Just Released New Books
February 2012
English Titles

Sorted by author and title within the main subject
Complexity Theories of Cities Have Come of Age
An Overview with Implications to Urban Planning and Design

Today, our cities are an embodiment of the complex, historical evolution of knowledge, desires and technology. Our planned and designed activities co-evolve with our aspirations, mediated by the existing technologies and social structures. The city represents the accretion and accumulation of successive layers of collective activity, structuring and being structured by other, increasingly distant cities, reaching now right around the globe. This historical and structural development cannot therefore be understood or captured by any set of fixed quantitative relations. Structural changes imply that the patterns of growth, and their underlying reasons change over time, and therefore that any attempt to control the morphology of cities and their patterns of flow by means of planning and design, must be dynamical, based on the mechanisms that drive the changes occurring at a given moment. This carefully edited post-proceedings volume gathers a snapshot view by leading researchers in field, of current[...]

Features
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Contents

Fields of interest
Regional and Cultural Studies; Cross Cultural Psychology; Non-Western Philosophy; Quality of Life Research 

Happiness Across Cultures
Views of Happiness and Quality of Life in Non-Western Cultures

Different cultures experience happiness differently. Traditionally, the West is considered materialistic, and happiness is said to come from achievement and acquisition. The East is said to be more people-oriented, where happiness is a result of deep personal interactions. Thus, poor people can be happier in the East than the West, because they are not so concerned with possession and more with society. This book considers happiness and quality of life in non-Western countries and cultures. Its coverage is diverse and spans the breadth of the non-Western world, revealing unique perspectives of happiness and life quality embedded in rich cultural traditions and histories.

Features
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Contents

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Regional and Cultural Studies; Cross Cultural Psychology; Non-Western Philosophy; Quality of Life Research 

Advances in Mitochondrial Medicine

Mitochondria are far more than the “powerhouse” of the cell as they have classically been described. In fact, mitochondria biological activities have progressively expanded to include not only various bioenergetic processes but also important biosynthetic pathways, calcium homeostasis and thermogenesis, cell death by apoptosis, several different signal transduction pathways mainly related to redox control of gene expression and so on. This functional and structural complexity may undergo important derangements so to justify the definition of “mitochondrial medicine”, which should include all the clinical consequences of congenital or acquired mitochondrial dysfunctions. There are actually a growing number of studies which assign a significant pathogenic role to damaged mitochondria in different diseases: ischemia/reperfusion injury, neurodegenerative diseases, cancer with its dramatic sequelae (i.e., metastasis), metabolic syndrome, hyperlipidemias, just to mention a few of the most important[...]

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Fields of interest
Biomedicine (general); Cancer Research; Molecular Medicine; Pharmacology / Toxicology; Medical Biochemistry 

Target groups
Research 

Type of publication
Contributed volume 

Biomedicine

R. Scatena, Catholic University, Rome, Italy; P. Bottini, Catholic University, Rome, Italy; G. Gardini, Catholic University, Rome, Italy (Eds.) 

Advances in Mitochondrial Medicine

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Fields of interest
Biomedicine (general); Cancer Research; Molecular Medicine; Pharmacology / Toxicology; Medical Biochemistry 

Target groups
Research 

Type of publication
Contributed volume
Cancer Epigenetics

Methods and Protocols

The epigenetic regulation plays an important role in normal development and maintenance of tissue specific genes expression in humans and the disturbance of these patterns lead to changes involved in tumor formation. More recently, epigenetic changes have been observed in early stages of tumor development and together with the genetic alterations have been defined as abnormalities, necessary for cancer initiation and progression. In, Cancer Epigenetics: Methods and Protocols, expert researchers reviewed these epigenetic changes in different tumor types and described several technologies that are currently available to detect epigenetic changes. These technologies have lead to a better understanding of the processes in normal and cancerous cells. Written in the highly successful Methods in Molecular Biology™ series format, the chapters include the kind of detailed description and implementation advice that is crucial for getting optimal results in the laboratory.

Fields of interest

Cancer Research

Target groups

Professional/practitioner

Type of publication

Contributed volume

Caveolins and Caveolae

Roles in Signaling and Disease Mechanisms

Caveolae are 50-100 nm flask-shaped invaginations of the plasma membrane that are primarily composed of cholesterol and sphingolipids. Using modern electron microscopy techniques, caveolae can be observed as omega-shaped invaginations of the plasma membrane, fully-invaginated caveolae, grape-like clusters of interconnected caveolae (caveosome), or as transcellular channels as a consequence of the fusion of individual caveolae. The caveolin gene family consists of three distinct members, namely Cav-1, Cav-2 and Cav-3. Cav-1 and Cav-2 proteins are usually co-expressed and particularly abundant in epithelial, endothelial, and smooth muscle cells as well as adipocytes and fibroblasts. On the other hand, the Cav-3 protein appears to be muscle-specific and is therefore only expressed in smooth, skeletal and cardiac muscles. Caveolin proteins form high molecular weight homo- and/or hetero-oligomers and assume an unusual topology with both their N- and C-terminal domains facing the cytoplasm.

Fields of interest

Biomedicine (general)

Target groups

Research

Type of publication

Contributed volume

Online orders shipping within 2-3 days
Gene Synthesis

Methods and Protocols

The de novo fabrication of custom DNA molecules is a transformative technology that significantly affects the biotechnology industry. Basic genetic engineering techniques for manipulating DNA in vitro opened an incredible field of opportunity in the life sciences. In, Gene Synthesis: Methods and Protocols expert researchers in the field detail many of the methods which are now commonly used to fabricate DNA. These include methods and techniques for the assembly of oligonucleotide, cloning of synthons into larger fragments, protocols and software applications, and educational and biosecurity impacts of gene synthesis. Written in the highly successful Methods in Molecular Biology™ series format, the chapters include the kind of detailed description and implementation advice that is crucial for getting optimal results in the laboratory. Thorough and intuitive, Gene Synthesis: Methods and Protocols aids scientists in understanding all the different stages of a complex gene synthesis process, while [...] Features

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Fields of interest

Human Genetics; Genetic Engineering

Target groups

Professional/practitioner

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days


$139.00

Genomic Structural Variants

Methods and Protocols

The completion of a consensus draft sequence for the human genome was the starting point for more thorough investigations of individual genome variation. The development of array-based strategies made it possible to look at our genome in new ways and for new types of variation to be discovered and characterized. Characterization of copy number variation and other forms of structural genetic variation has highlighted the complexity of human genetic variation and also provided significant insight into the evolution and dynamic nature of our genome. Genomic Structural Variants: Methods and Protocols provides an in-depth description of the developments in our understanding of structural genetic variation and its implications for human disease, from the introduction of microarrays up to current state-of-the-art sequencing strategies. It covers the major technologies used for research and diagnostics as well as web-based resources for variation data, and it then goes into depth regarding specific regions.[...]

Features

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What Have Studies of Genomic Disorders Taught us about our Genome.- Microdeletion and Microduplication Syndromes.- Structural Genomic Variation in Mental Retardation.- Copy Number Variation and Psychiatric Disease Risk.- Detection and Characterization of Copy Number Variation (CNV) in Autism Spectrum Disorder (ASD).- Structural Variation in Subtelomerises.- Array Based Approaches in Prenatal Diagnosis.- Structural Variation and its Effect on Expression.-The Challenges of Studying Complex and Dynamic Regions of the Human Genome.- Population Genetic Nature of Copy Number Variation.-[...]

Fields of interest

Human Genetics; Gene Function

Target groups

Professional/practitioner

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days


$139.00
ISBN 978-1-61779-506-0

Immunosenescence

As individuals age, their ability to respond to and control pathogens and to control unwanted immune reactions declines, leading to a greater incidence of certain infectious diseases, autoimmunity and general immune dysfunctions. Most remarkably, the efficacy of vaccines is frequently decreased in elderly persons. Therefore, age-associated dysfunctions of the humoral and cellular immune responses have a strong clinical impact. Improving our understanding of the aged immune system is crucial in developing effective prevention and treatment programs that will facilitate healthy aging and improve the quality of life of the elderly population. The aim of this volume is to summarize current knowledge on the cellular and molecular aspects of the aging immune system, with an emphasis on infectious diseases and new therapeutic approaches.

Features

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Biomedicine (general); Immunology; Molecular Medicine

Target groups

Professional/practitioner

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

2012, XVIII, 235 p. 4 illus., 2 in color. (Birkhäuser Advances in Infectious Diseases) Hardcover

$189.00
ISBN 978-3-0346-0218-1
### JIMD Reports - Case and Research Reports, 2012/1

JIMD Reports publishes case and short research reports in the area of inherited metabolic disorders. Case reports highlight some unusual or previously unrecorded feature relevant to the disorder, or serve as an important reminder of clinical or biochemical features of a Mendelian disorder.

#### Contents
- Different Case Reports.

#### Fields of interest
- Human Genetics; Metabolic Diseases; Pediatrics; Human Physiology

#### Target groups
- Research

#### Type of publication
- Contributed volume

**Usually dispatched within 3 to 5 business days**

2012, VII, 137 p. 42 illus., 18 in color. (JIMD Reports, Vol. 4) Softcover

$139.00  
ISBN 978-3-642-25751-3

### JIMD Reports - Case and Research Reports, 2012/2

JIMD Reports publishes case and short research reports in the area of inherited metabolic disorders. Case reports highlight some unusual or previously unrecorded feature relevant to the disorder, or serve as an important reminder of clinical or biochemical features of a Mendelian disorder.

#### Contents
- Different case reports.

#### Fields of interest
- Human Genetics; Metabolic Diseases; Pediatrics; Human Physiology

#### Target groups
- Research

#### Type of publication
- Contributed volume

**Usually dispatched within 3 to 5 business days**

March 31, 2012

2012, VII, 130 p. 36 illus., 19 in color. (JIMD Reports, Vol. 5) Softcover

$139.00  
ISBN 978-3-642-28095-5

### Nerve-Driven Immunity

*Nerve-Driven Immunity: Neurotransmitters and Neuropeptides in the Immune System*

“Nerve-Driven Immunity: Neurotransmitters and Neuropeptides in the Immune System” summarizes, analyzes and sheds new light on an unrecognized, yet very important role of key neurotransmitters and neuropeptides in the immune system. Each chapter of the book deals with a different neurotransmitter/neuropeptide from the following list: Dopamine, Adrenaline, Noradrenaline, Acetylcholine, Glutamate, GABA, Somatostatin, Neuropeptide Y (NPY), Vasointestinal polypeptide (VIP), Calcitonin gene related peptide (CGRP), Opioids and Cannabinoids. For each of these neurotransmitters/neuropeptides, the following four topics are discussed: The specific receptors for the neurotransmitter/neuropeptide expressed in various types of immune cells; The direct effects induced by the neurotransmitter/neuropeptide in various types of immune cells (either resting or activated); and the specific immune functions and features it activates/eradicates or rather inhibits in specific concentrations. The production of the...

#### Contents
- Mia Levite: Dopamine in the immune system: Dopamine receptors in immune cells, potent effects, endogenous production and involvement in immune and neuropsychiatric diseases.  
- Marco Cosentino and Franca Marino: Nerve driven immunity - Noradrenaline and Adrenaline.  
- Yonatan Ganor and Mia Levite: Glutamate in the immune system: glutamate receptors in immune cells, potent effects, endogenous production and involvement in disease.  
- Zhe Jin, Suresh Kumar Mendu, Amol Bhandage and Bryndis Birnir: GABA is...

#### Fields of interest
- Immunology; Neurochemistry; Neurosciences

#### Target groups
- Research

#### Type of publication
- Monograph

**Usually dispatched within 3 to 5 business days**

2012, XIX, 359 p. 33 illus., 26 in color. Hardcover

$209.00  
ISBN 978-3-7091-0887-1
Neuronal Network Analysis

Concepts and Experimental Approaches

In the last few years, technologies that allow for monitoring and manipulating neuronal networks at a single cell resolution have been rapidly expanding.

In Neuronal Network Analysis: Concepts and Experimental Approaches, experts in the field provide an overview of some of the most advanced techniques for the study of neuronal circuits, highlighting current technical limitations and providing a vision of what is yet to come. Broken into six convenient, interdependent sections, this volume covers optical approaches, electrophysiological approaches, both in vitro and in vivo, optogenetics, morpho-functional approaches, and neuronal network analysis in humans. As a volume in the Neuromethods series, this work provides the kind of detailed description and implementation advice that is crucial for getting optimal results. Authoritative and cutting-edge, Neuronal Network Analysis: Concepts and Experimental Approaches will be useful for early career neuroscientists, as well as for experienced [...] Features

- In the last few years, technologies that allow for monitoring and manipulating neuronal networks at a single cell resolution have been rapidly expanding.
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- Optical Interrogation of Neural Circuits.- In Vivo Functional Imaging of theolfactory Bulb at Single Cell Resolution.- Two-Photon Imaging of Neural Activity in Awake, Head-Fixed Mice.- Spatial Light Modulators for Complex Spatio-Temporal Illumination of Neuronal Networks.- Voltage-Sensitive Dye Imaging of Cortical Function In Vivo.- An Introduction to In Vivo Slices Approaches for the Study of Neuronal Circuity.- Extracellular Recordings of Synaptic Plasticity and Network Oscillations in Hippocampal Slices.- Use of Dynamic-Clamp as a Tool to Reveal the Computational Properties of[...]
- Fields of interest
  - Neurosciences; Human Physiology
- Target groups
  - Professional/practitioner
- Type of publication
  - Contributed volume

Novel Developments in Stem Cell Mobilization

Focus on CXCR4

Recently, the CXCR4/CXCL12-axis has been recognized as one of the pivotal adhesion pathways by which hematopoietic stem cells are retained in the bone marrow. CXCR4 antagonists with different chemical specification are being developed. Pharmacology research guides the way to the rational development effective antagonists. One antagonist, plerixafor, is clinically approved now for stem cell mobilization of lymphoma and myeloma patients. This allows patients to receive potentially life-saving treatment which could not have been administered otherwise. Through early clinical studies it was recognized that CXCR4 antagonists also mobilize malignant hematopoietic cells, i.e. leukemia cells. In preclinical studies a sensitization of mobilized leukemia cells to standard cytotoxic chemotherapy could be shown. Clinical studies are under way. CXCR4 antagonists are an exciting new class of compounds which are also employed for the mobilization of angiogenic cells or for the treatment of solid tumors. In this book[...]
- Features
  - Recently, the CXCR4/CXCL12-axis has been recognized as one of the pivotal adhesion pathways by which hematopoietic stem cells are retained in the bone marrow. CXCR4 antagonists with different chemical specification are being developed. Pharmacology research guides the way to the rational development of effective antagonists. One antagonist, plerixafor, is now clinically approved for stem cell mobilization [...]
- Contents
- Fields of interest
  - Cancer Research; Pharmacology / Toxicology
- Target groups
  - Professional/practitioner
- Type of publication
  - Contributed volume

Pain Research

Methods and Protocols

The advancements of medical technology, improvements in medical care, and increased patients’ life span make pain research and related drug development high priorities for both the research community and pharmaceutical companies. Rapid development of basic science research tools, such as techniques of fluorometric labeling, genomic and proteomic high throughput screening, and genetically modified animals, promotes the swift acceleration of pain research to a stage allowing integrated investigations of pain processing mechanisms at the single cell and/or molecule level, and in a spatially and temporally controlled manner.

Using multidisciplinary approaches, we can dissect the complicity of the sensory circuits connecting peripheral stimulation to maladaptive changes in the sensory pathways as well as pain perceptions at the central nervous system. Pain Research: Methods and Protocols, Second Edition provides advanced techniques and animal models that are critical for integrated pain research. Written[...]
- Features
  - The advancements of medical technology, improvements in medical care, and increased patients’ life span make pain research and related drug development high priorities for both the research community and pharmaceutical companies. Rapid development of basic science research tools, such as techniques of fluorometric labeling, genomic and proteomic high throughput screening, and genetically modified animals, [...] Contents

- Fields of interest
  - Molecular Medicine; Pain Medicine
- Target groups
  - Professional/practitioner
- Type of publication
  - Contributed volume

Usually dispatched within 3 to 5 business days

2012, XIV, 496 p. 68 illus., 35 in color. Hardcover
$209.00

2012, XII, 287 p. 66 illus., 3 in color. (Methods in Molecular Biology, Vol. 851) Hardcover
$139.00
Pharmacology of Bombax ceiba Linn.

This work is the first monograph devoted solely to Bombax ceiba, popularly known as the Red Silk Cotton Tree. Consisting of seven chapters, it covers all relevant aspects of this plant, from its historical and spiritual importance, to its botanical characterization, pharmacognostical details and ethnobiological uses, to its scientific validation in various animal and human studies. Each part of the tree is of medicinal value and possesses many novel chemical constituents such as shamaminicin, bombasin, bombamalone, bombamaloside etc. along with other bioactive secondary metabolites. The book presents the chemical structures of the most important constituents and highlights various pharmacological activities, predominantly antioxidant, anti-inflammatory, anti-mutagenic, hypoglycemic, hypotensive, hepatoprotective and fibrinolytic, which may prove to be a source for the development of a novel phyto-pharmaceutical agent to treat diabetes, heart disease and cancer. In addition, separate chapters deal with[..]

Features
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Contents
Introduction.- Ethno-biology- Phytochemical studies.- Pharmacological investigations and toxicity studies.- Commercial importance.- Ecological importance and need of conservation.- Future research.- Index.

Fields of interest
Pharmacology / Toxicology; Complementary & Alternative Medicine; Plant Sciences; Plant Ecology; Pharmacy; Conservation Biology / Ecology

Target groups
Research

Type of publication
Brief

Usually dispatched within 3 to 5 business days

2012. XII, 94 p. 19 illus., 13 in color. (SpringerBriefs in Pharmacology and Toxicology) Softcover

$49.95
ISBN 978-3-642-27903-4

RAMPs

Among the many GPCRs discovered, the calcitonin family of receptors comprise of members that regulate a number of physiological processes and are involved in many pathological conditions. Therefore, understanding how these receptors function is a critical question in the field. When Forood and his colleagues discovered that a single transmembrane protein called Receptor Activity Modifying Proteins (RAMPs) could modulate the surface expression of GPCRs of the calcitonin family, it widely opened the field of receptor life cycle. Hundreds of studies have confirmed the importance of RAMPs in the life cycle of this receptor family. Receptor biology is a rapidly expanding field and with the advances in cell and molecular biology and in vivo techniques, it is very likely that the field of RAMPs will explode further and many unanswered questions will be answered with in the next few years.

