect of self-defence
► Incorporates essence and limits of preemptive strikes into accessible formula
► Compares the temporal issue in cases such as the Cuban missile crisis (1962), the Israeli bombing of the Osirak reactor (1981) and the US war against Iraq (2003)

Fields of interest
European Law/Public International Law; Law, general

Target groups
Research

Discount group
P

Due July 2011

2011. IX, 140 p. (Beiträge zum ausländischen öffentlichen Recht und Völkerrecht, Volume 228) Hardcover
► approx. 589.95
ISBN 978-3-642-21358-8

Due September 2011

2011. 375 p. Hardcover
► approx. 5189.00
**Nuclear Reprogramming and Stem Cells**

Research into the field of stem cell biology has developed exponentially over recent years, and is beginning to offer significant promise for unravelling the molecular basis of a multitude of disease states. Importantly, in addition to offering the opportunity to delve deeply into the mechanisms that drive disease aetiology the research is realistically opening the doors for development of targeted and personalized therapeutic applications that many considered, until recently, to be nothing more than a far fetched dream. This volume provides a timely glimpse into the methods that have been developed to instigate, and the mechanisms that have been identified to drive, the process of nuclear reprogramming, chronicling how the field has developed over the last 50-60 years. Since the early 1950s a small number of notable experiments have provided significant impetus to the field, primarily the demonstration of reprogramming ability, first by the complex cytoplasmic milieu that constitutes the amphibian egg, then that of the mammalian egg, and finally that of the mammalian embryonic stem cell. Most recently, the demonstration that a limited pool of defined molecules is capable of reprogramming a multitude of cell types has provided massive impetus and facilitated transition towards realistic therapeutic application.

**Features**
- Provides a timely glimpse into the methods that have been developed over the last 50-60 years
- Focuses on areas that have shown significant movement in recent years and are most likely to translate into personalized therapeutic application
- Serves as a valuable resource for all researchers in the field of stem cell biology

**Fields of interest**
- Stem Cells; Cell Biology; Biotechnology

**Target groups**
- Professional/practitioner

**Available**

2011. XII, 241 p. 47 illus., 23 in color. (Stem Cell Biology and Regenerative Medicine) Hardcover

$189.00

**Cancer Stem Cells in Solid Tumors**

The “cancer stem cell” hypothesis postulates that cancer arises from a subpopulation of tumor-initiating cells or cancer stem cells (CSCs). While the idea of cancer stem cells has been around for more than a hundred years, evidence from the fields of hematology and cancer biology has now demonstrated the critical role of stem cells in hematological malignancies and suggested that these same mechanisms are also central to the initiation, progression, and treatment of solid cancers. Clinical and experimental studies have shown that CSCs exhibit many classical properties of normal stem cells, including a high self-renewal capacity and the ability to generate heterogeneous lineages; the requirement for a specific “niche”/microenvironment to grow; and an increased capacity for self-protection against harsh environments, toxins, and drugs. Cancer Stem Cells in Solid Tumors represents a detailed overview of cancer stem cells and their role in solid cancers. Comprised of 24 chapters, this volume will provide readers with a comprehensive understanding of this important and evolving field.

**Features**
- Focuses specifically on the role of CSCs in solid cancers
- Written by active investigators with research programs related to oncology and/or stem cell biology and leaders in their field
- Provides a comprehensive overview of this evolving and important field

**Fields of interest**
- Stem Cells; Cell Biology; Cancer Research

**Target groups**
- Professional/practitioner

**Discount group**
- P

**Available**

2011. X, 389 p. 34 illus., 23 in color. (Stem Cell Biology and Regenerative Medicine, Volume) Hardcover

$209.00

**Network Biology**

**Methods and Applications**

While extremely large datasets describing gene sequences, mRNA transcripts, protein abundance, and metabolite concentrations are increasingly commonplace, these represent only starting ‘parts lists’ that are usually insufficient to unlock mechanistic insights on their own right. Fortunately, as Network Biology: Methods and Applications examines, concepts emerging from the study of biological entities such as networks (e.g. functional interactions linking genes, proteins, metabolites, etc.) suggest that order rather than chaos prevails, with such principles as modular and hierarchical organization, reactive information-driven causal-response behaviours, systems robustness, co-evolution, and self-organization guiding the way. This volume presents detailed, practical descriptions of the experimental and computational approaches currently prevalent in network biology as written by practiced experts in the field.

**Features**
- Combines accurate high-throughput methods and innovative integrative analytical tools to approach network biology as comprehensively as possible
- Features step-by-step guidance on a wide variety of methods and applications
- Includes many expert tips and key implementation advice from the experts

**Fields of interest**
- Bioinformatics; Systems Biology; Computer Appl. in Life Sciences

**Target groups**
- Professional/practitioner

**Discount group**
- P

**Due August 2011**

2011. 410 p. 86 illus. (Methods in Molecular Biology, Volume 781) Hardcover

$139.00
ISBN 978-1-61779-272-4
Folding of Disulfide Proteins

This book aims to cover the knowledge of protein folding accumulated from studies of disulfide-containing proteins, including methodologies, folding pathways, and folding mechanism of numerous extensively characterized disulfide proteins. Folding of Disulfide Proteins will be valuable supplementary reading for general biochemistry, biophysics, molecular biology, and cellular biology courses for graduate and undergraduate students. This book can also be used for specialized graduate-level biochemistry, biophysics, and molecular biology courses dedicated to protein folding as well as related biological problems and diseases. Will also be of interest to everybody interested in problems related to protein folding, and anyone who is interested in understanding the mechanism of protein misfolding and protein misfolding-related diseases.

Features
► Covers the knowledge of protein folding accumulated from studies of disulfide-containing proteins, including methodologies, folding pathways, and folding mechanism of numerous extensively characterized disulfide proteins
► Valuable supplementary reading for general biochemistry, biophysics, molecular biology, and cellular biology courses for graduate and undergraduate students
► Can be used for specialized graduate-level biochemistry, biophysics, and molecular biology courses dedicated to protein folding as well as related biological problems and diseases

Fields of interest
Biochemistry, general; Animal Biochemistry; Medical Biochemistry

Target groups
Professional/practitioner

Discount group
P

Electrophoretic Deposition of Nanomaterials

This book provides a comprehensive overview of contemporary basic research, emerging technology, and commercial and industrial applications associated with the electrophoretic deposition of nanomaterials. This presentation of the subject includes an historical survey, the underlying theory of electrophoresis, dielectrophoresis, and the colloidal deposition of materials. This is followed by an assessment of the experimental equipment and procedures for electrophoretic and dielectrophoretic aggregation, manipulation, and deposition of nanoparticles, nanotubes, and other nanomaterials. Additional chapters explore the specific science and technology of electrophoretic film formation, using widely studied and application-driven nanomaterials, such as carbon nanotubes, luminescent nanocrystals, and nano-ceramics. The concluding chapters explore industrial applications and procedures associated with electrophoretic deposition of nanomaterials.

Features
► Is thus the first and only reference highlighting the basic research, materials science, and engineering of the electrophoretic deposition of nanomaterials
► Edited by one of the rising stars in the community
► Chapter contributors are some of the most well-respected researchers in the field

Fields of interest
Electrophoresis; Industrial Chemistry/Chemical Engineering; Nanotechnology

Target groups
Research

Discount group
P

Plant Kinases

Modification of target protein properties by reversible phosphorylation events has been found to be one of the most prominent cellular control processes in all organisms. Recent advances in the areas of molecular biology and biochemistry are presenting new possibilities for reaching an unprecedented depth and a proteome-wide understanding of phosphorylation processes in plants as well as in other species. The major goal of Plant Kinases: Methods and Protocols is to provide the experimentalist with a detailed account of the practical steps necessary for successfully carrying out each protocol in his or her own laboratory. Plant protein kinases specifically addressed in this volume are members of the plant MAP kinase cascade, cyclin- and Calcium-dependent protein kinases, and plant sensor and receptor kinases. Written in the highly successful Methods in Molecular Biology™ series format, chapters contain introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and notes on troubleshooting and avoiding known pitfalls. Authoritative and accessible, Plant Kinases: Methods and Protocols will prove a useful laboratory companion to both novice and seasoned researchers by facilitating the practical work that will lead them to new and exciting insights in this dynamic field.

Features
► Includes cutting-edge methods and protocols
► Provides step-by-step detail essential for reproducible results
► Contains key notes and implementation advice from the experts

Fields of interest
Plant Sciences; Proteomics

Target groups
Professional/practitioner

Discount group
P
Sustaining Young Forest Communities

Ecology and Management of early successional habitats in the central hardwood region, USA

This edited volume addresses a rising concern among natural resource scientists and management professionals about decline of the many plant and animal species associated with early-successional habitats, especially within the Central Hardwood Region of the USA. These open habitats, with herbaceous, shrub, or young forest cover, are disappearing as abandoned farmland, pastures, and cleared forest patches return to forest. There are many questions about “why, what, where, and how” to manage for early successional habitats. In this book, expert scientists and experienced land managers synthesize knowledge and original scientific work to address questions on such topics as wildlife, water, carbon sequestration, natural versus managed disturbance, future scenarios, and sustainable creation and management of early successional habitat in a landscape context.

Features
- Only book in print to focus on early successional habitats and their importance for declining wildlife
- Addresses multiple aspects of early successional habitats on topics including wildlife, water, carbon storage, natural versus managed disturbance, and how they can be sustainably created and managed in a landscape context
- Focuses on the upland hardwood forest ecosystem, allowing indepth examinations from multiple perspectives

Fields of interest
Conservation Biology/Ecology; Fish & Wildlife Biology & Management; Biodiversity

Target groups
Research

Discount group
P

Seed Dormancy
Methods and Protocols

Understanding seed-related processes is of major social, environmental, and economic concern. The viability and vigor of seeds are the very basis for sustainable agriculture and forestry, and comprehending the molecular and cellular events underlying these processes will become increasingly important to many economical sectors and for species that provide the world’s food supply. Seed Dormancy: Methods and Protocols covers analytical methods and approaches which have already lead to significant advances in the understanding of seed dormancy and germination. Chapters cover explanations of processes leading to the induction, maintenance, and termination of seed dormancy, the classification of different dormancy types, as well as an overview of protocols used for dormancy-termination of seeds of conifer species. This volume emphasizes methods essential for abscisic acid (ABA) analyses, including methods that have been important for receptor identification, analyses of ABA-catabolizing enzymes (the 8’-hydroxylases), and identification of novel signal transduction components, interacting partners, and/or response factors. The volume closes by addressing the development of new technologies, including spectroscopic methods (some of which allow for non-destructive sampling) as well as highly effective tissue-printing methods for seed dormancy research.

Features
- Includes cutting-edge methods and protocols
- Provides step-by-step detail essential for reproducible results
- Contains key notes and implementation advice from the experts

Fields of interest
Plant Sciences; Plant Physiology

Target groups
Research

Discount group
P

Wild Crop Relatives: Genomic and Breeding Resources

Tropical and Subtropical Fruits

Wild crop relatives are now playing a significant part in the elucidation and improvement of the genomes of their cultivated counterparts. This work includes comprehensive examinations of the status, origin, distribution, morphology, cytology, genetic diversity and available genetic and genomic resources of numerous wild crop relatives, as well as of their evolution and phylogenetic relationship. Further topics include their role as model plants, genetic erosion and conservation efforts, and their domestication for the purposes of bioenergy, phytomedicines, nutraceuticals and phytoremedia

Features
- This 10-volume-work is the first comprehensive depiction of wild crops as a gold mine for breeding
- With chapters authored by internationally reputed leading scientists, many of whom contributed to the development of novel concepts, strategies and tools of genetics, genomics and breeding
- Richly illustrated work

Contents

Fields of interest
Plant Breeding/Biotechnology; Plant Genetics & Genomics; Agriculture

Target groups
Research

Discount group
P
Wild Crop Relatives: Genomic and Breeding Resources

Wild Crop Relatives

Wild crop relatives are now playing a significant part in the elucidation and improvement of the genomes of their cultivated counterparts. This work includes comprehensive examinations of the status, origin, distribution, morphology, cytology, genetic diversity and available genetic and genomic resources of numerous wild crop relatives, as well as of their evolution and phylogenetic relationship. Further topics include their role as model plants, genetic erosion and conservation efforts, and their domestication for the purposes of bioenergy, phytomedicines, nutraceuticals and phytoremediation. Wild Crop Relatives: Genomic and Breeding Resources comprises 10 volumes on Cereals, Millets and Grasses, Oilseeds, Legume Crops and Forages, Vegetables, Temperate Fruits, Tropical and Subtropical Fruits, Industrial Crops, Plantation and Ornamental Crops, and Forest Trees. It contains 125 chapters written by nearly 400 well-known authors from about 40 countries.

Features
- This 10-volume work is the first comprehensive depiction of wild crops as a gold mine for breeding
- With chapters authored by internationally reputed leading scientists, many of whom contributed to the development of novel concepts, strategies and tools of genetics, genomics and breeding
- Richly illustrated work

Contents
- Allium, Amaranthus, Asparagus, Capsicum, Citrus, Cucumis, Daucus, Lactuca, Lycopersicon, Monomordica, Raphanus, Solanum, Spinacea

Fields of interest
- Plant Breeding/Biotechnology, Plant Genetics & Genomics, Agriculture

Target groups
- Research

Discount group
- P

Wild Crop Relatives: Genomic and Breeding Resources

Industrial Crops

Wild crop relatives are now playing a significant part in the elucidation and improvement of the genomes of their cultivated counterparts. This work includes comprehensive examinations of the status, origin, distribution, morphology, cytology, genetic diversity and available genetic and genomic resources of numerous wild crop relatives, as well as of their evolution and phylogenetic relationship. Further topics include their role as model plants, genetic erosion and conservation efforts, and their domestication for the purposes of bioenergy, phytomedicines, nutraceuticals and phytoremediation.

Features
- This 10-volume work is the first comprehensive depiction of wild crops as a gold mine for breeding
- With chapters authored by internationally reputed leading scientists
- Richly illustrated work

Contents
- Beta, Corchorus, Crotalaria, Dioscorea, Erianthus, Gossypium, Ipomoea, Manihot, Miscanthus, Saccharum

Fields of interest
- Plant Breeding/Biotechnology, Plant Genetics & Genomics, Agriculture

Target groups
- Research

Discount group
- P

Wild Crop Relatives: Genomic and Breeding Resources

Plantation and Ornamental Crops

Wild crop relatives are now playing a significant part in the elucidation and improvement of the genomes of their cultivated counterparts. This work includes comprehensive examinations of the status, origin, distribution, morphology, cytology, genetic diversity and available genetic and genomic resources of numerous wild crop relatives, as well as of their evolution and phylogenetic relationship. Further topics include their role as model plants, genetic erosion and conservation efforts, and their domestication for the purposes of bioenergy, phytomedicines, nutraceuticals and phytoremediation.

Features
- This 10-volume work is the first comprehensive depiction of wild crops as a gold mine for breeding
- With chapters authored by internationally reputed leading scientists
- Richly illustrated work

Contents
- Antirrhinum, Camellia, Coffea, Cola, Digitalis, Elaeis, Euphorbia, Gladiolus, Lilium, Nicotiana, Petunia, Rosa, Theobroma

Fields of interest
- Plant Breeding/Biotechnology, Plant Genetics & Genomics, Agriculture

Target groups
- Research

Discount group
- P
Wild Crop Relatives: Genomic and Breeding Resources
Forest Trees

Wild crop relatives are now playing a significant part in the elucidation and improvement of the genomes of their cultivated counterparts. This work includes comprehensive examinations of the status, origin, distribution, morphology, cytology, genetic diversity and available genetic and genomic resources of numerous wild crop relatives, as well as of their evolution and phylogenetic relationship. Further topics include their role as model plants, genetic erosion and conservation efforts, and their domestication for the purposes of bioenergy, phytomedicines, nutraceuticals and phytoremediation. Wild Crop Relatives: Genomic and Breeding Resources comprises 10 volumes on Cereals, Millets and Grasses, Oilseeds, Legume Crops and Forages, Vegetables, Temperate Fruits, Tropical and Subtropical Fruits, Industrial Crops, Plantation and Ornamental Crops, and Forest Trees. It contains 125 chapters written by nearly 400 well-known authors from about 40 countries.

Features
► This 10-volume work is the first comprehensive depiction of wild crops as a gold mine for breeding
► With chapters authored by internationally reputed leading scientists ► Richly illustrated work

Contents
Alnus.- Corylus.- Cryptomeria.- Eucalyptus.- Juglans.- Quercus.- Santalum.- Trigonobalanus.

Fields of interest
Plant Breeding/Biotechnology; Plant Genetics & Genomics; Agriculture

Target groups
Research

Discount group
P

Carbon Sequestration Potential of Agroforestry Systems

Opportunities and Challenges
Tree based production systems abound especially in the tropics. Despite the pervasiveness of such multipurpose “trees-outside-forest” resources, they have not attracted adequate attention in the development paradigms of many nation states. These multispecies production systems impact the ecosystem processes favourably. Yet, our understanding of the diversity attributes and carbon dynamics under agroforestry is not adequate. This book focuses on the role of multispecies production systems involving tree and crop species as a means for carbon sequestration and thereby reduce atmospheric carbon dioxide levels. Sixteen chapters organized into three broad sections titled: Measurement and Estimation, Agrobiodiversity and Tree Management, and Policy and Socioeconomic Aspects represent a cross section of the opportunities and challenges in current research and emerging issues in harnessing carbon sequestration potential of agroforestry systems.

Features
► Global coverage of the subject Compendium of original research articles, case studies, and regional overviews ► Focuses on current research and emerging issues

Fields of interest
Forestry; Applied Ecology; Environment, general

Target groups
Graduate

Discount group
P

Cell Cycle Checkpoints
Methods and Protocols

Cell cycle checkpoints control the fidelity and orderly progression of eukaryotic cell division. By controlling the orderly progression of critical cell cycle events such as DNA replication and chromosome segregation and ensuring proper repair of damaged DNA, cell cycle checkpoints function to ensure genome integrity. Mechanisms of checkpoint controls are not only the research focus of investigators interested in mechanisms that regulate the cell cycle, but are also the interests of researchers studying cancer development as it is increasingly clear that loss of cell cycle checkpoints, which leads to genomic instability as a result, is a hallmark of tumorigenesis. Cell Cycle Checkpoints: Methods and Protocols provides detailed descriptions of methodologies currently employed by researchers in the field, including those commonly used in the mammalian, yeast, C. elegans, Drosophila, and Xenopus model systems. Each chapter describes a specific technique or protocol, such as a method to induce cell cycle checkpoints in a particular model system, to synchronize a population of cells to allow observations of cell cycle progression, to identify genes involved in checkpoint regulation, and to study particular protein components of cell cycle checkpoint pathways.

Features
► Includes cutting-edge methods and protocols ► Provides step-by-step detail essential for reproducible results ► Contains key notes and implementation advice from the experts

Fields of interest
Cell Biology; Cell Cycle Analysis

Target groups
Professional/practitioner

Discount group
P
Probiotics
Biology, Genetics and Health Aspects

Probiotic microorganisms have a long history of use, and their health benefits for hosts are well documented. This Microbiology Monographs volume provides an overview of the current knowledge and applications of probiotics. Reviews cover the biology and probiotic potential of the thoroughly studied prokaryotic genera Lactobacillus and Bifidobacterium, several eukaryotic microorganisms, probiotic strain characterization, and the analytical methods (such as FISH, microarray, and high throughput sequencing) required for their study. Further chapters describe the positive effects of probiotics on malabsorption disorders such as diarrhea and lactose intolerance, and document the clinical evidence of benefits in treating allergies and lung emphysema, and in dermatological applications. Also addresses are topics such as genetically engineered strains, new carriers for probiotics, protection techniques, challenges of health claims, safety aspects, and future market trends.

Features
► A valuable source of information for scientists in microbiology, biotechnology and food sciences
► Covers the current knowledge and the most recent advances in the field of probiotics
► Each chapter is written by one or more expert scientist working on a particular class of probiotics

Fields of interest
Microbiology; Food Science; Gastroenterology

Target groups
Research

Discount group
P

Codings and Decodings of Calcium Signals in Plants

Plants cannot move away from their environments. As a result, all plants that have survived to date have evolved sophisticated signaling mechanisms that allow them to perceive, respond, and adapt to constantly changing environmental conditions. Among the many cellular processes that respond to environmental changes, elevation of calcium levels is by far the most universal messenger that matches primary signals to cellular responses. Yet it remains unclear how calcium, a simple cation, translates so many different signals into distinct responses - how is the "specificity" of signal-response coupling encoded within the calcium changes? This book will attempt to answer this question by describing the cellular and molecular mechanisms underlying the coding and decoding of calcium signals in plant cells.

Features
► Describes the cellular and molecular mechanisms underlying coding and decoding of calcium signals in plant cells
► With contributions by international experts
► Provides a clear overview of the basics

Contents
La Calcium, C’est La Vie. - Calcium Signaling and Homosotasis in Nuclei. - Calcium Signals in Pollen Tube Polar Growth. - Calcium, Mechanical Signaling, and Tip Growth. - Calcium Signals in The Control of Stomatal Movements. - Calcium Channels in Algae and Higher Plants. - Cyclic Nucleotide Gated Channels and The Generation of Ca2+ Signals. - Annexins. - Calcium-Dependent Protein Kinases. - Elucidation of Calcium Signaling Components and Networks. - Decoding of Calcium Signal Through Calmodulin: Calmodulin-Binding Proteins in Plants. - Decoding Calcium Signals by CBL-CIPK Network in Plants.

Fields of interest
Plant Biochemistry; Plant Physiology; Plant Sciences

Target groups
Research

Discount group
P

Bacteria in Agrobiology: Plant Growth Responses

The future of agriculture strongly depends on our ability to enhance productivity without sacrificing long-term production potential. An ecologically and economically sustainable strategy is the application of microorganisms, such as the diverse bacterial species of plant growth promoting bacteria (PGPB). The use of these bio-resources for the enhancement of crop productivity is gaining worldwide importance. "Bacteria in Agrobiology: Plant Growth Responses" describes the application of various bacteria in plant growth promotion and protection, including symbiotic, free living, rhizospheric, endophytic, methylotrophic, diazotrophic and filamentous species.

Features
► Gives a modern approach to the various facets of plant growth promoting and associative bacteria
► A valuable source of information for scientists in agriculture, agronomy, applied microbiology, plant protection, environmental sciences and soil ecology
► Written by renowned scientists

From the contents
Bioengineering Aspects in the Design of Gas Exchangers

Comparative Evolutionary, Morphological, Functional, and Molecular Perspectives

This book encapsulates over three decades of the author's work on comparative functional respiratory morphology. It provides insights into the mechanism(s) by which respiratory means and processes originated and advanced to their modern states. Pertinent cross-disciplinary details and facts have been integrated and reexamined in order to arrive at more robust answers to questions regarding the basis of the functional designs of gas exchangers. The utilization of oxygen for energy production is an ancient process, the development and progression of which were underpinned by dynamic events in the biological, physical, and chemical worlds. Many books that have broached the subject of comparative functional respiratory biology have only described the form and function of the 'end-product,' the gas exchanger; they have scarcely delved into the factors and the conditions that motivated and steered the development from primeval to modern respiratory means and processes.

Features
- Data from earth- and biological sciences have been integrated and critically evaluated
- The shifts in the levels of oxygen and carbon dioxide over the time life has existed on Earth are presented and their impact on the development of the gas exchangers and respiratory modalities highlighted
- The book is well illustrated so that the reader can easily grasp the concepts

Contents

Fields of interest
Animal Anatomy / Morphology / Histology; Animal Physiology; Evolutionary Biology

Target groups
Research

Discount group
P

Fisheries Management in Japan

Its institutional features and case studies

Japan is one of the world's largest fish-eating countries with a long history, and has developed its own customs and values in terms of managing fisheries resources. The first half of this book introduces the history and institutional features of capture fisheries management in Japan, with 9 case studies from sub-arctic to tropical ecosystems, from sedentary to migratory species, and from small-scale coastal to offshore industrial fisheries. For example, coastal fisheries management is more community-based, and local people have the authority and take priority in the decision-making process. In contrast, offshore fisheries are more industrialized and commercially oriented, and the national government plays a major role in their management. One of the main challenges in world fisheries is to implement the ecosystem approach, but there is no one-size-fits-all solution for its implementation. The second half of this book considers the advantages and limitations of the Japanese fisheries management regime and discusses the necessary environmental policy measures to bridge the gaps between fisheries management and ecosystem-based management. As a case study, management measures in the Shiretoko World Natural Heritage area are analyzed.

Features
- First book that comprehensively describes history, institutions, case studies, ecosystem approach, and the future direction of Japanese fisheries management
- Highlights the diversity of Japanese fisheries with 9 case studies from sub-arctic ecosystems to tropical ecosystems, from sedentary species to migratory species, and from small-scale coastal fisheries to industrialized offshore fisheries

Fields of interest
Freshwater & Marine Ecology; Social Sciences, general

Target groups
Research

Discount group
P

Single Molecule Enzymology

Methods and Protocols

The last fifteen years have witnessed the birth and maturation of many original methods and the development of protocols specific to single molecule measurements and their analysis, including techniques involving optical imaging, electron microscopy, optical and magnetic trapping, and developments in atomic force microscopy. In Single Molecule Enzymology: Methods and Protocols, experts in the field provide procedures which enable the extraction of detailed information about enzyme work cycles, their static and kinetic properties, and information about their location and activity within cells. The detailed volume offers practical advice on many aspects of single molecule enzymology and includes strategic overviews of interconnected methods involved in sample preparation, single molecule measurements, and data analysis. Written in the highly successful Methods in Molecular Biology™ series format, chapters contain introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls.

Features
- Serves as an ideal guide for the diverse community of molecular biologists, biochemists, and biophysicists studying enzymes in detail
- Features cutting-edge, lab ready protocols

Fields of interest
Biochemistry, general; Enzymology

Target groups
Professional/practitioner

Discount group
P
The Chimpanzees of Bossou and Nimba

The chimpanzees of Bossou in Guinea, West Africa, form a unique community which displays an exceptional array of tool use behaviors and behavioral adaptations to coexistence with humans. This community of Pan troglodytes verus has contributed more than three decades of data to the field of cultural primatology, especially chimpanzees' flexible use of stones to crack open nuts and of perishable tools during foraging activities. The book highlights the special contribution of the long-term research at Bossou and more recent studies in surrounding areas, particularly in the Nimba Mountains and the forest of Diécké, to our understanding of wild chimpanzees' tool use, cognitive development, lithic technology and culture. This compilation of research principally strives to uncover the complexity of the mind and behavioral flexibility of our closest living relatives. This work also reveals the necessity for ongoing efforts to conserve chimpanzees in the region. Chimpanzees have shed more light on our evolution and neighbors clearly embody an invaluable cultural heritage for humanity as a whole.

Features
- Unique assemblage of concise chapters providing a topic by topic overview of all the research and numerous studies conducted at Bossou and surrounding areas during the course of the past three decades
- Exclusive DVD compilation of video clips of Bossou chimpanzees' tool use and behavior

Fields of interest
- Zoology; Behavioral Sciences; Animal Ecology

Target groups
- Research

Discount group
- P

Advanced Protocols for Animal Transgenesis
An ISTT Manual

This laboratory manual, published in cooperation with the International Society for Transgenic Technology (ISTT), provides almost all current methods that can be applied to the creation and analysis of genetically modified animals. The chapters have been contributed by leading scientists who are actively using the technology in their laboratories. Based on their first-hand experience the authors also provide helpful notes and troubleshooting sections. Topics range from standard techniques, such as pronuclear microinjection of DNA, to more sophisticated and modern methods, such as the derivation and establishment of embryonic stem (ES) cell lines, with defined inhibitors in cell culture medium. In addition, related topics with relevance to the field are addressed, including global web-based resources, legal issues, colony troubleshooting sections.

Features
- Provides step-by-step instructions and helpful troubleshooting notes
- Published in cooperation with the International Society for Transgenic Technology (ISTT)
- With contributions by leading scientists

Fields of interest
- Animal Genetics and Genomics; Transgenics

Target groups
- Research

Discount group
- P

Vertebrate Embryogenesis
Embryological, Cellular, and Genetic Methods

One of the striking findings of modern developmental biology has been the high degree of conservation of signaling and developmental mechanisms amongst different animal species. Such conservation allows information learned from a given organism to be applicable to other species, including humans, and has validated the use of a few model systems to deduce general biological principles. In spite of this underlying conservation, however, each species has unique characteristics arising from its evolutionary history. Vertebrate Embryogenesis: Embryological, Cellular and Genetic Methods attempts to address the increasingly important need of straddling species boundaries in the context of a single research program by compiling research protocols used in a wide range of vertebrate species. In fact, this volume has been designed so that readers can readily find information on species other than the one with which they may be most familiar. These protocols include not only embryological methods, but also cellular and genetic approaches that have complemented and expanded our understanding of embryonic development. In addition, a number of chapters highlight a specific method that is in principle applicable to multiple species, such as TILLING and ZFN-mediated mutagenesis, the generation of Embryonic Stem (ES) cell lines, and nuclear/oocyte transfer.

Features
- Includes cutting-edge methods and protocols
- Provides step-by-step detail essential for reproducible results
- Contains key notes and implementation advice from the experts

Fields of interest
- Cell Biology; Embryology

Target groups
- Professional/practitioner

Discount group
- P
Endophytes of Forest Trees

Biology and Applications

Found in every plant species, the diversity of endophytic micro-organisms can be extremely high within different plant organs and tissue types. In trees, their ecological roles with respect to host tree can vary from latent pathogens or saprophytes to neutral commensalists and mutualists. Given their high diversity, and their bio-active nature, endophytes are currently being associated with a role in tree health against insect herbivores and fungal pathogens, as well as improving tree properties in phytoremediation. Meanwhile there is increasing interest in the potential of some tree endophytes as new sources of drug compounds. The first book on tree endophytes in several years, and containing contributions from leading authors in the field, this book provides an important reference text for professional researchers and advanced students.

Features

- Contributions from leading authors in the field
- State-of-the-art on topic of increasing importance
- First book on endophytes in several years

From the contents


Fields of interest

Tree Biology; Microbial Ecology; Plant Biochemistry

Target groups

Research

Discount group

P

Evolutionary Biology – Concepts, Biodiversity, Macroevolution and Genome Evolution

The annual Evolutionary Biology Meetings in Marseilles serve to gather leading scientists, promote the exchange of ideas and encourage the formation of international collaborations. This book contains the most essential contributions presented at the 14th Evolutionary Biology Meeting, which took place in September 2010. It comprises 19 chapters organized according to the following categories: Evolutionary Biology Concepts, Biodiversity and Evolution, Macroevolution, Genome Evolution. Offering an up-to-date overview of recent results in the field of evolutionary biology, this book is an invaluable source of information for scientists, teachers and advanced students.

Features

- Written by experts
- Provides an overview of latest results in the field
- Richly illustrated

From the contents


Fields of interest

Evolutionary Biology; Plant Genetics & Genomics; Microbial Genetics and Genomics

Target groups

Research

Discount group

P

Numerical Methods for the Life Scientist

Binding and Enzyme Kinetics Calculated with GNU Octave and MATLAB

Enzyme kinetics, binding kinetics and pharmacological dose-response curves are currently analyzed by a few standard methods. Some of these, like Michelis-Menten enzyme kinetics, use plausible approximations, others, like Hill equations for dose-response curves, are outdated. Calculating realistic reaction schemes requires numerical mathematical routines which usually are not covered in the curricula of life science. This textbook will give a step-by-step introduction to numerical solutions of non-linear and differential equations. It will be accompanied with a set of programs to calculate any reaction scheme on any personal computer. Typical examples from analytical biochemistry and pharmacology can be used as versatile templates. When a reaction scheme is applied for data fitting, the resulting parameters may not be unique. Correlation of parameters will be discussed and simplification strategies will be offered.

Features

- First advanced text for life scientists on numerical methods
- Easy step-by-step introduction to numerical solutions
- Installation guide for the free software GNU Octave
- More than 30 programs (written in Octave) will provide templates for biochemical applications – available as supplementary electronic material
- Analysis of experimental data by multi-parameter fits
- Correlation of parameters, significance of the results

Contents

Preparing the computer.- Binding equilibria.- Binding kinetics.- Least squares fit to experimental data.- Multi-parameter fits.- Comparing the two different approaches.

Fields of interest

Bioinformatics; Computational Biology/Bioinformatics; Mathematical and Computational Biology

Target groups

Research

Discount group

P
Meaningful Information
The Bridge Between Biology, Brain, and Behavior

The book introduces a radically new way of thinking about information and the important role it plays in living systems. It opens up new avenues for exploring how cells and organisms change and adapt, since the ability to detect and respond to meaningful information is the key that enables them to receive their genetic heritage, regulate their internal milieu, and respond to changes in their environment. It also provides a way of resolving Descartes’ dilemma by explaining the workings of the brain in non-mechanical terms that are not tainted by spiritual or metaphysical beliefs. The types of meaningful information that different species and different cell types are able to detect are finely matched to the ecosystem in which they live, for natural selection has shaped what they need to know to function effectively in those circumstances.

Features
► The book introduces a radically new way of thinking about information and the important role it plays in living systems ► It opens up new avenues for exploring how cells and organisms change and adapt, since the ability to detect and respond to meaningful information is the key that enables them to receive their genetic heritage, regulate their internal milieu, and respond to changes in their environment ► Provides a way of resolving Descartes’ dilemma by explaining the workings of the brain in non-mechanical terms that are not tainted by spiritual or metaphysical beliefs

Fields of interest
Evolutionary Biology; Cognitive Psychology; Philosophy of Science

Target groups
Graduate

Discount group
P

Human Cell Transformation
Role of Stem Cells and the Microenvironment

Rhim and Kremer’s state-of-the-art volume on Human Cell Transformation: Role of Stem Cells and the Microenvironment highlights the latest findings on the current state of human cell transformation model systems and provides the insight into the molecular and cellular changes involved in the conversion of normal cells to neoplastic cells. Chapters cover all recently developed novel human cell models. In addition, the rapidly growing fields of knowledge regarding not only stem cells in cancer progression, but also the role of the microenvironments in human carcinogenesis are discussed.

Features
► Highlights the latest findings on the current state of human cell transformation model systems ► Provides the insight into the molecular and cellular changes involved in the conversion of normal cells to neoplastic cells ► Covers all recently developed novel human cell models

From the contents

Fields of interest
Cell Biology; Stem Cells

Target groups
Professional/practitioner

Discount group
P
Bioaugmentation, Biostimulation and Biocontrol

Bioaugmentation, biostimulation and biocontrol approaches using microbial inoculants, biofertilizers, biochemicals and organic amendments improve soil biology, fertility and crop productivity by providing plant growth-promoting nutrients and suppressing soil-borne diseases and plant-parasitic nematodes. Our knowledge of microbial diversity and its function in soils has been increased tremendously due to the availability of a wealth of data gained through recent advances in the development of molecular methods and metagenomics for the evaluation of microbial diversity and functions in the rhizosphere environment of soil.

Features
- A valuable source of information for scientists in microbiology, molecular biology, agronomy, crop and soil sciences
- Written by renowned scientists
- Presents the latest results in the field of bioaugmentation, biostimulation and biocontrol

From the contents
Nagina Parmar and Jaimie Dufresne: Beneficial Interactions of Plant Growth Promoting Rhizosphere Microorganisms.
S.S.Dudeja et al.: Biofertilizer Technology and Pulse Production.

Discount group
- P

Soil Health and Climate Change

“Soil Health and Climate Change” presents a comprehensive overview of the concept of soil health, including the significance of key soil attributes and management of soil health in conventional and emerging land use systems in the context of climate change. Starting with a review of the physical, chemical and biological indicators of soil health and their significance for monitoring the impacts of climate change, this book then focuses on describing the role of soil structure, pH, organic matter, nitrogen, respiration and biota in sustaining the basic functions of soil ecosystems, and their anticipated responses to climate change. Further topics include the management of cropping, pastoral, and forestry systems, and rehabilitated mine sites, with a focus on mitigation of and adaptation to climate change impacts. Finally, the opportunities and potential risks of organic farming, biochar and bioenergy systems, and their ability to sustain and even enhance soil health, are discussed.

Features
- With contributions from internationally-renowned experts
- A valuable source of information for students and researchers in soil, plant and environmental sciences as well as policy makers involved in natural resource management and agriculture
- Presents the latest results in the field of soil quality in view of the climate change

Contents
Soil health indicators for the climate change.
Soil attributes and soil processes in response to the climate change.
Conventional land use systems.
Organic farming, biochar and bioenergy systems.

Fields of interest
- Agriculture; Climate Change; Soil Science & Conservation

Target groups
- Research

Discount group
- P

Microtubule Dynamics

Microtubules are at the heart of cellular self-organization, and their dynamic nature allows them to explore the intracellular space and mediate the transport of cargoes from the nucleus to the outer edges of the cell and back. In Microtubule Dynamics: Methods and Protocols, experts in the field provide an up-to-date collection of methods and approaches that are used to investigate microtubule dynamics in vitro and in cells. Beginning with the question of how to analyze microtubule dynamics, the volume continues with detailed descriptions of how to isolate tubulin from different sources and with different posttranslational modifications, methods used to study microtubule dynamics and microtubule interactions in vitro, techniques to investigate the ultrastructure of microtubules and associated proteins, assays to study microtubule nucleation, turnover, and force production in cells, as well as approaches to isolate novel microtubule-associated proteins and their interacting proteins.

Features
- Presents well-established and newly emerging techniques as performed by seasoned experts in the field
- Provides easy to follow instruction written in a clear, step-by-step manner
- Includes key tips and implementation advice to ensure successful results

Fields of interest
- Cell Biology; Cell Physiology

Discount group
- P

Available
2011, X, 280 p. 14 illus., 2 in color.
(Soil Biology, Volume 28) Hardcover

Discount group
- P
Designing and Conducting a Forest Inventory - case: 9th National Forest Inventory of Finland

This book demonstrates in detail all phases of the 9th National Forest Inventory of Finland (1996–2003): the planning of the sampling design, measurements, estimation methods and results. The inventory knowledge accumulated during almost one hundred years is consolidated in the book. The purpose of the numerous examples of results is to demonstrate the diversity of the estimates and content of a national forest inventory. The most recent results include the assessment of the indicators describing the biodiversity of forests. The Finnish NFI has been and is a model for many countries worldwide. The methods and results of the book are set in the international context and are applicable globally.

Features
- The detailed descriptions of all the phases of a forest inventory, one of the oldest in the world
- Completeness and comprehensiveness of the statistical methods to make the estimates and error estimates
- A high number of the forest inventory variables with the definitions
- The methods and results are set in the international context and are applicable world wide

Contents

Fields of interest
Forestry; Forestry Management; Applied Earth Sciences

Target groups
Research

Discount group
P

Poly(ADP-ribose) Polymerase
Methods and Protocols

Poly (ADP-ribose) Polymerases (PARPs) are abundant and ubiquitous proteins that regulate crucial processes of the cell cycle, DNA repair, genomic stability, and transcriptional regulation. Being involved in basic cell functions, PARPs mediate rapid responses to such environmental factors as stress, infection, nutrition and hormonal signals. One of the most exciting developments in cancer research in more than a decade has been the discovery that tumor growth in people with a BRCA1 or BRCA2 mutation, which is typical in breast, ovarian and prostate cancer, can be suppressed by PARP inhibitors. Divided into three convenient sections, Poly(ADP-Ribose) Polymerase: Methods and Protocols aims to explain how PARP proteins act within the normal development of an organism as well as in pathogenic conditions, seeks to advance the knowledge of developmental pathways regulation, and endeavors to facilitate the development of new therapeutic drugs and methods to target PARP-dependent processes.

Features
- Includes cutting-edge methods and protocols
- Provides step-by-step detail essential for reproducible results
- Contains key notes and implementation advice from the experts

Fields of interest
Cell Biology; Proteomics

Target groups
Professional/practitioner

Discount group
P

Sustainable Urban Environments
An Ecosystem Approach

The urban environment – buildings, cities and infrastructure – represents one of the most important contributors to climate change, while at the same time holding the key to a more sustainable way of living. The transformation from traditional to sustainable systems requires interdisciplinary knowledge of the re-design, construction, operation and maintenance of the built environment. Sustainable Urban Environments: An Ecosystem Approach presents fundamental knowledge of the built environment. Approaching the topic from an ecosystems perspective, it shows the reader how to combine diverse practical elements into sustainable solutions for future buildings and cities. You’ll learn to connect problems and solutions at different spatial scales, from urban ecology to material, water and energy use, from urban transport to livability and health. The authors introduce and explore a variety of governance tools that support the transformation process, and show how they can help overcome institutional barriers. The book concludes with an account of promising perspectives for achieving a sustainable built environment in industrialized countries.

Features
- Multidisciplinary ecosystem approach
- Integration of social, engineering and planning issues
- Powerful team of researchers
- Breadth and scale of issues addressed

Fields of interest
Urban Ecology; Architecture, general; Landscape/Regional and Urban Planning

Target groups
Graduate

Discount group
P
Personality and Temperament in Nonhuman Primates

Recently, there has been an increased interest in research on personality, temperament, and behavioral syndromes (henceforth to be referred to as personality) in nonhuman primates and other animals. This follows, in part, from a general interest in the subject matter and the realization that individual differences, once consigned to ‘error’ terms in statistical analyses, are potentially important predictors, moderators, and mediators of a wide variety of outcomes ranging from the results of experiments to health to enrichment programs. Unfortunately, while there is a burgeoning interest in the subject matter, findings have been reported in a diverse number of journals and most of the methodological and statistical approaches were developed in research on human personality.

Features
► Gathers submissions from a variety of specialists in research on individual differences in primate temperament, personality, or behavioral syndromes
► Offers much to those interested in studying the personality of nonhuman primates and other species (including humans) ► Demonstrates the richness and diversity of findings and inspires new researchers to take the sorts of bold steps needed to further our understanding of diversity in primates, whether they are nonhuman or human

Fields of interest
Zoology; Evolutionary Biology

Target groups
Research

Discount group
P

Biology and Conservation of the European Sturgeon Acipenser sturio L. 1758

The Reunion of the European and Atlantic Sturgeons

The book aims at synthesizing our current knowledge of Acipenser sturio and its management. This species, one of the most widespread sturgeon species all over Western Europe ranging from the Black Sea to the Baltic, is now on the verge of extinction. Major aspects of its biology and management, including mismanagement, are provided in a historic perspective. Similarly, the changes in the restoration programs (in situ and ex situ) initiated in France and Germany are presented. As the species occurred in sympatry with Acipenser oxyrinchus in Germany and Poland and very recently in France as well, a brief outlook on restoration-management programs of A. oxyrinchus are also provided for both North America and Northern European countries, namely Germany and Poland. As conservation-restoration actions go beyond scientific issues, non-governmental stakeholders and marine professional fisherman’s organizations have also been asked to contribute, and the key role of a French-German cooperation plan is underlined.

Features
► Describes all aspects of the biology, management and restoration programs of Acipenser sturio ► Written by experts Presents Illustrations of the European sturgeon by photos, stamps, and paintings

Fields of interest
Fish & Wildlife Biology & Management; Freshwater & Marine Ecology; Conservation Biology/Ecology

Target groups
Research

Discount group
P

Human Embryonic and Induced Pluripotent Stem Cells

Lineage-Specific Differentiation Protocols

Because of the huge potential of human embryonic stem (hES) cells, especially the newly developed human induced pluripotent stem (hiPS) cells, in disease treatment and life quality improvement, enormous efforts have been made to develop new methodologies to translate lab discoveries in stem cell research into bed-side clinical technologies. In Human Embryonic and Induced Pluripotent Stem Cells: Lineage-Specific Differentiation Protocols, experts in the field present a comprehensive collection of protocols designed for labs around the world. The topics covered in this detailed volume include techniques used for maintenance of hES and iPS cells in either small or large scale, techniques for directing hES and iPS cell lineage specification, techniques for enhancing the maturity of differentiated hES and iPS cells within three-dimensional scaffolds, techniques for reprogramming adult cells into iPS cells, techniques for generating patient-specific iPS cells, and techniques for translating hES and iPS cell research into new therapies. Chapters include lab ready protocols with tips on troubleshooting and avoiding known pitfalls.

Features
► Serves to inspire the next generation of regenerative medicine and tissue engineering technologies ► Features an extensive collection of protocols developed by leading scientists in the field ► Contains practical laboratory guidance to promote successful results

Fields of interest
Cell Biology; Stem Cells

Target groups
Professional/practitioner

Discount group
P
Biodiversity Hotspots

Biodiversity Hotspots: Distribution and Protection of Conservation Priority Areas

Biodiversity and its conservation are among the main global topics in science and politics and perhaps the major challenge for the present and coming generations. This book written by international experts from different disciplines comprises general chapters on diversity and its measurement, human impacts on biodiversity hotspots on a global scale, human diversity itself and various geographic regions exhibiting high levels of diversity. The areas covered range from genetics and taxonomy to evolutionary biology, biogeography and the social sciences. In addition to the classic hotspots in the tropics, the book also highlights various other ecosystems harbouring unique species communities including coral reefs and the Southern Ocean. The approach taken considers, but is not limited to, the original hotspot definition sensu stricto and presents a chapter introducing the 35th hotspot, the forests of East Australia. While, due to a bias in data availability, the majority of contributions on particular taxa deal with vertebrates and plants, some also deal with the less-studied invertebrates.

Features
► A valuable contribution to future research on biodiversity and its conservation
► Included the original publication on the 35th biodiversity hotspot, the Forests of East Australia
► Covers also less well-studied areas and taxa, such as marine ecosystems and invertebrates
► Essential reading for researchers and practitioners in the fields of conservation biology, ecology and evolution
► Richly illustrated

Fields of interest
Biodiversity; Conservation Biology/Ecology; Nature Conservation

Target groups
Research

Discount group
P

Available

2011. 400 p. Hardcover
► approx. $139.00
ISBN 978-3-642-20991-8
L. Bermejo Luque, Spanish National Research Council (CSIC), Madrid, Spain

### Giving Reasons

**A Linguistic-Pragmatic Approach to Argumentation Theory**

This book provides a new, linguistic approach to Argumentation Theory. Its main goal is to integrate the logical, dialectical and rhetorical dimensions of argumentation in a model providing a unitary treatment of its justificatory and persuasive powers. This model takes as its basis Speech Acts Theory in order to characterize argumentation as a second-order speech act complex. The result is a systematic and comprehensive theory of the interpretation, analysis and evaluation of arguments. This theory sheds light on the many faces of argumentative communication: verbal and non-verbal, monological and dialogical, literal and non-literal, ordinary and specialized.

**Features**

- Provides Argumentation Theory with a new, linguistic approach
- Integrates argumentation's logical, dialectical and rhetorical dimensions
- Solves challenging meta-theoretical questions, e.g. the justification problem

**Contents**


**Fields of interest**

Linguistics (General); Logic; Epistemology

**Target groups**

Research

**Discount group**

P

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J. de Villiers, Smith College, Northampton, MA, USA; T. Roeper, University of Massachusetts at Amherst, Amherst, MA, USA (Eds.)

### Handbook of Generative Approaches to Language Acquisition

Modern linguistic theory has been based on the promise of explaining how language acquisition can occur so rapidly with such subtlety, and with both surprising uniformity and diversity across languages. This handbook provides a summary and assessment of how far that promise has been fulfilled, exploring core concepts in acquisition theory, including notions of the initial state, parameters, triggering theory, the role of competition and frequency, and many others, across a variety of syntactic topics that have formed the central domains of investigation and debate. These topics are treated from the unique perspective of central actors in each domain who have helped shape the research agenda. The authors have presented a summary of the data, the theories under discussion, and their own best assessments of where each domain stands.

**Features**

- Leading scholars review their speciality in language acquisition
- Each chapter provides the reader with a strong introduction of the field and contains an overview of the work in the field by a leading authority
- Includes modern perspectives, reviews of crucial experiments, naturalistic data summaries, and methodological innovations that have led to new insights

**From the contents**


**Fields of interest**

Psycholinguistics; Language Education; Syntax

**Target groups**

Research

**Discount group**

P

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M. Lamers, Vrij Universiteit Amsterdam, Amsterdam, The Netherlands; P. de Swart, University of Groningen, Groningen, The Netherlands (Eds.)

### Case, Word Order and Prominence

**Interacting Cues in Language Production and Comprehension**

Language users have access to several sources of information during the build up of a meaningful construction. These include grammatical rules, situational knowledge, and general world knowledge. A central role in this process is played by the argument structure of verbs, which establishes the syntactic and semantic relationships between arguments. This book provides an overview of recent psycholinguistic and theoretical investigations on the interplay between structural syntactic relations and role semantics. The focus herein lies on the interaction of case marking and word order with semantic prominence features, such as animacy and definiteness. The interaction of these different sorts of information is addressed from theoretical, time-insensitive, and incremental perspectives, or a combination of these. Taking a broad cross-linguistic perspective, this book bridges the gap between theoretical and psycholinguistic approaches to argument structure.