Features

Contents
Introduction to RAMPs.- RAMPs and CGRP Receptors.- Regulation of GPCR Trafficking by RAMPs.- Regulation of Calcium Sensing Receptor Trafficking by RAMPs.- Understanding RAMPs through Genetically Engineered Mouse Models.- RAMPs as Drug Targets.- Ramp Like Proteins: RTP and REEP Family of Proteins.- Regulation of RAMP Expression in Diseases.- Perspectives on some Recent Studies on RAMPs.

Fields of interest
Biomedicine (general); Cell Biology; Molecular Medicine

Target groups
Research

Type of publication
Contributed volume

Online orders shipping within 2-3 days


$139.00
ISBN 978-3-642-1679-1

Self and Nonself

In 1960 Sir Frank Macfarlane Burnet received the Noble Prize in Physiology and Medicine. He titled his Nobel Lecture “Immunological Recognition of Self” emphasizing the central argument of immunological tolerance in “How does the vertebrate organism recognize self from nonself in this the immunological sense—and how did the capacity evolve.” The concept of self is linked to the concept of biological self identity. All organisms, from bacteria to higher animals, possess recognition systems to defend themselves from nonself. Even in the context of the limited number of metazoan phyla that have been studied in detail, we can now describe many of the alternative mechanism of immune recognition that have emerged at varying points in phylogeny. Two different arms—the innate and adaptive immune system—have emerged at different moments in evolution, and they are conceptually different. The ultimate goals of immune biology include reconstructing the molecular networks underlying immune processes.

Features

Contents

Fields of interest
Immunology; Biomedicine (general)

Target groups
Professional/practitioner

Type of publication
Contributed volume

Online orders shipping within 2-3 days

2012. XLI, 318 p. 35 illus., 22 in color. (Advances in Experimental Medicine and Biology, Vol. 738) Hardcover

$209.00
ISBN 978-3-642-1679-1
Sensing in Nature

Biological systems are an emerging discipline that may provide integrative tools by assembling the hierarchy of interactions among genes, proteins and molecular networks involved in sensory systems. The aim of this volume is to provide a picture, as complete as possible, of the current state of knowledge of sensory systems in nature. The presentation in this book lies at the intersection of evolutionary biology, cell and molecular biology, physiology and genetics. Sensing in Nature is written by a distinguished panel of specialists and is intended to be read by biologists, students, scientific investigators and the medical community.

Features

Biological systems are an emerging discipline that may provide integrative tools by assembling the hierarchy of interactions among genes, proteins and molecular networks involved in sensory systems. The aim of this volume is to provide a picture, as complete as possible, of the current state of knowledge of sensory systems in nature. The presentation in this book lies at the intersection of evolutionary [...]
Statistics Applied to Clinical Studies

Thanks to the omnipresent computer, current statistics can include data files of many thousands of values, and can perform any exploratory analysis in less than seconds. This development, however fascinating, generally does not lead to simple results. We should not forget that clinical studies are, mostly, for confirming prior hypotheses based on sound arguments, and the simplest tests provide the best power and are adequate for such studies. In the past few years the authors of this 5th edition, as teachers and research supervisors in academic and top-clinical facilities, have been able to closely observe the latest developments in the field of clinical data analysis, and they have been able to assess their performance. In this 5th edition the 47 chapters of the previous edition have been maintained and upgraded according to the current state of the art, and 20 novel chapters have been added after strict selection of the most valuable and promising novel methods. The novel methods are explained[...]

Features
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Contents
Preface. Foreword. - 1 Hypotheses, data, stratification.- 2 The analysis of efficacy data.- 3 The analysis of safety data.- 4 Log likelihood ratio tests for safety data analysis.- 5 Equivalence testing.- 6 Statistical power and sample size.- 7 Interim analyses.- 8 Clinical trials are often false positive.- 9 Multiple statistical inferences.- 10 The interpretation of the p values.- 11 Research data closer to expectation than compatible with random sampling.- 12 Statistical tables for testing data closer to expectation than compatible with random sampling.- 13 Dispersion issues.- 14 Linear regression,...

Fields of interest
Biomedicine (general); Laboratory Medicine; Statistics (general); Statistics for Life Sciences, Medicine, Health Sciences; Internal Medicine

Target groups
Research

Type of publication
Professional book

Usually dispatched within 3 to 5 business days

2012. XXXV, 743 p. 186 illus. Hardcover
$119.00

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

Stem Cells and Cancer Stem Cells, Volume 4

Therapeutic Applications in Disease and Injury

Vast therapeutic applications of the following specific stem cells in disease and tissue injury are discussed: embryonic stem cells, induced pluripotent stem cells, human hair follicle stem cells, bone marrow-derived human mesenchymal stem cells, adipose-derived stem cells, periodontal/progenitor cells, cancer stem cells, and breast cancer stem cells. Because human embryonic stem cells possess the potential to produce unlimited quantities of any human cell type, considerable focus is placed on this type of stem cells in this volume. The role of cancer stem cells, specifically in breast cancer is explained. Transplantation of mesenchymal stem cells to aid the injured brain is included. Immune recovery after stem cells transplantation in severe combined immunodeficiency patients is described. The role of mesenchymal stem cells in enhancing the growth and metastasis of colon cancer is discussed. Clinical application of human follicle stem cells is presented. Treatment of malignant gliomas using[...]

Features
It is difficult to overstate the potential applications of stem-cell biology to our understanding of, and responses to, disease and injury. This volume aims to bring to its readers authoritative and responsive coverage of aspects of the field that will keep them up-to-date in a fast-moving scientific landscape. The fourth volume in the series on stem cells and their cancer-carrying counterparts, this book[...]

Contents

Fields of interest
Cancer Research; Oncology; Stem Cells; Laboratory Medicine; Neurosciences

Target groups
Research

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days

2012. XIX, 319 p. 44 illus., 32 in color. (Stem Cells and Cancer Stem Cells, Vol. 4) Hardcover
$209.00
ISBN 978-94-007-2827-1

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

Stem Cells and Cancer Stem Cells, Volume 5

Therapeutic Applications in Disease and Injury

It is pointed out that a cancer stem cell is a type within a tumor that possesses the capacity of self-renewal and can give rise to the heterogeneous lineages of cancer cells, which comprise the tumor. It is emphasized that a unique feature of cancer stem cells is that, although conventional chemotherapy kills most cells in a tumor, cancer stem cells remain intact. Vast applications of the following specific stem cells in disease and tissue injury are discussed: embryonic stem cells, human mesenchymal stem cells, cancer stem cells, arterial stem cells, neural stem cells, cardiac stem cells, dental stem cells, limbal stem cells, and hematopoietic stem cells. Because human embryonic stem cells possess the potential to produce unlimited quantities of any human cell type, considerable focus is placed on their therapeutic potential in this volume. These cells are used in tissue engineering, regenerative medicine, pharmacological and toxicological studies, and fundamental studies of cell[...]

Features
The fifth volume in the essential series on stem cell biology provides a detailed explanation of the mechanisms of self-renewing cancer stem cells, as well as their ability to generate the heterogeneous lineages of cancer cells that comprise tumors. It explores the unique resistance of cancer stem cells to conventional chemotherapy techniques able to kill a tumor’s constituent cells. The contents also[...]

Contents
Cancer Stem Cells.- 1 Signaling Pathways In Cancer Stem Cells Therapeutic Implications.- 2 Inhibition Of Telomerase With Imetelstat Causes Depletion Of Cancer Stem Cells.- 3 Targeting Self-Renewal Pathways In Cancer Stem Cells.- 4 Detection Of Cancer Stem Cells Using Ac133 Antibody.- Tissue Injury.- 5 Peripheral Nerve Regeneration After Traumatic Injury And Stem Cell Therapy.- 6 Neural Stem Cell Proliferation Surrounding The Area Of Traumatic Brain Injury Role Of Exercise Therapy.- 7 Mesenchymal Stem Cell Treatment For Ischemic Brain Injury.- 8 Role Of Neuropeptide Y On The Maintenance[...]

Fields of interest
Cancer Research; Gene Expression; Laboratory Medicine; Neurosciences; Oncology; Pathology

Target groups
Research

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days

2012. XIX, 309 p. 48 illus., 39 in color. (Stem Cells and Cancer Stem Cells, Vol. 5) Hardcover
$209.00
ISBN 978-94-007-2899-8
**Stem Cells and Cancer Stem Cells, Volume 6**

Therapeutic Applications in Disease and Injury

The difference among pluripotent stem cells, multipotent stem cells, and unipotent stem cells is pointed out. Vast therapeutic applications of the following specific stem cells in disease and tissue injury are discussed: human embryonic stem cells, human mesenchymal stem cells, germ-cell-derived pluripotent stem cells, induced pluripotent stem cells, human umbilical cord blood-derived stem cells, breast tumor stem cells, and hematopoietic stem cells. Because of the potential of human embryonic stem cells to produce unlimited quantities of any human cell type, considerable focus is placed on their therapeutic potential. Because of their pluripotency, these cells have been used in various applications such as tissue engineering, regenerative medicine, pharmacological and toxicological studies, and fundamental studies of cell differentiation. The formation of embryoid bodies, which are three-dimensional aggregates of embryonic stem cells, is explained as this is the first step in cell differentiation. [...]

**Features**

This book of the multi-volume series on stem cells and their cancerous counterparts features an in-depth explanation of the differences between pluripotent, multipotent and unipotent stem cell varieties. The specific types of stem cell singled out for discussion in this sixth volume include human mesenchymal, germ-cell-derived pluripotent, induced pluripotent, human umbilical cord-blood-derived, breast [...]

**Contents**


**Fields of interest**

Cancer Research; Stem Cells; Pathology; Transplant Surgery; Oncology

**Target groups**

Research

**Type of publication**

Contributed volume

**Usually dispatched within 3 to 5 business days**

March 31, 2012

2012, XXII, 448 p. 62 illus., 56 in color. (Stem Cells and Cancer Stem Cells, Vol. 6) Hardcover

$209.00

ISBN 978-94-007-2992-6

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**Stem Cells and Human Diseases**

The main objective of this book is to provide a comprehensive review on stem cells and their role in tissue regeneration, homeostasis and therapy. In addition, the role of cancer stem cells in cancer initiation, progression and drug resistance are discussed. The cell signaling pathways and microRNA regulating stem cell self-renewal, tissue homeostasis and drug resistance are also mentioned. Overall, these reviews will provide a new understanding of the influence of stem cells in tissue regeneration, disease regulation, therapy and drug resistance in several human diseases.

**Features**

There have been major advances in understanding the behavior of stem cells and their roles in tissue regeneration, homeostasis and therapy. Cancer stem cell hypothesis opened a new opportunity for treating and preventing cancers by targeting cancer stem cells or cancer initiating cells. An increased understanding of stem cell behavior and biology along with rapid advancement of high throughput screening [...]

**Contents**


**Fields of interest**

Biomedicine (general); Literacy; Medicine (general); Entomology

**Target groups**

Research

**Type of publication**

Contributed volume

**Usually dispatched within 3 to 5 business days**

2012, IX, 630 p. 76 illus., 44 in color. Hardcover

$279.00

ISBN 978-94-007-2800-4

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**Store-operated Ca2+ entry (SOCE) pathways**

Emerging signaling concepts in human (patho)physiology

Store-operated Ca2+ entry (SOCE) serves to control essential functions throughout the human body and represents a novel and attractive target for therapeutic intervention. This book provides an extensive overview of the role of SOCE pathways in Molecular Physiology and Cell Biology, as well as their clinical significance. (Patho)physiological principles and emerging therapeutic strategies are delineated in a way that is valuable both for the education of graduate students in advanced Cell Biology/Molecular Physiology and for the promotion of innovative research and developments in the clinical/therapeutic fields. A comprehensive, clear and elaborate representation of current concepts is provided, including a pathophysiological section arranged in a tissue/organ/system-oriented manner. The book is intended for basic researchers specializing in cell signaling, ion transport, or pharmacology, as well as biomedical scientists and clinicians with a focus on immunology, neurology or cardiology.

**Features**

Store-operated Ca2+ entry (SOCE) serves to control essential functions throughout the human body and represents a novel and attractive target for therapeutic intervention. This book provides an extensive overview of the role of SOCE pathways in Molecular Physiology and Cell Biology, as well as their clinical significance. (Patho)physiological principles and emerging therapeutic strategies are delineated in a [...]

**Contents**


**Fields of interest**

Molecular Medicine; Cell Biology; Human Physiology; Physics of the Cell; Cardiology

**Target groups**

Research

**Type of publication**

Contributed volume

**Usually dispatched within 3 to 5 business days**

April 28, 2012

2012, XXII, 481 p. 56 illus., 32 in color. With online files/ update. Hardcover

$209.00

ISBN 978-3-7091-0961-8
Synaptic Plasticity
Dynamics, Development and Disease

This book introduces the current concepts of molecular mechanisms in synaptic plasticity and provides a comprehensive overview of cutting-edge research technology used to investigate the molecular dynamics of the synapses. It explores current concepts on activity-dependent remodeling of the synaptic cytoskeleton and presents the latest ideas on the different forms of plasticity in synapses and dendrites. Synaptic Plasticity in Health and Disease not only supplies readers with extensive knowledge on the latest developments in research, but also with important information on clinical and applied aspects. Changes in spine synapses in different brain disease states, so-called synaptopathies, are explained and described by experts in the field. By outlining basic research findings as well as physiological and pathophysiological impacts on synaptic plasticity, the book represents an essential state-of-the-art work for scientists in the fields of biochemistry, molecular biology and the neurosciences, as [...]

Contents

Features
This book introduces the current concepts of molecular mechanisms in synaptic plasticity and provides a comprehensive overview of cutting-edge research technology used to investigate the molecular dynamics of the synapses. It explores current concepts on activity-dependent remodeling of the synaptic cytoskeleton and presents the latest ideas on the different forms of plasticity in synapses and dendrites. [...]

Tumors of the Central Nervous System, Volume 6
Spinal Tumors (Part 1)

This volume contains information on the diagnosis, therapy, and prognosis of spinal tumors. Various aspects of different major types of spinal tumors (astrocytomas, ependymomas, and oligodendroglioma) are discussed. Insights into the understanding of molecular pathways involved in tumor biology are explained. Classification of intradural spinal tumors, including the percentages of each of the three major types, is detailed. Symptoms, radiological features, and clinicopathological parameters of spinal cord tumors are explained. Diagnosis, outcome, and prognosis of primary spinal cord and oligodendroglioma are discussed. Diagnosis of some other spinal tumors (e.g., pilomyxoid and chordomas) is also explained. The useful role of neuroimaging in diagnosing spinal teratoid/rhabdoid and gangliogliomas is included. A wide variety of treatments of a number of spinal cord tumor types are presented in detail. Therapies discussed include chemotherapy, surgery, radiosurgery, stereotactic radiosurgery [...]

Features
With tens of thousands of new CNS tumor cases each year in the US alone, this Book Series is a vital resource for any medical professional encountering brain and CNS neoplasms in their work. Their frequent occurrence, as well as the scope and pace of research in the field, make staying on top of developments a priority. Focusing on the diagnosis, therapy and prognosis of those affecting the spine, this [...]

Contents

Fields of interest
Cancer Research; Pharmacology / Toxicology

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012, XII, 401 p. 67 illus., 33 in color. Hardcover

$189.00

Biomathematics and Bioinformatics in Cancer Research

This book is designed for advanced students and researchers pursuing the use of biostatistics and biomathematics in their investigations in biology and medicine in general, and in cancer in particular. Each chapter has been conceived as a part in the whole in such a way that information flows easily, explaining in a concise and clear way a particular subject, and connecting its results with those in the [...]

Contents

Fields of interest
Cancer Research; Pharmacology / Toxicology

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012, IX, 618 p. 56 illus., 49 in color. (Advances in Experimental Medicine and Biology, Vol. 970) Hardcover

$239.00
ISBN 978-3-7091-0931-1

Spinal Tumors (Part 1)

This volume contains information on the diagnosis, therapy, and prognosis of spinal tumors. Various aspects of different major types of spinal tumors (astrocytomas, ependymomas, and oligodendroglioma) are discussed. Insights into the understanding of molecular pathways involved in tumor biology are explained. Classification of intradural spinal tumors, including the percentages of each of the three major types, is detailed. Symptoms, radiological features, and clinicopathological parameters of spinal cord tumors are explained. Diagnosis, outcome, and prognosis of primary spinal cord and oligodendroglioma are discussed. Diagnosis of some other spinal tumors (e.g., pilomyxoid and chordomas) is also explained. The useful role of neuroimaging in diagnosing spinal teratoid/rhabdoid and gangliogliomas is included. A wide variety of treatments of a number of spinal cord tumor types are presented in detail. Therapies discussed include chemotherapy, surgery, radiosurgery, stereotactic radiosurgery [...]

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Contents

Fields of interest
Cancer Research; Laboratory Medicine; Diagnostic Radiology; Medicine (general); Pediatric Surgery; Pediatrics

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012, XXX, 241 p. 64 illus., 26 in color. (Tumors of the Central Nervous System, Vol. 6) Hardcover

$189.00
ISBN 978-94-007-2865-3

The Evolution of the Use of Mathematics in Cancer Research

This book will provide an exhaustive and clear explanation of how Statistics, Mathematics and Informatics have been used in cancer research, and seeks to help cancer researchers in achieving their objectives. To do so, state-of-the-art Biostatistics, Biomathematics and Bioinformatics methods will be described and discussed in detail through illustrative and capital examples taken from cancer research work already published. The book will provide a guide for cancer researchers in using Statistics, Mathematics and Informatics, clarifying the contribution of these logical sciences to the study of cancer, thoroughly explaining their procedures and methods, and providing criteria to their appropriate use.

Features
This book is designed for advanced students and researchers pursuing the use of biostatistics and biomathematics in their investigations in biology and medicine in general, and in cancer in particular. Each chapter has been conceived as a part in the whole in such a way that information flows easily, explaining in a concise and clear way a particular subject, and connecting its results with those in the [...]