**Features**

- Considers the interactions between different types of information
- Takes into account both production and comprehension
- Presents a combination of psycholinguistic and theoretical approaches
- Takes a broad cross-linguistic perspective

**Fields of interest**

Linguistics (General); Psycholinguistics; Theoretical Linguistics

**Target groups**

Research

**Discount group**

P
**Materials Chemistry**

The 2nd edition of Materials Chemistry builds on the strengths that were recognized by a 2008 Textbook Excellence Award from the Text and Academic Authors Association (TAA). Materials Chemistry addresses inorganic-, organic-, and nano-based materials from a structure vs. property treatment, providing a suitable breadth and depth coverage of the rapidly evolving materials field — in a concise format. The opening solid-state chemistry chapter uses color illustrations of crystalline unit cells and digital photos of models to clarify their structures. This edition features more archetypical unit cells and includes fundamental principles of X-ray crystallography and band theory. In addition, an ample amorphous-solids section has been expanded to include more details regarding zeolite syntheses, as well as ceramics classifications and their biomaterial applications.

**Features**
- Completely revised, updated and expanded new edition
- Contains many illustrations and color graphics, as well as up-to-date references and examples
- A “topics for further discussion” section in each chapter poses thought-provoking questions
- Provides lab modules dealing with various types of materials synthesis
- Includes new sections on nanotoxicity, vapor-phase growth of 0-D nanostructures and graphene
- Features ‘click chemistry’ polymerization, silicons, conductive polymers and biomaterials applications
- Describes the emerging field of ‘soft lithographic’ patterning

**From the contents**

**Fields of interest**
Characterization and Evaluation of Materials; Polymer Sciences; Condensed Matter Physics

**Target groups**
Graduate

**Discount group**
P

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**Advances in Elastomers II**

**Composites and Nanocomposites**

This is the second volume of a two-volume work which summarizes in an edited format and in a fairly comprehensive manner many of the recent technical research accomplishments in the area of Elastomers. “Advances in Elastomers” discusses the various attempts reported on solving these problems from the point of view of the chemistry and the structure of elastomers, highlighting the drawbacks and advantages of each method. It summarize the importance of elastomers and their multiphase systems in human life and industry, and covers all the topics related to recent advances in elastomers, their blends, IPNs, composites and nanocomposites. This second volume is deals with composites and nanocomposites of elastomers.

**Features**
- “One stop” reference resource for important research
- Summarizes the importance of elastomers and their multiphase systems in human life and industry
- Contributed by prominent researchers from industry, academia and research laboratories across the globe

**From the contents**

**Fields of interest**
Characterization and Evaluation of Materials; Continuum Mechanics and Mechanics of Materials; Polymer Sciences

**Target groups**
Research

**Discount group**
P
Partitions, q-Series, and Modular Forms

Partitions, q-Series, and Modular Forms contains a collection of research and survey papers that grew out of a Conference on Partitions, q-Series and Modular Forms at the University of Florida, Gainesville in March 2008. It will be of interest to researchers and graduate students that would like to learn of recent developments in the theory of q-series and modular and how it relates to number theory, combinatorics and special functions.

Features
- Unique volume describing recent progress in the fields of q-hypergeometric series, partitions, and modular forms and their relation to number theory, combinatorics, and special functions

Contents

Fields of interest
Number Theory; Combinatorics; Special Functions

Target groups
Research

Discount group
P

Due August 2011
$124.00
ISBN 978-1-4614-0027-1

Inequalities Based on Sobolev Representations

Inequalities based on Sobolev Representations deals exclusively with very general tight integral inequalities of Chebyshev-Grüss, Ostrowski types and of integral means, all of which depend upon the Sobolev integral representations of functions. Applications illustrate inequalities that engage in ordinary and weak partial derivatives of the involved functions. This book also derives important estimates for the averaged Taylor polynomials and remainders of Sobolev integral representations. The results are examined in all directions and through both univariate and multivariate cases. This book is suitable for researchers, graduate students, and seminars in subareas of mathematical analysis, inequalities, partial differential equations and information theory.

Features
- First monograph to deal exclusively with very general tight integral inequalities of Chebyshev-Grüss, Ostrowski types and of comparison of integral means
- Advanced courses and seminars can be taught out of this book
- All necessary background and motivations are given in each chapter
- Suitable for researchers, graduate students, and seminars in subareas of mathematical analysis, inequalities, partial differential equations and information theory

Contents
Part 1. -Univariate Integral Inequalities based on Sobolev representations.- Introduction.- Background.- Main Results.- Applications.- References. Part 2.- Multivariate Integral Inequalities deriving from Sobolev representations.- Introduction.- Background.- Main Results.- Applications.- References.

Fields of interest
Real Functions; Statistics, general; Engineering Design

Target groups
Research

Discount group
P

Due July 2011
$49.95

Introduction to Stochastic Programming

The aim of stochastic programming is to find optimal decisions in problems which involve uncertain data. This field is currently developing rapidly with contributions from many disciplines including operations research, mathematics, and probability. At the same time, it is now being applied in a wide variety of subjects ranging from agriculture to financial planning and from industrial engineering to computer networks. This textbook provides a first course in stochastic programming suitable for students with a basic knowledge of linear programming, elementary analysis, and probability.

Features
- Well-paced and wide-ranging introduction to this subject
- Prime goal is to help students develop an intuition on how to model uncertainty into mathematical problems
- Provides a first course in stochastic programming suitable for students

Contents

Fields of interest
Operations Research, Management Science; Statistics and Computing/Statistics Programs; Optimization

Target groups
Graduate

Discount group
P

Due June 2011
$99.00

K. Alladi, University of Florida, Gainesville, FL, USA (Eds.)

G. A. Anastassiou, The University of Memphis, TN, USA

J. Birge, University of Chicago, Booth School of Business, Chicago, IL, USA; F. Louveaux, University of Namur, Belgium
An Introduction to Enumeration

Written for students taking a second or third year undergraduate course in mathematics or computer science, this book is the ideal companion to a course in enumeration. Enumeration is a branch of combinatorics where the fundamental subject matter is numerous methods of pattern formation and counting. Introduction to Enumeration provides a comprehensive and practical introduction to this subject giving a clear account of fundamental results and a thorough grounding in the use of powerful techniques and tools. Two major themes run in parallel through the book, generating functions and group theory. The former theme takes enumerative sequences and then uses analytic tools to discover how they are made up. Group theory provides a concise introduction to the subject and how the theory can be used to count the number of symmetries a particular object has. These enrich and extend basic group ideas and techniques.

Features
- Includes over 350 worked examples and over 200 exercises with solutions
- Focuses on the application of major mathematical topics including linear algebra, group theory and complex analysis
- Strong emphasis on generating functions

Contents

Fields of interest
Combinatorics; Group Theory and Generalizations

Target groups
Upper undergraduate

Discount group
P

The Mathematics of Darwin’s Legacy

The Mathematics of Darwin’s Legacy presents a general overview of mathematical models in the context of evolution. It covers a wide range of topics such as population genetics, population dynamics, speciation, adaptive dynamics, game theory, kin selection, and stochastic processes. Written by leading scientists working at the interface between evolutionary biology and mathematics the book is the outcome of a conference commemorating Charles Darwin’s 200th birthday and the 150th anniversary of the first publication of his book “On the origin of species”. Its chapters vary in format between general introductory and state-of-the-art research texts in biomathematics, in this way addressing both students and researchers in mathematics, biology and related fields. Mathematicians looking for new problems as well as biologists looking for rigorous description of population dynamics will find this book fundamental.

Features
- General introduction and state-of-the-art texts organized by topics
- All authors are leading experts in their fields
- Includes more than 50 illustrative pictures

Fields of interest
Mathematical and Computational Biology; Applications of Mathematics

Target groups
Research

Discount group
P

Integral Methods in Science and Engineering
Computational and Analytical Aspects

An enormous array of problems encountered by scientists and engineers are based on the design of mathematical models using many different types of ordinary differential, partial differential, integral, and integro-differential equations. Accordingly, the solutions of these equations are of great interest to practitioners and to science in general. Presenting a wealth of cutting-edge research by a diverse group of experts in the field, Integral Methods in Science and Engineering: Computational and Analytical Aspects gives a vivid picture of both the development of theoretical integral techniques and their use in specific science and engineering problems. This book will be valuable for researchers in applied mathematics, physics, and mechanical and electrical engineering. It will likewise be a useful study guide for graduate students in these disciplines, and for various other professionals who use integration as an essential technique in their work.

Features
- Illustrates the application of integral methods to diverse problems in mathematics, physics, biology, and engineering
- Chapters written by a diverse group of well-established scientists
- Applicable to a broad range of special subjects, including deformable structures, fluid dynamics, medical imaging, and energy analysis
- Useful for an interdisciplinary audience of graduate students, researchers, and professionals across mathematics and the sciences

Fields of interest
Integral Equations; Applied Mathematics/Computational Methods of Engineering; Ordinary Differential Equations

Target groups
Research

Discount group
P
Convolution Operators on Groups

This volume is devoted to a systematic study of the Banach algebra of the convolution operators of a locally compact group. Inspired by classical Fourier analysis we consider operators on Lp spaces, arriving at a description of these operators and Lp versions of the theorems of Wiener and Kaplansky-Helson.

Contents
1 Elementary Results.- 2 An Approximation Theorem for CV2(G).- 3 The Figa-Talamanca Herz Algebra.- 4 The Dual of Ap(G).- 5 CVp(G) as a Module on Ap(G).- 6 The Support of a Convolution Operator.- 7 Convolution Operators Supported by Subgroups.- 8 CVp(G) as a Subspace of CV2(G).

Field of interest
Abstract Harmonic Analysis

Target groups
Research

Discount group
P

Complex Analysis 2
Riemann Surfaces, Several Complex Variables, Abelian Functions, Higher Modular Functions

The idea of this book is to give an extensive description of the classical complex analysis, here “classical” means roughly that sheaf theoretical and cohomological methods are omitted. Numerous exercises including hints for solutions and many figures make this an attractive, indispensable book for students who would like to have a sound introduction to classical complex analysis.

Features
► All needed notions are developed within the book with the exception of fundamentals, which are presented in introductory lectures; no other knowledge is assumed ► Provides a more in-depth introduction to the subject than other existing books in this area ► Many exercises including hints for solutions are included

Contents
Chapter I. Riemann Surfaces.- Chapter II. Harmonic Functions on Riemann Surfaces.- Chapter III. Uniformization.- Chapter IV. Compact Riemann Surfaces.- Appendices to Chapter IV.- Chapter V. Analytic Functions of Several Complex Variables.- Chapter VI. Abelian Functions.- Chapter VII. Modular Forms of Several Variables.- Chapter VIII. Appendix: Algebraic Tools.- References.- Index.

Fields of interest
Several Complex Variables and Analytic Spaces; Functions of a Complex Variable

Target groups
Graduate

Discount group
P

Representations of Hecke Algebras at Roots of Unity

The modular representation theory of Iwahori-Hecke algebras and this theory’s connection to groups of Lie type is an area of rapidly expanding interest; it is one that has also seen a number of breakthroughs in recent years. In classifying the irreducible representations of Iwahori-Hecke algebras at roots of unity, this book is a particularly valuable addition to current research in this field. Using the framework provided by the Kazhdan-Lusztig theory of cells, the authors develop an analogue of James’ (1970) “characteristic-free” approach to the representation theory of Iwahori-Hecke algebras in general.

Features
► Offers the first systematic and unified treatment of representations of Hecke algebras at roots of unity ► Written by leading experts in the field ► Uses a number of concrete examples to clearly explain theoretical results ► Uses sophisticated mathematical results from Representation Theory and Combinatorics to describe state of the art developments in Hecke algebra theory ► Describes the connections between Representation theory of quantum affine algebras and Representation Theory of Hecke algebras

Contents

Fields of interest
Group Theory and Generalizations; Associative Rings and Algebras

Target groups
Research

Discount group
P
Disorder and Critical Phenomena Through Basic Probability Models
École d'Été de Probabilités de Saint-Flour XL – 2010

Understanding the effect of disorder on critical phenomena is a central issue in statistical mechanics. In probabilistic terms: what happens if we perturb a system exhibiting a phase transition by introducing a random environment? The physics community has approached this very broad question by aiming at general criteria that tell whether or not the addition of disorder changes the critical properties of a model: some of the predictions are truly striking and mathematically challenging. We approach this domain of ideas by focusing on a specific class of models, the “pinning models,” for which a series of recent mathematical works has essentially put all the main predictions of the physics community on firm footing: in some cases, mathematicians have even gone beyond, settling a number of controversial issues. But the purpose of these notes, beyond treating the pinning models in full detail, is also to convey the gist, or at least the flavor, of the “overall picture,” which is, in many respects, unfamiliar territory for mathematicians.

Features
- It develops the tools that allow a person with a probability background to access a large amount of theoretical physics literature
- Recently developed mathematical techniques are explained in detail for a class of models that demand no background beyond a standard graduate course in probability
- It proposes various open questions, along with the explanation of what the answer is expected to be in the physical community

Fields of interest
Probability Theory and Stochastic Processes; Applications of Mathematics; Statistical Physics, Dynamical Systems and Complexity

Target groups
Research

Discount group
P

Due May 2011
Softcover

Functional Analysis Methods for Reliability Models
G. Gupur, Xinjiang University, Urumqi, China

The main goal of this book is to introduce readers to functional analysis methods, in particular, time dependent analysis, for reliability models. Understanding the concept of reliability is of key importance — schedule delays, inconvenience, customer dissatisfaction, and loss of prestige and even weakening of national security are common examples of results that are caused by unreliability of systems and individuals. The book begins with an introduction to C0-semigroup theory. Then, after a brief history of reliability theory, methods that study the well-posedness, the asymptotic behaviors of solutions and reliability indices for various reliability models are presented. Finally, further research problems are explored.

Features
- Reliability models with importance to daily life are covered
- The mathematics of reliability is clearly explained
- Functional analysis methods are discussed

Contents

Fields of interest
Operations Research, Management Science; Functional Analysis

Target groups
Research

Discount group
P

Symplectic Invariants and Hamiltonian Dynamics
H. Hofer, Institute for Advanced Study, Princeton, NJ, USA; E. Zehnder, ETH Zürich, Switzerland

The discoveries of the last decades have opened new perspectives for the old field of Hamiltonian systems and led to the creation of a new field: symplectic topology. Surprising rigidity phenomena demonstrate that the nature of symplectic mappings is very different from that of volume preserving mappings. This raises new questions, many of them still unanswered. On the other hand, analysis of an old variational principle in classical mechanics has established global periodic phenomena in Hamiltonian systems. As it turns out, these seemingly different phenomena are mysteriously related. One of the links is a class of symplectic invariants, called symplectic capacities. These invariants are the main theme of this book, which includes such topics as basic symplectic geometry, symplectic capacities and rigidity, periodic orbits for Hamiltonian systems and the action principle, a bi-invariant metric on the symplectic diffeomorphism group and its geometry, symplectic fixed point theory, the Arnold conjectures and first order elliptic systems, and finally a survey on Floer homology and symplectic homology.

Features
- Opened new perspectives for the old field of Hamiltonian systems and let to the creation of a new field: symplectic topology
- Invariants which grew out of lectures given by the authors
- Selection by a single principle: the action principle of mechanics

Contents
1 Introduction. - 2 Symplectic capacities. - 3 Existence of a capacity. - 4 Existence of closed characteristics. - 5 Compactly supported symplectic mappings in R2n. - 6 The Arnold conjecture, Floer homology and symplectic homology. - Appendix. - Index. - Bibliography.

Fields of interest
Differential Geometry; Manifolds and Cell Complexes (incl. Diff. Topology); Analysis

Target groups
Research

Discount group
P

Due July 2011
2011. 140 p. 15 illus. (Lecture Notes in Mathematics / École d’Été de Probabilités de Saint-Flour, Volume 2025)
Softcover

ISBN 978-3-642-21155-3
approx. $49.95

ISBN 978-3-642-21155-3
approx. $49.95

Available

ISBN 978-3-0348-0103-4
$89.95

ISBN 978-3-0348-0103-4
$89.95
Geometric Aspects of Analysis and Mechanics

In Honor of the 65th Birthday of Hans Duistermaat

Hans Duistermaat, an influential geometric-analyst, made substantial contributions to the theory of ordinary and partial differential equations, symplectic, differential, and algebraic geometry, minimal surfaces, semisimple Lie groups, mechanics, mathematical physics, and related fields. Written in his honor, the invited and refereed articles in this volume contain important new results as well as surveys in some of these areas, clearly demonstrating the impact of Duistermaat’s research and, in addition, exhibiting interrelationships among many of the topics.

Contents

Fields of interest
Analysis; Geometry; Mathematical Methods in Physics

Target groups
Research

Discount group
P

Due July 2011

2011. XL, 332 p. 5 illus. (Progress in Mathematics, Volume 292) Hardcover

S. G. Krantz, Washington University, St. Louis, MO, USA

The Proof is in the Pudding
The Changing Nature of Mathematical Proof

Krantz takes the reader on a journey around the globe and through centuries of history, exploring the many transformations that mathematical proof has undergone since its inception at the time of Euclid and Pythagoras to its versatile, present-day use. The author elaborates on the beauty, challenges and metamorphisms of thought that have accompanied the search for truth through proof. The first two chapters examine the early beginnings of concept of proof and the creation of its elegant structure and language, touching on some of the logic and philosophy behind these developments. The history then unfolds as the author explains the changing face of proofs. The more well-known proofs, the mathematicians behind them, and the world that surrounded them are all highlighted.

Features
- Invited articles written by prominent researchers in the field
- Broad collection of topics highlights Duistermaat’s wide range of research and influence
- The articles cover a wide area of fields, including symplectic, differential, and algebraic geometry, mechanics, and mathematical physics

From the contents

Fields of interest
Probability Theory and Stochastic Processes; Potential Theory

Target groups
Research

Discount group
P

Due June 2011

2011. XVI, 264 p. 94 illus., 6 in color. Hardcover

Y. Le Jan, Université Paris-Sud, Orsay, France

Markov Paths, Loops and Fields

The purpose of these notes is to explore some simple relations between Markovian path and loop measures, Poissonian ensembles of loops they determine, their occupation fields, uniform spanning trees, determinants, and Gaussian Markov fields such as the free field. These relations are first studied in complete generality for the finite discrete setting, then partly generalized to specific examples in infinite and continuous spaces.

Features
- St Flour Lecture notes+ additional material
- A large part of the content is new
- There is no really similar book

Contents
1 Symmetric Markov processes on finite spaces.- 2 Loop measures.- 3 Geodesic loops.- 4 Poisson process of loops.- 5 The Gaussian free field.- 6 Energy variation and representations.- Decompositions.- 8 Loop erasure and spanning trees.- 9 Reflection positivity.- 10 The case of general symmetric Markov processes.

Fields of interest

Target groups

Discount group
P

Due July 2011

2012. VIII, 134 p. 11 illus. (Lecture Notes in Mathematics / École d’Été de Probabilités de Saint-Flour, Volume 2026) Softcover

.approx. $64.95
ISBN 978-3-642-21215-4
Constrained Optimization and Optimal Control for Partial Differential Equations

This special volume focuses on optimization and control of processes governed by partial differential equations. The contributors are mostly participants of the DFG-priority program 1253: Optimization with PDE-constraints which is active since 2006. The book is organized in sections which cover almost the entire spectrum of modern research in this emerging field. Indeed, even though the field of optimal control and optimization for PDE-constrained problems has undergone a dramatic increase of interest during the last four decades, a full theory for nonlinear problems is still lacking.

Features
- Covers almost the entire spectrum of modern research in this emerging field
- Presents novel methods of optimization, control and identification
- Develops new ideas for optimization, control and corresponding numerical methods

Contents

Fields of interest
Partial Differential Equations; Optimization; Computational Mathematics and Numerical Analysis

Target groups
Research

Discount group
P
Asymptotic stability of steady compressible fluids

This volume introduces a systematic approach to the solution of some mathematical problems that arise in the study of the hyperbolic-parabolic systems of equations that govern the motions of thermodynamic fluids. It is intended for a wide audience of theoretical and applied mathematicians with an interest in compressible flow, capillarity theory, and control theory. The focus is particularly on recent results concerning nonlinear asymptotic stability, which are independent of assumptions about the smallness of the initial data. Of particular interest is the loss of control that sometimes results when steady flows of compressible fluids are upset by large disturbances. The main ideas are illustrated in the context of three different physical problems:

(i) A barotropic viscous gas in a fixed domain with compact boundary. The domain may be either an exterior domain or a bounded domain, and the boundary may be either impermeable or porous.
(ii) An isothermal viscous gas in a domain with free boundaries.
(iii) A heat-conducting, viscous free boundaries. (iii) A heat-conducting, viscous

Features
► It is the first book specifically devoted to nonlinear stability of compressible fluids
► A systematic approach is proposed
► It turns out of great utility to graduate students, since it is self-contained and only basic elements of functional analysis and PDE are required
► Original techniques are introduced in the study of direct Lyapunov method, these techniques furnish, in particular new “a priori” estimates for the solutions

Fields of interest
Applications of Mathematics; Mathematical Modeling and Mathematics in Industry; Partial Differential Equations

Target groups
Graduate

Discount group
P

Functional Equations in Mathematical Analysis

The stability problem for approximate homomorphisms, or the Ulam stability problem, was posed by S. M. Ulam in the year 1941. The solution of this problem for various classes of equations is an expanding area of research. In particular, the pursuit of solutions to the Hyers-Ulam and Hyers-Ulam-Rassias stability problems sets of functional equations and inequalities has led to an outpouring of recent research. This volume, dedicated to S. M. Ulam, presents the most recent results on the solution to Ulam stability problems for various classes of functional equations and inequalities. Comprised of invited contributions from notable researchers and experts, this volume presents several important types of functional equations and inequalities and their applications to problems in mathematical analysis, geometry, physics and applied mathematics. “Functional Equations in Mathematical Analysis” is intended for researchers and students in mathematics, physics, and other computational and applied sciences.

Features
► Presents the most recent results to the solution of the Ulam stability problem for several types of functional equations
► Includes contributions from an international group of experts in the fields of functional analysis, partial differential equations, dynamical systems, algebra, geometry, and physics

Fields of interest
Difference and Functional Equations; Functional Analysis; Special Functions

Target groups
Research

Discount group
P

Affine Maps, Euclidean Motions and Quadrics

Affine geometry and quadrics are fascinating subjects alone, but they are also important applications of linear algebra. They give a first glimpse into the world of algebraic geometry yet they are equally relevant to a wide range of disciplines such as engineering. This text discusses and classifies affinities and Euclidean motions culminating in classification results for quadrics. A high level of detail and generality is a key feature unmatched by other books available. This intricacy makes this a particularly accessible teaching resource as it requires no extra time in deconstructing the author’s reasoning. The provision of a large number of exercises with hints will help students to develop the problem solving skills and will also be a useful resource for lecturers when setting work for independent study. Affinities, Euclidean Motions and Quadrics takes rudimentary, and often taken-for-granted, knowledge and presents it in a new, comprehensive form.

Features
► Thorough treatment of affine geometry and quadrics
► A useful resource for lecturers in linear algebra and geometry
► Provides an high level of detail and generality that is unmatched by other texts available
► An extensive number of exercises with hints are included to aid problem-solving and abstraction

Contents

Fields of interest
Mathematics, general; Algebra

Target groups
Upper undergraduate

Discount group
P
p-Adic Lie Groups

Manifolds over complete nonarchimedean fields together with notions like tangent spaces and vector fields form a convenient geometric language to express the basic formalism of p-adic analysis. The volume starts with a self-contained and detailed introduction to this language. This includes the discussion of spaces of locally analytic functions as topological vector spaces, important for applications in representation theory. The author then sets up the analytic foundations of the theory of p-adic Lie groups and develops the relation between p-adic Lie groups and their Lie algebras. The second part of the book contains, for the first time in a textbook, a detailed exposition of Lazard’s algebraic approach to compact p-adic Lie groups, via his notion of a p-valuation, together with its application to the structure of completed group rings.

Features

► First textbook with detailed exposition of Lazard’s algebraic approach to compact p-adic Lie groups. ► Treats p-adic analysis in geometric language. ► Includes a chapter on locally convex topology on spaces of locally analytic functions.

From the contents


Fields of interest

Topological Groups, Lie Groups; Associative Rings and Algebras

Target groups

Graduate

Discount group

P

Due July 2011

2011. XII. 248 p. (Grundlehren der mathematischen Wissenschaften, Volume 344) Hardcover

► approx. $109.00

ISBN 978-3-642-21146-4

Vibrations of Plates with Transverse Shear Deformation

Many problems in mathematical physics rely heavily on the use of elliptical partial differential equations, and boundary integral methods play a significant role in solving these equations. Vibrations of Plates with Transverse Shear Deformation studies the latter in the context of stationary vibrations of thin elastic plates. The techniques presented here reduce the complexity of classical elasticity to a system of two independent variables, modeling problems of flexural-vibrational elastic body deformation with the aid of eigenfrequencies and simplifying them to manageable, uniquely solvable integral equations. The book is intended for an audience with a knowledge of advanced calculus and some familiarity with functional analysis. It is a valuable resource for professionals in pure and applied mathematics, and for theoretical physicists and mechanical engineers whose work involves elastic plates. Graduate students in these fields can also benefit from the monograph as a supplementary text for courses relating to theories of elasticity or flexural vibrations.

Features

► Provides comprehensive and rigorous mathematical treatment within an unprecedentedly refined mathematical model. ► Illustrates applications of the boundary integral equation method to new problems. ► Constructs easily approximated solutions. First book of its kind.

From the contents


Fields of interest

Integral Equations; Vibration, Dynamical Systems, Control; Mathematical Methods in Physics

Target groups

Research

Discount group

P

Due August 2011


► approx. $139.00

ISBN 978-3-540-71040-0
Foundations of Incidence Geometry
Projective and Polar Spaces

Incidence geometry is a central part of modern mathematics that has an impressive tradition. The main topics of incidence geometry are projective and affine geometry and, in more recent times, the theory of buildings and polar spaces. Embedded into the modern view of diagram geometry, projective and affine geometry including the fundamental theorems, polar geometry including the Theorem of Buekenhout-Shult and the classification of quadratic sets are presented in this volume. Incidence geometry is developed along the lines of the fascinating work of Jacques Tits and Francis Buekenhout. The book is a clear and comprehensible introduction into a wonderful piece of mathematics. More than 200 figures make even complicated proofs accessible to the reader.

Features
- The book is a reference in which a lot of classical material is presented in most readable and accessible way
- Valuable contribution to the literature about a wonderful piece of mathematics
- Can be used by students, researchers and lecturers

From the contents

Field of interest
Geometry

Target groups
Research

Discount group
P

Due July 2011
$109.00
ISBN 978-3-642-20971-0

Due August 2011
$99.00
ISBN 978-3-0348-0165-2

Reflections on Quanta, Symmetries, and Supersymmetries

This is a collection of essays based on lectures that author has given on various occasions on foundation of quantum theory, symmetries and representation theory, and the quantum theory of the superworld created by physicists. The lectures are linked by a unifying theme: how the quantum world and superworld appear under the lens of symmetry and supersymmetry. In the world of ultra-small times and distances such as the Planck length and Planck time, physicists believe no measurements are possible and so the structure of spacetime itself is an unknown that has to be first understood. There have been suggestions (Volovich hypothesis) that world geometry at such energy regimes is non-archimedian and some of the lectures explore the consequences of such a hypothesis.

Features
- The author’s interest in representation is lifelong
- Explores the Volovich hypothesis that the world of ultra-small times and distances is non-archimedian
- Concludes with a retrospective look at the author’s discussions with George Mackey and Harish-Chandra

Contents

Fields of interest
Topological Groups, Lie Groups; Quantum Physics; Order, Lattices, Ordered Algebraic Structures

Target groups
Research

Discount group
P

Due June 2011
$99.00
ISBN 978-1-4419-0666-8
Damped Oscillations of Linear Systems
A Mathematical Introduction

The theory of linear damped oscillations was originally developed more than hundred years ago and is still of vital research interest to engineers, mathematicians and physicists alike. This theory plays a central role in explaining the stability of mechanical structures in civil engineering, but it also has applications in other fields such as electrical network systems and quantum mechanics. This volume gives an introduction to linear finite dimensional damped systems as they are viewed by an applied mathematician. After a short overview of the physical principles leading to the linear system model, a largely self-contained mathematical theory for this model is presented. This includes the geometry of the underlying indefinite metric space, spectral theory of J-symmetric matrices and the associated quadratic eigenvalue problem. Particular attention is paid to the sensitivity issues which influence numerical computations. Finally, several recent research developments are included, e.g. Lyapunov stability and the perturbation of the time evolution.

Features
- No recent texts on this topic
- Multidisciplinarity
- Self-containedness

From the contents

Fields of interest
Applications of Mathematics; Systems Theory, Control; Applications in the Physical Sciences

Discount group
P

Unified Field Theories in the first third of the 20th century

Despite the rapidly expanding ambit of physical research and the continual appearance of new branches of physics, the main thrust in its development has been the attempt at a theoretical synthesis of the entire body of physical knowledge. Vladimir Vizgin’s work presents perhaps the first systematic historico-scientific study of the formation and development of the unified field theories in the general context of 20th century physics. Concentrating on the first three decades of the century and drawing extensively on Russian sources, the author analyses the first successes, failures and paths of further development of the unified field theories. He presents the evolution of these theories as a process of interaction/competition between the geometric field and quantum research programs, and ascertains the relevance of these theories for fundamental concepts in modern field theory.

Features
- First complete historical description of Unified field theories in this era
- Addresses historically interesting physicists and mathematicians
- The extensive bibliography of original papers also includes important but little known contributions

Contents

Field of interest
Mathematics, general

From Obscurity to Enigma

Oliver Heaviside’s contributions to electromagnetism, electrical engineering, and applied mathematics have consistently attracted attention. Of late they have become a major source for the study of the development of field theory after Maxwell. From Obscurity to Enigma: The Work of Oliver Heaviside, 1872-1889 is a systematic, in-depth study of the most creative period in Heaviside’s scientific career. During this period he wrote the essays and articles that constitute his two-volume Electrical Papers. Here he presented his novel reformulation of Maxwell’s equations, created the elements of vector algebra, produced the first comprehensive theory of transmission lines, suggested the inductive “loading” of telegraph and telephone lines to improve long-distance communications, introduced his innovative version of the operational calculus, and made several important contributions to the electrodynamics of moving bodies. From Obscurity to Enigma traces the evolution of Heaviside’s ideas against the background of growing knowledge in basic electromagnetic theory, telegraphy, and telephony at the time.

Features
- Presents person and work of a distinguished scientific “eccentric”
- Provides a historical account of how Heaviside’s ideas originated
- Deals with one of the most periods in the history of physics

From the contents
1 The Enigmatic Legacy of Oliver Heaviside.- II Outlining the Way.- III The Maxwellian Outlook.- IV From Obscurity to Enigma.- Appendix 3.1 Heaviside’s Extended Theorem for the Distortionless Condition.

Fields of interest
Algebra; Optics and Electrodynamics

Discount group
P

V. P. Vizgin, Russian Academy of Sciences, Moscow, Russia
I. Yavetz, Tel Aviv University, Tel Aviv, Israel

Due July 2011

> approx. $69.95
ISBN 978-3-642-21334-7

Due July 2011

> approx. $89.95
ISBN 978-3-0348-0173-7

Due July 2011

> approx. $89.95
ISBN 978-3-0348-0176-8
J. Zheng, Tsinghua University, Beijing, China

**Value Distribution of Meromorphic Functions**

"Value Distribution of Meromorphic Functions" focuses on functions meromorphic in an angle or on the complex plane, T directions, deficient values, singular values, potential theory in value distribution and the proof of the celebrated Nevanlinna conjecture. The book introduces various characteristics of meromorphic functions and their connections, several aspects of new singular directions, new results on estimates of the number of deficient values, new results on singular values and behaviours of subharmonic functions which are the foundation for further discussion on the proof of the Nevanlinna conjecture. The independent significance of normality of subharmonic function family is emphasized. This book is designed for scientists, engineers and post graduated students engaged in Complex Analysis and Meromorphic Functions.

Dr. Jianhua Zheng is a Professor at the Department of Mathematical Sciences, Tsinghua University, China.

**Features**
- Presents new aspects of new singular directions, T directions
- Covers new results on estimates of the number of deficient values
- Investigate Meromorphic Functions in a new aspect

**Contents**

**Fields of interest**
Analysis; Functions of a Complex Variable; Real Functions

**Target groups**
Research

**Discount group**
P

**Available**
Distribution rights in China: Tsinghua University Press
Jointly published with Tsinghua University Press

2011. 316 p. Hardcover
$129.00
ISBN 978-3-642-12908-7
Advances and Technical Standards in Neurosurgery

Editor-in-chief: J. D. Pickard, Series editors:
V. V. Dolenc, J. Lobo Antunes, C. Di Rocco,
M. Sindou, N. Akalan, J. Mooij, J. Schramm

Volume 37
J. Pickard, University of Cambridge, UK; N. Akalan,
Hacettepe University, Ankara, Turkey; C. Di Rocco,
Universita Cattolica del Sacro Cuore, Rome, Italy; 
V. V. Dolenc, University Ljubljana, Slovenia; 
J. Lobo Antunes, Universidade Lisboa, Lisbon, 
Portugal; J. Mooij, Rijksuniversiteit Groningen, 
The Netherlands; J. Schramm, Universitätsklinikum Bonn, Germany; M. Sindou, Hôpital Neurologique Pierre Wertheimer, Lyon, France (Eds.)

Advances and Technical Standards in Neurosurgery

Advisors: J. Maarrawi, P. Mertens, R. Peyron, 
L. Garcia-Larrea, M. Sindou: Functional exploration 
for neuropathic pain. - Z. H. Rappaport: The 
neuroscientific foundations of free will. - A. Hejel, 
P. Jendelova, E. Sykova: Experimental reconstruction 
of the injured spinal cord. - M. Visocchi: Advances 
in video-assisted anterior surgical 
approach to the craniocervical junction. Technical Standards N. Akalan: Myelomingingocele (Open 
spina bifida): Surgical management. - M. Stoffel, 
C. Stüer, F. Ringel, B. Meyer: Treatment of infections 
of the spine. - I. Massimi, F. Novegno, 
C. di Rocco: Chiari Type 1 malformation in children.

Features
► Present fields of neurosurgery in which important recent advances have been made
► Written by specialists in the fields present detailed descriptions of standard operative procedures and in-depth reviews of established knowledge

Fields of interest
Neurosurgery

Target groups
Upper undergraduate

Discount group
MR

Advances and Technical Standards in Neurosurgery

H. Aichinger, J. Dierker, S. Joite-Barfuß, M. Säbel, 
University of Erlangen, Germany

Radiation Exposure and Image Quality in X-Ray Diagnostic Radiology

Physical Principles and Clinical Applications

This completely updated second edition of Radiation Exposure and Image Quality in X-ray Diagnostic Radiology provides the reader with detailed guidance on the optimization of radiological diagnosis. The basic physical principles of diagnostic radiology are first presented in detail, and their application to clinical problems is then carefully explored. The final section is a supplement containing tables of data and graphical depictions of X-ray spectra, interaction coefficients, characteristics of X-ray beams, and other aspects relevant to patient dose calculations. In addition, user-friendly data files that can be employed in calculations are made available to the reader via a special internet page. This book will be an invaluable aid to medical physicists when performing calculations relating to patient dose and image quality, and will also prove useful for diagnostic radiologists and engineers.

Features
► Thoroughly updated new edition that examines in detail the relationship between radiation dose and image quality, including when using digital imaging and computed tomography ► Written by experts who for many years have collected data relevant to the optimization of radiological diagnosis ► Complemented by user-friendly data files that can be employed in calculations and are available via a special internet page

From the contents

Fields of interest
Imaging / Radiology; Effects of Radiation/Radiation Protection; Gynecology

Target groups
Professional/practitioner

Discount group
MR

Principles of Nasal Reconstruction

Skin cancer is among the most commonly occurring cancers, with incidence rates climbing among patients of all ages. The nose is the most common site for these cases. The vast majority of skin cancers of the nose are treated surgically by plastic surgeons, dermatologists, and oto- laryngologists. Surgical excision requires reconstruction to one degree or another and Principles of Nasal Reconstruction will prove extremely helpful to any surgeon contemplating reconstruction of defects resulting from skin cancer removal. This book and the accompanying DVD offer multiple guided surgical techniques and references to provide insight and practical guidance to the surgeon and trainee performing nasal reconstructions

Features
► The most comprehensive and lavishly illustrated text/atlas on nasal reconstruction ► Has been fully revised and even enhanced with 90 minutes of real-time video on the accompanying DVD

From the contents

Fields of interest
Plastic Surgery; Otorhinolaryngology; Dermatology

Target groups
Professional/practitioner

Discount group
MR

Available
Originally published by Mosby, 2002
With DVD. Hardcover
► $279.00

2nd ed. 2011. 300 p. 250 illus. With CD-ROM. Hardcover
► $179.00
ISBN 978-3-642-11240-9

This completely updated second edition of Radiation Exposure and Image Quality in X-ray Diagnostic Radiology provides the reader with detailed guidance on the optimization of radiological diagnosis. The basic physical principles of diagnostic radiology are first presented in detail, and their application to clinical problems is then carefully explored. The final section is a supplement containing tables of data and graphical depictions of X-ray spectra, interaction coefficients, characteristics of X-ray beams, and other aspects relevant to patient dose calculations. In addition, user-friendly data files that can be employed in calculations are made available to the reader via a special internet page. This book will be an invaluable aid to medical physicists when performing calculations relating to patient dose and image quality, and will also prove useful for diagnostic radiologists and engineers.

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► Thoroughly updated new edition that examines in detail the relationship between radiation dose and image quality, including when using digital imaging and computed tomography ► Written by experts who for many years have collected data relevant to the optimization of radiological diagnosis ► Complemented by user-friendly data files that can be employed in calculations and are available via a special internet page

From the contents

Fields of interest
Imaging / Radiology; Effects of Radiation/Radiation Protection; Gynecology

Target groups
Professional/practitioner

Discount group
MR

Features
► The most comprehensive and lavishly illustrated text/atlas on nasal reconstruction ► Has been fully revised and even enhanced with 90 minutes of real-time video on the accompanying DVD

From the contents

Fields of interest
Plastic Surgery; Otorhinolaryngology; Dermatology

Target groups
Professional/practitioner

Discount group
MR

Available
Originally published by Mosby, 2002
With DVD. Hardcover
The ASCRS Textbook of Colon and Rectal Surgery
Second Edition

Developed in conjunction with the American Society of Colon and Rectal Surgeons, this comprehensive textbook provides readers with the full scope of surgical practice for patients with diseases of the colon and rectum. Expert surgeons, all active both as educators and with busy clinical practices, have written concise and practical chapters on the most commonly done procedures while providing much-needed insight on less frequently presentations. The ASCRS Practice Parameters are incorporated in the book along with an appendix providing the most up-to-the-minute access to best practice guidelines. Patient care and safety are addressed in each chapter. The ASCRS Textbook of Colon and Rectal Surgery is a long awaited textbook for those in the field and it does not disappoint.

Features
- EBM approach based on the Core Curriculum established by the Association of Program Directors in Colon and Rectal Surgery
- Written by expert surgeons with unique perspectives
- A source of guidance for colorectal surgeons

Contents
- Diagnostic Training and Rheumatology Trees
- Explanations of Figures and Case Reports with Individual Therapeutic Options
- Index of Figures and Clinical Scenarios with Syndromes (for self-assessment)

Target groups
- Professional/practitioner

Discount group
- MR

Due May 2011

Available

2011. XII, 137 p. 156 illus., 111 in color. Hardcover
- $29.95
  ISBN 978-0-85729-335-0

Due May 2011

Available

2011. XII, 260 p. 193 illus., 40 in color. Hardcover
- $79.95
  ISBN 978-0-85729-335-0
Images in Urology
Diagnosis and Management

Images in Urology is an integral guide to the diagnosis and management of urological conditions over the years, even before the discovery of X-rays. Improvements in techniques have meant greater diagnostic power and a dramatic rise in the number of images obtained and viewed by practicing clinicians. None more so than in the field of urology, where static and dynamic images are fundamental to the diagnosis and treatment of almost all conditions. This book presents images of macroscopic and microscopic histopathology specimens, radiological and radionucleotide scans, urodynamic traces and photographs of dermatological conditions relating to urology. Descriptions of how to interpret the image and the use of contrast or staining methods to help differentiate normal anatomy from pathology are included. Images in Urology is an essential research tool for urology trainees and consultants, as well as being an exam preparation guide.

Features
► Centred around intricate urological images often encountered in diagnosis ► Text throughout will be clear, concise and to the point by only including the salient points needed for a good understanding of each image and situation ► Edited by highly established urological surgeons, radiologists and pathologist, thus creating a nicely rounded piece of literature ► Contributors primarily UK based but with an international editorial team ► Comprehensive cover of the most important urological conditions to enable the reader to appreciate the full differential diagnosis and how to get to the correct diagnosis

Fields of interest
Urology/Andrology; Diagnostic Radiology; Imaging / Radiology

Target groups
Professional/practitioner

Discount group
MR

Due September 2011
ISBN 978-0-85729-768-6

Perioperative Medicine

Perioperative Medicine uses a concise, highly practical, bulleted format designed to ensure rapid comprehension of key concepts and reinforce the reader’s understanding of complex topics in perioperative medicine. It contains authoritative, up-to-date coverage of the most essential concepts in perioperative care from preoperative risk assessment to postoperative follow-up. The Editor and his contributors use their expert insight and experience to provide an in-depth review of comorbid conditions, patient and surgery-specific risk assessment, and common postoperative complications. This new book reviews recent developments in the field, including published guidelines, and emphasizes an evidence-based, cost-effective approach designed to ensure quality, patient safety, and optimal outcomes. It is intended for use by hospitalists, general internists and subspecialists as well as anesthesiologists, surgeons, and residents in training who are caring for patients before and after surgery.

Features
► Covers essential, must-know facts ► Content presented in an easy-to-follow streamlined, bulleted format ensures quick comprehension of key concepts ► Expert, up-to-date coverage of the most critical, need-to-know concepts in perioperative care, from preoperative risk assessment to postoperative follow-up and much more ► Complete coverage of co-existing diseases, assessment and implications for surgical care ► Logically organized, easy-to-follow chapters help focus your study and provide rapid access to specific subjects

Contents
Section 1 – Preoperative Evaluation. Section 2 – Surgery-Specific Risks. Section 3 – Preoperative Evaluation and Management of Co-existing Medical Diseases. Section 4 – Postoperative Complications.

Fields of interest
Cardiology; Surgery; Internal Medicine

Target groups
Professional/practitioner

Discount group
MR

Due May 2011
2011. X, 300 p. 12 illus., 5 in color. Softcover approx. 99.00

Forensic Histopathology
Fundamentals and Perspectives

This book, which combines the features of an atlas and a textbook, presents findings in forensic histology, immunohistochemistry, and cytology based on microscopic investigations using different staining methods and different antibodies. The principal aim is to provide practitioners with detailed information and guidance on how microscopy can help to clarify the cause of sudden and unexpected death. Many of the topics will be of interest not only to forensic pathologists but also to general pathologists, whether practitioners or researchers. Examples include the pathology of drug abuse, wound age determination, adverse drug reactions, histopathology of the sudden infant death syndrome, and age determination of myocardi infarction. Both typical and unusual findings are demonstrated with the aid of numerous high-quality color illustrations, and other key literature in forensic histology and immunohistochemistry is highlighted for each topic.

Features
► Provides detailed information on how microscopy can help to clarify the cause of sudden and unexpected death ► Demonstrates both typical and unusual findings with the aid of numerous high-quality color illustrations ► Highlights other key literature relating to the topic under considerationInvaluable for both forensic pathologists and general pathologists

From the contents
Introduction.- Staining Techniques and Microscopy.- Histopathology of Selected Trauma.- Histopathology and Drug Abuse.- Toxin- and Drug-Induced Pathologies.- Alcohol-Related Pathologies.- Radiation, and Gases.- Hypothermia.- Thrombosis and Embolism.- Vitality, Injury Age, Determination of Skin Wound Age, and Fracture Age.- Aspiration and Inhalation.- Forensic-histologic Species, Sex, Age and Identity Diagnostics.

Fields of interest
Pathology; Forensic Medicine

Target groups
Professional/practitioner

Discount group
MR

Available
2011. Approx. 300 p. 330 illus. in color. Hardcover approx. 219.00
ISBN 978-3-642-20658-0
Molecular Defects in Cardiovascular Disease

Molecular Defects in Cardiovascular Disease provides an in-depth discussion of the molecular mechanisms underlying the genesis of cardiovascular defects and the implications this has on current and emerging targeted therapeutics. Divided into three sections, this book covers the scientific foundations of our present understanding as well as the array of clinical manifestations and their treatment. The first section covers Molecular Mechanisms of Heart Disease, with discussion of the development of cardiovascular dysfunction. The remaining two sections provide a more clinical focus. The second, Cardiac Hypertrophy and Heart Failure, deals with metabolic derangements, Ca2+ handling, and subcellular remodeling. It illustrates the wide variety of molecular defects which may serve as targets associated with the transition from cardiac hypertrophy to advanced heart failure. The third section, Hypertension and Diabetes, provides molecular rationale for the pathogenesis of hypertension and diabetic cardiomyopathy, as well as highlighting the importance of hormones toward this end.

Features

- Outlines novel targets for the treatment of cardiovascular diseases
- Elucidates the role of biochemical insults and metabolic derangements in altering gene expression
- Provides an understanding of the molecular genesis of cardiovascular dysfunction

Fields of interest
Cardiology; Medical Biochemistry

Target groups
Professional/practitioner

Discount group
MR

Shoulder Instability

Alternative Surgical Techniques

Over the past few years, international literature has highlighted the limitations of arthroscopic treatment for antero-inferior instability of the shoulder. Therefore, the question arises as to which technique – open surgery or arthroscopy – may represent the best alternative to the classical arthroscopic capsuloplasty. The volume is organized into five chapters and presents five different techniques. Each chapter describes the non-surgical and surgical algorithms for the treatment of unidirectional and multidirectional antero-inferior instabilities, with and without shoulder laxity. The chapters offer a detailed description of each technique, enhanced by 10–15 high-definition photographs, tips and tricks, and pitfalls, as well as surgical steps. The book is aimed at medical students, fellows, specialists, orthopedic surgeons, physiotherapists, and rehabilitation and generalist physicians.

Features

- Contains approximately 100 high-definition images, which provide a better understanding of anatomy, clinical concepts, and surgical techniques
- The illustrations describing the surgical procedures will be placed beside the text to provide a step-by-step illustration
- The mini-plate latarjet is a new surgical product designed by Giovanni Di Giacomo

Contents

Fields of interest
Orthopedics; Surgical Orthopedics

Target groups
Professional/practitioner

Discount group
MR

Dyspepsia in Clinical Practice

Although dyspepsia has been investigated for a long period of time, there is no international agreement on what constitutes this condition nor any standardized guidelines. National guidelines followed by practitioners in different countries vary in diagnostic and therapeutic approach, underlining the necessity for a unique definition worldwide. Dyspepsia in Clinical Practice summarizes the current guidelines while offering a unified, practical definition of dyspepsia, and a diagnostic algorithm with an emphasis on the upper gastrointestinal endoscopy and rational first-line therapeutic approach based on epidemiology, pathophysiology, clinical presentation, diagnostic workup and response to previous therapy. Up-to-date scientific information about dyspepsia is presented from a practical, clinician’s point of view. Written by experts in the field, this volume addresses dyspepsia in childhood and in the elderly, a very important issue often insufficiently emphasized in the literature. Guidelines are provided that can be easily followed in clinical practice, leading to a reduction in costs and increased patient safety. Dyspepsia in Clinical Practice will be of great value to gastroenterologists, internists, primary care physicians, pediatricians, infectious disease specialists, residents and fellows in training.

Features

- Written by leaders in their respective areas
- Presented from a practical, clinician’s point of view
- Guidelines provide reduction in costs and increases patient safety

From the contents

Fields of interest
Gastroenterology; Primary Care Medicine; Infectious Diseases

Target groups
Professional/practitioner

Discount group
MR
Color Atlas of Fetal and Neonatal Histology

Color Atlas of Fetal and Neonatal Histology serves as a comprehensive atlas of the developmental histology of the major organs from 15 weeks gestation to the neonatal period. Each section includes text on basic embryologic processes that influence the development of each organ and highlight major histologic features that correspond with certain developmental periods. In addition, there are many color photomicrographs at key developmental stages to assist the reader in identifying appropriate histologic changes at each developmental stage. This book will be of great value to students of embryology, pathology residents and fellows, and attending pathologists who perform fetal autopsies.