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Cancer Research; Pharmacology / Toxicology

Target groups
Research

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Cancer Research; Pharmacology / Toxicology

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012, IX, 618 p. 56 illus., 49 in color. (Advances in Experimental Medicine and Biology, Vol. 970) Hardcover

$239.00
ISBN 978-3-7091-0931-1
Tumors of the Central Nervous System, Volume 7

Meningiomas and Schwannomas

Various aspects, including diagnosis, therapy, and prognosis, of two brain tumors (meningioma and schwannoma), of brain tumors are discussed in this volume. Insights on the understanding of molecular pathways involved in brain tumor biology are explained. For example, the role of E-cadherin gene instability, carbonic anhydrase 11, urokinase plasminogen activator, and Wnt signaling is discussed in detail. Such information will lead to the development of effective anticancer drugs. The role of molecular genetics and epigenetic mechanisms in schwannomas is explained. Also, is explained, the role of cyclin D1 in vestibular schwannoma. The determination of subtypes of meningiomas using perfusion magnetic resonance imaging is explained. Diagnosis of incidentally discovered meningioma and cystic papillary meningioma is also included. Diagnosis of facial nerve schwannoma, vestibular schwannoma, and intermediate nerve schwannoma is explained. Treatments for atypical meningioma, oncocytic meningioma, [...]
Chemistry of Nanocontainers


Features
Stefan Kubik Molecular Cages and Capsules with Functionalized Inner Surfaces Bruno Therrien Drug Delivery by Water-Soluble Organometallic Cages Daruish Ajami Julius Rebek Reversibly Expanded Encapsulation Complexes A. Carina Schulze Iris M. Oppel Container Molecules Based on Imine Type Ligands Tobias Schröder Satya Narayan Sahu Jochen Mattay Molecular Capsules Derived from Resorcin[4]arenes by ...

Fields of interest
Organic Chemistry; Nanochemistry; Polymer Sciences

Target groups
Research

Type of publication
Reviews

Usually dispatched within 3 to 5 business days


$259.00
ISBN 978-3-642-28058-0

Computational Organometallic Chemistry

Computational methods have become an indispensable tool for elucidating the mechanism of organometallic reactions. This snapshot of state-of-the-art computational studies provides an overview of the vast field of computational organometallic chemistry. Authors from Asia, Europe and the US have been selected to contribute a chapter on their specialist areas. Topics addressed include: DFT studies on zincium-mediated reactions, force field methods in organometallic chemistry, hydrogenation of n-systems, oxidative functionalization of unactivated C-H bonds and olefins, the osmation reaction, and cobalt carbonyl clusters. The breadth and depth of the contributions demonstrate not only the crucial role that computational methods play in the study of a wide range of organometallic reactions, but also attest the robust health of the field, which continues to benefit from, as well as inspire novel experimental studies.

Features
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Contents
DFT Studies on Zirconium-Mediated Reactions.- Computational Organometallic Chemistry with Force Fields.- New insights onto the molecular mechanism of H2 activation.- Transition Metal-Catalyzed Hydrogenations.- Mechanistic insights into selective oxidation of light alkanes by transition metal compounds/complexes.- Computational Studies on Osmium Catalyzed Olefin Oxidation Reactions.- Reactivity of Metal Carbene Clusters PtCH2+ and PdMCH2+ (M=Cu, Ag, Au, Pt, Rh) toward O2 and NH3: A Computational Study.- Cobalt Catalyzed Hydroformylation and Cobalt Carbonyl Clusters: Recent Computational...

Fields of interest
Organometallic Chemistry; Theoretical and Computational Chemistry; Computer Applications in Chemistry

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012, VII, 254 p. 203 illus., 59 in color. Hardcover

$189.00
ISBN 978-3-642-25257-0

Environmental and Food Safety and Security for South-East Europe and Ukraine

This book covers important aspects of the field of food security and safety, ranging from fundamental production, through advanced water treatment technologies and detection of novel pollutants, to management and policy making. The discussion strives to develop an integrated approach to solving the associated problems by simultaneously considering sociological, ecological and economic aspects. Special focus is on the environmental management systems that should be integrated in the processes of environmental risk assessment. Also addressed are other technologies applied in the service of detecting, preventing and monitoring possible threats to food security and safety. With its variety of subjects, this volume can serve both as a textbook for advanced studies and as a useful reference source for professionals.

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Contents

Fields of interest
Chemistry (general); Food Science; Medicine (general); Environment (general); Business & Economics (general)

Target groups
Graduate

Type of publication
Proceedings

Usually dispatched within 3 to 5 business days

April 28, 2012

2012, XVI, 272 p. 29 illus. (NATO Science for Peace and Security Series C: Environmental Security) Hardcover

$89.95
Environmental and Food Safety and Security for South-East Europe and Ukraine

This book covers important aspects of the field of food security and safety, ranging from fundamental production, through advanced water treatment technologies and detection of novel pollutants, to management and policy making. The discussion strives to develop an integrated approach to solving the associated problems by simultaneously considering sociological, ecological and economic aspects. Special focus is on the environmental management systems that should be integrated in the processes of environmental risk assessment. Also addressed are other technologies applied in the service of detecting, preventing and monitoring possible threats to food security and safety. With its variety of subjects, this volume can serve both as a textbook for advanced studies and as a useful reference source for professionals.

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E. Ortega-Rivas, Autonomous University of Chihuahua, Mexico

Non-thermal Food Engineering Operations

A number of food engineering operations, in which heat is not used as a preserving factor, have been employed and are applied for preparation (cleaning, sorting, etc.), conversion (milling, agglomeration, etc.) or preservation (irradiation, high pressure processing, pulsed electric fields, etc.) purposes in the food industry. This book presents a comprehensive treatise of all normally used food engineering operations that are carried out at room (or ambient) conditions, whether they are aimed at producing microbiologically safe foods with minimum alteration to sensory and nutritive properties, or they constitute routine preparative or transformation operations. The book is written for both undergraduate and graduate students, as well as for educators and practicing food process engineers. It reviews theoretical concepts, analyzes their use in operating variables of equipment, and discusses in detail different applications in diverse food processes.

Features

A number of food engineering operations, in which heat is not used as a preserving factor, have been employed and are applied for preparation (cleaning, sorting, etc.), conversion (milling, agglomeration, etc.) or preservation (irradiation, high pressure processing, pulsed electric fields, etc.) purposes in the food industry. This book presents a comprehensive treatise of all normally used food engineering operations.

Contents


Fields of interest

Chemistry (general); Biomedical Engineering; Biochemistry

Target groups

Graduate

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XII, 361 p. 119 illus. (Food Engineering Series) Hardcover

$209.00


C. Backes, University Erlangen-Nürnberg, Fürth, Germany

Noncovalent Functionalization of Carbon Nanotubes

Fundamental Aspects of Dispersion and Separation in Water

In this thesis, Claudia Backes guides the reader through her multidisciplinary research into the non-covalent functionalization of carbon nanotubes in water. Although one of the most remarkable materials of the 21st century, carbon nanotubes often have limited application because of their intrinsically low solubility and polydispersity. The author shows that rational surfactant design is a powerful tool for chemists because it can unmask the key to solubilization and allow us to tailor nanotube surface and optical properties in a fully reversible fashion. Aspects of organic, physical and analytical chemistry, as well as colloidal sciences are covered in this outstanding work which brings us one step closer to exploiting this super-material to its full potential.

Features

In this thesis, Claudia Backes guides the reader through her multidisciplinary research into the non-covalent functionalization of carbon nanotubes in water. Although one of the most remarkable materials of the 21st century, carbon nanotubes often have limited application because of their intrinsically low solubility and polydispersity. The author shows that rational surfactant design is a powerful tool for [...]
**Portable Chemical Sensors**

**Weapons Against Bioterrorism**

Biosensors are making a large impact in environmental, food, biomedical, and other applications. In comparison to standard analytical detection methods, such as minimal sample preparation and handling, they offer advantages including real-time detection, rapid detection of the analyte of concern, use of non-skilled personnel, and portability. The aim of this book is to focus on research related to the rapid detection of agents and weapons of bioterrorism and provide a comprehensive overview of the research topics most pertinent to advancing devices applicable to the rapid real-time detection of toxicants such as microbes, pathogens, toxins, or nerve gases. The ongoing war on terrorism and the rising security concerns are driving the need for newer faster biosensors against bio-warfare agents for both military and civil defence applications. The volume brings together contributions from the most eminent international researchers in the field, covering various aspects of work not so far published in...
Progress in Corrosion Science and Engineering II

This and volume no. 47 of Modern Aspects of Electrochemistry is composed of eight chapters covering topics having relevance both in corrosion science and materials engineering. In particular, the first seven chapters provide comprehensive coverage of recent advances in corrosion science.

Features
Topics in Number 47 include: Advances in the study of electrochemical and corrosion phenomena in high subcritical and supercritical aqueous solutions. Passive oxide films on iron by in-situ detection of optical techniques. Probing and modeling of galvanic coupling phenomena in localized corrosion. Preparation of hierarchical (nano/meso/macro) porous structures using electrochemical deposition.

Fields of interest
Electrochemistry; Tribology, Corrosion and Coatings

Target groups
Professional/practitioner

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012, XIV, 335 p. 190 illus. (Modern Aspects of Electrochemistry, Vol. 47) Hardcover

$189.00
ISBN 978-1-4419-5577-7

Radicals in Synthesis III


Fields of interest
Electrochemistry; Tribology, Corrosion and Coatings

Target groups
Professional/practitioner

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012, XIV, 335 p. 190 illus. (Modern Aspects of Electrochemistry, Vol. 47) Hardcover

$189.00
ISBN 978-1-4419-5577-7

Steric Effects in the Chemisorption of Vibrationally Excited Methane on Nickel

Bruce Yoder’s thesis outlines his investigation of the dissociative chemisorption of methane (CH4) on a nickel single crystal. In this work Bruce uses a molecular beam and infrared laser techniques to prepare methane in excited rovibrational states. The excited methane molecules are aligned relative to the target nickel surface. Bruce describes the discovery and exploration of a previously unknown steric effect in the dissociation reaction between a vibrationally excited methane molecule and a nickel crystal. From these studies we see that methane molecules are up to twice as reactive when the vibration is aligned parallel rather than perpendicular to the surface. This discovery will help guide the development of detailed predictive models of methane chemisorption, which in turn may lead to better catalysts for the synthesis of several industrially relevant chemicals, including hydrogen fuel from natural gas.

Features
Bruce Yoder’s thesis outlines his investigation of the dissociative chemisorption of methane (CH4) on a nickel single crystal. In this work Bruce uses a molecular beam and infrared laser techniques to prepare methane in excited rovibrational states. The excited methane molecules are aligned relative to the target nickel surface. Bruce describes the discovery and exploration of a previously unknown steric effect in the dissociation reaction between a vibrationally excited methane molecule and a nickel crystal. From these studies we see that methane molecules are up to twice as reactive when the vibration is aligned parallel rather than perpendicular to the surface. This discovery will help guide the development of detailed predictive models of methane chemisorption, which in turn may lead to better catalysts for the synthesis of several industrially relevant chemicals, including hydrogen fuel from natural gas.

Fields of interest
Physical Chemistry; Theoretical and Computational Chemistry, Catalysis

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012, XII, 175 p. 125 illus., 88 in color. (Springer Theses) Hardcover

$129.00
ISBN 978-3-642-27678-1

Summary and Outlook.
- The excited methane molecules are up to twice as reactive when the vibration is aligned parallel rather than perpendicular to the surface. This discovery will help guide the development of detailed predictive models of methane chemisorption, which in turn may lead to better catalysts for the synthesis of several industrially relevant chemicals, including hydrogen fuel from natural gas.

Fields of interest
- Physical Chemistry; Theoretical and Computational Chemistry, Catalysis

Target groups
- Research

Type of publication
- Monograph

Usually dispatched within 3 to 5 business days

2012, XII, 175 p. 125 illus., 88 in color. (Springer Theses) Hardcover

$129.00
ISBN 978-3-642-27678-1
Advanced Methods in Computer Graphics

With examples in OpenGL

This book brings together several advanced topics in computer graphics that are important in the areas of game development, three-dimensional animation and real-time rendering. The book is designed for final-year undergraduate or first-year graduate students, who are already familiar with the basic concepts in computer graphics and programming. It aims to provide a good foundation of advanced methods such as skeletal animation, quaternions, mesh processing and collision detection. These and other methods covered in the book are fundamental to the development of algorithms used in commercial applications as well as research.

Features
Advanced Methods in Computer Graphics provides an in-depth analysis of a selection of topics that are important in the areas of character animation and game development. The discussion of a wide range of algorithms and their implementation aspects presented in the book will serve as a useful reference for researchers and practitioners in computer graphics. Students will find the book to be a useful reference for researchers and practitioners in computer graphics.

Contents
Introduction.- Mathematical Preliminaries.- Scene Graphs.- Skeletal Animation.- Quaternions.- Kinematics.- Curves and Surfaces.- Mesh Processing.- Collision Detection.- Appendix A: Geometry Classes.- Appendix B: Scene Graph Classes.- Appendix C: Vertex Skinning Classes.- Appendix D: Quaternion Classes.- Index

Fields of interest
Computer Graphics

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days
March 31, 2012

2012, XIII, 312 p, 238 illus. Hardcover
$89.95

Algebraic and Numeric Biology

4th International Conference, ANB 2010, Hagenberg, Austria, July 31-August 2, 2010, Revised Selected Papers

This book constitutes the refereed proceedings of the 4th International Conference on Algebraic Biology, ANB 2010, held at the Castle of Hagenberg, Austria in July/August 2010. The conference is a follow up of the AB Conference. The 10 papers were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on mathematical modeling, system analysis and design, genomics, molecular structure analysis, automata theory, artificial intelligence, sequence analysis, automated reasoning, formal language and hybrid symbolic numerical methods.

Features
This book constitutes the refereed proceedings of the 4th International Conference on Algebraic Biology, ANB 2010, held at the Castle of Hagenberg, Austria in July/August 2010. The conference is a follow up of the AB Conference. The 10 papers were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on mathematical modeling, system analysis and design, genomics, molecular structure analysis, automata theory, artificial intelligence, sequence analysis, automated reasoning, formal language and hybrid symbolic numerical methods.

Fields of interest
Logics and Meanings of Programs; Mathematical Logic and Formal Languages; Symbolic and Algebraic Manipulation; Computational Biology / Bioinformatics; Software Engineering; Programming Languages, Compilers, Interpreters

Target groups
Research

Type of publication
Proceedings

Due: April 30, 2012

$82.00
ISBN 978-3-642-28066-5

Algorithms for Sensor Systems

7th International Symposium on Algorithms for Sensor Systems, Wireless Ad Hoc Networks and Autonomous Mobile Entities, ALGOSENSORS 2011, Saarbrücken, Germany, September 8-9, 2011, Revised Selected Papers

This book constitutes the thoroughly refereed post-conference proceedings of the 7th International Workshop on Algorithms for Sensor Systems, Wireless Ad Hoc Networks, and Autonomous Mobile Entities, ALGOSENSORS 2011, held in Saarbrücken, Germany, in September 2011. The 16 revised full papers presented together with two invited keynote talks were carefully reviewed and selected from 31 submissions. The papers are organized in two tracks: sensor networks, covering topics such as localization, lifetime maximization, interference control, neighbor discovery, self-organization, detection, and aggregation; and ad hoc wireless and mobile systems including the topics: routing, scheduling and capacity optimization in the SINR model, continuous monitoring, and broadcasting.

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Fields of interest
Algorithm Analysis and Problem Complexity; System Performance and Evaluation; Computation by Abstract Devices; Software Engineering; Computer Communication Networks; Special Purpose and Application-Based Systems

Target groups
Research

Type of publication
Proceedings

Due: February 9, 2012

$72.00
ISBN 978-3-642-28208-9
Applied Parallel and Scientific Computing
10th International Conference, PARA 2010, Reykjavik, Iceland, June 6–9, 2010. Revised Selected Papers, Part I

The two volume set LNCS 7133 and LNCS 7134 constitutes the thoroughly refereed post-conference proceedings of the 10th International Conference on Applied Parallel and Scientific Computing, PARA 2010, held in Reykjavik, Iceland, in June 2010. These volumes contain three keynote lectures, 29 revised papers and 45 minisymposia presentations arranged on the following topics: cloud computing, HPC algorithms, HPC programming tools, HPC in meteorology, parallel numerical algorithms, parallel computing in physics, scientific computing tools, HPC software engineering, simulations of atomic scale systems, tools and environments for accelerator based computational biomedicine, GPU computing, high performance computing interval methods, real-time access and processing of large data sets, linear algebra algorithms and software for multicore and hybrid architectures in honor of Fred Gustavson on his 75th birthday, memory and multicore issues in scientific computing - theory and praxis, multicore algorithms and […]

Features
The two volume set LNCS 7133 and LNCS 7134 constitutes the thoroughly refereed post-conference proceedings of the 10th International Conference on Applied Parallel and Scientific Computing, PARA 2010, held in Reykjavik, Iceland, in June 2010. These volumes contain three keynote lectures, 29 revised papers and 45 minisymposia presentations arranged on the following topics: cloud computing, HPC algorithms, HPC in meteorology, parallel numerical algorithms, parallel computing in physics, scientific computing tools, HPC software engineering, simulations of atomic scale systems, tools and environments for accelerator based computational biomedicine, GPU computing, high performance computing interval methods, real-time access and processing of large data sets, linear algebra algorithms and software for multicore and hybrid architectures in honor of Fred Gustavson on his 75th birthday, memory and multicore issues in scientific computing - theory and praxis, multicore algorithms and […]

Fields of interest
Mathematics of Computing; Software Engineering / Programming and Operating Systems; Algorithm Analysis and Problem Complexity; Complexity; Computational Mathematics and Numerical Analysis; Computer Communication Networks

Target groups
Research

Type of publication
Proceedings

Due: February 13, 2012

Architecture of Computing Systems - ARCS 2012

This book constitutes the refereed proceedings of the 25th International Conference on Architecture of Computing Systems, ARCS 2012, held in Munich, Germany, in February/March 2012. The 20 revised full papers presented in 7 technical sessions were carefully reviewed and selected from 65 submissions. The papers are organized in topical sections on robustness and fault tolerance, power-aware processing, parallel processing, processor cores, optimization, and communication and memory.