Features
► Comprehensive atlas of the developmental histology of the major organs ► Each section includes text on basic embryologic processes that influence the development of each organ ► Includes many color photomicrographs at key developmental stages

Contents

Fields of interest
Pathology; Pediatrics; Developmental Biology

Target groups
Professional/practitioner

Discount group
MR

Available
ISBN 978-1-4419-1347-0
$219.00

Health Services for Cancer Survivors
Practice, Policy and Research

Health has been conceptualized by world and national health organizations (WHO, CDC, Healthy People 2010) as more than the absence of disease. It involves a focus on physical, psychosocial, and functional aspects of life as well as the prevention of future illnesses. At this point in the development of quality health care for cancer survivors, there is sufficient knowledge and expert opinion to push efforts forward to improve the health of cancer survivors. Clearly there is more research in the most prevalent forms of cancers (e.g., breast cancer) than others that provide us with guidance on how to optimize their health, but there are data on other forms of cancers that can also better inform practice. There may also be general care practices that can cut across cancer types. There has been an emergence of epidemiological and clinical research in cancer survivors that can form the basis for a revolution in the quality and nature of health care that survivors receive. This book not only provides the reader with diverse perspectives and data but also integrates this information so it can serve as the foundation necessary to improve and maintain the health of cancer survivors.

Features
► Focuses exclusively on the quality of health care and services ► Focuses on integrating evidence-based healthcare into care decision making process ► Provides specific information on what needs to change to improve quality of healthcare services for survivors

Fields of interest
Health Administration; Medicine/Public Health, general; Health Psychology

Target groups
Professional/practitioner

Discount group
MR

Available
$169.00

Combat Radiology
Diagnostic Imaging of Blast and Ballistic Injuries

Combat Radiology provides unique insights into a military radiologist's role in the modern battlefield environment. Drawing on his recent experiences in Iraq, Col. Les Folio, a retired air force radiologist and flight surgeon with over twenty years of service, presents a comprehensive introduction to diagnostic imaging technology for the deployed military physician. Topics in the book include descriptions of imaging capabilities of hospitals in deployed military bases in combat zones; practical imaging techniques and terminology associated with penetrating/perforating blast and ballistic injuries; recent medical advances on the battlefield; and the changing role of imaging modalities in combat situations. Additionally, specific anatomic and pathologic imaging cases from combat situations are presented, including traumatic brain injury; chest, abdomen/pelvis, and skeletal trauma. Combat Radiology will appeal not only to military radiologists and surgeons, but also to civilian emergency radiologists and trauma physicians who encounter patients with ballistic and blast injuries resulting from armed conflict, terrorism, and disaster situations.

Features
► New data/Cutting-edge research ► Combat medicine

From the contents

Fields of interest
Imaging / Radiology; Diagnostic Radiology

Target groups
Professional/practitioner

Discount group
P

Available
$99.00
Sjögren’s Syndrome
Practical Guidelines to Diagnosis and Therapy

The key knowledge assembled in this book comprises today’s most comprehensive resource on Sjögren’s syndrome. Sjögren’s patients require the care of a wide variety of clinical and surgical specialists to treat their disease and improve their quality of life. This volume presents a broad multi-disciplinary approach, enlisting the expertise of well-respected authors from around the world, covering the specialties of rheumatology, ophthalmology, oral medicine, oral surgery, otolaryngology, hematology, and others. This practical clinical resource begins with an overview of Sjögren’s myths, pearls and tips, information for referring physicians, and diagnostic and classification criteria. The second section covers pathogenesis, providing the backbone for our understanding current diagnostics and therapeutics. The third section is devoted to clinical manifestations and therapeutic considerations. It covers the entire spectrum of symptoms and treatment, infused with the experience and astute clinical observations of the book’s contributors. With system-wide coverage of local and systemic therapy, the book examines current therapy, biologics, and emerging therapeutic targets. Presenting many international perspectives, this book creates an inter-communicative conduit for the global community of Sjögren’s patients and physicians.

Features
► Integrates the experiences of international experts in the spectrum of involved disciplines
► Offers a practical approach to the diagnosis and treatment of Sjögren’s Syndrome
► Provides the latest information made possible only by multi-disciplinary communication
► Presents a global perspective on this prevalent autoimmune disease

Fields of interest
Rheumatology; Otorhinolaryngology; Ophthalmology

Target groups
Professional/practitioner

Discount group
MR

The Daschner Guide to In-Hospital Antibiotic Therapy
European Standards

This book will most certainly be a valuable asset for all those treating patients with infections. While primarily aimed at the hospital setting, most of the very useful information can certainly be used in other healthcare settings, too.

Features
► Handy - concise - clear The "always on-hand" pocket guide to the treatment of infectious diseases
► The most important antibiotics and antimycotics: Spectrum - dosage - side-effects
► Numerous tables sorted by substances, pathogens, indications
► Administration of antibiotics during pregnancy, renal and hepatic insufficiency, dialysis
► Including statements on the cost of therapy
► Adjusted to European standards: Up-to-date substances, authorizations, resistances and trade names
► The first guide to antibiotic therapy for Europe!

Fields of interest
Infectious Diseases; Internal Medicine; Surgery

Target groups
Professional/practitioner

Discount group
MR

Fundamentals of Surgical Simulation
Principles and Practice

Fundamentals of Surgical Simulation explains in detail, from a behavioural science/human factors perspective, why modern image guided medicine such as surgery, interventional cardiology and interventional radiology are difficult to learn and practice. Medicine is currently at a tipping point in terms of how physicians in procedural based medicine are trained. Fundamentals of Surgical Simulation helps drive this change and is a valuable resource for medical trainers and trainees alike. For trainers, this book gives explicit theoretical and applied information on how this new training paradigm works thus allowing them to tailor the application of simulation training to their program, no matter where in the world they work. For the trainee, it allows them to see and understand the rules of this new training paradigm thus allowing them to optimize their approach to training and reaching proficiency in as efficient a manner as possible. For the simulation researcher, engineer and medical profession Fundamentals of Surgical Simulation poses some difficult questions that require urgent unambiguous and agreed answers.

Features
► Explains in detail from a behavioural science/human factors perspective why modern image guided medicine such as surgery is difficult to learn and what is important when structuring a curriculum
► A valuable resource for medical trainers and trainees alike
► For the trainee it allows them to see and understand the rules of this new training paradigm thus allowing them to optimize their approach to training and reaching proficiency in as efficient a manner as possible

Fields of interest
Emergency Medicine; Medicine/Public Health, general

Target groups
Professional/practitioner

Discount group
MR
Vulvodynia
Tips and Tricks

Vulvodynia is a chronic pain syndrome affecting up to 10–12% of the female population. Despite its high prevalence and associated distress, clinical management of the disorder has not been clearly delineated. This book integrates clinical and scientific knowledge that will empower healthcare professionals treating women to help their patients overcome this common debilitating disorder. Based on the highest-level research, it will provide state-of-the-art practical guidance that will help healthcare professionals to characterize vulvodynia precisely, identify comorbid conditions and risk factors, and obtain evidence-based guidelines for the assessment and clinical management of vulvodynia.

Features
> To date there is no scientific publication that deals exclusively with vulvodynia
> Must have for healthcare professionals involved in female sexual pain or vulval disease
> Book with insight into the organic features of the syndrome

Contents
1. Epidemiology of vulvar pain and its sexual comorbidities
2. Vulvodynia – What's Behind the Name?
3. Vulvodynia and Dyspareunia – How Should They Be Addressed?
5. How vulvodynia originates: The pathophysiology of vulvar pain
6. How to make a comprehensive diagnosis of vulvodynia and its co morbidities

Fields of interest
Obstetrics/Perinatology; Gynecology; Pain Medicine

Target groups
Professional/practitioner

Discount group
MR

Plastic Surgery
A Problem Based Approach

Plastic Surgery, A Problem Based Approach provides a problem-based approach to solutions for common scenarios in plastic, reconstructive and aesthetic surgery and serves as a practical guide to managing a plastic surgical case. This book outlines a pathway through management for the clinician, consisting of six phases: 1) Recognition of the condition: facilitated by high quality images. 2) General approach: provided by an opening “mindset” statement for the particular case. 3) Assessment: the critical aspects of the history and examination. 4) Treatment: key decisions and key interventions. 5) Management: post-intervention expectations. 6) Evidence: the rationale behind the preceding treatment and an overview of any controversies. Plastic Surgery, A Problem Based Approach is a valuable reference tool for surgical trainees, medical students, healthcare professionals and plastic and reconstructive surgeons.

Features
> Provides the reader with a feel for each condition which will provide a logical base for intervention and aid discussions with the patient
> Rapid reminder of most significant points and also to act as an instant aide memoir of the subject
> Aids clinical case recognition by providing illustrative images

From the contents
Abdominoplasty
- Blepharoplasty
- Breast Reconstruction
- Breast Reduction
- Breast Ptosis
- Burns Contracture
- Burns – Acute Management
- Cleft Lip and Palate
- Congenital Hand
- Craniosynostosis
- Dupuytren Disease
- Facial Palsy
- Facial Trauma
- Gynaecomastia
- Hand Palsy
- Hand with Arthropathy
- Hypospadia
- Lower Limb Trauma
- Lump in the Neck
- Management of Complex Wounds

Fields of interest
Plastic Surgery; Surgery; Rehabilitation

Target groups
Professional/practitioner

Discount group
MR

Manual of Temporal Bone Exercises

Every resident in otolaryngology has to practice on temporal bones before operating on patients. Whilst the systematic training includes use of the microscope and surgical instruments, heavy emphasis is also placed on knowledge of the surgical anatomy of the middle ear and the temporal bone. This lavishly illustrated manual offers an overview of all such important structures and provides the reader with a helpful approach to gain the knowledge necessary to start operating on patients. It also supports experts to improve and teach their skills.

Features
> This unique and lavishly illustrated manual includes extraordinary artwork
> It offers a unique overview of all important structures and surgical techniques of the middle ear and the temporal bone
> Reader-friendly, step-by-step guide through all surgical procedures of the middle ear and the temporal bone
> It is written by famous experts

Contents

Fields of interest
Otorhinolaryngology; Oral and Maxillofacial Surgery; Head and Neck Surgery

Target groups
Research

Discount group
MR
Hughes Syndrome: The Antiphospholipid Syndrome
A Guide for Students

Hughes Syndrome: The Antiphospholipid Syndrome, A Guide for Students provides an in-depth analysis into the main effects of Hughes Syndrome. In 1983, Dr Graham Hughes, and his team in London, described a syndrome and subsequently developed simple blood tests to diagnose the condition. This syndrome is characterised by thrombosis (both in limbs and internal organs), headaches, memory loss, strokes and, in pregnant women, placental clotting and recurrent miscarriage. The syndrome, now known worldwide as Hughes Syndrome, or the Antiphospholipid Syndrome, is common - being responsible for example, for up to 1 in 5 cases of young stroke and more importantly, it is treatable. Hughes Syndrome: The Antiphospholipid Syndrome, A Guide for Students details the effects of Hughes Syndrome on the major organs, making it a valuable reference tool for students in training.

Features
► Aimed at students in medical education
► Provides an in-depth look into the effects of Hughes Syndrome
► A detailed history of Hughes Syndrome
► Dr Graham Hughes uses personal experience and studies within his analysis

Contents
History.- Clinical features.- Pregnancy & infertility.- Venous thrombosis.- Migraine & stroke.- Movement disorders & seizures.- Neuro psychiatric aspects.- Spinal cord, multiple sclerosis, peripheral nerves.- The Heart
The arteries.- Kidneys.- Skin.- The eye.- Ear, nose & throat.- Lungs.- Liver & gut.- Bones & joints.- Blood.- Catastrophic APS.- Diagnosis.- Treatment.- Aetiology – genetics vs. environment.- Links to other diseases.- The world map.

Fields of interest
Rheumatology

Target groups
Professional/practitioner

Discount group
MR

Pediatric Oncology
A Comprehensive Guide

This is the second edition of a well-received compendium of information and guidance on the diagnosis and management of the various oncological diseases that are encountered in children and adolescents. For each disease entity, fundamental facts are provided that will be relevant for a range of professionals – hospital physicians, specialist nurses, psycho-oncologists, physiotherapists, family doctors, and pediatricians. Compared with the first edition, all chapters have been updated and entirely new chapters are included on rare disorders, genetic aspects, and palliative care. Throughout, rapid orientation is ensured by the clear, consistent layout and the concise, lucid style. Pediatric Oncology: A Comprehensive Guide is an excellent, easy-to-use reference that belongs on the shelf of every practitioner who encounters or treats malignancies in the pediatric age group.

Features
► Updated second edition with new chapters on rare disorders, genetic aspects, and palliative care
► Ideal, easy-to-use guide to the diagnosis and management of the oncological diseases encountered in children and adolescents
► Clear, consistent layout and concise, lucid style
► Intended for a wide range of professionals – hospital physicians, specialist nurses, psycho-oncologists, physiotherapists, family doctors, and pediatricians

From the contents

Fields of interest
Oncology; Hematology; Nursing

Target groups
Professional/practitioner

Discount group
MR

Advances in Radiation Oncology in Lung Cancer

This is the second, completely updated edition of a comprehensive book in which many of the world’s leading lung cancer specialists discuss the recent advances in the radiation oncology of lung cancer and reflect on the latest research findings. The first three sections cover the basic science of lung cancer, clinical investigations, including histology and staging, and a wide range of fundamental treatment considerations. Current treatment strategies for small cell and non-small cell lung cancer are then explained and evaluated in detail, with due attention to novel approaches that promise further improvements in outcome. The various types of treatment-related toxicity are discussed, and quality of life studies and prognostic factors are also considered. After evaluating the latest technological and biological advances, including IMRT, IMAT, Cyber knife treatment, and tomotherapy, the book concludes by thorough consideration of specific aspects of clinical research in lung cancer.

Features
► Only book to consider in detail all aspects of the radiation oncology of lung cancer
► Presents and discusses the latest knowledge on the role of different treatment strategies and their outcomes and toxicities
► Written by leading lung cancer specialists of world renown

From the contents

Fields of interest
Imaging / Radiology; Radiotherapy; Oncology

Target groups
Professional/practitioner

Discount group
MR

Available
2011. V, 45 p. 55 illus., 38 in color. Softcover
Price: approx. $39.95

Due October 2011
2nd Ed. 2011. 500 p. 60 illus., 40 in color.
(Medical Radiology / Radiation Oncology) Hardcover
Price: approx. $329.00
ISBN 978-3-642-19924-0
**H. Leigh, University of California, San Francisco, CA, USA**

### Genes, Memes, Culture, and Mental Illness

**Toward an Integrative Model**

What produces mental illness: genes, environment, both, neither? The answer can be found in memes—replicable units of information linking genes and environment in the memory and culture—whose effects on individual brain development can be benign or toxic. This book reconceptualizes mental disorders as products of stressful gene-meme interactions and introduces a biopsychosocial template for meme-based diagnosis and treatment. A range of therapeutic modalities, both broad-spectrum (meditation) and specific (cognitive-behavioral), for countering negative memes and their replication are considered, as are possibilities for memetic prevention strategies. In this book, the author outlines the roles of genes and memes in the evolution of the human brain; elucidates the creation, storage, and evolution of memes within individual brains; examines culture as a carrier and supplier of memes to the individual; provides examples of gene-meme interactions that can result in anxiety, depression, and other disorders; proposes a multiaxial gene-meme model for diagnosing mental illness; identifies areas of meme-based prevention for at-risk children; and defines specific syndromes in terms of memetic symptoms, genetic/memetic development, and meme-based treatment.

**Features**
- Reconceptualizes mental disorders as products of stressful gene-meme interactions
- Introduces a biopsychosocial template for meme-based diagnosis and treatment of mental illness
- Details broad-spectrum and specific meme-oriented treatment strategies
- Enhances theoretical knowledge and daily practice

**Fields of interest**
- Psychiatry
- Clinical Psychology
- Sociology

**Target groups**
- Professional/practitioner

**Discount group**
- MR

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**C. Lenk, Göttingen, Germany; J. Sándor, Budapest, Hungary; B. Gordijn, Dublin, Ireland (Eds.)**

### Biobanks and Tissue Research

**The Public, the Patient and the Regulation**

The research field of biobanks and tissue research is highly promising. Many projects around the globe are involved in the collection of human tissue and health data for research purposes. These initiatives are driven by the perspective of decisive breakthroughs in the knowledge of the genetic pathways involved in widespread diseases. However, there are considerable ethical and legal challenges to be considered as well. These challenges encompass the use of body material for research purposes, the misuse of genetic and other health data by third parties, trust in science and medicine, concerns regarding privacy, use of genetic data for forensic applications by the state and the police, and regulatory issues. This volume is divided into three parts: the inclusion of the public, the rights of donors and patients, examples and recommendations for the future of tissue research. It presents a comprehensive overview of the most important topics in the field by renowned scholars in medical ethics and biolaw.

**Features**
- Comprehensive ethical and legal perspective
- Focus on the most important discussions in the field
- Targeting of “hot topics” like forensic research and biobanking

**Fields of interest**
- Transplant Surgery
- Cell Biology
- Biomedicine

**Target groups**
- Research

**Discount group**
- MR

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**C. Litchman, Columbia University, New York, NY, USA (Ed.)**

### Desmoid Tumors

Desmoid Tumors (DT), also called Aggressive Fibromatoses, are a rare fibroblastic proliferative disease, with an incidence of 2 to 4 new cases per million people per year. Despite the absence of a metastatic potential, DT cause significant morbidity and at times mortality due to its locally invasive behaviour. The anatomical locations can be abdominal, extra-abdominal (often in the extremities) and intra-abdominal. This book is the first manuscript dedicated entirely to Desmoid Tumors. Written by prominent clinicians, researchers and advocacy group experts, patients and professionals alike will find this to be a comprehensive review. Clinical presentation, imaging guidelines and treatment paradigms are highlighted. Both the sporadic and hereditary forms (Familial Adenomatous Polyposis) will be discussed. A thorough discussion on the unique issues in children with DT is included. A portion of the book will address the role of the APC gene, the β-catenin protein and the role of mutations in the genesis of DT. Emerging cutting edge research techniques will be revealed. Also included is a thoughtful discussion on the controversial labelling of Desmoid Tumors as benign and the consequences of such a designation. The role of advocacy groups in supporting research and in promoting awareness of rare diseases such as DT will be outlined. This book will serve as basis to prepare clinicians, researchers and patients to embark on the quest for a cure for Desmoid Tumors.

**Features**
- First manuscript on desmoid tumors
- World renowned authors
- Encompasses topics of relevance to clinicians, scientific researchers and advocacy groups
- Provides concrete guidance for treatment planning

**Fields of interest**
- Oncology
- Surgical Oncology
- Interventional Radiology

**Target groups**
- Research

**Discount group**
- MR
M. Mahmoudi, University of California San Francisco, CA, USA (Ed.)

**Challenging Cases in Pulmonology**

From acute respiratory diseases to chronic lung conditions, pulmonology is a vital area of clinical medicine. Due to a wide array of respiratory diseases, clinical presentation of pulmonary conditions can be complex and oftentimes challenging. In addition to recognizing common characteristics of lung diseases, identifying unusual clinical presentation of pulmonary conditions remains an important educational experience. This concise and easy-to-read title provides that experience in practical context, using a case-based system of learning where a unique case is presented and discussed and questions are provided to challenge the learner and reinforce the transmission of knowledge. Challenging Cases in Pulmonology is not an exhaustive review but rather focuses on common and important problems, with emphasis on evaluation and treatment. The book offers 16 chapters consisting of two or more cases followed by five to ten multiple choice questions. A valuable resource for pulmonologists, allergists, primary care physicians, internal medicine, fellows in allergy and pulmonology, and residents in training, this practical title will also be of interest to nurses, physician assistants, and medical students studying pulmonology. Challenging Cases in Pulmonology complements two previously published case-based titles edited by Dr. Mahmoudi: Challenging Cases in Allergy and Immunology (Humana Press, 2009) and Challenging Cases in Allergic and Immunologic Diseases of the Skin (Springer, 2010).

**Features**

- Concise resource and teaching tool containing numerous practical points
- Written by leading physicians, providing their own opinions based on their experience in clinical practice
- Covers full range of common respiratory disorders, with a focus on common, everyday problems
- Offers helpful multiple choice questions to reinforce learning

**Fields of interest**

Pneumology/Respiratory System; Primary Care Medicine; Internal Medicine

**Target groups**

Professional/practitioner

**Discount group**

MR

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A. Marchevsky, Cedars-Sinai Medical Center, UCLA School of Medicine, Los Angeles, CA, USA; M. Wick, University of Virginia School of Medicine, Charlottesville, VA USA (Eds.)

**Evidence Based Pathology and Laboratory Medicine**

Focusing on practical, patient related issues, this volume provides the basic concepts of Evidence Based Medicine (EBM) as they relate to Pathology and Laboratory Medicine and presents various practical applications. It includes EBM concepts for use in the identification of cost-effective panels of immunostains and other laboratory tests and for improvement of diagnostic accuracy based on the identification of selected diagnostic features for particular differential diagnosis. EBM concepts are also put forth for use in Meta-analysis to integrate the results of conflicting literature reports and use of novel analytical tools such as Bayesian belief networks, neural networks, multivariate statistics and decision tree analysis for the development of new diagnostic and prognostic models for the evaluation of patients. This volume will be of great value to pathologists who will benefit from the concepts being promoted by EBM, such as levels of evidence, use of Bayesian statistics to develop diagnostic and other rules and stronger reliance on “hard data” to support therapeutic and diagnostic modalities.

**Features**

- Focusses on practical patient related issues
- Develops diagnostic models
- Use of meta-analysis to investigate unusual diseases

**Fields of interest**

Pathology; Laboratory Medicine; Health Administration

**Target groups**

Professional/practitioner

**Discount group**

MR

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D. A. Marcus, University of Pittsburgh, PA, USA; P. A. Bain, Dean Clinic, Madison, WI, USA

**Practical Assessment and Treatment of the Patient with Headaches in the Emergency Department and Urgent Care Clinic**

Migraine is an extremely common condition affecting 28 million Americans. Fully 1 in every 6 adult women suffers from this malady. Patients with migraine are frequently seen in the Emergency Room and Urgent Care Clinic for acute treatment of their headaches. Headache generally accounts for nearly 3 % of all ER visits, resulting in almost 3.5 million visits annually. There currently are no widely used guidelines for the treatment of patients with headache in the ER or UCC, and reducing the number of CT scans remains a key goal for administrators in many ER or urgent care settings. In one study, 35 drugs, alone or in combination, were used to treat migraine. The most common medication class used was narcotics, which were used in 25% of the visits.

**Features**

- First handbook available to exclusively address the issue of headache treatment in the acute care setting
- Practical, easy to use handbook that allows ER and UCC providers to treat patients with headache efficiently and effectively with protocols and strategies that can be used right away
- Of value to primary care providers in helping reduce the number of ER and UCC visits

**Contents**

Acknowledgements.- Preface.- Overview of headache in the emergency department.- Getting started.- Secondary headaches.- General treatment strategies.- Treating the child and adolescent with acute headache.- Treatment of pregnant and breastfeeding patients with acute headache in the ED.- Treatment of the older adult patient (>50 years old) with acute headache in the ED.- Managing risk in the ED.- After the ED: arranging post-ED follow-up care.

**Fields of interest**

Emergency Medicine

**Target groups**

Professional/practitioner

**Discount group**

MR

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Master Techniques in Blepharoplasty and Periorbital Rejuvenation

Master Techniques in Blepharoplasty and Eyelid Reconstruction is a comprehensive, multi-specialty textbook and surgical atlas on blepharoplasty and eyelid reconstruction, presenting multiple competing and complementary techniques by the leading experts in the field of plastic surgery, facial plastic surgery, and oculoplastic surgery. Only the most pioneering and time-tested surgical procedures are presented in step-by-step, illustrative detail. All areas of eyelid surgery are covered in a balanced and systematic approach. An accompanying on-line surgical atlas shows digitally video-taped procedures by the leading authors, extremely useful to any surgeon interested in blepharoplasty. Master Techniques in Blepharoplasty and Eyelid Reconstruction is the definitive textbook and atlas for any surgeon who is interested in this topic.

Features
- Edited by leading experts in a variety of specialties including facial plastic surgery, oculoplastic surgery, and reconstructive and cosmetic blepharoplasty
- Complementary textbook to the editor’s best-selling textbook on facial rejuvenation
- Provides a unique and comprehensive understanding of cosmetic brow lifting, blepharoplasty and midface surgery

Fields of interest
Ophthalmology; Plastic Surgery; Otorhinolaryngology

Target groups
Professional/practitioner

Discount group
MC

Textbook of Penile Cancer

Textbook of Penile Cancer reports accurately on recent developments in the management of penile cancer, whilst also covering the fundamentals of the disease, to provide a comprehensive, stand-alone and up-to-date volume on the subject. The surgical management of penile cancer is shifting towards increasingly refined methods, as it is believed that a proportion of patients undergo overtreatment for the disease. Where traditionally the management of penile cancer has involved partial or total penectomy combined with radical inguinal lymphadenectomy, over the last few years the treatment involves conservative penile reconstructive surgery such that sexual function and phallic length is preserved. Furthermore, the increasing utilization of sentinel lymph node biopsy rather than radical inguinal lymphadenectomy prevents the unnecessary removal of lymph nodes in patients where lymph node metastasis has not occurred. There is also likely to be a change in the role of chemotherapy and radiotherapy for advanced disease. Textbook of Penile Cancer covers the epidemiology, molecular biology, radiological imaging, as well as the latest surgical advances in the treatment of this disease. This book is a valuable reference tool for Urologists, Genitourinary Physicians, Trainee Surgeons, Plastic Surgeons, Oncologists, Dermatologists and Sexual Health Physicians.

Features
- The book’s focus on penile cancer alone is unprecedented
- Covers all aspects of the management and treatment of penile cancer. Includes up-to-date surgical techniques for tumour removal and for treatment of the lymph nodes
- Illustrations include colour photographs to aid diagnosis and to explain operative techniques. International Authorship

Fields of interest
Oncology; Urology/Andrology

Target groups
Professional/practitioner

Discount group
MC

Cytopathology of Infectious Diseases

Cytopathology of Infectious Diseases is the first book of its kind to focus entirely on the cytopathology of infectious diseases. It contains all of the pertinent information about the cytology of infectious diseases and microorganisms and will serve as an ideal handy reference. This unique volume covers the cytology of various microorganisms and the host reactions they elicit, and also incorporates an update on advances in the field. Newly recognized infections such as the recent discovery of the Merkel Cell Polymavirus (MCPV) are included, as well as the utility of new immunostains (e.g. CM284 for MCPV) and the role of molecular techniques that assist in the identification, classification and even quantification of microorganisms. Each chapter is succinctly written and concisely referenced with key published articles and resources. The volume includes practical pointers, useful diagnostic criteria, differential diagnoses and potential pitfalls. Many color images of high resolution that illustrate microorganisms (e.g. branching hyphae) and host reactions (e.g. viral cytopathic effect) are included throughout. Relevant tables with diagrams that provide quick reference guides are incorporated. Cytopathology of Infectious Diseases will serve as a valuable reference tool for cytopathologists, anatomical/clinical pathologists, cyto technologists, pathologists and cytopathology fellows.

Features
- Published in Essentials in Cytopathology book series
- Designed to be concise and easy to use
- Fits in lab coat pocket

Fields of interest
Pathology

Target groups
Professional/practitioner

Discount group
MR

Due August 2011

2011. 400 p. 658 illus., 651 in color. Hardcover
$219.00
ISBN 978-1-4614-0066-0

Due September 2011

$189.00
ISBN 978-1-84882-878-0

Due September 2011

2011. 170 p. 181 illus., 176 in color. (Essentials in Cytopathology) Softcover
$179.95
ISBN 978-1-4614-0241-1
The book will educate and decode the role of vitamins, essential fatty acids and other nutraceuticals on skin health and their tremendous impact to the current needs of the skin care industry. Focus on conditions, as acne, dermatitis, dry scaly skin or alopecia will provide a comprehensive knowledge of the relationship of nutrition and skin as well as the current attempts in nutritional or dermatological research. It will stimulate food professionals to brainstorm for new products and opportunities that will target the emerging antiaging and wellness trends and modern consumer needs.

Features
- Focuses on serious skin problems, such as acne, dermatitis, dry scaly skin, and alopecia
- Explains the role of vitamins, essential fatty acids, and other nutraceuticals on skin health
- Highly relevant to the current needs of the skin care industry

Contents

Fields of interest
Dermatology; Food Science; Chemistry/Food Science, general

Target groups
Research

Discount group
MR

Essentials of Percutaneous Dialysis Interventions

As the dialysis population grows, an expert medical resource on the percutaneous creation and maintenance of vascular access is much needed. This book fulfills exactly that need, engaging interventional radiologists, vascular surgeons, interventional nephrologists, and the medical support personnel serving these patients. Providing a clear understanding of best techniques and practices, the authors present an unbiased discussion of patient preparation, procedures, and new devices and equipment. Logically organized and concluding with a compelling collection of 15 noteworthy cases, the book is the culminating work of leading experts in their specialties. The first truly practical reference dedicated to this topic, Essentials of Percutaneous Dialysis Interventions extends across multiple medical specialties to address a global health problem. Easy to use, reader-friendly, and portable, experienced practitioners and trainees alike will find this book to be of daily value.

Features
- Focused information cuts to the heart of daily practice
- The uniform approach makes information easily accessible
- A practical guide for interventionists across multiple specialties
- Presents the unbiased expertise of the foremost international leaders in their fields

From the contents

Fields of interest
Interventional Radiology; Vascular Surgery; Nephrology

Target groups
Professional/practitioner

Discount group
MR

In vivo NMR Imaging

Methods and Protocols

Nuclear magnetic resonance imaging represents a technique that is indispensable in every day biomedical diagnostics. Thanks to the numerous ways to manipulate and detect an NMR signal, it is possible to obtain a variety of information with excellent spatial and temporal resolution. Today’s MRI techniques go far beyond the illustration of pure anatomical structures and include the revealing of processes down to the molecular level. The number of small animal imaging centers relying on MRI as a key method for preclinical research to understand diseases and to test for novel treatments is growing rapidly. In Vivo NMR Imaging: Methods and Protocols is written as an experimental laboratory text to provide a descriptive approach of the various applications of magnetic resonance imaging and its underlying principles.

Features
- Includes cutting-edge methods and protocols
- Provides step-by-step detail essential for reproducible results
- Contains key notes and implementation advice from the experts

Fields of interest
Imaging / Radiology; Animal Models

Target groups
Professional/practitioner

Discount group
MR

Available
2011. 685 p. 222 illus., 8 in color. (Methods in Molecular Biology, Volume 771) Hardcover
Health Care Advocacy
A Guide for Busy Clinicians

Interest in policy influences on health care is high, and will remain high as long as health care costs continue to rise and health care reform remains a hot topic in the news. There are inevitable and frequent points of interface between health care public policy and the health professions; in their daily work, clinicians see the problems with the health care system but often feel powerless and unsure how to advocate for system changes. Clinicians and Health Care Advocacy is written by clinicians for clinicians and focuses on how policy works and what individual professionals can do to affect policy. It looks at the facts and processes in an accessible way that employs case-based examples of clinician advocacy to illustrate its points. The book is nonpartisan and will stay neutral towards policy issues. Instead, it encourages a model of empowering clinicians as responsible for healing not only the individual patient but also the larger health care system in which they work.

Features
- The book's case-based approach makes it suitable as a learning tool as well as a clinical reference
- Highly illustrated cases provide a visual guide which is relevant to the diagnostic setting
- Currently, there is no other book available that deals specifically with systemic sclerosis in a case study format

Fields of interest
Rheumatology; Dermatology

Target groups
Professional/practitioner

Discount group
P

Case Studies in Systemic Sclerosis

Case Studies in Systemic Sclerosis deals specifically with Systemic Sclerosis in a case study format. Each case presentation includes illustrative figures, a discussion of the pathophysiology relevant to the case, a discussion of management that is both evidence-based and expert opinion-based and several key references for further reading. With its easy-to-use format, this book presents multiple different manifestations of Systemic Sclerosis to a wide range of readers. Because this disease has a broad range of systemic features, Case Studies in Systemic Sclerosis is a valuable reference tool not only to the community of rheumatologists (trainees, academic and private practice rheumatologists) and dermatologists, but also potentially to internists, gastroenterologists, pulmonologists, cardiologists and nephrologists.

Features
- The book's case-based approach makes it suitable as a learning tool as well as a clinical reference
- Highly illustrated cases provide a visual guide which is relevant to the diagnostic setting
- Currently, there is no other book available that deals specifically with systemic sclerosis in a case study format

Fields of interest
Rheumatology; Dermatology

Target groups
Professional/practitioner

Discount group
P

Laparoscopic and Robot-Assisted Surgery in Urology

Atlas of Standard Procedures

Operative urology has evolved in recent years to include laparoscopic and robot-assisted surgical procedures, which have resulted in significant improvements in quality of life-related outcome. Nevertheless, training methods in urologic laparoscopy and robot-assisted surgery vary considerably, and a structured training scheme is required to enable the modern urologist to adapt to and make optimal use of these techniques. Accordingly, the main goal of this surgical atlas is to guide the urologist carefully through all the standard laparoscopic and robot-assisted procedures. Each procedure is presented in detail with numerous supporting endoscopic images and diagrams. The reader is thereby acquainted with the different surgical steps and will acquire the knowledge necessary for reliable reproduction of the techniques in clinical practice.

Features
- Offers a detailed, step-by-step guide to all the standard laparoscopic and robot-assisted procedures used in urology
- Includes numerous supporting endoscopic images and diagrams
- Provides the type of structured training scheme required to enable the modern urologist to adapt to and make optimal use of these techniques

Contents

Fields of interest
Urology/Andrology; Minimally Invasive Surgery; Surgical Oncology

Target groups
Professional/practitioner

Discount group
MR
Annual Update in Intensive Care and Emergency Medicine 2011

The Annual Update compiles the most recent developments in experimental and clinical research and practice in one comprehensive reference book. The chapters are written by well recognized experts in the field of intensive care and emergency medicine. It is addressed to everyone involved in internal medicine, anesthesia, surgery, pediatrics, intensive care and emergency medicine.

Contents
- Mechanisms of Multiple Organ Failure
- Coagulation System
- Acute Respiratory Failure
- Endotracheal Intubation
- Ventilator Issues
- Cardiac Crises
- Renal Aspects
- Fluids
- The Microcirculation
- Cardiovascular Monitoring
- Perioperative Medicine
- Infection and Sepsis
- Liver Failure
- Trauma and Emergency Medicine
- Neurological-Metabolic Disorders and Nutrition
- ICU Organization and Management
- The Future

Features
- Comprehensively documents the most recent developments in experimental and clinical research in intensive care and emergency medicine
- Written by acknowledged experts in the field
- Broad appeal for all who work in internal medicine, anesthesia, surgery, pediatrics, intensive care, and emergency medicine

Target groups
- Professional/practitioner

Discount group
- MR

Frozen Section Library: Liver, Extrahepatic Biliary Tree and Gallbladder

The Frozen Section Library series provides concise, user-friendly, site specific handbooks that are well illustrated and highlight the pitfalls, artifacts and differential diagnosis issues that arise in the hurried frozen section scenario. Frozen Section Library: Liver, Extrahepatic Biliary Tree and Gallbladder provides a convenient reference for use during intraoperative consultation. The volume addresses commonly encountered challenges, such as the diagnosis of primary and secondary hepatic neoplasms and assessment of gross abnormalities of the gallbladder. The assessment of frozen section biopsies for liver transplantation, a challenging and increasingly encountered situation, is detailed in the form of histologic criteria that should be reported. Emphasis is placed on the differential diagnoses of gross and microscopic findings with attention to potential pitfalls and artifacts encountered on frozen section. gross and microscopic images are provided as well as user-friendly tables for quick reference.

Features
- Convenient reference for intraoperative consultation
- Addresses commonly encountered challenges
- Provides gross and microscopic images

Contents
- Intraoperative Evaluation of Primary Hepatocellular Tumors
- Intraoperative Evaluation of Hepatic Biliary Lesions
- Metastases and Mimics of Metastatic Disease in the Liver
- Mesenchymal and Pediatric Tumors of the Liver
- Intraoperative Assessment of Donor Livers in the Transplant Setting
- Intraoperative Evaluation of the Extrahepatic Biliary Tree and Ampulla of Vater
- Intraoperative Evaluation of the Gallbladder

Target groups
- Pathology

Discount group
- MR

Auditory Prostheses

New Horizons

Cochlear implants are currently the standard treatment for profound sensorineural hearing loss. In the last decade, advances in auditory science and technology have not only greatly expanded the utility of electric stimulation to other parts of the auditory nervous system in addition to the cochlea, but have also demonstrated drastic changes in the brain in responses to electric stimulation, including changes in language development and music perception. Volume 20 of SHAR focused on basic science and technology underlying the cochlear implant. However, due to the newness of the ideas and technology, the volume did not cover any emerging applications such as bilateral cochlear implants, combined acoustic-electric stimulation, and other types of auditory prostheses, nor did it review brain plasticity in responses to electric stimulation and its perceptual and language consequences. This proposed volume takes off from Volume 20, and expands the examination of implants into new and highly exciting areas.

Features
- Discusses the advances in the development and application of auditory prostheses
- Provides insight into the advances over the past seven years, and also examines a range of other current issues that concern complex processing of sounds by the prosthetic device users
- The material in this volume very much relates to a material in a large number of previous SHAR volumes

Available


April 2011

$159.00
ISBN 978-1-4419-9433-7
Development of Antibody-Based Therapeutics

Translational Considerations

Translational strategies for development of antibody-based therapeutics should allow understanding of the relationship between the ‘unit dose’ and ‘unit effect’ with respect to both beneficial and deleterious effects from early stages of development. The flow of information from later to earlier stages of development should provide opportunities to facilitate selection of more effective novel and next-generation drug candidates. Selection and evaluation of relevant biomarkers in early preclinical development in “relevant” animal models should allow for identifying potential risks to humans and establishing safe First-In-Human (FIH) dosing strategies. Hence, integration of knowledge with respect to target antigen properties such as antigen distribution, expression profile, kinetic properties, target pharmacology, antigen isoforms and pharmacological redundancy in health and disease, as well as antibody design criteria, such as antibody isotype, affinity, PK/PD and safety is a critical necessity for the design of effective translational strategies. Additionally, these factors will further offer critical differentiating characteristics for next-generation antibodies, and novel technologies prove instrumental in generation of biosuperior antibody candidates for market entry.

Features

► Examines important considerations necessary for the design of effective translational strategies during the development of antibody-based therapeutics
► Improves the understanding of generation and engineering of human antibodies
► Discusses strategies for development of novel therapies

Fields of interest
Pharmacy; Pharmacology/Toxicology; Biochemistry, general

Target groups
Research

Discount group
P
**Essays on the Doctrinal Study of Law**

Essays on the Doctrinal Study of Law is a summary of the author’s 40 years of discussion in the fields of civil law and the philosophy of law. The main focus is on the two main tasks in the doctrinal study of law: the interpretation and systematisation of legal norms. In this regard, Professor Aarnio deals with the theory of argumentation as well as with its foundations - i.e., with the ontology, epistemology and methodology of legal thinking - and develops the ideas that were first presented in The Rational as Reasonable (Kluwer 1987) in all of these dimensions. The work includes an updated discussion on the writings of Robert Alexy, Jürgen Habermas, Ronald Dworkin and Alf Ross. A focal point of view concerns the distinction between positivism and non-positivism, in which the core of the criticism focuses on Scandinavian realism.

**Features**

- A new and personal analysis of the role of ontology in legal reasoning
- New interpretation is given to the much discussed theory of (legal) institutions
- Introduces the modern theory of legal reasoning of the Nordic countries

**From the contents**


**Fields of interest**

Philosophy of Law; Law Theory/Law Philosophy; Political Science

**Target groups**

Research

**Discount group**

P

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**Socratic, Platonic and Aristotelian Studies: Essays in Honor of Gerasimos Santas**

This volume contains outstanding studies by some of the best scholars in ancient Greek Philosophy on key topics in Socratic, Platonic, and Aristotelian thought. These studies provide rigorous analyses of arguments and texts and often advance original interpretations. The essays in the volume range over a number of central themes in ancient philosophy, such as Socratic and Platonic conceptions of philosophical method; the Socratic paradoxes; Plato's view on justice; the nature of Platonic Forms, especially the Form of the Good; Aristotle's views on the faculties of the soul; Aristotle's functionalist account of the human good; Socratic, Platonic, and Aristotelian views on the nature of desire and its object. The volume will be of interest to students and scholars of ancient philosophy and classics.

**Features**

- Provides a rich account of some of the most central themes in ancient philosophy
- Offers original interpretations of key philosophical issues in Socrates, Plato, and Aristotle
- Explores important philosophical topics in Socrates, Plato, and Aristotle that continue to be of interest to contemporary philosophers

**Fields of interest**

History of Philosophy; Classical Philosophy; Ethics

**Target groups**

Research

**Discount group**

P

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**Corporate Governance and Business Ethics**

This volume explores corporate governance from three perspectives: a traditional economic, a philosophical, and an integrated business ethics perspective. Corporate governance has enjoyed a long tradition in the English-speaking world of management sciences. Following its traditional understanding it is defined as leadership and control of a firm with the aim of securing the long-term survival and viability of that firm. But recent business scandals and financial crises continue to provide ample cause for concern and have all fuelled interest in the ethical aspects. As a result, corporate governance has been criticized by many social groups. Economic sciences have failed to provide a clear definition of the corporate governance concept. Complexity increases if we embed the economic approach of corporate governance in a philosophical context. This book seeks to define the concept by examining its economic, philosophical and business ethics foundations.

**Features**

- Brings together leading international researchers in the field
- Is published within the well-known Ethical Economy, Studies in Economic Ethics and Philosophy series
- Reunites philosophical and economic ideas of corporate governance

**Fields of interest**

Ethics; Business/Management Science, general; Social Sciences, general

**Target groups**

Research

**Discount group**

P
Applying Care Ethics to Business

Applying Care Ethics to Business is a multidisciplinary collection of original essays that explores the intersection between the burgeoning field of care ethics and business. Care ethics is an approach to morality that emphasizes relational, particularist, and affective dimensions of morality that evolved from feminist theory and today enjoys robust intellectual exploration. Care ethics emerged out of feminist theory in the 1980’s and the greatest contribution to moral analysis among Women’ Studies scholars. Today, feminists and non-feminist scholars are increasingly taking care ethics seriously. Applying care to the marketplace is a natural step in its maturity. Applying Care Ethics to Business is the first book-length analysis of business and economic cases and theories from the perspective of care theory.

Features
► Offers a unique opportunity to rethink corporate responsibility and business ethics
► Provides fresh and timely insight into ideal business values and commitments
► First book-length analysis of business and economic cases and theories from the perspective of care theory
► Explores the intersection between the burgeoning field of care ethics and business

Fields of interest
Ethics; Gender Studies; Business/Management Science, general

Target groups
Research

Discount group
P

Persons, Moral Worth, and Embryos
A Critical Analysis of Pro-Choice Arguments

“Bioethicists have achieved consensus on two ideas pertaining to beginning of life issues: (1) persons are those beings capable of higher-order cognition, or self-consciousness, and (2) it is impermissible to kill only persons. As a consequence, a consensus is reached regarding the permissibility of both destroying human embryos for research purposes and abortion. The present collection aims to interact critically with this consensus. Authors address various aspects of this ‘orthodoxy’. Issues discussed include: theories of personhood and in particular the role of thought experiments used in support of such theories; the notion of an intrinsic potential and the moral relevance of having one; new formulations of the virtue argument against abortion rights; four-dimensionalism and abortion; the notion of moral status and who (or what) has it; scientific accounts of what a human being is, as well as addressing empirical evidence of fetal consciousness; and analysis of the public policy implications given the epistemic status of pro-choice arguments. Given the issues discussed and that the arguments in critical focus are fairly new, the collection provides a novel, comprehensive, and rigorous analysis of contemporary pro-choice arguments.”

Features
► The book offers novel arguments and explores new territory on the abortion issue
► The book brings together a host of primarily analytical philosophers, public policy persons, and scientists to provide a comprehensive analysis of the abortion issue
► The book aims to tether its analyses to specific claims, thereby entering into a dialogue with abortion-rights advocates

Fields of interest
Ethics

Target groups
Research

Discount group
P

Corporate Citizenship and New Governance
The Political Role of Corporations

This volume unites the perspective of business ethics with approaches from strategic management, economics, law, political science, and with philosophical reflections on the theory of Corporate Citizenship and New Governance. In view of the internationalization of the (global) economy and the free movement of capital, new instruments of political coordination are needed. These societal changes trigger the two closely intertwined challenges examined in this book. The first challenge relates to the role and the self-conceptualization of business firms as corporate citizens within society. Companies are increasingly expected to assume the social responsibility of helping to shape the rule-framework of globalization. The second challenge refers to the form of the engagement in local, national and international processes of governance. To more credibly and effectively tackle these challenges, corporate actors are ever more participating in rule-setting processes together with civil society organizations and the government.

Features
► Brings together internationally distinguished experts from different disciplines
► Discusses cutting-edge research insights
► Examines a highly innovative topic
► Brings together united business ethics perspectives and interdisciplinary approaches

Fields of interest
Ethics; Economics/Management Science, general; Political Science

Target groups
Research

Discount group
P
Heidegger, Translation, and the Task of Thinking

Essays in Honor of Parvis Emad

Numerous volumes have been written on the philosophy of Martin Heidegger, and new translations of his writings appear on a regular basis. Up to now, however, no book has addressed the connections between Heidegger’s thought and the hermeneutic methodology involved in translating his works - or any other text. Gathering essays by internationally recognized scholars, this volume examines the specific synergy that holds between Heidegger’s thinking and the distinctive endeavor of translation. Heidegger, Translation, and the Task of Thinking: Essays in Honor of Parvis Emad offers scholars and students alike a rare journey into the insights and intricacies of one of the greatest philosophers of the twentieth century. The book also pays homage to Parvis Emad, Professor Emeritus of Philosophy at De Paul University, founder of the journal Heidegger Studies and a renowned translator of Heidegger’s writings. Heidegger, Translation, and the Task of Thinking: Essays in Honor of Parvis Emad provides a uniquely focused perspective on Heidegger’s thought, and delves into the strategies and controversies that attend all attempts to translate his most complex and challenging texts, including his seminal works Contributions to Philosophy and Mindfulness. Accordingly, this book will be of great interest and benefit to anyone working in the fields of phenomenology, hermeneutics, or Heidegger studies.

Features

- Meets growing interest in translating Heidegger’s works
- Includes an original essay by Martin Heidegger, “ Poverty” (1945), translated into English by Thomas Kalary and Frank Schalow
- Offers a critical appraisal of the problem of translation, and specifically the methodology for translating Heidegger’s writings
- Takes a new look at the hermeneutic aspect of translation

Fields of interest

Phenomenology; Translation; Ontology

Target groups

Research

Discount group

P

History, Philosophy and Theory of the Life Sciences

Series editors: P. Huneman, T. Reydon, C. T. Wolfe

History, Philosophy and Theory of the Life Sciences is a space for dialogue between Life Scientists and Philosophers or Historians – welcoming both essays about the principles and domains of cutting-edge research in the Life Sciences, novel ways of tackling philosophical issues raised by the Life Sciences, as well as original research about the history of methods, ideas and tools, which constitute the genealogy of our current ways of understanding living phenomena. The series is interested in receiving technical book proposals that are

Features

- First detailed reading of the methodological and theoretical influence of David Marr’s foundational book in cognitive science: Vision
- First book length study of the development of recent theories of vision since David Marr
- A detailed study of the interplay between conceptual and experimental investigations of vision from the 1981 Nobel prize winners David Hubel and Torsten Wiesel to the present

From the contents


Fields of interest

Philosophy of Science; Neurobiology; Cognitive Psychology

Target groups

Research

Discount group

P
Phenomenology/Ontopoiesis
Retrieving Cosmic Horizons of Antiquity
Logos and Life

The controversy of flux and stasis as the groundwork of reality of Greek ancient philosophy reached its crux in the all encompassing doctrine of the logos by Heraclitus of Ephesus. It centers upon human soul in its role with the cosmos. Philosophy of the Occident corroborating Greek insights with the progress of culture in numerous interpretations (Kant, Kierkegaard, Husserl, Merleau-Ponty, Ricoeur…), presented in this collection has neglected the cosmic sphere. While contemporary development of science revealed its grounding principles (papers by Grandpierre, Kule and Trutty-Coohill) the ancient logos fully emerges. Thus, logos hitherto hidden in our commerce with earth is revealed in its intertwinnings with the cosmos through the trajectories of the phenomenology/ontopoiesis of life (Tymieniecka). The crucial link between the soul and the cosmos, in a new geo-cosmic horizon, is thus being retrieved.