Features
This book constitutes the refereed proceedings of the 25th International Conference on Architecture of Computing Systems, ARCS 2012, held in Munich, Germany, in February/March 2012. The 20 revised full papers presented in 7 technical sessions were carefully reviewed and selected from 65 submissions. The papers are organized in topical sections on robustness and fault tolerance, power-aware processing, parallel processing, processor cores, optimization, and communication and memory.

Fields of interest
Computer Communication Networks; Computer System Implementation; Operating Systems; Software Engineering; Information Systems Applications (incl.Internet); Information Storage and Retrieval

Target groups
Research

Type of publication
Proceedings

Due: February 9, 2012


$72.00
ISBN 978-3-642-28292-8

$83.00
ISBN 978-3-642-28150-1

Competence in High Performance Computing 2010
Proceedings of an International Conference on Competence in High Performance Computing, June 2010, Schloss Schwetzingen, Germany

This book presents the state-of-the-art in simulation on supercomputers. Leading researchers present results achieved on systems of the Gauss-Allianz, the association of High-Performance Computing centers in Germany. The reports cover all fields of computational science and engineering, ranging from CFD to Computational Physics and Biology to Computer Science, with a special emphasis on industrially relevant applications. Presenting results for large-scale parallel microprocessor-based systems and GPU and FPGA-supported systems, the book makes it possible to compare the performance levels and usability of various architectures. Its outstanding results in achieving the highest performance levels for production codes are of particular interest for both scientists and engineers. The book includes a wealth of color illustrations and tables.

Features
This book presents the state-of-the-art in simulation on supercomputers. Leading researchers present results achieved on systems of the Gauss-Allianz, the association of High-Performance Computing centers in Germany. The reports cover all fields of computational science and engineering, ranging from CFD to Computational Physics and Biology to Computer Science, with a special emphasis on industrially relevant […]

Fields of interest
Numeric Computing; Simulation and Modeling; Computational Science and Engineering; Computational Mathematics and Numerical Analysis

Target groups
Research

Type of publication
Proceedings

Usually dispatched within 3 to 5 business days April 28, 2012

2012. IX, 234 p. 242 illus., 48 in color. Hardcover

$124.00
ISBN 978-3-642-24024-9
Computational Linguistics and Intelligent Text Processing

13th International Conference, CICLing 2012, New Delhi, India, March 11-17, 2012, Proceedings, Part I

This two-volume set, consisting of LNCS 7181 and LNCS 7182, constitutes the thoroughly refereed proceedings of the 13th International Conference on Computer Linguistics and Intelligent Processing, held in New Delhi, India, in March 2012. The total of 92 full papers were carefully reviewed and selected for inclusion in the proceedings. The contents have been ordered according to the following topical sections: NLP system architecture; lexical resources; morphology and syntax; word sense disambiguation and named entity recognition; semantics and discourse; sentiment analysis; opinion mining, and emotions; natural language generation; machine translation and multilingualism; text categorization and clustering; information extraction and text mining; information retrieval and question answering; document summarization; and applications.

Features
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Fields of interest
Information Systems Applications (incl. Internet); Data Mining and Knowledge Discovery; Information Storage and Retrieval; Artificial Intelligence (incl. Robotics); Database Management; Computational Linguistics

Target groups
Research

Type of publication
Proceedings

Due: February 20, 2012


$119.00
ISBN 978-3-642-28603-2


$107.00
ISBN 978-3-642-28600-1

Conceptual Modelling and Its Theoretical Foundations

Essays Dedicated to Bernhard Thalheim on the Occasion of his 60th Birthday

This Festschrift, published in honor of Bernhard Thalheim on the occasion of his 60th birthday, presents 20 articles by colleagues from all over the world with whom Bernhard Thalheim had cooperation in various respects; also included is a scientific biography contributed by the volume editors. The 20 contributions reflect the breadth and the depth of the work of Bernhard Thalheim in conceptual modeling and database theory during his scientific career spanning more than 35 years of active research. In particular, ten articles are focusing on topics like database dependency theory, object-oriented databases, triggers, abstract state machines, database and information systems design, web semantics, and business processes.

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Contents

Fields of interest
Logics and Meanings of Programs; Mathematical Logic and Formal Languages; Software Engineering; Models and Principles; Artificial Intelligence (incl. Robotics); Programming Languages, Compilers, Interpreters

Target groups
Research

Type of publication
Proceedings

Due: February 16, 2012


$83.00
ISBN 978-3-642-28278-2
Event-Driven Surveillance

Possibilities and Challenges

The Web has become a rich source of personal information in the last few years. People twitter, blog, and chat online. Current feelings, experiences or latest news are posted. For instance, first hints to disease outbreaks, customer preferences, or political changes could be identified with this data. Surveillance or early warning systems enable such detection of changes and support humans in getting information on changing situations. However, the variety of data that could be considered for surveillance is immense, ranging from sensor-measured values to collected counts and information extracted from natural language documents. Denecke’s objective is to introduce the multiple possibilities and facets of surveillance and its applications. She first introduces the task of surveillance and provides an overview on surveillance in various domains. Next, the various information sources that are available and could already be used by surveillance systems are summarized. In the main part of the book, her [...] 

Features

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Fields of interest

Data Mining and Knowledge Discovery; Information Storage and Retrieval; Document Preparation and Text Processing; Pattern Recognition; Artificial Intelligence (incl. Robotics)

Target groups

Research

Type of publication

Brief

Usually dispatched within 3 to 5 business days April 28, 2012

2012. X, 76 p. 15 illus. (SpringerBriefs in Computer Science) Hardcover

$39.95
ISBN 978-3-642-28134-1

Foundational Java

Key Elements and Practical Programming

This book presents a guide to the core features of Java – and some more recent innovations – enabling the reader to build skills and confidence though tried and trusted stages, supported by exercises that reinforce key learning points. All of the most useful and commonly applied Java syntax and libraries are introduced, along with many example programs that can provide the basis for more substantial applications. Use of the Eclipse IDE and the JUnit testing framework is integral to the book, ensuring maximum productivity and code quality, although to ensure that skills are not confined to one environment the fundamentals of the Java compiler and run time are also explained. Additionally, coverage of the Ant tool will equip the reader with the skills to automatically build, test and deploy applications independent of an IDE. Features: presents information on Java 7; contains numerous code examples and exercises; provides source code, self-test questions and PowerPoint slides at an associated website.

Features

Java is now well-established as one of the world’s major programming languages, used in everything from desktop applications to web-hosted applications and enterprise systems, and embedded in devices such as mobile phones and Blu-ray players. Foundational Java: Key Elements and Practical Programming presents a detailed guide to the core features of Java – and some more recent innovations – [...]

Contents


Fields of interest

Programming Languages, Compilers, Interpreters; Programming Techniques; Software Engineering

Target groups

Lower undergraduate

Type of publication

Undergraduate textbook

Usually dispatched within 3 to 5 business days March 31, 2012

2012. XX, 543 p. 182 illus., 21 in color. Hardcover

$99.00
ISBN 978-1-4471-2478-8

Foundations of Information and Knowledge Systems

7th International Symposium, FoIKS 2012, Kiel, Germany, March 5-9, 2012, Proceedings

This book constitutes the proceedings of the 7th International Symposium on Foundations of Information and Knowledge Systems, FoIKS 2012, held in Kiel, Germany, in March 2012. The 12 regular and 8 short papers, presented together with two invited talks in full paper-length, were carefully reviewed and selected from 53 submissions. The contributions cover foundational aspects of information and knowledge systems. These include the application of ideas, theories or methods from specific disciplines to information and knowledge systems, such as discrete mathematics, logic and algebra, model theory, informaton theory, complexity theory, algorithmics and computation, statistics, and optimization.

Features

This book constitutes the proceedings of the 7th International Symposium on Foundations of Information and Knowledge Systems, FoIKS 2012, held in Kiel, Germany, in March 2012. The 12 regular and 8 short papers, presented together with two invited talks in full paper-length, were carefully reviewed and selected from 53 submissions. The contributions cover foundational aspects of information and knowledge systems. These include the application of ideas, theories or methods from specific disciplines to information and knowledge systems, such as discrete mathematics, logic and algebra, model theory, informaton theory, complexity theory, algorithmics and computation, statistics, and optimization.

Fields of interest

Mathematical Logic and Formal Languages; Discrete Mathematics in Computer Science; Logics and Meanings of Programs; Mathematics of Computing; Algorithm Analysis and Problem Complexity; Artificial Intelligence (incl. Robotics)

Target groups

Research

Type of publication

Proceedings

Due: February 22, 2012


$95.00
ISBN 978-3-642-28471-7

D. Parsons, Massey University, Albany, Auckland, New Zealand

K. Denecke, Forschungszentrum L3S, Hannover, Germany

Th. Lukaszewicz, University of Oxford, UK; A. Sali, Hungarian Academy of Sciences, Budapest, Hungary (Eds.)
Guide to Web Development with Java

Understanding Website Creation

This comprehensive textbook introduces readers to the three-tiered, Model-View-Controller (MVC) architecture by using Hibernate, JSPs, and Java Servlets. These three technologies all use Java, so that a student with a background in programming will be able to master them with ease, with the end result of being able to create web applications that use MVC, validate user input and save data to a database. Features: presents the many topics of web development in small steps, in an accessible, easy-to-follow style; uses powerful technologies that are freely available on the web to speed up web development, such as JSP, JavaBeans, annotations, JSTL, Java 1.5, Hibernate and Tomcat; discuses HTML, HTML Forms, Cascading Style Sheets and XML; introduces core technologies from the outset, such as the MVC architecture; contains questions and exercises at the end of each chapter, detailed illustrations, chapter summaries, and a glossary; includes examples for accessing common web services.

Features

Web development is simpler than it seems, especially with the software tools freely available on the Web. Breaking from the tradition of teaching a history of Web development, this book jumps to the good stuff right from the outset so that students can start writing real applications. This comprehensive Guide to Web Development with Java introduces readers to the three-tiered, Model-View-Controller [...] 

Contents


Fields of interest

Information Systems Applications (incl.Internet)

Target groups

Lower undergraduate

Type of publication

Undergraduate textbook

Integration of World Knowledge for Natural Language Understanding

This book concerns non-linguistic knowledge required to perform computational natural language understanding (NLU). The main objective of the book is to show that inference-based NLU has the potential for practical large scale applications. First, an introduction to research areas relevant for NLU is given. We review approaches to linguistic meaning, explore knowledge resources, describe semantic parsers, and compare two main forms of inference: deduction and abduction. In the main part of the book, we propose an integrative knowledge base combining lexical-semantic, ontological, and distributional knowledge. A particular attention is payed to ensuring its consistency. We then design a reasoning procedure able to make use of the large scale knowledge base. We experiment both with a deduction-based NLU system and with an abductive reasoner. For evaluation, we use three different NLU tasks: recognizing textual entailment, semantic role labeling, and interpretation of noun dependencies.

Features

This book concerns non-linguistic knowledge required to perform computational natural language understanding (NLU). The main objective of the book is to show that inference-based NLU has the potential for practical large scale applications. First, an introduction to research areas relevant for NLU is given. We review approaches to linguistic meaning, explore knowledge resources, describe semantic [...] 

Contents


Fields of interest

Language Translation and Linguistics; Artificial Intelligence (incl. Robotics); Mathematical Logic and Formal Languages; Document Preparation and Text Processing; Computing Methodologies

Target groups

Graduate

Type of publication

Monograph

Introduction to Programming with Fortran

With Coverage of Fortran 90, 95, 2003, 2008 and 77

This edition has been revised to stress the use of modern Fortran throughout. Key features: lots of clear, simple and complete examples highlighting the key core language features of modern Fortran including data typing, array processing, control structures functions, subroutines, user defined types and pointers, pinpoints common problems that occur when programming, has sample output from a variety of compilers, expands on the first edition, by introducing modules as soon as the fundamental language features have been covered. Modules are the major organisational feature of Fortran and are the equivalent of classes in other languages, major new features covered in this edition include, introduction to object oriented programming in Fortran introduction to parallel programming in Fortran using MPI, OpenMP and Coarray Fortra, this edition has three target audiences the complete beginner existing Fortran programmers wishing to update their code those with programming experience in other languages[...]

Features

This edition has been revised to stress the use of modern Fortran throughout. Key features: lots of clear, simple and complete examples highlighting the key core language features of modern Fortran including data typing, array processing, control structures functions, subroutines, user defined types and pointers, pinpoints common problems that occur when programming[...] 

Contents


Fields of interest

Programming Languages, Compilers, Interpreters; Programming Techniques; Software Engineering; Data Structures; Numeric Computing

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XVII, 384 p. 109 illus. Hardcover

$89.95

2012. XVII, 384 p. 109 illus. Hardcover

$89.95

2012. XVII, 384 p. 109 illus. Hardcover

$89.95

2012. XVII, 242 p. 16 illus., 2 in color. (Atlantis Thinking Machines, Vol. 3) Hardcover

$109.00

2012. XVII, 242 p. 16 illus., 2 in color. (Atlantis Thinking Machines, Vol. 3) Hardcover

$109.00

2012. XVII, 619 p. 173 illus. Softcover

$89.95
Language Grounding in Robots

Written by leading international experts, this volume presents contributions establishing the feasibility of human language-like communication with robots. The book explores the use of language games for structuring situated dialogues in which contextualized language communication and language acquisition can take place. Within the text are integrated experiments demonstrating the extensive research which targets artificial language evolution. Language Grounding in Robots uses the design layers necessary to create a fully operational communicating robot as a framework for the text, focusing on the following areas: Embodiment; Behavior; Perception and Action; Conceptualization; Language Processing; Whole Systems Experiments. This book serves as an excellent reference for researchers interested in further study of artificial language evolution.

Features
No copy necessary

Contents

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

Target groups
Research

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days

2012. XI, 276 p. 134 illus. Hardcover
$109.00

Language and Automata Theory and Applications

6th International Conference, LATA 2012, A Coruña, Spain, March 5-9, 2012, Proceedings

This book constitutes the refereed proceedings of the 6th International Conference on Language and Automata Theory and Applications, LATA 2012, held in A Coruña, Spain in March 2012. The 41 revised full papers presented together with 3 invited talks and 2 invited tutorials were carefully reviewed and selected from 114 initial submissions. The volume features contributions from both classical theory fields and application areas; e.g. informations, systems biology, language technology, artificial intelligence, etc. Among the topics covered are algebraic language theory, automata and logic, systems analysis, systems verifications, computational complexity, decidability, unification, graph transformations, language-based cryptography, and applications in data mining, computational learning, and pattern recognition.

Features
This book constitutes the refereed proceedings of the 6th International Conference on Language and Automata Theory and Applications, LATA 2012, held in A Coruña, Spain in March 2012. The 41 revised full papers presented together with 3 invited talks and 2 invited tutorials were carefully reviewed and selected from 114 initial submissions. The volume features contributions from both classical theory fields and [...] 

Fields of interest
Computation by Abstract Devices; Mathematical Logic and Formal Languages; Algorithm Analysis and Problem Complexity; Artificial Intelligence (incl. Robotics); Logics and Meanings of Programs; Computer Appl. in Social and Behavioral Sciences

Target groups
Research

Type of publication
Proceedings

Due: February 20, 2012

2012. XII, 556 p. 64 illus. (Theoretical Computer Science and General Issues, Vol. 7183) Softcover
$107.00
ISBN 978-3-642-28331-4

Linked Data in Linguistics

Representing and Connecting Language Data and Language Metadata

The explosion of information technology has led to substantial growth of web-accessible linguistic data in terms of quantity, diversity and complexity. These resources become even more useful when interlinked with each other to generate network effects. The general trend of providing data online is thus accompanied by newly developing methodologies to interconnect linguistic data and metadata. This includes linguistic data collections, general-purpose knowledge bases (e.g., the DBpedia, a machine-readable edition of the Wikipedia), and repositories with specific information about languages, linguistic categories and phenomena. The Linked Data paradigm provides a framework for interoperability and access management, and thereby allows to integrate information from such a diverse set of resources. The contributions assembled in this volume illustrate the bandwidth of applications of the Linked Data paradigm for representative types of linguistic resources. They cover lexical-semantic resources, annotated [...] 

Features
The explosion of information technology has led to substantial growth of web-accessible linguistic data in terms of quantity, diversity and complexity. These resources become even more useful when interlinked with each other to generate network effects. The general trend of providing data online is thus accompanied by newly developing methodologies to interconnect linguistic data and [...] 