Features
- Continental philosophy continues to be rooted in the ancient Greek principle of the Logos, which subtends our conception of rationality of all things.
- Contemporary science revealing the grounding principles of becoming uncovers the Logos hidden in our dealings with earth in its interlacings with the sky.
- Logos in the ontopoiesis of life opens through its trajectories of becoming its full horizon – so long closed – toward future of the fulfilled metaphysics.

Fields of interest
Phenomenology; Classical Philosophy; Metaphysics

Target groups
Research

Discount group
P

Due August 2011
$279.00

Doing good with technologies: taking responsibility for the social role of emerging technologies

20th century technologies like cars, the Internet, and the contraceptive pill have altered our actions, changed our perceptions and influenced our moral ideas, for better and worse. Upcoming technologies are bound to fulfill their own unique social roles. How can we advance this social role so that it will support the good live and limit undesired changes? This book explores whether we can take a forward looking responsibility to optimize the social roles of technologies. In doing so, the book discusses three issues: first, it aims to understand the social role of technologies; second, it explores what it means to accept responsibility for this social role; and, third, it searches for some forward looking tools that help us to see how new technologies may influence human behavior. In a rather unique approach, this book combines the influential sociological research of Bruno Latour on the social impacts of technologies with the contemporary Aristotelianism of Alasdair MacIntyre.

Features
- Unique interdisciplinary research on Social Technology Studies and Philosophy of Technology
- New model of responsibility for technology on Life Ethics / Virtue Ethics
- Brings Ethics back into Actor-Network Theory (ANT)
- Combines classical ethicists with the social role of technologies
- Features a case study on intelligent cars

Fields of interest
Philosophy of Technology; Ethics; Philosophy of the Social Sciences

Target groups
Research

Discount group
P

Due July 2011
$139.00

Ethical Principles and Economic Transformation – A Buddhist Approach

Buddhism points out that emphasizing individuality and promoting the greatest fulfillment of the desires of the individual conjointly lead to destruction. The book promotes the basic value-choices of Buddhism, namely happiness, peace and permanence. Happiness research convincingly shows that not material wealth but the richness of personal relationships determines happiness. Not things, but people make people happy. Western economics tries to provide people with happiness by supplying enormous quantities of things and today’s dominating business models are based on and cultivates narrow self-centeredness. But what people need are caring relationships and generosity. Buddhist economics makes these values accessible by direct provision. Peace can be achieved in nonviolent ways. Wanting less can substantially contribute to this endeavor and make it happen more easily. Permanence, or ecological sustainability, requires a drastic cutback in the present level of consumption and production globally. This reduction should not be an inconvenient exercise of self-sacrifice. In the noble ethos of reducing suffering it can be a positive development path for humanity.

Features
- The most comprehensive presentation yet of the Buddhist approach to economics and business
- Cutting edge research in CSR shows the relevance of Buddhism’s promotion of cooperation, care and generosity
- Highlights one of the most popular and fast-growing trends in the USA, Western Europe and Japan

Fields of interest
Ethics; Development Economics; Religious Studies

Target groups
Research

Discount group
P
Reciprocity, Spatial Mapping and Time Reversal in Electromagnetics

This long awaited second edition traces the original developments from the 1970s and brings them up to date with new and previously unpublished material to give this work a new lease of life for the early twenty-first century and readers new to the topic. In the winter of 1970-71, Colman Altman had been finding almost exact symmetries in the computed reflection and transmission matrices for plane-stratified magnetoplasmas when symmetrically related directions of incidence were compared. At the suggestion of Kurt Suchy the complex conjugate wave fields, used to construct the eigenmode amplitudes via the mean Poynting flux densities, were replaced by the adjoint wave fields that would propagate in a medium with transposed constitutive tensors, to yield a scattering theorem – reciprocity in k-space – in the computer output. To prove the result analytically, one had to investigate the properties of the adjoint Maxwell system, and the two independent proofs that followed, in 1975 and 1979, proceeded according to the personal preference of each of the authors. The proof given in this volume, based on the hindsight provided by later results, is much more simple and concise. Later, when media with bianisotropic constitutive tensors were investigated, it was found that conjugate (reciprocal) matrices for plane-stratified magnetoplasmas when symmetrically related directions of incidence were compared. At the suggestion of Kurt Suchy the complex conjugate wave fields, used to construct the eigenmode amplitudes via the mean Poynting flux densities, were replaced by the adjoint wave fields that would propagate in a medium with transposed constitutive tensors, to yield a scattering theorem – reciprocity in k-space – in the computer output. To prove the result analytically, one had to investigate the properties of the adjoint Maxwell system, and the two independent proofs that followed, in 1975 and 1979, proceeded according to the personal preference of each of the authors. The proof given in this volume, based on the hindsight provided by later results, is much more simple and concise. Later, when media with bianisotropic constitutive tensors were investigated, it was found that conjugate (reciprocal) matrices for plane-stratified magnetoplasmas when symmetrically related directions of incidence were compared.

Features
- Unique approach
- Still in use as an authoritative text after twenty years
- Updated and expanded second edition

Fields of interest
- Optics and Electrodynamics; Theoretical, Mathematical and Computational Physics; Electrical Engineering

Target groups
- Research

Discount group
- P

Quantum Mechanics
A Modern and Concise Introductory Course

Starting from basic principles, the book covers a wide variety of topics, ranging from Heisenberg, Schroedinger, second quantization, density matrix and path integral formulations of quantum mechanics, to applications that are (or will be) corner stones of present and future technologies. The emphasis is on spin waves, quantum information, recent tests of quantum physics and decoherence. The book provides a large amount of information without unbalancing the flow of the main ideas by laborious detail.

Features
- The presentation in the new edition of this well-reviewed textbook is clear and goes to the core of the questions
- The balance between principles, concepts and applications is optimal
- The material presented is touching active areas of physics
- Supplies new views on decoherence, entanglement and path integral formulation of quantum mechanics
- Gives background needed to understand quantum cryptography, teleportation and computation

Contents
- Introduction.
- The Principles of Quantum Mechanics.
- Other Consequences of the Basic Principles.
- The Heisenberg Realization of Quantum Mechanics.
- The Schroedinger Realization of Quantum Mechanics.
- Angular Momenta.
- Three-Dimensional Hamiltonian.
- Many-Body Problems.
- Approximate Solutions to Quantum Problems.
- Time-Dependence in Quantum Mechanics.
- Broken Symmetries.
- Entanglement and Experimental Tests of Quantum Mechanics.
- Quantum Information.
- Other Formulations of Quantum Mechanics: the Density Matrix and the Path Integral.
- The Classical and Quantum Realities. Decoherence and Measurements.
- A Brief History of Quantum Mechanics.

Fields of interest
- Quantum Physics; Quantum Field Theories, String Theory

Target groups
- Graduate

Discount group
- P

Laboratory Science with Space Data
Accessing and Using Space-Experiment Data

For decades experiments conducted on space stations like MIR and the ISS have been gathering data in many fields of research in the natural sciences, medicine and engineering. The EU-sponsored Ulisse Internet Portal provides metadata from space experiments of all kinds and links to the data. Complementary to the portal, this book will serve as handbook listing space experiments by type of infrastructure, area of research in the life and physical sciences, data type, what their mission was, what kind of data they have collected and how one can access this data through Ulisse for further research. The book will provide an overview of the wealth of space experiment data that can be used for research, and will inspire academics (e.g. those looking for topics for their PhD thesis) and research departments in companies for their continued development.

Features
- This book details:
- The past, present and future space infrastructures and ground-based facilities in both life and physical sciences
- The areas of science and technology concerned in life and physical sciences
- What kind of data are generated
- How to obtain these data from the Ulisse project

From the contents
- 1 Introduction.
- 2 Space and Ground-Based Infrastructures.
- 2.1 Characteristics of the Space Environment.
- 2.2 Space Infrastructure.
- 2.3 Non-orbital weightless research platforms.
- 2.4 Ground-based facilities and space simulators.
- 3 Areas of research.
- 3.1 Physical sciences.
- 3.2 Life sciences.

Fields of interest
- Astronomy, Astrophysics and Cosmology; Aerospace Technology and Astronautics; Life Sciences, general

Target groups
- Research

Discount group
- P
K. Blum, Universität Münster, Münster, Germany

Density Matrix Theory and Applications

Written in a clear pedagogic style, this book deals with the application of density matrix theory to atomic and molecular physics. The aim is to precisely characterize states by a vector and to construct general formulas and proofs of general theorems. The basic concepts and quantum mechanical fundamentals (reduced density matrices, entanglement, quantum correlations) are discussed in a comprehensive way. The discussion leads up to applications like coherence and orientation effects in atoms and molecules, decoherence and relaxation processes.

This third edition has been updated and extended throughout and contains a completely new chapter exploring nonseparability and entanglement in two-particle spin-1/2 systems. The text discusses recent studies in atomic and molecular reactions. A new chapter explores nonseparability and entanglement in two-particle spin-1/2 systems.

Features
- Deals with the basics and application of density matrix theory to atomic and molecular physics
- Presents an elegant way to describe processes in atomic physics with a minimum amount of formulas
- Comprehensive introduction to the theory
- Includes advanced applications of the theory in atomic and molecular physics

Contents

Fields of interest
Atomic, Molecular, Optical and Plasma Physics; Mathematical Methods in Physics; Quantum Physics

Target groups
Research

Discount group
P

M. Bojowald, The Pennsylvania State University, University Park, Pennsylvania

Quantum Cosmology

Consequences of quantum gravity on grander scales are expected to be enormous: only such a theory can show how black holes really behave and where our universe came from. Applications of loop quantum gravity to cosmology have especially by now shed much light on cosmic evolution of a universe in a fundamental, microscopic description. Modern techniques are explained in this book which demonstrate how the universe could have come from a non-singular phase before the big bang, how equations for the evolution of structure can be derived, but also what fundamental limitations remain to our knowledge of the universe before the big bang. The following topics will be covered in this book: Hamiltonian cosmology: a general basic treatment of isotropy, perturbations and their role for observations; useful in general cosmology. Effective equations: an efficient way to evaluate equations of quantum gravity, which is also useful in other areas of physics where quantum theory is involved. Loop quantization: a new formalism for the atomic picture of space-time; usually presented at a sophisticated mathematical level, but evaluated here from an intuitive physical side.

Features
- Bridges the gap between quantum gravity research and cosmology
- Discusses concepts and philosophical implications of the universe before the big bang
- The author is credited for establishing loop quantum gravity, the main approach to understanding quantum cosmology

From the contents

Fields of interest
Classical and Quantum Gravitation, Relativity Theory; Quantum Physics

Target groups
Research

Discount group
P

F. Catoni, ENEA, Rome, Italy; D. Boccaletti, University of Rome “La Sapienza”, Rome, Italy; R. Cannata, ENEA, Rome, Italy; V. Catoni, Rome, Italy; P. Zampetti, ENEA, Rome, Italy

Geometry of Minkowski Space-Time

This book provides an original introduction to the geometry of Minkowski space-time. A hundred years after the space-time formulation of special relativity by Hermann Minkowski, it is shown that the kinematical consequences of special relativity are merely a manifestation of space-time geometry. The book is written with the intention of providing students (and teachers) of the first years of University courses with a tool which is easy to be applied and allows the solution of any problem of relativistic kinematics at the same time. The book treats in a rigorous way, but using a non-sophisticated mathematics, the kinematics of special relativity. As an example, the famous “Twin Paradox” is completely solved for all kinds of motions. The novelty of the presentation in this book consists in the extensive use of hyperbolic numbers, the simplest extension of complex numbers, for a complete formalization of the kinematics in the Minkowski space-time. Moreover, from this formalization the understanding of gravity comes as a manifestation of curvature of space-time, suggesting new research fields.

Features
- Provides an original introduction to the geometry of Minkowski spacetime
- Gives concise guidance to solving problems of relativistic kinematics
- Contains problems of relativistic kinematics
- Solves the “Twin Paradox” for all kinds of motion
- Extensive use of hyperbolic and complex numbers
- Complete formalization of the kinematics in Minkowski space-time
- Shows that the kinematical consequences of special relativity are merely a manifestation of space-time geometry
- Gives understanding of gravity as a manifestation of curvature of spacetime

Fields of interest
Theoretical, Mathematical and Computational Physics; Applications of Mathematics; Classical and Quantum Gravitation, Relativity Theory

Target groups
Research

Discount group
P

Available
Price $169.00
ISBN 978-3-642-20560-9

Due June 2011
2011. VI, 302 p. 13 illus. 4 in color. (Lecture Notes in Physics, Volume 835) Hardcover
Price approx. $59.95

Available
2011. VIII, 114 p. 28 illus. (SpringerBriefs in Physics) Softcover
Price $49.95
ISBN 978-3-642-17976-1
The Science of Astrobiology
A Personal View on Learning to Read the Book of Life

Since the publication of The New Science of Astrobiology in the year 2001—the first edition of the present book—two significant events have taken place raising the subject from the beginning of the present century to its present maturity. Firstly, in 2001 the Galileo Mission still had two years to complete its task, which turned out to be an outstanding survey of the Jovian system, especially of its intriguing satellite Europa. Secondly, the Cassini Huygens Mission was still on its way to Saturn. Its present success has surpassed all expectations of ESA and NASA. Astrobiologists still did not know that Titan was the fifth body in the Solar System that possibly contained a water ocean (including the Earth and the three Galilean satellites other than Io). For these reasons the book includes overviews of the evolutionary and molecular biology that are necessary. There is a discussion of other sectors of culture that are the natural frontiers of astrobiology, especially the humanities.

Features
- The book includes subjects missing in other discussions of astrobiology that help the reader to appreciate the limitations of our current understanding of astrobiology (philosophy and the current bases of cosmology)
- References in each chapter to the rich enclosed illustrated glossary help the reader to find his or her way through the vast array of disciplines that make up astrobiology
- Includes over 100 illustrations mostly in colour that lead specialists in diverse scientific areas, as well as in the humanities, gently and pleasantly into the most relevant arguments

Fields of interest
Astrobiology; Extraterrestrial Physics, Space Sciences; Astronomy, Astrophysics and Cosmology

Target groups
Upper undergraduate

Discount group
P
Digital Holographic Microscopy
Principles, Techniques, and Applications

Digital holography is an emerging field of new paradigm in general imaging applications. The book presents an introduction to the theoretical and numerical principles and reviews the research and development activities in digital holography, with emphasis on the microscopy techniques and applications. Topics covered include the general theory of diffraction and holography formations, and practical instrumentation and experimentation of digital holography. Various numerical techniques are described that give rise to the unique and versatile capabilities of digital holography. Representative special techniques and applications of digital holography are discussed. The book is intended for researchers interested in developing new techniques and exploring new applications of digital holography.

Features
- Provides the foundations and new developments of digital holography with emphasis on the microscopy techniques and applications
- Presents vital mathematical and numerical principles in a clear, yet highly-detailed, manner
- Supplies a concise but comprehensive introduction to the field, allowing the reader to attain enough technical background to begin experimentation and exploration

From the contents

Fields of interest
Optics, Optoelectronics, Plasmonics and Optical Devices; Computer Imaging, Vision, Pattern Recognition and Graphics; Biological Microscopy

Energy-Aware System Design
Algorithms and Architectures

Power consumption becomes the most important design goal in a wide range of electronic systems. There are two driving forces towards this trend: continuing device scaling and ever increasing demand of higher computing power. First, device scaling continues to satisfy Moore's law via a conventional way of scaling (More Moore) and a new way of exploiting the vertical integration (More than Moore). Second, mobile and IT convergence requires more computing power on the silicon chip than ever. Cell phones are now evolving towards mobile PC. PCs and data centers are becoming commodities in house and a must in industry. Both supply enabled by device scaling and demand triggered by the convergence trend realize more computation on chip (via multi-core, integration of diverse functionalities on mobile SoCs, etc.) and finally more power consumption incurring power-related issues and constraints.

Energy-Aware System Design: Algorithms and Architectures provides state-of-the-art ideas for low power design methods from circuit, architecture to software level and offers design case studies in three fast growing areas of mobile storage, biomedical and security.

Features
- Successful examples or ideas on the application of energy awareness in various application areas are presented
- Introduces physical and information theoretic principles, and fundamental circuit and chip-level low-power/energy techniques
- Describes the state-of-the-art energy-aware algorithms and architectures in a number of information processing hardware blocks processor

Fields of interest
Solid State Physics; Circuits and Systems; Signal, Image and Speech Processing

Target groups
Research

Discount group
P

Due August 2011


> approx. $129.00

Available

2011. 400 p. 208 Illus., 64 in color. Hardcover

> approx. $129.00
ISBN 978-94-007-1678-0
Astronomy at the Frontiers of Science

Astronomy is by nature an interdisciplinary activity: it involves mathematics, physics, chemistry and biology. Astronomers use (and often develop) the latest technology, the fastest computers and the most refined software. In this book twenty-two leading scientists from nine countries talk about how astronomy interacts with these other sciences. They describe modern instruments used in astronomy and the relations between astronomy and technology, industry, politics and philosophy. They also discuss what it means to be an astronomer, the history of astronomy, and the place of astronomy in society today.

Features
► First book comprehensively describing interdisciplinary aspects of contemporary astronomy
► Unique description by top specialists of challenges facing 21st century astronomers
► Provides historical perspective, including the struggle of astronomy against astrology

From the contents

Dune Worlds
How Windblown Sand Shapes Planetary Landscapes

This book describes how sand dunes work, why they are the way they are in different settings, and how they are being studied. Particular attention is paid to their formation and appearance elsewhere in the solar system. New developments in knowledge about dunes make for an interesting story – like the dunes themselves, dune science is dynamic – and the visual appeal of Aeolian geomorphology ensures that this is an attractive volume.

Features
► Compares and contrasts for the first time the characteristics and formation of sand dunes on Earth, Mars and Titan
► Imparts fundamental knowledge about how dunes form
► Updates the literature on geomorphology and planetary science
► Provides a comprehensive overview of all aspects of dune studies on planetary bodies

Contents
1.1 Introduction.- 1.2 Dune Physics.- 1.3 Dune Trafficability – soil mechanics, effects on mobility on Earth, Mars and elsewhere.- 2.1 Earth.- 2.2 Mars.- 2.3 Titan.- 2.4 Elsewhere.- 3.1 Field Studies - Overview.- 3.2 Laboratory Studies.- 3.3 Computer Models.- 4. Conclusions.

Fields of interest
Astronomy, Astrophysics and Cosmology; Applied Earth Sciences; Popular Science in Astronomy

Target groups
Graduate

Discount group
P

Available
► $179.00

Biomechanics of the Brain

Biomechanics of the Brain will present an introduction to brain anatomy for engineers and scientists. Experimental techniques such as brain imaging and brain tissue mechanical property measurement will be discussed, as well as computational methods for neuroimage analysis and modeling of brain deformations due to impacts and neurosurgical interventions. Brain trauma between the different sexes will be analyzed. Applications will include prevention and diagnosis of traumatic injuries, such as shaken baby syndrome, neurosurgical simulation and neurosurgical guidance, as well as brain structural disease modeling for diagnosis and prognosis.

This book will be the first book on brain biomechanics. It will provide a comprehensive source of information on this important field for students, researchers, and medical professionals in the fields of computer-aided neurosurgery, head injury, and basic biomechanics.

Features
► Provides, for the first time, a comprehensive resource in the field of brain biomechanics
► Edited by leading authority in the field, with contributions from scientists at major institutions
► A must-have for students and researchers in the areas of computer-aided neurosurgery, head injury, and basic biomechanics

Contents

Fields of interest
Biophysics and Biological Physics; Biomedical Engineering; Neurosurgery

Target groups
Research

Discount group
P

Available
2011. 200 p. 107 illus., 62 in color. (Biological and Medical Physics, Biomedical Engineering) Hardcover
► $129.00
Reduced-Order Modelling for Flow Control

The book focuses on the physical and mathematical foundations of model-based turbulence control: reduced-order modelling and control design in simulations and experiments. Leading experts provide elementary self-consistent descriptions of the main methods and outline the state of the art. Covered areas include optimization techniques, stability analysis, nonlinear reduced-order modelling, model-based control design as well as model-free and neural network approaches. The wake stabilization serves as unifying benchmark control problem.

Features
- First book with successful strategies for closed-loop turbulence control written by leading international researchers and scholars
- Good introductory reading due to a focus on exemplified principles of the modelling and control strategy

Contents

Fields of interest
Fluid- and Aerodynamics; Mathematical Modeling and Mathematics in Industry; Engineering Fluid Dynamics

Target groups
Research

Discount group
P

Available
2011. 328 p. 101 illus. (CISM International Centre for Mechanical Sciences, Volume 528) Hardcover
$209.00
ISBN 978-3-7091-0757-7

Laser-Induced Breakdown Spectroscopy
Fundamentals and Applications

This book is a comprehensive source of the fundamentals, process parameters, instrumental components and applications of laser-induced breakdown spectroscopy (LIBS). The effect of multiple pulses on material ablation, plasma dynamics and plasma emission is presented. A heuristic plasma modeling allows to simulate complex experimental plasma spectra. These methods and findings form the basis for a variety of applications to perform quantitative multi-element analysis with LIBS. These application potentials of LIBS have really boosted in the last years ranging from bulk analysis of metallic alloys and non-conducting materials, via spatially resolved analysis and depth profiling covering measuring objects in all physical states: gaseous, liquid and solid. Dedicated chapters present LIBS investigations for these tasks with special emphasis on the methodical and instrumental concepts as well as the optimization strategies for a quantitative analysis. Requirements, concepts, design and characteristic features of LIBS instruments are described covering laboratory systems, inspections systems for in-line process control, mobile systems and remote systems. State-of-the-art industrial applications of LIBS systems are presented demonstrating the benefits of inline process control for improved process guiding and quality assurance purposes.

Features
- Comprehensively presents fundamentals, principles and applications of LIBS
- Explains the underlying physics and methodical approaches to optimize quantitative element analysis
- Reviews a broad variety of applications fields for conducting and non-conducting materials: gaseous, liquid and solid materials, nanoparticles, including industrial applications
- Indicates achieving world records in limit of detection and measuring frequency

Fields of interest
Spectroscopy and Microscopy; Atoms and Molecules in Strong Fields, Laser Matter Interaction; Characterization and Evaluation of Materials

Target groups
Research

Discount group
P

Available
2011. 400 p. 300 illus. Hardcover
approx $199.00
ISBN 978-3-642-20667-2

Electroweak and Strong Interactions
Phenomenology, Concepts, Models

Electroweak and Strong Interaction: Phenomenology, Concepts, Models, begins with relativistic quantum mechanics, which lays the foundation for the rest of the text. The phenomenology and the physics of fundamental interactions are emphasized through a detailed discussion of the empirical fundamentals of unified theories of strong, electromagnetic, and weak interactions. The principles of local gauge theories are described. The minimal standard model of the fundamental interactions is developed and characteristic applications are worked out. Possible signals of physics beyond that model and the theory of interactions of elementary particles probing complex nuclei are also discussed. Numerous exercises with solutions make the text suitable for advanced courses. This completely updated revised new edition has been enlarged by a chapter on quantum chromodynamics and a widely updated chapter on neutrino physics.

Features
- The author has achieved a good balance between the presentation of mathematical material and its use in the description of physical phenomena
- The new edition has been enlarged by the topics quantum chromodynamics and neutrino physics
- Numerous exercises with solutions

Fields of interest
Particle and Nuclear Physics; Quantum Physics; Elementary Particles, Quantum Field Theory

Target groups
Graduate

Discount group
P

Available
Originally published by North-Holland, Amsterdam, 1983
3rd rev. and enlarged ed. 2011. 560 p. 90 illus. (Graduate Texts in Physics) Hardcover
$99.00
ISBN 978-3-642-20240-7
Elegance and Enigma
The Quantum Interviews

Quantum mechanics is one of mankind’s most remarkable intellectual achievements. Stunningly successful and elegant, it challenges our deepest intuitions about the world. In this book, seventeen physicists and philosophers, all deeply concerned with understanding quantum mechanics, reply to Schlosshauer’s penetrating questions about the central issues. They grant us an intimate look at their radically different ways of making sense of the theory’s strangeness. What is quantum mechanics about? What is it telling us about nature? Can quantum information or new experiments help lift the fog? And where are we headed next? Everyone interested in the contemporary but often longstanding conundrums of quantum theory, whether a lay reader or expert, will find much food for thought in these pages. A wealth of personal reflections and anecdotes guarantee an engaging read. Participants: Guido Bacciagaluppi, Caslav Brukner, Jeffrey Bub, Arthur Fine, Christo- pher Fuchs, GianCarlo Ghirardi, Shelly Goldstein, Daniel Greenberger, Lucien Hardy, Anthony Leggett, Tim Maudlin, David Mermin, Lee Smolin, Anton Valentini, David Wallace, Anton Zeilinger, and Wojciech Zurek.