Contents

Fields of interest
Language Translation and Linguistics; Computational Linguistics; Document Preparation and Text Processing; Linguistics (general); Data Mining and Knowledge Discovery; Data Structures

Target groups
Research

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XIV, 216 p. 34 illus., 5 in color. Hardcover
$109.00
ISBN 978-3-642-28248-5
Logic and the Organization of Information

Logic and the Organization of Information closely examines the historical and contemporary methodologies used to catalogue information objects—books, ebooks, journals, articles, web pages, images, emails, podcasts and more—in the digital era. This book provides an in-depth technical background for digital librarianship, and covers a broad range of theoretical and practical topics including: classification theory, topic annotation, automatic clustering, generalized synonymy and concept indexing, distributed libraries, semantic web ontologies and Simple Knowledge Organization System (SKOS). It also analyzes the challenges facing today’s information architects, and outlines a series of techniques for overcoming them. Logic and the Organization of Information is intended for practitioners and professionals working at a design level as a reference book for digital librarianship. Advanced-level students, researchers and academics studying information science, library science, digital libraries and [...]
Mining Text Data

Text mining applications have experienced tremendous advances because of web 2.0 and social networking applications. Recent advances in hardware and software technology have lead to a number of unique scenarios where text mining algorithms are learned. Mining Text Data introduces an important niche in the text analytics field, and is an edited volume contributed by leading international researchers and practitioners focused on social networks & data mining. This book contains a wide swath in topics across social networks & data mining. Each chapter contains a comprehensive survey including the key research content on the topic, and the future directions of research in the field. There is a special focus on Text Embedded with Heterogeneous and Multimedia Data which makes the mining process much more challenging. A number of methods have been designed such as transfer learning and cross-lingual mining for such cases. Mining Text Data simplifies the content, so that advanced-level students, [...] Features

Text mining applications have experienced tremendous advances because of web 2.0 and social networking applications. Recent advances in hardware and software technology have lead to a number of unique scenarios where text mining algorithms are learned. Mining Text Data introduces an important niche in the text analytics field, and is an edited volume contributed by leading international researchers [...] Contents


Database Management; Data Mining and Knowledge Discovery; Information Systems Applications (incl.Internet); Computer Communication Networks; Multimedia Information Systems

Target groups

Research

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

Multi-Agent-Based Simulation XII

International Workshop, MABS 2011, Taipei, Taiwan, May 2-6, 2011, Revised Selected Papers

This book constitutes the refereed proceedings of the 12th International Workshop on Multi-Agent-Based Simulation, MABS 2011, held in Taipei, Taiwan, in May 2011. The 10 revised selected and extended papers presented were carefully reviewed and selected from 21 submissions. The topics covered are MABS in scientometrics; MABS in politics, transit and policy; pedestrian, crowds and large scale MABS; and MABS modeling. Features

This book constitutes the refereed proceedings of the 12th International Workshop on Multi-Agent-Based Simulation, MABS 2011, held in Taipei, Taiwan, in May 2011. The 10 revised selected and extended papers presented were carefully reviewed and selected from 21 submissions. The topics covered are MABS in scientometrics; MABS in politics, transit and policy; pedestrian, crowds and large scale MABS; and MABS modeling. Fields of interest

Artificial Intelligence (incl. Robotics); Software Engineering; Computation by Abstract Devices; Algorithm Analysis and Problem Complexity; Simulation and Modeling; Special Purpose and Application-Based Systems Target groups

Research

Type of publication

Proceedings

Due: February 24, 2012

2012, IX, 127 p. 50 illus. (Lecture Notes in Artificial Intelligence, Vol. 7124) Softcover

$72.00

ISBN 978-3-642-28399-4

New Frontiers in Applied Data Mining

PAKDD 2011 International Workshops, Shenzhen, China, May 24-27, 2011, Revised Selected Papers

This book constitutes the thoroughly refereed post-conference proceedings of five international workshops held in conjunction with PAKDD 2011 in Shenzhen, China, in May 2011: the International Workshop on Behavior Informatics (BI 2011), the Workshop on Quality Issues, Measures of Interestingness and Evaluation of Data Mining Models (QIMIE 2011), the Workshop on Biologically Inspired Techniques for Data Mining (BODM 2011), the Workshop on Advances and Issues in Traditional Chinese Medicine Clinical Data Mining (Ai-TCM 2011), and the Second Workshop on Data Mining for Healthcare Management (DMGHM 2011). The book also includes papers from the First PAKDD Doctoral Symposium on Data Mining (DSDM 2011). The 42 papers were carefully reviewed and selected from numerous submissions. The papers cover a wide range of topics discussing emerging techniques in the field of knowledge discovery in databases and their application domains extending to previously unexplored areas such as data mining based on [...] Features

This book constitutes the thoroughly refereed post-conference proceedings of five international workshops held in conjunction with PAKDD 2011 in Shenzhen, China, in May 2011: the International Workshop on Behavior Informatics (BI 2011), the Workshop on Quality Issues, Measures of Interestingness and Evaluation of Data Mining Models (QIMIE 2011), the Workshop on Biologically Inspired Techniques for Data Mining [...] Fields of interest

Artificial Intelligence (incl. Robotics); Database Management; Information Storage and Retrieval; Information Systems Applications (incl.Internet); Pattern Recognition; Data Mining and Knowledge Discovery Target groups

Research

Type of publication

Proceedings

Due: February 15, 2012

2012, XXX, 508 p. 185 illus. (Lecture Notes in Artificial Intelligence, Vol. 7104) Softcover

$107.00

ISBN 978-3-642-28319-2
Partially Supervised Learning

First IAPR TC3 Workshop, PSL 2011, Ulm, Germany, September 15-16, 2011, Revised Selected Papers

This book constitutes thoroughly refereed revised selected papers from the First IAPR TC3 Workshop on Partially Supervised Learning, PSL 2011, held in Ulm, Germany, in September 2011. The 14 papers presented in this volume were carefully reviewed and selected for inclusion in the book, which also includes 3 invited talks. PSL 2011 dealt with methodological issues as well as real-world applications of PSL. The main methodological issues were: combination of supervised and unsupervised learning; diffusion learning; semi-supervised classification, regression, and clustering; learning with deep architectures; active learning; PSL with vague, fuzzy, or uncertain teaching signals; learning, or statistical pattern recognition; and PSL in cognitive systems. Applications of PSL included: image and signal processing; multi-modal information processing; sensor/information fusion; human computer interaction; data mining and Web mining; forensic anthropology; and bioinformatics.

Features
This book constitutes thoroughly refereed revised selected papers from the First IAPR TC3 Workshop on Partially Supervised Learning, PSL 2011, held in Ulm, Germany, in September 2011. The 14 papers presented in this volume were carefully reviewed and selected for inclusion in the book, which also includes 3 invited talks. PSL 2011 dealt with methodological issues as well as real-world applications of PSL. [...]
Rough Sets: Selected Methods and Applications in Management and Engineering

Rough Set Theory, introduced by Pawlak in the early 1980s, has become an important part of soft computing within the last 25 years. However, much of the focus has been on the theoretical understanding of Rough Sets, with a survey of Rough Sets and their applications within business and industry much desired. Rough Sets: Selected Methods and Applications in Management and Engineering provides context to Rough Set theory, with each chapter exploring a real-world application of Rough Sets. Rough Sets is relevant to managers striving to improve their businesses, industry researchers looking to improve the efficiency of their solutions, and university researchers wanting to apply Rough Sets to real-world problems.

Contents
- Preface - Contributors - Part I: Foundations of Rough Sets - An Introduction to Rough Sets - Part II: Methods and Applications in Data Analysis - Applying Rough Set Concepts to Clustering - Rough Clustering Approaches for Dynamic Environments - Feature Selection, Classification and Rule Generation using Rough Sets - Part III: Methods and Applications in Decision Support - Three-way Decisions using Rough Sets - Rough Set Based Decision Support - Models East to Interpret - Part IV: Methods and Applications in Management - Financial Series Forecasting using Dual Rough Support Vector - Fields of interest
- Artificial Intelligence (incl. Robotics); Computer Appl. in Administrative Data Processing

Target groups
- Research

Type of publication
- Contributed volume

Usually dispatched within 3 to 5 business days
March 31, 2012

2012, X, 214 p. 130 illus., 86 in color. (Advanced Information and Knowledge Processing) Hardcover

$99.00
ISBN 978-1-4471-2759-8

2012, IX, 111 p. (SpringerBriefs in Electrical and Computer Engineering) Softcover

$39.95
ISBN 978-1-4614-1902-0
Sets, Logic and Maths for Computing

This easy-to-follow textbook introduces the mathematical language, knowledge and problem-solving skills that undergraduates need to study computing. The language is in part qualitative, with concepts such as set, relation, function and recursion/induction; but it is also partly quantitative, with principles of counting and finite probability. Entwined with both are the fundamental notions of logic and their use for representation and proof. Features: teaches finite math as a language for thinking, as much as knowledge and skills to be acquired; uses an intuitive approach with a focus on examples for all general concepts; brings out the interplay between the qualitative and the quantitative in all areas covered, particularly in the treatment of recursion and induction; balances carefully the abstract and concrete, principles and proofs, specific facts and general perspectives; includes highlight boxes that raise common queries and clear confusions; provides numerous exercises, with selected solutions.

Features
This easy-to-follow textbook introduces the mathematical language, knowledge and problem-solving skills that undergraduate students need to enter the world of computer and information sciences. The language is in part qualitative, with concepts such as set, relation, function and recursion/induction; but it is also partly quantitative, with principles of counting and finite probability. Entwined with both [...]
Transactions on Large-Scale Data- and Knowledge-Centered Systems V

The LNCS journal Transactions on Large-Scale Data- and Knowledge-Centered Systems focuses on data management, knowledge discovery, and knowledge processing, which are core and hot topics in computer science. Since the 1990s, the Internet has become the main driving force behind application development in all domains. An increase in the demand for resource sharing across different sites connected through networks has led to an evolution of data- and knowledge-management systems from centralized systems to decentralized systems enabling large-scale distributed applications providing high scalability. Current decentralized systems still focus on data and knowledge as their main resource. Feasibility of these systems relies basically on P2P (peer-to-peer) techniques and the support of agent systems with scaling and decentralized control. Synergy between Grids, P2P systems, and agent technologies is the key to data- and knowledge-centered systems in large-scale environments. This, the fifth issue of [...] Features

Contents

Database Management; Data Mining and Knowledge Discovery; Information Storage and Retrieval; Information Systems Applications (incl. Internet); Database Structures; Data Storage Representation

Target groups
Research

Type of publication
Contributed volume

Due: April 30, 2012


$98.00
ISBN 978-3-642-28147-1

D. Uckelmann, University of Bremen, Germany; B. Scholz Reiter, University of Bremen, Germany; L. Rügge, University of Bremen, Germany; B. Hong, Pusan National University, Korea; A. Rizzi, University of Parma, Italy (Eds.)

The Impact of Virtual, Remote and Real Logistics Labs

First International Conference, ImViReLL 2012, Bremen, Germany, February 28-March 1, 2012. Proceedings

This book constitutes the refereed proceedings of the International Conference on the Impact of Virtual, Remote and Real Logistic Labs, ImViReLL 2012, held in Bremen, Germany, in February/March 2012. The 16 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on fundamentals and historic background of lab-based research in logistics; infrastructure and design of virtual, remote and real labs; educational implications of virtual, remote and real labs; test-beds and demonstrators; lab-based process improvements in logistics; lab-supported product developments.

Features

This book constitutes the refereed proceedings of the International Conference on the Impact of Virtual, Remote and Real Logistic Labs, ImViReLL 2012, held in Bremen, Germany, in February/March 2012. The 16 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on fundamentals and historic background of lab-based research in [...] Fields of interest

Information Systems Applications (incl. Internet); Industrial and Production Engineering; Educational Technology; Information Systems and Communication Service; Engineering (general); Engineering Economics, Organization, Logistics, Marketing

Target groups
Research

Type of publication
Proceedings

Due: April 7, 2012


$84.00
ISBN 978-3-642-28815-9

L.M. Camarinhã-Matos, New University of Lisbon, Portugal; E. Shahamatnia, New University of Lisbon, Portugal; G. Nunes, University of Coimbra, Portugal (Eds.)

Technological Innovation for Value Creation


This book constitutes the refereed proceedings of the Third IFIP WG 5.5/SOCOLNET Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2012, held in Costa de Caparica, Portugal, in February 2012. The 65 revised full papers were carefully reviewed and selected from numerous submissions. They cover a wide spectrum of topics ranging from collaborative enterprise networks to microelectronics. The papers are organized in topical sections on collaborative systems, service orientation, knowledge and content management, human interaction, Petri nets, smart systems, robotic systems, perceptional systems, signal processing, energy, renewable energy, energy smart grid, power electronics, electronics, optimization in electronics, telecommunications and electronics, and electronic materials. The book also includes papers from the Workshop on Data Analysis and Modeling Retina in Health and Disease.

Features

This book constitutes the refereed proceedings of the Third IFIP WG 5.5/SOCOLNET Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2012, held in Costa de Caparica, Portugal, in February 2012. The 65 revised full papers were carefully reviewed and selected from numerous submissions. They cover a wide spectrum of topics ranging from collaborative enterprise networks to microelectronics. [...] Fields of interest

Management of Computing and Information Systems; Computer Communication Networks; Artificial Intelligence (incl. Robotics); Information Systems Applications (incl. Internet); Computation by Abstract Devices; Software Engineering

Target groups
Research

Type of publication
Proceedings

Due: February 10, 2012


$189.00
ISBN 978-3-642-28254-6

L.M. Camarinhã-Matos, New University of Lisbon, Portugal; E. Shahamatnia, New University of Lisbon, Portugal; G. Nunes, University of Coimbra, Portugal (Eds.)
Earthquake fault zones exhibit hierarchical damage and granular structures with evolving geometrical and material properties. Understanding how repeated brittle deformation form the structures and how the structures affect subsequent earthquakes is a rich problem involving coupling of various processes that operate over broad space and time scales. The diverse state-of-the-art papers collected here show how insight can come from many fields including statistical physics, structural geology and rock mechanics at large scales; elasticity, friction and nonlinear continuum mechanics at intermediate scales; and fracture mechanics, granular mechanics and surface physics at small scales. This volume will be useful to students and professional researchers from Earth Sciences, Material Sciences, Engineering, Physics and other disciplines, who are interested in the properties of natural fault zones and the processes that occur between and during earthquakes.

Features
Earthquake fault zones exhibit hierarchical damage and granular structures with evolving geometrical and material properties. Understanding how repeated brittle deformation form the structures and how the structures affect subsequent earthquakes is a rich problem involving coupling of various processes that operate over broad space and time scales. The diverse state-of-the-art papers collected here show how [...]
Sand Control in Well Construction and Operation

Produced sand causes a lot of problems. From that reasons sand production must be monitored and kept within acceptable limits. Sand control problems in wells result from improper completion techniques or changes in reservoir properties. The idea is to provide support to the formation to prevent movement under stresses resulting from fluid flow from reservoir to well bore. That means that sand control often result with reduced well production. Control of sand production is achieved by: reducing drag forces (the cheapest and most effective method), mechanical sand bridging (screens, gravel packs) and increasing of formation strength (chemical consolidation). For open hole completions or with un-cemented slotted liners/screens sand failure will occur and must be predicted. Main problem is plugging. To combat well failures due to plugging and sand breakthrough Water-Packing or Shunt-Packing are used.

Features
Produced sand causes a lot of problems. From that reasons sand production must be monitored and kept within acceptable limits. Sand control problems in wells result from improper completion techniques or changes in reservoir properties. The idea is to provide support to the formation to prevent movement under stresses resulting from fluid flow from reservoir to well bore. That means that sand control often [...]
Eastern and Cross Cultural Management

This path-breaking book liberates management thinking from a century of Western subjugation. It is a comparative exposition of culture and management styles in India, Japan, China and major Western countries. There is a need to protect and sustain each country’s identity and positive strengths in values while interlinking global business with cross cultural empathy. The book explores profiles of culture-management axis through secondary literature study in various languages of the East, empirical research conducted with nearly one thousand managers and 375 organizations in India. The effective management in the next millennium will be mission-based strategic integration of the team, combined with people-sensitive approach. In spite of growth of hi-tech, the emotional human issues will dominate the coming decades. Happiness and health in institutions will largely depend on successive sacrifice of greed and possessiveness in creation of wealth for human development. The meltdown in the US and its[...]

Features
This path-breaking book liberates management thinking from a century of Western subjugation. It is a comparative exposition of culture and management styles in India, Japan, China and major Western countries. There is a need to protect and sustain each country’s identity and positive strengths in values while interlinking global business with cross cultural empathy. The book explores profiles of[...]

Contents

Fields of interest
Management/Business for Professionals

Target groups
Management/Business for Professionals

Type of publication
Professional book

Usually dispatched within 3 to 5 business days
March 31, 2012

2012, XX, 163 p. 15 illus. (Management for Professionals) Hardcover

$99.00
ISBN 978-81-322-0471-8
Improving Software Testing

Technical and Organizational Developments

Software is continuously increasing in complexity. Paradigmatic shifts and new development frameworks make it easier to implement software – but not to test it. Software testing remains to be a topic with many open questions with regard to both technical low-level aspects and to the organizational embedding of testing. However, a desired level of software quality cannot be achieved by either choosing a technical procedure or by optimizing testing processes. In fact, it requires a holistic approach. This brief summarizes the current knowledge of software testing and introduces three current research approaches. The base of knowledge is presented comprehensively in scope but concise in length; thereby the volume can be used as a reference. Research is highlighted from different points of view. Firstly, progress on developing a tool for automated test case generation (TCG) based on a program’s structure is introduced. Secondly, results from a project with industry partners on testing best practices are [...] Features

Software is continuously increasing in complexity. Paradigmatic shifts and new development frameworks make it easier to implement software – but not to test it. Software testing remains to be a topic with many open questions with regard to both technical low-level aspects and to the organizational embedding of testing. However, a desired level of software quality cannot be achieved by either choosing a [...] Contents


Fields of interest

Business Information Systems; Software Engineering; System Performance and Evaluation

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

2012. XVIII, 160 p. 17 illus. (SpringerBriefs in Information Systems) Softcover

$49.95
ISBN 978-3-642-27463-3

Information Theory and Best Practices in the IT Industry

The importance of benchmarking in the service sector is well recognized as it helps in continuous improvement in products and work processes. Through benchmarking, companies have strived to implement best practices in order to remain competitive in the product-market in which they operate. However, studies on benchmarking, particularly in the software development sector, have neglected using multiple variables and therefore have not been as comprehensive. Information Theory and Best Practices in the IT Industry fills this void by examining benchmarking in the business of software development and studying how it is affected by development process, application type, hardware platforms used, and many other variables. Research on benchmarking, particularly in the software development sector, have neglected using multiple [...] Features

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Fields of interest

Business Information Systems; Data Structures, Cryptology and Information Theory; Technology Management

Target groups

Professional/practitioner

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

2012. XV, 216 p. 34 illus., 17 in color. Hardcover

$139.00
ISBN 978-1-4614-3042-1

Innovators’ Marketplace

Using Games to Activate and Train Innovators

This book presents a powerful method for innovation that reinforces combinational and analogical thoughts, with interdisciplinary communications among stakeholders in the market. In this method called Innovators’ Marketplace, two games - Innovators’ Market Game and Analogy Game - accelerate the spiral of innovation with visualizing data on the connectivity of pieces of existing knowledge. Some players invent ideas by connecting and combining pre-existing knowledge, while others evaluate the ideas to decide whether or not to buy. In a joyful atmosphere created by the games, players look beyond resistance to criticism, as experiments real cases show. They will start thinking and talking about the best segment of the majority, latent requirements in the future market, and scenarios for satisfying those requirements. This process embodies the principle that an interdisciplinary combination of business actors and resources, possibly with the appearance of new actors, triggers innovation.

Features

This book presents a powerful method for innovation that reinforces combinational and analogical thoughts, with interdisciplinary communications among stakeholders in the market. In this method called Innovators’ Marketplace, two games - Innovators’ Market Game and Analogy Game - accelerate the spiral of innovation with visualizing data on the connectivity of pieces of existing knowledge. Some players invent [...] Contents


Fields of interest

Management/Business for Professionals; Technology Management; Organization/Planning

Target groups

Professional/practitioner

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XXIV, 195 p. 95 illus. (Understanding Innovation) Hardcover

$139.00
ISBN 978-3-642-25479-6
Insurance Economics

Insurance Economics brings together the economic analysis of decision making under risk, risk management and demand for insurance by individuals and corporations, objectives pursued and management tools used by insurance companies, the regulation of insurance, and the division of labor between private and social insurance. Appropriate both for advanced undergraduate and graduate students of economics, management, and finance, this text provides the background required to understand current research. Predictions derived from theoretical argument are not only stated but confronted with empirical evidence. Throughout the book, conclusions summarize results, helping readers to check their knowledge and understanding. Issues discussed include paradox in decision making under risk, selection of favorable risks by insurers, the possibility of a ‘death spiral’ in insurance markets, and future challenges such as regulation in the wake of the 2007–09 financial crisis and the increasing availability of...

Features

Insurance Economics brings together the economic analysis of decision making under risk, risk management and demand for insurance by individuals and corporations, objectives pursued and management tools used by insurance companies, the regulation of insurance, and the division of labor between private and social insurance. Appropriate both for advanced undergraduate and graduate students of economics, ...

Contents


Fields of interest

Insurance; Microeconomics; Finance / Banking; Social Policy; Game Theory; Economics, Social and Behavioral Sciences; Demography

Target groups

Upper undergraduate

Type of publication

Graduate/advanced undergraduate textbook

Managing Safety of Heterogeneous Systems

Decisions under Uncertainties and Risks

Managing safety of diverse systems requires decision-making under uncertainties and risks. Such systems are typically characterized by spatio-temporal heterogeneities, inter-dependencies, externalities, endogenous risks, discontinuities, irreversibility, practically irreducible uncertainties, and rare events with catastrophic consequences. Traditional scientific approaches rely on data from real observations and experiments; yet no sufficient observations exist for new problems, and experiments are usually impossible. Therefore, science-based support for addressing such new class of problems needs to replace the traditional “deterministic predictions” analysis by new methods and tools for designing decisions that are robust against the involved uncertainties and risks. The new methods treat uncertainties explicitly by using “synthetic” information derived by integration of “hard” elements, including available data, results of possible experiments, and formal representations of scientific facts, with...

Features

Managing safety of diverse systems requires decision-making under uncertainties and risks. Such systems are typically characterized by spatio-temporal heterogeneities, inter-dependencies, externalities, endogenous risks, discontinuities, irreversibility, practically irreducible uncertainties, and rare events with catastrophic consequences. Traditional scientific approaches rely on data from real.

Fields of interest

Operation Research / Decision Theory; Operations Research, Mathematical Programming; Quality Control, Reliability, Safety and Risk; Statistical Theory and Methods

Target groups

Research

Type of publication

Proceedings

Usually dispatched within 3 to 5 business days February 29, 2012


$129.00

ISBN 978-3-642-22883-4

Modeling Dynamic Economic Systems

This book explores the dynamic processes in economic systems, concentrating on the extraction and use of the natural resources required to meet economic needs. Sections cover methods for dynamic modeling in economics, microeconomic models of firms, modeling optimal use of both nonrenewable and renewable resources, and chaos in economic models. This book does not require a substantial background in mathematics or computer science.

Features

Economists model the ways in which humans meet their needs using given endowments of resources and technologies. This book explores the dynamic processes in economic systems, concentrating on the extraction of resources that are required to meet economic needs. Using the STELLA® software, Modeling Dynamic Economic Systems applies methods of computer modeling to a wide range of ...

Contents


Fields of interest

Environmental Economics; Monitoring / Environmental Analysis; Economic Theory; Complexity; Models and Principles

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days

2012. XVII, 326 p. 244 illus., 205 in color. (Modeling Dynamic Systems) Hardcover

$99.00

Modernization Science
The Principles and Methods of National Advancement

Depending on their national level of income, development and modernization, all countries in the world can be generally categorized as either advanced or developing. Studies on why advanced countries continue to develop, how they maintain their level of development, and how developing countries enter into the advanced club fall into the field of “modernization science,” which is an emerging interdisciplinary science. This monograph, the first English book available on “modernization science,” interprets its concepts, methodologies, general theories, first and second modernization, level-specific, field-specific and three sector-specific modernizations, modernization policy and evaluation, and the principles and methods of national development since the 18th century. It provides clear, systematic, up-to-date information on this new discipline with more than 173 figures and 265 tables, and covers 131 countries and 97% of the global population. A comprehensive outlook on modernization is [...]"}

Contents

Features
Depending on their national level of income, development and modernization, all countries in the world can be generally categorized as either advanced or developing. Studies on why advanced countries continue to develop, how they maintain their level of development, and how developing countries enter into the advanced club fall into the field of “modernization science,” which is an emerging [...]"

Project Management with Dynamic Scheduling
Scheduling
Project Management with Dynamic Scheduling
Scheduling

The topic of this book is known as dynamic scheduling, and is used to refer to three dimensions of project management and scheduling: the construction of a baseline schedule and the analysis of a project schedule’s risk as preparation of the project control phase during project progress. This dynamic scheduling point of view implicitly assumes that the usability of a project’s baseline schedule is rather limited and only acts as a point of reference in the project life cycle. Consequently, a project schedule should especially be considered as nothing more than a predictive model that can be used for resource efficiency calculations, time and cost risk analyses, project tracking and performance measurement, and so on. In this book, the three dimensions of dynamic scheduling are highlighted in detail and are based on and inspired by a combination of academic research studies at Ghent University (www.ugent.be), in-company trainings at Vlerick Leuven Gent Management School (www.vlerick.com) and [...]"

Fields of interest
Operation Research / Decision Theory; Organization / Planning; Management / Business for Professionals; Operations Research, Mathematical Programming

Target groups
Graduate advanced undergraduate textbook

Type of publication
Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. XVIII, 310 p. 123 illus. Hardcover
$139.00
ISBN 978-3-642-25174-0
Redefining German Health Care
Moving to a Value-Based System

The German health care system is on a collision course with budget realities. Costs are high and rising, and quality problems are becoming ever more apparent. Decades of reforms have produced little change to these troubling trends. Why has Germany failed to solve these cost and quality problems? The reason is that Germany has not set value for patients as the overarching goal, defined as the patient health outcomes achieved per euro expended. This book lays out an action agenda to move Germany to a high value system: care must be reorganized around patients and their medical conditions; providers must compete around the outcomes they achieve; health plans must take an active role in improving subscriber health, and payment must shift to models that reward excellent providers. Also, private insurance must be integrated in the risk-pooling system. These steps are practical and achievable, as numerous examples in the book demonstrate. Moving to a value-based health care system is the only way for [...] Features

The German health care system is on a collision course with budget realities. Costs are high and rising, and quality problems are becoming ever more apparent. Decades of reforms have produced little change to these troubling trends. Why has Germany failed to solve these cost and quality problems? The reason is that Germany has not set value for patients as the overarching goal, defined as the [...] Contents


Fields of interest

Health Economics; Public Health; Management/ Business for Professionals; Public Finance & Economics; Insurance; Social Policy

Target groups

Professional/practitioner

Type of publication

Professional book

Due: March 28, 2012

2012. XV, 305 p. Hardcover

$49.95 ISBN 978-3-642-10825-9

Technologies and Innovations for Development
Scientific Cooperation for a Sustainable Future

Technological innovation – combined with scientific research – has always constituted a driving force of transformation in our societies. At the same time, it is no longer simply possible to transfer technologies from the North to the South; it is also essential to consider technical innovations that are adapted to the social, environmental, cultural and economic conditions of receiving countries, and which can be appropriated by their potential users and as such prove to be real technologies for fostering development. The first International Scientific Conference on the topic organized by the UNESCO Chair Technologies for Development at the École Polytechnique Fédérale de Lausanne in 2010 focused on its four priority sectors: Technologies for Sustainable Development of Habitat and Cities, ICTs for the Environment, Science and Technology for Disaster Risk Reduction, and Technologies for the Production of Sustainable Energy. This volume reflects the main outcomes of the conference and provides some [...] Features

Technological innovation – combined with scientific research – has always constituted a driving force of transformation in our societies. At the same time, it is no longer simply possible to transfer technologies from the North to the South; it is also essential to consider technical innovations that are adapted to the social, environmental, cultural and economic conditions of receiving countries, and [...] Fields of interest

Business & Economics (general); Sustainable Development; Political Science, general; Climate Change; Energy Technology; Urbanism

Target groups

Professional/practitioner

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

2012. XXX, 333 p. 76 illus., 72 in color. Hardcover

$79.95 ISBN 978-2-8178-0267-1

Telephone Surveys in Europe
Research and Practice

The first part of this book deals with the coverage of landline and mobile phones in Europe. It presents an overview of the coverage and the use of phones as well as the resulting strategies for telephone surveys. The second part addresses the challenge of so-called “mobile-only” households for survey research. Numerous statisticians present new sampling strategies like dual frame designs and findings of current projects. In dual frame designs, respondents are contacted both via mobile phone and landline. The third part focuses on the usage of mobile phones in the general population, while the fourth part of examines if different modes of data collection (mobile vs. landline) have an impact on the response quality. The last part analyses the first chapter and offers suggestions and advice on how to conduct surveys and polls, in both academic and market research.

Features

Telephone surveying is the most often applied mode of data collection in Europe. That implies a need for methodological knowledge on this topic. However, technical conditions are changing rapidly and the challenge for survey researchers to stay up-to-date is immense. For instance, landline and mobile phone coverage have extremely changed in the last time. Along with the rising number of so-called [...] Contents

Part I Spotlights on Selected European Countries: Russia. - The Netherlands. - Switzerland. - Finland. - Great Britain. - Italy. - Portugal. - Part II Sampling for Telephone Surveys: Who can be contacted by phone? Lessons from Switzerland. - Sampling Frames for Telephone Surveys in Europe. - Mobile- and Landline-Onlys in Dual-Frame Approaches: Effects on Sample Quality. - Part III Weighting and Nonresponse: Weighting for unequal inclusion probabilities and nonresponse in dual frame telephone surveys. - Weighting to Adjust for Non-Observation Errors in Telephone Surveys. - Nonresponse in an [...] Fields of interest

Marketing; Sociology, general; Communications; Engineering; Networks; Statistics for Social Science; Behavioral Science; Education; Public Policy; and Law

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. VI, 326 p. 44 illus. Hardcover

$179.00 ISBN 978-3-642-25410-9
Unemployment and Inflation in Economic Crises

This book studies unemployment and inflation in economic crises, first considering the scenario of a demand shock in Europe. In that case, monetary and fiscal interaction would cause widespread oscillations in European unemployment and European inflation. And what is more, there would be equally far-reaching fluctuations in the European money supply and European government purchases. Monetary and fiscal interactions would produce uniform oscillations in American unemployment and American inflation. Lastly, we would also see an implosion of both the American money supply and American government purchases.

Contents
Monetary Interaction between Europe and America.- Monetary Cooperation between Europe and America.- Fiscal Cooperation between Europe and America.- Monetary and Fiscal Interaction between Europe and America: Cold-Turkey Policies.- Monetary and Fiscal Interaction between Europe and America: Gradualist Policies.- Fiscal Interaction between Europe and America.- Monetary and Fiscal Interaction between Europe and America.- Result.- The Current Research Project.

Fields of interest
Macroeconomics / Monetary Economics; International Economics; Labor Economics

Target groups
Research

Usually dispatched within 3 to 5 business days

2012. XII, 283 p. Hardcover
$139.00
ISBN 978-3-642-28017-7

Becoming a Mathematician

An international perspective

This book considers the views of participants in the process of becoming a mathematician, that is, the students and the graduates. This book investigates the people who carry out mathematics rather than the topics of mathematics. Learning is about change in a person, the development of an identity and ways of interacting with the world. It investigates more generally the development of mathematical scientists for a variety of workplaces, and includes the experiences of those who were not successful in the transition to the workplace as mathematicians. The research presented is based on interviews, observations and surveys of students and graduates as they are finding their identity as a mathematician. The book contains material from the research carried out in South Africa, Northern Ireland, Canada and Brunei as well as Australia.

Features
Mathematicians are everywhere and nowhere: although they play key roles in industry and research, business and science, the people who use the ideas and tools of the mathematics are often invisible and difficult to identify. This leads to a lack of clarity for students who are studying the mathematical sciences in their transition to professional life. Becoming a Mathematician considers the process [...]

Contents
Chapter 1: Introduction: How does a person become a mathematician?. - Chapter 2: How do mathematics students think of mathematics? – a first look.- Chapter 3: How do mathematics students go about learning mathematics? – a first look.- Chapter 4: What do mathematics students say about mathematics internationally?. - Chapter 5: How can we track our students’ progress towards becoming mathematicians?. - Chapter 6: What is the contribution of mathematics to graduates’ professional working life?. - Chapter 7: What is the role of communication in mathematics graduates’ transition to professional[...]

Fields of interest
Mathematics Education; Learning and Instruction; Professional and Vocational Education

Target groups
Research

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. VIII, 188 p. 1 illus. (Mathematics Education Library, Vol. 56) Hardcover
$139.00
ISBN 978-94-007-2983-4

International Students in the Asia Pacific

Mobility, Risks and Global Optimism

This book documents the growing mobility of international students in the Asia Pacific. International students comprise over 2.7m students and it is estimated by the OECD that this will top 8 million in 2020. The great majority of them are students from the Asian countries who study in the Europe, North America and Asia. In addition countries such as Singapore, Malaysia and Hong Kong are becoming “education hubs” and are proposing to attract international students. Over 42% of international students come from Asia and this is predicted to continue with the strong presence of students from China, India, Korea and Japan continuing. A younger population, a growing middle class and shortages of quality education providers in the Asia Pacific region means that this mobility will be a feature of the future. This book explores questions around the mobility of international students in the context of the global economy and an increasingly competitive trans-national education market. It also explores[...]

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Contents
Introduction by the Series Editors; Rupert Maclean.- Acknowledgements.- Table of Figures.- Table of Tables.- 1. Trans-national Student Mobility: Introducing New Paradigms for Researching International Students.- 2. Trans-national Education: Big Business around the Globe.- 3. The International Student: Examining the Invisible Subject of Global Mobility.- 4. English and the International Student: Getting Started, Getting on and Being Understood.- 5. Internationalisation in the Asia Pacific: Education Hubs in Hong Kong, Singapore and Malaysia.- 6. East Asia, China and the “Asiанизation” off[...]

Fields of interest
International and Comparative Education; Higher Education; Professional and Vocational Education; Educational Policy and Politics; International Relations

Target groups
Research

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XV, 197 p. 6 illus. (Education in the Asia-Pacific Region: Issues, Concerns and Prospects, Vol. 17) Hardcover
$129.00
ISBN 978-94-017-8568-7
Multidimensional Ranking

The Design and Development of U-Multirank

During the last decades ranking has become one of the most controversial issues in higher education and research. It is widely recognized now that, although some of the current rankings can be severely criticized, they seem to be here to stay. In addition, rankings appear to have a great impact on decision-makers at all levels of higher education and research systems worldwide, including in universities. Rankings reflect a growing international competition among universities for talent and resources; at the same time they reinforce competition by their very results. Yet major concerns remain as to the rankings’ methodological underpinnings and to their various impacts. This new book presents a comprehensive overview of the current ‘state of the art’ of ranking in higher education and research, and introduces a completely new approach called ‘multidimensional ranking’. In part 1 rankings are discussed in the broader context of quality assurance and transparency in higher education and research. In[...]

Features

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Contents


Fields of interest

Higher Education; Educational Policy and Politics

Target groups

Research

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XII, 194 p. 20 Illus., 4 in color. (Higher Education Dynamics, Vol. 37) Hardcover

$139.00


Narrative Soundings: An Anthology of Narrative Inquiry in Music Education

This volume focuses specifically on narrative inquiry as a means to interrogate research questions in music education, offering music education researchers indispensable information on the use of qualitative research methods, particularly narrative, as appropriate and acceptable means of conducting and reporting research. This anthology of narrative research work in the fields of music and education builds on and supports the work presented in the editors’ first volume in Narrative Inquiry in Music Education: Troubling Certainty (Barrett & Stauffer, 2009, Springer). The first volume provides a context for undertaking narrative inquiry in music education, as well as exemplars of narrative inquiry in music education and commentary from key international voices in the fields of narrative inquiry and music education respectively.

Features

This volume focuses specifically on narrative inquiry as a means to interrogate research questions in music education, offering music education researchers indispensable information on the use of qualitative research methods, particularly narrative, as appropriate and acceptable means of conducting and reporting research. This anthology of narrative research work in the fields of music and education [...] 

Contents


Fields of interest

Arts Education

Target groups

Research

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XVI, 357 p. 90 Illus. Hardcover

$139.00

ISBN 978-94-007-0698-9
Pedagogies for Development
The Politics and Practice of Child-Centred Education in India

Pedagogies for Development takes a sociological approach to examine the introduction of child-centred education in contemporary Indian policy and school contexts. It investigates the promise of democratic learning in development discourses to ask how far child-centred models can address poverty and social inequalities in rural Indian communities. Drawing on in-depth ethnographic research conducted in the south Indian state of Karnataka, the book offers a multi-level analysis of international, national and state education practices and pedagogic reform. The book contributes to pressing debates about how 'quality' education should be conceptualised and assessed in development contexts, and brings into focus the assumptions which associate schooling to social justice.

Features
Pedagogies for Development takes a sociological approach to examine the introduction of child-centred education in contemporary Indian policy and school contexts. It investigates the promise of democratic learning in development discourses to ask how far child-centred models can address poverty and social inequalities in rural Indian communities. Drawing on in-depth ethnographic research conducted in [..]