Features
- Unique compilation of the often conflicting (world)views of foremost physicists and philosophers
- Presents the various mind-bending interpretations of nature’s strangest laws
- Level accessible to non-specialists
- Protagonists and their opinions are marshaled and commented by a skilful editor, himself a major contributor to the world of quantum theory

Fields of interest
Quantum Physics; Philosophy of Science; Quantum Optics

Target groups
Research

Discount group
P

Device Architecture and Materials for Organic Light-Emitting Devices
Targeting High Current Densities and Control of the Triplet Concentration

Device Architecture and Materials for Organic Light-Emitting Devices focuses on the design of new device and material concepts for organic light-emitting devices, thereby targeting high current densities and an improved control of the triplet concentration. A new light-emitting device architecture, the OLED with field-effect electron transport, is demonstrated. This device is a hybrid between a diode and a field-effect transistor. Compared to conventional OLEDs, the metallic cathode is displaced by one to several micrometers from the light-emitting zone, reducing optical absorption losses. The electrons injected by the cathode accumulate at an organic heterojunction and are transported to the light-emission zone by field-effect. High mobilities for charge carriers are achieved in this way, enabling a high current density and a reduced number of charge carriers in the device. Pulsed excitation experiments show that pulses down to 1 μs can be applied to this structure without affecting the light intensity, suggesting that pulsed excitation might be useful to reduce the accumulation of triplets in the device.

Features
- A concise introduction gives an overview of the state-of-the-art organic light-emitting devices and highlights the challenges that have to be overcome to achieve electrically pumped lasing
- New device and material concepts for organic light-emitting devices are presented
- A chapter discussing the prospects of the proposed concepts for the realization of electrically pumped lasers

Fields of interest
Solid State Physics; Circuits and Systems; Optics, Optoelectronics, Plasmonics and Optical Devices

Target groups
Research

Discount group
P

Optical Binding Phenomena: Observations and Mechanisms

This thesis addresses optical binding - a new area of interest within the field of optical micromanipulation. It presents, for the first time, a rigorous numerical simulation of some of the key results, along with new experimental findings and also physical interpretations of the results. In an optical trap particles are attracted close to areas of high optical intensities and intensity gradients. So, for example, if two lasers are pointed towards each other (a counter propagating trap) then a single particle is trapped in the centre of the two beams – the system is analogous to a particle being held by two springs in a potential well. If one increases the number of particles in the trap then naively one would expect all the particles to collect in the centre of the well. However, the effect of optical binding means that the presence of one particle affects the distribution of light experienced by another particle, resulting in extremely complex interactions that can lead to unusual 1D and 2D structures to form within the trap. Optical binding is not only of theoretical interest but also has applications in micromanipulation and assembly.

Features
- Addresses an important new area with practical applications
- Clear explanations for interested newcomers to the area
- Nominated as an outstanding contribution by the University of Durham

Contents
Introduction.- Scattering Theory.- Evanescent Wave Trapping.- Counter-Propagating Gaussian Beam Traps.- Conclusions.

Fields of interest
Optics, Optoelectronics, Plasmonics and Optical Devices; Atoms and Molecules in Strong Fields, Laser Matter Interaction; Optics and Electrodynamics

Target groups
Research

Discount group
P
M. Thiriet, Université Pierre et Marie Curie, Paris, France

Circulatory and Ventilatory Systems

Volume 1: Signaling in Cell Organization, Fate, and Activity Part B: Remote and Local Control and Cell Fate

The volumes in this authoritative series present a multidisciplinary approach to modeling and simulation of flows in the cardiovascular and ventilatory systems, especially multiscale modeling and coupled simulations. The cardiovascular and respiratory systems are tightly coupled, as their primary function is to supply oxygen to and remove carbon dioxide from the body's cells. Because physiological conduits have deformable and reactive walls, macroscopic flow behavior and prediction must be coupled to nano- and microscopic events in a corrector scheme of regulated mechanism. Therefore, investigation of flows of blood and air in physiological conduits requires an understanding of the biology, chemistry, and physics of these systems together with the mathematical tools to describe their functioning.

Features
► Describes cell types, functions, and fate in the regulated activities of the circulatory and respiratory systems  
► Presents applications of mechanics and mathematics for an understanding and prediction of function in health and disease  
► Integrates biology, chemistry, and physics for a multidisciplinary understanding of physiological flows

Contents

Fields of interest
Biophysics and Biological Physics; Biomedical Engineering; Mathematical and Computational Biology

Target groups
Research

Discount group
P

Due August 2011

2011. X, 516 p. 21 illus. Hardcover
Approx. 5199.00
Cloud Computing
Web-Based Dynamic IT Services

Cloud computing is a buzz-word in today’s information technology (IT) that nobody can escape. But what is really behind it? There are many interpretations of this term, but no standardized or even uniform definition. Instead, as a result of the multi-faceted viewpoints and the diverse interests expressed by the various stakeholders, cloud computing is perceived as a rather fuzzy concept. With this book, the authors deliver an overview of cloud computing architecture, services, and applications. Their aim is to bring readers up to date on this technology and thus to provide a common basis for discussion, new research, and novel application scenarios.

Features
- Short and yet solid introduction to the main cloud technologies and services
- Authors combine teaching, research and industrial experience in cloud and web technologies
- Deals both with commercial and open-source aspects of cloud computing
- Requires no prior technical knowledge and thus appeals to a broad audience in research, development and application of cloud services

Contents

Fields of interest
Computer Communication Networks; Information Systems Applications (incl. Internet); Software Engineering

Target groups
Professional/practitioner

Discount group
P
Small Group Research

Applications in Peace Psychology and Conflict Resolution

Small group research is of particularly wide interest to people working in a fairly broad variety of areas concerned with understanding conflict, especially for practitioners and researchers concerned with conflict resolution, peace, and related areas. The editors will focus on six main topical areas of small group research, which include: - Cooperation, competition, and conflict resolution - Coalitions, bargaining, and games - Group dynamics and social cognition - The group and organization - Team performance - Intergroup relations

Features
- Integrates research findings on small groups
- Clarifies potential applications to peace and conflict resolution through an inductive process
- Editors are well-published and well-known in the field
- Resource (collective) dilemmas covers key and general studies, paradigms and theories, individual background (real and perceived), group size, framing of issues, and reward structures

Contents
Cooperation, competition and conflict resolution - Coalitions, bargaining, and games - Group dynamics and social cognition - The group and the organization - Team performance - Intergroup relations.

Fields of interest
Personality and Social Psychology

Target groups
Research

Discount group
P

Encyclopedia of the History of Psychological Theories

Editor-in-chief: R. W. Rieber, Fordham University, New York, NY, USA

This work will survey the entire range of thinking in psychology, from ancient times to the present, encompassing philosophies and theories of mind that pre-date our modern conception of psychology as a science, and extending to the current findings of neuroscience. It will set the theories into their historical context and cross-reference key influences, such as Darwin's on Freud. Fifteen hundred entries will comprise key figures, theoretical concepts, false theories, historical events, and seminal writings.

Fields of interest
History of Psychology; Psychotherapy; Philosophy of Science

Target groups
Research

Discount group
P
A New Unified Theory of Psychology

Concern about psychology's fragmentation is not new, but there has for the past decade been increasing calls for psychologists to acknowledge the costs associated with fragmentation and to search for ways to unify the discipline. A New Unified Theory of Psychology introduces a new system that addresses psychology's current theoretical and philosophical difficulties. The new theory consists of four interlocking pieces that together provide—for the first time—a macro-level view that clarifies the nature of psychology's problems and offers a clear way to unify the various elements of the field. The unified theory provides the field of psychology with a well-defined subject matter, allowing both academic and professional psychologists will be able to develop a shared language and conceptual foundation.

Features
► Provides a workplace theory of integration
► Defines the science of psychology ► Offers insights relevant to both academic and clinical psychologists

Contents

Fields of interest
Clinical Psychology; Psychotherapy

Target groups
Professional/practitioner

Discount group
P

Behavioral Sport Psychology
Evidence-Based Approaches to Performance Enhancement

Sport psychology is a topic of growing interest. Many professionals read journals such as The International Journal of Sports, Journal of Sport Behavior, Journal of Applied Sport Psychology, Research Quarterly for Exercise and Sport, and The Sport Psychologist. In August 2008, Monitor on Psychology, the monthly publication of the American Psychological Association (APA), featured a special issue on sport psychology. Indeed, Division 47 of APA is devoted to "the scientific, educational, and clinical foundations of exercise and sport psychology." The North American Society for the Psychology of Sport and Physical Activity (NASPSPA) and the Association for the Advancement of Applied Sport Psychology (AAASP) convene conferences each year to present scientific findings and new developments in a rapidly expanding field.

Features
► Combines experimental and applied research
► Emphasizes Applied Behavior Analysis and Cognitive Behavioral Therapy approaches
► Describes specific training methods for athletes
► Includes overviews of behavioral consultation and coaching

From the contents

Fields of interest
Health Psychology; Social Sciences, general; Sports Medicine

Target groups
Professional/practitioner

Discount group
P

Rural Caregiving in the United States
Research, Practice, Policy

Caregivers living in rural areas face daunting obstacles. In addition to the isolation and anxiety that many caregivers across the country experience, rural caregivers must also cope with limited access to uncoordinated resources and severe shortages of trained professionals. Although many research, policy, and practice upgrades have been made in response to caregivers' general concerns, the specific problems facing the rural caregiver have been less frequently addressed. Focusing on what is known as well as what is needed—and zeroing in on major subgroups within this diverse population—Rural Caregiving in the United States replaces misconceptions of the nonurban experience with real-life issues, findings, and solutions.

Features
► Foreword by former First Lady of the United States, Rosalynn Carter ► Covers a broad range of issues unique to rural caregiving, including research, education and training, policy and advocacy as well as practiceidentifies specific needs related to education, training, and support for rural caregivers ► Examines both the positive (e.g., close-knit family and friends) and negative effects (e.g., less access to professional support) of rural community on both the caregiver and the care recipient

Fields of interest
Clinical Psychology; Social Work; Medicine/Public Health, general

Target groups
Research

Discount group
P
R. L. Wiener, B. H. Bornstein, University of Nebraska, Lincoln, NE, USA (Eds.)

Handbook of Trial Consulting

This volume will be a handbook that treats trial consulting as applied psychology. The purpose of the volume will be to collect the viewpoints of leaders in the field of psychology and law who apply the discipline's theoretical models, methods, and ethics to assist litigators to try cases in the most effective way possible. As a whole, the collection of chapters will describe the theory, business, and mechanics of trial consulting for those interested in learning and practicing the profession. However, it will do so from the perspective of organized theories of jury-decision making. In other words, the work of juror researchers will inform the recommendations and suggestions in the handbook.

Features
▶ Provides an interdisciplinary perspective
▶ Contributors are prominent legal scholars and social scientists
▶ Covers often overlooked problems

From the contents

Fields of interest
Law and Psychology; Criminology & Criminal Justice

Target groups
Research

Discount group
P

Due May 2011

2011. 500 p. Hardcover

$169.00
The Sociology of Community Connections

Many of our current social problems have been attributed to the breakdown or loss of community as a place and to the fragmentation of connections due to an extreme value of individualism in the Western world, particularly in the United States. Not all scholars and researchers agree that individualism and technology are the primary culprits in the loss of community as it existed in the middle decade of the 20th century. Nonetheless, people exist in groups, and connections are vital to their existence and in the daily performance of activities. The second edition of the Sociology of Community Connections will identify and help students understand community connectedness in the present and future.

Features
- Will include four new chapters to incorporate new subject matter
- Presents updated graphs, tables and examples in existing chapters
- Includes a new chapter addressing the growth of virtual networks

From the contents
2. Conceptions of Community: Past and Present Introduction.
4. Mobile Communities: The Tentative Ties of Migrant and Seasonal Farmworkers Introduction.
5. Fragmented Ties: The Poor and the Homeless Introduction.
6. Communities in Crisis: Reconnecting Frayed Social Ties Introduction.
7. Excluded Communities: Barriers to Neighbors Introduction.
12. Virtual Connections in New Work Environments.

Fields of interest
Sociology; Personality and Social Psychology; Community and Environmental Psychology

Target groups
Research

Discount group
P

Detect and Deter: Can Countries Verify the Nuclear Test Ban?

Features
- Unique view on the CTBT verification from the USA's perspectives
- Recent dramatic scientific developments and their effects on verification capabilities
- How states can collaborate on technical issues to further political objectives
- Cooperative efforts in support of international security

Contents
Introduction.
1. Setting the Stage.
5. Monitoring Atmospheric Nuclear Explosions in the Oceans.
7. Is the CTBT Verifiable?

Fields of interest
Political Science; Geophysics/Geodesy; Science, general

Target groups
Research

Discount group
P

Trekking the Shore
Changing Coastlines and the Antiquity of Coastal Settlement

Human settlement has often centered around coastal areas and waterways. Until recently, however, archaeologists believed that marine economies did not develop until the end of the Pleistocene, when the archaeological record begins to have evidence of marine life as part of the human diet. This has long been interpreted as a postglacial adaptation, due to the rise in sea level and subsequent decrease in terrestrial resources. Coastal resources, particularly mollusks, were viewed as fallback resources, which people resorted to only when terrestrial resources were scarce, included only as part of a more complex diet. Recent research has significantly altered this understanding, known as the Broad Spectrum Revolution (BSR) model. The contributions to this volume revise the BSR model, with evidence that coastal resources were an important part of human economies and subsistence much earlier than previously thought, and even the main focus of diets for some Pleistocene and early Holocene hunter-gatherer societies. With evidence from North and South America, Europe, Africa, Asia, and Australia, this volume comprehensively lends a new understanding to coastal settlement from the Middle Paleolithic to the Middle Holocene.

Features
- New evidence to expand the current Broad Spectrum Revolution model
- Contributions cover coastal regions from five continents in one volume
- Synthesizes past decade of research on coastal settlement and resources in hunter-gatherer economies

Fields of interest
Archaeology; Anthropology

Target groups
Research

Discount group
P
**Defining Democracy**

Voting Procedures in Decision-Making, Elections and Governance

Defining Democracy looks both at the theory of why and the history of how different voting procedures have come to be – or not, as the case may be – in the three fields of democratic structures: firstly, in decision-making, both in society at large and in the elected chamber; secondly, in elections to and within those chambers; and thirdly, in the various forms of governance, from no-party to multi-party and all-party, which have emerged as a result.

**Features**

► Democracy is for everybody, not just a majority - this book explains the basis of a more consensual politics ► Advocates more accurate voting methodologies beyond the simplistic majority rule ► Shows how democracy is still evolving, e.g. through the use of computer applications ► Outlines how consensual voting procedures can play a vital part in any peace process

**Contents**


**Fields of interest**

Political Science; Public Finance & Economics

**Target groups**

Graduate

**Discount group**

P

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**New Thinking in Complexity for the Social Sciences and Humanities**

A Generative, Transdisciplinary Approach

The underlying idea and motive for the book is that the notion of complexity may humanize the social sciences, may conceive the complex human being as more human, and turn reality as assumed in our doing social science into a more complex, that is a richer reality for all. The main focus of this book is on new thinking in complexity, with complexity to be taken as derived from the Latin word complexus: ‘that which is interwoven.’ The trans-disciplinary approach advocated here will be trans-disciplinary in two ways: firstly, by going beyond the separate disciplines within the fields of both natural sciences and social sciences, and, secondly, by going beyond the separate cultures of the natural sciences and of the social sciences and humanities.

**Features**

► Offers a way to learn to think in a new way about the subject of study in the social sciences and humanities ► One can learn to think in complexity about the real complexity of a nonlinear complex reality ► Opening the social sciences by offering a new agenda for these sciences by taken complexity not for granted but as a serious topic of study with great potential for humanity and society at large

**Contents**


**Fields of interest**

Methodology of the Social Sciences; Complexity; Interdisciplinary Studies

**Target groups**

Research

**Discount group**

P

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**International Handbook of Historical Archaeology**

In studying the past, archaeologists have focused on the material remains of our ancestors. Prehistorians generally have only artifacts to study and rely on the diverse material record for their understanding of past societies and their behavior. Those involved in studying historically documented cultures not only have extensive material remains but also contemporary texts, images, and a range of investigative technologies to enable them to build a broader and more reflexive picture of how past societies, communities, and individuals operated and behaved. Increasingly, historical archaeology refers not to a particular period, place, or a method, but rather an approach that interrogates the tensions between artifacts and texts irrespectively of context.

**Features**

► Brings together an international group of leaders in the field of historical or post Medieval archaeology ► Covers the field globally as well as theoretically ► Perfect as a reference book and for use in graduated level courses

**From the contents**


**Fields of interest**

Archaeology; Cultural Heritage

**Target groups**

Graduate

**Discount group**

P

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Investigating Quality of Urban Life
Theory, Methods, and Empirical Research

The study of urban quality of life involves both an objective approach to analysis using spatially aggregated secondary data and a subjective approach using unit record survey data whereby people provide subjective evaluations of QoL domains. This book provides a comprehensive overview of theoretical perspectives on urban QoL and methodological approaches to research design to investigate urban QoL and measure QoL dimensions. It incorporates empirical investigations into urban QoL in a range of cities across the world.

Features
► Comprehensive coverage of topic ► Reports on recent research covering Urban QoL in several places around the world ► Focus on theory, methodologies and empirical aspects of the conceptualisation, measurement, analysis and modelling of aspects of urban QoL.

Fields of interest
Quality of Life Research; Landscape/Regional and Urban Planning; Cities, Countries, Regions

Target groups
Research

Discount group
P

Due August 2011

European Prehistory
A Survey

European Prehistory: A Survey traces humans from their earliest appearance on the continent to the Rise of the Roman Empire, drawing on archaeological research from all over Europe. It includes the Paleolithic, Mesolithic, Neolithic, Bronze and Iron Ages. Throughout these periods, the major developments are explored using a wide range of archaeological data that emphasizes aspects of agricultural practices, gender, mortuary practices, population genetics, ritual, settlement patterns, technology, trade, and warfare. Using new methods and theories, recent discoveries and arguments are presented and previous discoveries reevaluated. This work includes chapters on European geography and the chronology of European prehistory. A new chapter has been added on the historical development of European archaeology. The remaining chapters have been contributed by archaeologists specializing in different periods. The second edition of European Prehistory: A Survey is enhanced by a glossary, three indices and a comprehensive bibliography, as well as an extensive collection of maps, chronological tables and photographs.

Features
► Follow-up to the comprehensive and popular first edition, featuring updated versions and new chapters ► Chronological Maps of each area covered accompany the chapters ► Covers the scope of European Prehistory in each time period, through the entire region

From the contents
Introduction.- Observations on European Archaeology.- The Present Environment: A Geographic Summary.- The Lower and Middle Palaeolithic.- The Upper Palaeolithic. - The Mesolithic.- Early Neolithic, The First Farmers in Europe.- Middle Neolithic and Early Copper Age.- Late Neolithic and Early Copper Age, Continuity, Diversity, and Greater Complexity.

Fields of interest
Archaeology; Anthropology

Target groups
Research

Discount group
P

The Political Economy of Collective Decision-Making
Conflicts and Coalitions in the Council of the European Union

The Council of the European Union is the institutional heart of EU policy-making. But 'who gets what, when and how' in the Council? What are the dimensions of political conflict, and which countries form coalitions in the intense negotiations to achieve their desired policy outcomes? Focussing on collective decision-making in the Council between 1998 and 2007, this book provides a comprehensive account of these salient issues that lie at the heart of political accountability and legitimacy in the European Union. Based on a novel and unique dataset of estimates of government policy positions, salience and power in influencing deliberations, an explanatory model approximating the Nash-Bargaining solution is employed to predict the policy outcomes on ten policy domains of central importance to this institution.

The book's analyses comprise investigations into the determinants of decision-making success, the architecture of the political space and the governments' coalition behavior.

Features
► Constitutes the first book-length comprehensive analysis of 'who gets what, when and how' in the Council ► Analyses a new and original data-set on decision-making in the Council Yields challenging new insights into the dimensions of conflict, coalition behaviour and winners & losers of collective decision-making ► Features a rigorous discussion of the various theoretical and analytical perspectives on political conflict in the Council

From the contents

Fields of interest
Political Science; European Integration; Methodology of the Social Sciences

Target groups
Research

Discount group
P

Available

►approx. $139.00
ISBN 978-3-642-20173-8

Social Sciences
125
Motherhood and Postnatal Depression

C. Westall, Peace of Mind Parenting Support, Australia; P. Liamputtong, University La Trobe, Melbourne, Australia

Globally, postnatal depression (PND) is a growing public health problem. PND affects 10 to 15% of women in Western society. It caused by a combination of biological, psychological and social factors. Two models have attempted to define and explain PND: the biomedical and the sociological models. The traditional biomedical model views PND as a medical condition which implies there is individual pathology and abnormality. Whilst the biomedical model has been the dominant model in treating PND, it has been criticized by feminist sociologists and psychologists for its rigidity in defining and explaining PND. In contrast, the psychosocial model of health acknowledges the biological factors that impact on emotional well-being, but places more emphasis on the personal and social factors that impact on emotional well-being, but places more emphasis on the personal and social factors that contribute to depressive symptoms such as gender, poverty, social disadvantage and social class.

Features

- The first book to address the impact of postnatal depression on the partner
- Fills the gap in knowledge of cultural and social issues relating to pregnancy, childbirth and motherhood for woman who were diagnosed with, and had resolved, postnatal depression

From the contents


Fields of interest

Maternal and Child Health; Quality of Life Research; Health Psychology

Target groups

Research

Discount group

MR

Due July 2011

2011. XII, 242 p. 14 illus. Hardcover

$139.00

ISBN 978-94-007-1693-3
Survival Analysis
A Self-Learning Text, Third Edition

This greatly expanded third edition of Survival Analysis: A Self-Learning Text provides a highly readable description of state-of-the-art methods of analysis of survival/event-history data. This text is suitable for researchers and statisticians working in the medical and other life sciences as well as statisticians in academia who teach introductory and second-level courses on survival analysis. The third edition continues to use the unique “lecture-book” format of the first two editions with one new chapter, additional sections and clarifications to several chapters, and a revised computer appendix. The Computer Appendix, with step-by-step instructions for using the computer packages STATA, SAS, and SPSS, is expanded this third edition to include the software package R.

Features
- Second edition of the text originally published in 1996 – New material has been added and the original six chapters have been modified

Contents

Fields of interest
Statistics for Life Sciences, Medicine, Health Sciences; Epidemiology

Target groups
Graduate

Discount group
P

Targeted Learning
Causal Inference for Observational and Experimental Data

The statistics profession is at a unique point in history. The need for valid statistical tools is greater than ever; data sets are massive, often measuring hundreds of thousands of measurements for a single subject. The field is ready to move towards clear objective benchmarks under which tools can be evaluated. Targeted learning allows (1) the full generalization and utilization of cross-validation as an estimator selection tool so that the subjective choices made by humans are now made by the machine, and (2) targeting the fitting of the probability distribution of the data toward the target parameter representing the scientific question of interest. This book is aimed at both statisticians and applied researchers interested in causal inference and general effect estimation for observational and experimental data. Part I is an accessible introduction to super learning and the targeted maximum likelihood estimator, including related concepts necessary to understand and apply these methods. Parts II-IX handle complex data structures and topics applied researchers will immediately recognize from their own research, including time-to-event outcomes, direct and indirect effects, positivity violations, case-control studies, censored data, longitudinal data, and genomic studies.

Features
- Establishes causal inference methodology that incorporates the benefits of machine learning with statistical inference – Presentation combines accessibility with the method’s rigorous grounding in statistical theory – Demonstrates targeted learning in epidemiological, medical, and genomic experimental and observational studies that include informative dropout, missingness, time-dependent confounding, and case-control sampling

Fields of interest
Statistical Theory and Methods; Public Health/Gesundheitswesen; Statistics for Life Sciences, Medicine, Health Sciences

Target groups
Research

Discount group
P
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