Contents

Fields of interest
International and Comparative Education; Sociology; general; Educational Policy and Politics; Sociology of Education

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XV, 199 p. 12 illus. (Education in the Asia-Pacific Region: Issues, Concerns and Prospects, Vol. 16) Hardcover

$129.00ISBN 978-94-007-2668-0

Proof and Proving in Mathematics Education

The 19th ICMI Study

One of the most significant tasks facing mathematics educators is to understand the role of mathematical reasoning and proving in mathematics teaching, so that its presence in instruction can be enhanced. This challenge has been given even greater importance by the assignment to proof of a more prominent place in the mathematics curriculum at all levels. Along with this renewed emphasis, there has been an upsurge in research on the teaching and learning of proof at all grade levels, leading to a re-examination of the role of proof in the curriculum and of its relation to other forms of explanation, illustration and justification. This book, resulting from the 19th ICMI Study, brings together a variety of viewpoints on issues such as: the potential role of reasoning and proof in deepening mathematical understanding in the classroom as it does in mathematical practice. The developmental nature of mathematical reasoning and proving in teaching and learning from the earliest grades. The development of[..]

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Contents

Fields of interest
Mathematics Education

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XII, 475 p. 120 illus. (New ICMI Study Series, Vol. 15) Hardcover

$189.00ISBN 978-94-007-2128-9

Teachers of English Learners
Negotiating Authoritarian Policies

In an effort to reverse the purported crisis in U.S. public schools, the federal government, states, districts have mandated policies that favor standardized approaches to teaching and assessment. As a consequence, teachers have been relying on teacher-centered instructional approaches that do not take into consideration the needs, experiences, and interests of their students; this is particularly pronounced with English learners (ELs). The widespread implementation of these policies is particularly striking in California, where more than 25% of all public school students are ELs. This volume reports on three studies that explore how teachers of ELs in three school districts negotiated these policies. Drawing on sociocultural and poststructural perspectives on agency and power, the authors examine how contexts in which teachers of ELs lived and worked influenced the messages they constructed about these policies and mediated their decisions about policy implementation. The volume provides[..]

Features
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Contents

Fields of interest
Language Education; Educational Policy and Politics; Teaching and Teacher Education

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XII, 475 p. 120 illus. (New ICMI Study Series, Vol. 15) Hardcover

$189.00ISBN 978-94-007-2128-9

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In an effort to reverse the purported crisis in U.S. public schools, the federal government, states, districts have mandated policies that favor standardized approaches to teaching and assessment. As a consequence, teachers have been relying on teacher-centered instructional approaches that do not take into consideration the needs, experiences, and interests of their students; this is particularly pronounced with English learners (ELs). The widespread implementation of these policies is particularly striking in California, where more than 25% of all public school students are ELs. This volume reports on three studies that explore how teachers of ELs in three school districts negotiated these policies. Drawing on sociocultural and poststructural perspectives on agency and power, the authors examine how contexts in which teachers of ELs lived and worked influenced the messages they constructed about these policies and mediated their decisions about policy implementation. The volume provides[..]

Features
In an effort to reverse the purported crisis in U.S. public schools, the federal government, states, and districts have mandated policies that favor standardized approaches to teaching and assessment. As a consequence, teachers have been relying on teacher-centered instructional approaches that do not take into consideration the needs, experiences, and interests of their students; this is particularly[..]

Contents

Fields of interest
Language Education; Educational Policy and Politics; Teaching and Teacher Education

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XII, 475 p. 120 illus. (New ICMI Study Series, Vol. 15) Hardcover

$189.00ISBN 978-94-007-2128-9
The Next Generation of Distance Education

Unconstrained Learning

The world of education is being radically altered with the change being driven by technology, openness, and unprecedented access to knowledge. Older correspondence-style methods of instructional delivery are passé and “classroom adapted to the web” approaches to learning are often ineffective and do little to harness the transformational potential of technology. E-Learning scenarios, mobile technologies, communication and information access, and personal learning environments are becoming mainstream and, as a result, control of the learning process is shifting away from institutions and into the hands of learners. This volume promotes a forward-thinking agenda for research and scholarship that highlights new ideas, deep insights, and novel approaches to “unconstrained” learning.

Features

The world of education is being radically altered driven by ever-emerging and innovative technologies, openness, and unprecedented access to knowledge. Older correspondence-style methods of instructional delivery are passe and “classroom adapted to the web” approaches to learning are often ineffective because they do little to harness the transformational potential of technology. The Next [...] Contents


Fields of interest

Educational Technology; Computers and Education

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

2012. XXV, 266 p. 20 illus. Hardcover

$169.00

Advanced Information Technology in Education

The volume includes a set of selected papers extended and revised from the 2011 International Conference on Computers and Advanced Technology in Education. With the development of computers and advanced technology, the human social activities are changing basically. Education, especially the education reforms in different countries, has been experiencing the great help from the computers and advanced technology. Generally speaking, education is a field which needs more information, while the computers, advanced technology and internet are a good information provider. Also, with the aid of the computer and advanced technology, persons can make the education an effective combination. Therefore, computers and advanced technology should be regarded as an important media in the modern education. Volume Advanced Information Technology in Education is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of computers and advanced technology [..]

Features

The volume includes a set of selected papers extended and revised from the 2011 International Conference on Computers and Advanced Technology in Education. With the development of computers and advanced technology, the human social activities are changing basically. Education, especially the education reforms in different countries, has been experiencing the great help from the computers and advanced [...] Contents

From the content: Integrating Current Technologies into Graduate Computer Science Curricula. - Effective Web and Java Security Education with the SWEET Course Modules/Resources. - Thinking of the College Students’ Humanistic Quality Cultivation in Forestry & Agricultural Colleges. - A Heuristic Approach of Code Assignment to Obtain an Optimal FSM Design. - Development of LEON3-FT Processor Emulator for Flight Software Development and Test. - Experiments with Embedded System Design at UMinho and AIT. - The Study of H. 264 Standard Key Technology and Analysis of Prospect.

Fields of interest

Computational Intelligence; Computers and Education

Target groups

Research

Type of publication

Proceedings

Usually dispatched within 3 to 5 business days

2012. CXL, 1746 p. 805 illus. Hardcover

$469.00

Volume 1: Intelligent Ubiquitous Computing and Education

The volume includes a set of selected papers extended and revised from the International Conference on Teaching and Computational Science (WTCS 2009) held on December 19-20, 2009, Shenzhen, China. WTCS 2009 best papers Volume 1 is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of Intelligent Ubiquitous Computing and Education to disseminate their latest research results and exchange views on the future research directions of these fields. 128 high-quality papers are included in the volume. Each paper has been peer-reviewed by at least 2 program committee members and selected by the volume editor Prof. Wu. On behalf of the WTCS 2009, we would like to express our sincere appreciation to all of authors and referees for their efforts reviewing the papers. Hoping you can find lots of profound research ideas and results on the related fields of Intelligent Ubiquitous Computing and Education.

Features
The volume includes a set of selected papers extended and revised from the International Conference on Teaching and Computational Science (WTCS 2009) held on December 19-20, 2009, Shenzhen, China. WTCS 2009 best papers Volume 1 is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of Intelligent Ubiquitous Computing and Education. [...]

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

Target groups
Research

Type of publication
Proceedings

Usually dispatched within 3 to 5 business days


$399.00
ISBN 978-3-642-11275-1


Volume 2: Education, Psychology and Computer Science

The volume includes a set of selected papers extended and revised from the International Conference on Teaching and Computational Science (WTCS 2009) held on December 19-20, 2009, Shenzhen, China. WTCS 2009 best papers Volume 2 is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of Education, Psychology and Computer Science to disseminate their latest research results and exchange views on the future research directions of these fields. 128 high-quality papers are included in the volume. Each paper has been peer-reviewed by at least 2 program committee members and selected by the volume editor Prof. Wu. On behalf of the WTCS 2009, we would like to express our sincere appreciation to all of authors and referees for their efforts reviewing the papers. Hoping you can find lots of profound research ideas and results on the related fields of Education, Psychology and Computer Science.

Features
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Advances in Electrical Engineering and Automation

EEA2011 is an integrated conference concentration its focus on Electrical Engineering and Automation. In the proceeding, you can learn much more knowledge about Electrical Engineering and Automation of researchers from all around the world. The main role of the proceeding is to be used as an exchange pillar for researchers who are working in the mentioned fields. In order to meet the high quality of Springer, AISC series, the organization committee has made their efforts to do the following things. Firstly, poor quality paper has been refused after reviewing course by anonymous referee experts. Secondly, periodically review meetings have been held around the reviewers about five times for exchanging reviewing suggestions. Finally, the conference organizers had several preliminary sessions before the conference. Through efforts of different people and departments, the conference will be successful and fruitful.

Features
EEA2011 is an integrated conference concentration its focus on Electrical Engineering and Automation of researchers from all around the world. The main role of the proceeding is to be used as an exchange pillar for researchers who are working in the mentioned fields. In order to meet the high quality of [...] Contents
From the content: Research of Multiple Internal Model Control Method Based on Fuzzy Neural Network.- An Improved Algorithm for Negative Inventory Balances in Inventory Cost Accounting under ERP Environment.- Improved simulated annealing algorithm used for job shop scheduling problems.- The Risk Management Analysis of Electric Power Engineering Project Convex Geometry on Partially Ordered Sets.- A Multiple Relay Selection Scheme in Cognitive Relay Network.- Flexible Index System of Human Resources Considering the Organizational Flexibility Factor.- Research on an Integrated Model of [...] Fields of interest
Computational Intelligence; Electrical Engineering; Robotics and Automation

Advances in Electronic Commerce, Web Application and Communication

Volume 1
ECWAC2012 is an integrated conference devoted to Electronic Commerce, Web Application and Communication. In the this proceedings you can find the carefully reviewed scientific outcome of the second International Conference on Electronic Commerce, Web Application and Communication (ECWAC 2012) held at March 17-18,2012 in Wuhan, China, bringing together researchers from all around the world in the field.

Features
ECWAC2012 is an integrated conference devoted to Electronic Commerce, Web Application and Communication. In the this proceedings you can find the carefully reviewed scientific outcome of the second International Conference on Electronic Commerce, Web Application and Communication (ECWAC 2012) held at March 17-18,2012 in Wuhan, China, bringing together researchers from all around [...] Contents
From the content: Analysis of College Sports Consumption and the Sunshine Sports in China.- The research on the sports consumption and the development of physical fitness industry.- L2 Performance Index Robust Control of Arc Furnace Electrode Regulator System.- A Foreground Segmentation Scheme.- Research on fuzzy comprehensive evaluation based on rough set theory.- Research of Engine Department Team Approach for Crowd Simulation.- Numerical analysis for stochastic age-dependent population equations with diffusion.- An Improved Diagonal Loading Algorithm.- Trajectory Planning for Near Spacecraft’s Unpowered Gliding Phase.- New stability of Markovian jump delayed systems with partially[...] Fields of interest
Computational Intelligence; Business Information Systems; e-commerce / e-business

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

$349.00
ISBN 978-3-642-28657-5
Advances in Knowledge Discovery and Management

Volume 2

During the last decade, Knowledge Discovery and Management (KDM or, in French, EGC for Extraction et Gestion des connaissances) has been an intensive and fruitful research topic in the French-speaking scientific community. In 2003, this enthusiasm for KDM led to the foundation of a specific French-speaking association, called EGC, dedicated to supporting and promoting this topic. More precisely, KDM is concerned with the interface between knowledge and data such as, among other things, Data Mining, Knowledge Discovery, Business Intelligence, Knowledge Engineering and Semantic Web. The recent and novel research contributions collected in this book are extended and reworked versions of a selection of the best papers that were originally presented in French at the EGC 2010 Conference held in Tunis, Tunisia in January 2010. The volume is organized in three parts. Part I includes four chapters concerned with various aspects of Data Cube and Ontology-based representations. Part II is composed of four [...] Features

- During the last decade, Knowledge Discovery and Management (KDM or, in French, EGC for Extraction et Gestion des connaissances) has been an intensive and fruitful research topic in the French-speaking scientific community. In 2003, this enthusiasm for KDM led to the foundation of a specific French-speaking association, called EGC, dedicated to supporting and promoting this topic. More precisely, KDM is [...]

Contents

- Part I Data Cube and Ontology-based representations.
- Part II Efficient Pattern Mining.
- Part III Data Preprocessing and Information Retrieval.

Fields of interest

- Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups

- Research

Type of publication

- Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XII, 244 p. 61 illus., 32 in color. (Studies in Computational Intelligence, Vol. 398) Hardcover

$129.00
ISBN 978-3-642-25837-4

Advances in Non-Linear Modeling for Speech Processing

Advances in Non-Linear Modeling for Speech Processing includes advanced topics in non-linear estimation and modeling techniques along with their applications to speaker recognition. Non-linear aeroacoustic modeling approach is used to estimate the important fine-structure speech events, which are not revealed by the short-time Fourier transform (STFT). This aeroacoustic modeling approach provides the impetus for the high resolution Teager energy operator (TEO). This operator is characterized by a time resolution that can track rapid signal energy changes within a glottal cycle. The cepstral features like linear prediction cepstral coefficients (LPCC) and mel frequency cepstral coefficients (MFCC) are computed from the magnitude spectrum of the speech frame and the phase spectra is neglected. To overcome the problem of neglecting the phase spectra, the speech production system can be represented as an amplitude modulation-frequency modulation (AM-FM) model. To demodulate the speech signal, [...]

Features

- From the Contents: Speech production mechanism.- Linear speech production model.- Nonlinearity in speech production.- Nonlinear dynamic system model.- Speech perception mechanism.- Summary.- Autoregressive models.- Linear autoregressive model.- Nonlinear autoregressive model.- Nonlinear measurement and modeling using Teager energy operator.- Teager energy operator (TEO).- Vocal tract aeroacoustic flow.- Energy measurement.- Energy separation.- Noise suppression using TEO.

Fields of interest

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

Target groups

- Research

Type of publication

- Brief

Usually dispatched within 3 to 5 business days

2012. XIII, 102 p. 32 illus. (SpringerBriefs in Speech Technology) Softcover

$49.95
ISBN 978-1-4614-1504-6

Advances in Real-Time Systems

This volume contains the lectures given in honor to Georg Färber as tribute to his contributions in the area of real-time and embedded systems. The chapters of many leading scientists cover a wide range of aspects, like robot or automotive vision systems or medical aspects.

Features

- This volume has been prepared in honor of Prof. Georg Färber, to celebrate his 34 years of service at TU München, as the Head of the Lehrstuhl für Realeit-Computersysteme. It contains a collection of articles reflecting the state-of-the-art in the area of real-time systems. The topics included span over automotive software and electronics, software timing analysis, models for real-time systems, [...]

Contents


Fields of interest

- Communications Engineering, Networks; Computer Communication Networks; Multimedia Information Systems

Target groups

- Research

Type of publication

- Monograph

Usually dispatched within 3 to 5 business days

April 28, 2012


$129.00
ISBN 978-3-642-24348-6
Applied Ontology Engineering in Cloud Services, Networks and Management Systems

Metadata standards in today’s ICT sector are proliferating at unprecedented levels, while automated information management systems collect and process exponentially increasing quantities of data. With interoperability and knowledge exchange identified as a core challenge in the sector, this book examines the role ontology engineering can play in providing solutions to the problems of information interoperability and linked data. At the same time as introducing basic concepts of ontology engineering, the book discusses methodological approaches to formal representation of data and information models, thus facilitating information interoperability between heterogeneous, complex and distributed communication systems. In doing so, the text advocates the advantages of using ontology engineering in telecommunications systems. In addition, it offers a wealth of guidance and best-practice techniques for instances in which ontology engineering is applied in cloud services, computer networks and management.

Features

Metadata standards in today’s ICT sector are proliferating at unprecedented levels, while automated information management systems collect and process exponentially increasing quantities of data. With interoperability and knowledge exchange identified as a core challenge in the sector, this book examines the role ontology engineering can play in providing solutions to the problems of information...

Contents


Fields of interest

Communications Engineering, Networks; Information Systems and Communication Service; Software Engineering / Programming and Operating Systems

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

2012. XXXIII, 189 p. 55 illus. Hardcover

$129.00

Astronauts For Hire

The Emergence of a Commercial Astronaut Corps

‘Astronauts For Hire’ is a comprehensive and authoritative study of the increasing need for commercial astronauts. Erik Seedhouse provides unique insights into the burgeoning new field of commercial space operation and the individuals who will run these missions. Section I begins by describing how Astronauts for Hire (A4H) was created in 2010 by Brian Shiro, a highly qualified NASA astronaut candidate, and a group of other astronaut candidates. Erik introduces A4H’s vision for opening the space frontier to commercial astronauts and describes the tantalizing science opportunities offered when suborbital and orbital trips become routine. Section II describes the vehicles astronauts will use. Anticipation is on the rise for the new crop of commercial suborbital and orbital spacecrafts that will serve the scientific and educational market. These reusable rocket-propelled vehicles are expected to offer quick, routine, and affordable access to the edge of space, along with the capability to carry research.

Features

The spaceflight industry is being revolutionized. It is no longer the sole preserve of professional astronauts working on government-funded manned spaceflight programs. As private companies are being encouraged to build and operate launch vehicles, and even spacecraft that can be hired on a contract basis, a new breed of astronauts is coming into being. Astronauts for Hire describes how this...

Contents


Fields of interest

Aerospace Technology and Astronautics; Popular Science in Astronomy; Technology Management

Target groups

Popular/general

Type of publication

Popular science

Usually dispatched within 3 to 5 business days

2012. XXV, 243 p. 104 illus., 101 in color. (Space Exploration) Softcover

$34.95
ISBN 978-1-4614-0519-1

Balancing Renewable Electricity

Energy Storage, Demand Side Management, and Network Extension from an Interdisciplinary Perspective

An important aim behind the restructuring of Germany’s and Europe’s electricity systems is to reduce the environmental burden, especially with respect to greenhouse gas emissions, of the current systems. Emissions must be brought down to a level that is sustainable in the long run and consistent with greenhouse gas emission reduction goals. Meeting these goals will require a system (as best as current knowledge suggests) that will be able to cope simultaneously with the fundamental demands for economic efficiency, environmental sustainability and supply security. Making use of existing scenarios, this study sketches such a system. It focuses in particular on auxiliary systems such as energy storage methods and network extensions.

Features

A significant problem of integrating renewable energies into the electricity system is the temporally fluctuating electricity production by wind and solar power plants. Thus, in order to meet the ambitious long-term targets on CO2 emission reduction, long-term viable low-carbon options for balancing electricity will be needed. This interdisciplinary study analyses published future energy...

Contents


Fields of interest

Power Electronics, Electrical Machines and Networks; Renewable and Green Energy; Ethics; Energy (general)

Target groups

Research

Type of publication

Monograph

Due: February 29, 2012

2012. XLVIII, 253 p. 42 illus. (Ethics of Science and Technology Assessment, Vol. 40) Hardcover

$99.00
ISBN 978-3-642-25156-6
Collaborative Assistive Robot for Mobility Enhancement (CARMEN)

The bare necessities: assisted wheelchair navigation and beyond

In nowadays aging society, many people require mobility assistance. Sometimes, assistive devices need a certain degree of autonomy when users’ disabilities difficult manual control. However, clinicians report that excessive assistance may lead to loss of residual skills and frustration. Shared control focuses on deciding when users need help and providing it. Collaborative control aims at giving just the right amount of help in a transparent, seamless way. This book presents the collaborative control paradigm. User performance may be indicative of physical/cognitive condition, so it is used to decide how much help is needed. Besides, collaborative control integrates machine and user commands so that people contribute to self-motion at all times. Collaborative control was extensively tested for 3 years using a robotized wheelchair at a rehabilitation hospital in Rome with volunteer inpatients presenting different disabilities, ranging from mild to severe. We also present a taxonomy of common metrics.

Features

In nowadays aging society, many people require mobility assistance. Sometimes, assistive devices need a certain degree of autonomy when users’ disabilities difficult manual control. However, clinicians report that excessive assistance may lead to loss of residual skills and frustration. Shared control focuses on deciding when users need help and providing it. Collaborative control aims at giving just the...

Contents

From the content: On the why of robotic assistive devices. - A Dummy’s Guide to Assistive Navigation Devices. - From shared control to collaborative navigation. - Bigger, faster, better, more! - If I only had a brain. - Once more, with feeling.

Fields of interest

Computational Intelligence; Artificial Intelligence (incl. Robotics); Health Informatics; Biomedical Engineering

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XVI, 236 p. 140 illus., 64 in color. (Intelligent Systems Reference Library, Vol. 27) Hardcover

$129.00

ISBN 978-3-642-24901-3

Compact Models and Measurement Techniques for High-Speed Interconnects

Modeling of High-Speed Interconnects presents a comprehensive review of the available techniques for modeling of electrical interconnects for signal integrity. These techniques showcase both analytical and numerical approaches. The authors review available modeling approaches and provide a comparative summary that highlights the relative merits and applicability of each approach.

Features

Modeling of High-Speed Interconnects presents a comprehensive review of the available techniques for modeling of electrical interconnects for signal integrity. These techniques showcase both analytical and numerical approaches. The authors review available modeling approaches and provide a comparative summary that highlights the relative merits and applicability of each approach.

Contents


Fields of interest

Circuits and Systems; Logic Design; Electronic Circuits and Devices

Target groups

Professional/practitioner

Type of publication

Brief

Usually dispatched within 3 to 5 business days

2012. XVII, 69 p. 29 illus., 6 in color. (SpringerBriefs in Electrical and Computer Engineering) Softcover

$49.95

ISBN 978-1-4614-1070-6

Complex Strategic Choices

Applying Systemic Planning for Strategic Decision Making

Effective decision making requires a clear methodology, particularly in complex, globally relevant situations. Institutions and companies in all disciplines and sectors are faced with increasingly multi-faceted areas of uncertainty which cannot always be effectively handled by traditional strategies. Complex Strategic Choices provides clear principles and methods which can guide and support strategic decision to face modern challenges. By considering ways in which planning practices can be renewed and exploring the possibilities for acquiring awareness and tools to add value to strategic decision making, Complex Strategic Choices presents a methodology which is further illustrated by a number of case studies and example applications. Dr. Techn. Steen Leleur has adapted previously established research based on feedback and input from various conferences, journals and students resulting in new material stemming from and focusing on practical application of systemic planning. The outcome is a coherent...

Features

Effective decision making requires a clear methodology, particularly in a complex world of globalisation. Institutions and companies in all disciplines and sectors are faced with increasingly multi-faceted areas of uncertainty which cannot always be effectively handled by traditional strategies. Complex Strategic Choices provides clear principles and methods which can guide and support strategic decision ...

Contents


Fields of interest

Engineering Economics, Organization, Logistics, Marketing, Organization / Planning, Systems Theory, Control, Complexity

Target groups

Professional/practitioner

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XIV, 168 p. 21 illus., 10 in color. With online files/ update. (Decision Engineering) Hardcover

$129.00

ISBN 978-1-4471-2490-0
Complexity, Analysis and Control of Singular Biological Systems

Complexity, Analysis and Control of Singular Biological Systems follows the control of real-world biological systems at both ecological and physiological levels concentrating on the application of non-extensively-investigated singular system theory. Much effort has recently been dedicated to the modelling and analysis of developing bioeconomic systems and the text establishes singular examples of these, showing how proper control can help to maintain sustainable economic development of biological resources. The book begins from the essentials of singular systems theory and bifurcations before tackling the use of various forms of control in singular biological systems using examples including predator-prey relationships and viral vaccination and quarantine control. Researchers and graduate students studying the control of complex biological systems are shown how a variety of methods can be brought to bear and practitioners working with the economics of biological systems and their control will also[...]

Computational Intelligence Techniques for New Product Design

Applying computational intelligence for product design is a fast-growing and promising research area in computer sciences and industrial engineering. However, there is currently a lack of books, which discuss this research area. This book discusses a wide range of computational intelligence techniques for implementation on product design. It covers common issues on product design from identification of customer requirements in product design, determination of importance of customer requirements, determination of optimal design attributes, relating design attributes and customer satisfaction, integration of marketing aspects into product design, affective product design, to quality control of new products. Approaches for refinement of computational intelligence are discussed, in order to address different issues on product design. Case studies of product design in terms of development of real-world new products are included, in order to illustrate the design procedures, as well as the effectiveness[...]

Computational Intelligence

The present book includes a set of selected extended papers from the second International Joint Conference on Computational Intelligence (IJCCI 2010), held in Valencia, Spain, from 24 to 26 October 2010. The conference was composed by three colocated conferences: The International Conference on Fuzzy Computation (IFCF), the International Conference on Evolutionary Computation (ICEC), and the International Conference on Neural Computation (ICNC). Recent progresses in scientific developments and applications in these three areas are reported in this book. IJCCI received 236 submissions, from 49 countries, in all continents. After a double blind paper review performed by the Program Committee, only 30 submissions were accepted as full papers and thus selected for oral presentation, leading to a full paper acceptance rate of 13%. Additional papers were accepted as short papers and posters. A further selection was made after the Conference, based also on the assessment of presentation quality and[...]

Fields of interest

Computational Intelligence; Artificial Intelligence (incl. Robotics)

Target groups

Research

Type of publication

Proceedings

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XIV, 242 p. 153 illus., 54 in color. (Studies in Computational Intelligence, Vol. 399) Hardcover

$179.00

ISBN 978-3-642-27533-3

Techniques for New Product Design

Continuum Damage Mechanics

A Continuum Mechanics Approach to the Analysis of Damage and Fracture

Recent developments in engineering and technology have brought about serious and enlarged demands for reliability, safety and economy in wide range of fields such as aeronautics, nuclear engineering, civil and structural engineering, automotive and production industry. This, in turn, has caused more interest in continuum damage mechanics and its engineering applications. This book aims to give a concise overview of the current state of damage mechanics, and then to show the fascinating possibility of this promising branch of mechanics, and to provide researchers, engineers and graduate students with an intelligible and self-contained textbook. The book consists of two parts and an appendix. Part I is concerned with the foundation of continuum damage mechanics. Basic concepts of material damage and the mechanical representation of damage state of various kinds are described in Chapters 1 and 2. In Chapters 3-5, irreversible thermodynamics, thermodynamic constitutive theory and its application[...]

Features
Recent developments in engineering and technology have brought about serious and enlarged demands for reliability, safety and economy in wide range of fields such as aeronautics, nuclear engineering, civil and structural engineering, automotive and production industry. This, in turn, has caused more interest in continuum damage mechanics and its engineering applications. This book aims to[...]

Contents

Fields of interest
Continuum Mechanics and Mechanics of Materials; Characterization and Evaluation of Materials; Mechanics

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. XXIX, 402 p. 120 illus. (Solid Mechanics and its Applications, Vol. 185) Hardcover

$179.00
ISBN 978-94-007-2665-9

Data Fusion: Concepts and Ideas

This textbook provides a comprehensive introduction to the concepts and idea of multisensor data fusion. It is an extensively revised second edition of the author’s successful book "Multi-Sensor Data Fusion: An Introduction" which was originally published by Springer-Verlag in 2007. The main changes in the new book are: New Material: Apart from one new chapter there are approximately 30 new sections, 50 new examples and 100 new references. At the same time, material which is out-of-date has been eliminated and the remaining text has been rewritten for added clarity. Altogether, the new book is nearly 70 pages longer than the original book. Matlab code: Where appropriate we have given details of Matlab code which may be downloaded from the worldwide web. In a few places, where such code is not readily available, we have included Matlab code in the body of the text. Layout: The layout and typography has been revised. Examples and Matlab code now appear on a gray background for easy identification[...]

Features
"Data Fusion: Concepts and Ideas" provides a comprehensive introduction to the concepts and idea of multisensor data fusion. This textbook is an extensively revised second edition of the author’s successful book "Multi-Sensor Data Fusion: An Introduction". The book is self-contained and no previous knowledge of multi-sensor data fusion is assumed. The reader is made familiar with tools taken from a wide[...]

Contents

Fields of interest
Signal, Image and Speech Processing; Computational Intelligence; Electronics and Microelectronics; Instrumentation

Target groups
Research

Type of publication
Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days
March 31, 2012

$99.00
ISBN 978-3-642-27221-9

Distributed, Embedded and Real-time Java Systems

Research on real-time Java technology has been prolific over the past decade, leading to a large number of corresponding hardware and software solutions, and frameworks for distributed and embedded real-time Java systems. This book is aimed primarily at researchers in real-time embedded systems, particularly those who wish to understand the current state of the art in using Java in this domain. Much of the work in real-time distributed, embedded and real-time Java has focused on the Real-time Specification for Java (RTSJ) as the underlying base technology, and consequently many of the Chapters in this book address issues with, or solve problems using, this framework. Describes innovative techniques in: scheduling, memory management, quality of service and communication systems supporting real-time Java applications, Includes coverage of multiprocessor embedded systems and parallel programming; Discusses state-of-the-art resource management for embedded systems, including Java’s real-time garbage[...]

Features
Research on real-time Java technology has been prolific over the past decade, leading to a large number of corresponding hardware and software solutions, and frameworks for distributed and embedded real-time Java systems. This book is aimed primarily at researchers in real-time embedded systems, particularly those who wish to understand the current state of the art in using Java in this domain. Much of[...]

Contents

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

Target groups
Professional/practitioner

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

$179.00
ISBN 978-1-4419-8157-8
 Distributed-Order Dynamic Systems

Stability, Simulation, Applications and Perspectives

Distributed-order differential equations, a generalization of fractional calculus, are of increasing importance in many fields of science and engineering from the behaviour of complex dielectric media to the modelling of nonlinear systems. This Brief will broaden the toolbox available to researchers interested in modeling, analysis, control and filtering. It contains contextual material outlining the progression from integer-order, through fractional-order to distributed-order systems. Stability issues are addressed with graphical and numerical results highlighting the fundamental differences between constant-, integer-, and distributed-order treatments. The power of the distributed-order model is demonstrated with work on the stability of noncommensurate-order linear time-invariant systems. Generic applications of the distributed-order operator follow: signal processing and viscoelastic damping of a mass-spring set up. A new general approach to discretization of distributed-order derivatives and [...] 

Features

Distributed-order differential equations, a generalization of fractional calculus, are of increasing importance in many fields of science and engineering from the behaviour of complex dielectric media to the modelling of nonlinear systems. This Brief will broaden the toolbox available to researchers interested in modeling, analysis, control and filtering. It contains contextual material outlining the [...] 

Contents

Introduction - Distributed-order Linear Time-invariant System (DOLTIS) and Its Stability Analysis. - Noncommensurate Constant Orders as Special Cases of Doltis. - Distributed-order Filtering and Distributed-order Optimal Damping. - Numerical Solution of Differential Equations of Distributed Order. - Future Topics. - Appendix: MATLAB® Codes. 

Fields of interest

Control; Systems Theory; Control; Signal, Image and Speech Processing; Energy (general) 

Target groups

Research

Type of publication

Brief

Usually dispatched within 3 to 5 business days

March 31, 2012

C. Zhang, Microsoft, Redmond, WA, USA; Y. Ma, Honeywell, Golden Valley, MN, USA (Eds.)

Ensemble Machine Learning Methods and Applications

It is common wisdom that gathering a variety of views and inputs improves the process of decision making, and, indeed, underpins a democratic society. Dubbed "ensemble learning" by researchers in computational intelligence and machine learning, it is known to improve a decision system’s robustness and accuracy. Now, fresh developments are allowing researchers to unleash the power of ensemble learning in an increasing range of real-world applications. Ensemble learning algorithms such as "boosting" and "random forest" facilitate solutions to key computational issues such as face recognition and are now being applied in areas as diverse as object tracking and bioinformatics. Responding to a shortage of literature dedicated to the topic, this volume offers comprehensive coverage of state-of-the-art ensemble learning techniques, including the random forest skeleton tracking algorithm in the Xbox Kinect sensor, which bypasses the need for game controllers. At once a solid theoretical study and [...] 

Features

It is common wisdom that gathering a variety of views and inputs improves the process of decision making, and, indeed, underpins a democratic society. Dubbed "ensemble learning" by researchers in computational intelligence and machine learning, it is known to improve a decision system’s robustness and accuracy. Now, fresh developments are allowing researchers to unleash the power of ensemble learning in an [...] 

Contents


Fields of interest

Computational Intelligence; Data Mining and Knowledge Discovery; Computer Science (general) 

Target groups

Research 

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

2012. VIII, 329 p. 84 illus. Hardcover

$179.00 ISBN 978-1-4419-9325-0

Enterprise Interoperability V

Shaping Enterprise Interoperability in the Future Internet

Within a scenario of globalised markets, where the capacity to efficiently cooperate with other firms starts to become essential in order to remain in the market in an economically, socially and environmentally cost-effective manner, it can be seen how the most innovative enterprises are beginning to redesign their business model to become interoperable. This goal of interoperability is essential, not only from the perspective of the individual enterprise but also in the new business structures that are now emerging, such as supply chains, virtual enterprises, interconnected organisations or extended enterprises, as well as in mergers and acquisitions. Composed of over 40 papers, Enterprise Interoperability V ranges from academic research through case studies to industrial and administrative experience of interoperability. The international nature of the authorship continues to broaden. Many of the papers have examples and illustrations calculated to deepen understanding and generate new ideas. The [...] 

Features

Within a scenario of globalised markets, where the capacity to efficiently cooperate with other firms starts to become essential in order to remain in the market in an economically, socially and environmentally cost-effective manner, it can be seen how the most innovative enterprises are beginning to redesign their business model to become interoperable. This goal of interoperability is essential, not only [...] 

Contents


Fields of interest

Engineering Economics, Organization, Logistics, Marketing, Communications Engineering, Networks; Management of Computing and Information Systems; Software Engineering; Business Information Systems; Industrial and Production Engineering 

Target groups

Research 

Type of publication

Proceedings

Usually dispatched within 3 to 5 business days

March 31, 2012
Fast Boundary Element Methods in Engineering and Industrial Applications

This volume contains eight state of the art contributions on mathematical aspects and applications of fast boundary element methods in engineering and industry. This covers the analysis and numerics of boundary integral equations by using differential forms, preconditioning of hp boundary element methods, the application of fast boundary element methods for solving challenging problems in magnetostatics, the simulation of micro electro mechanical systems, and for contact problems in solid mechanics. Other contributions are on recent results on boundary element methods for the solution of transient problems. This book is addressed to researchers, graduate students and practitioners working on and using boundary element methods. All contributions also show the great achievements of interdisciplinary research between mathematicians and engineers, with direct applications in engineering and industry.

Contents
Differential Forms and Boundary Integral Equations for Maxwell-Type Problems.
- Discrete Electromagnetism with Shape Forms of Higher Polynomial Degree.
- Fast Boundary Element Methods for Industrial Applications in Magnetostatics.
- Wave Propagation Problems Treated with Convolution Quadrature and BEM.
- Fast Nyström Methods for Parabolic Boundary Integral Equations.
- Fast Stokes Solvers for MEMS.
- Engineering Multibody Contact Problems Solved by Scalable TBETI.

Fields of interest
Theoretical and Applied Mechanics; Appl. Mathematics / Computational Methods of Engineering; Mechanics; Computational Mathematics and Numerical Analysis

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

Flexible AC Transmission Systems: Modelling and Control

The extended and revised second edition of this successful monograph presents advanced modeling, analysis and control techniques of Flexible AC Transmission Systems (FACTS). The book covers comprehensively a range of power-system control problems: from steady-state voltage and power flow control, to voltage and reactive power control, to voltage stability control, to small signal stability control using FACTS controllers. In the six years since the first edition of the book has been published research on the FACTS has continued to flourish while renewable energy has developed into a mature and booming global green business. The second edition reflects the new developments in converter configuration, smart grid technologies, super power grid developments worldwide, new approaches for FACTS control design, new controllers for distribution system control, and power electronic controllers in wind generation operation and control. The latest trends of VSC-HVDC with multilevel architecture have been[…]

Contents
FACTS-Devices and Applications.
- Modeling of Multi-Converter FACTS in Power Flow Analysis.
- Modeling of FACTS in Three-Phase Power Flow and Three-Phase OPF Analysis.
- Steady State Power System Voltage Stability Analysis and Control with FACTS.
- Congestion Management and Loss Optimization with FACTS.
- Non-Intrusive System Control of FACTS.
- Autonomous Systems for Emergency Control.

Fields of interest
Power Electronics, Electrical Machines and Networks; Energy Technology; Control; Robotics, Mechatronics; Electronics and Microelectronics; Instrumentation; Computational Intelligence; Energy (general)

Target groups
Professional/practitioner

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

February 29, 2012
**Future Communication, Computing, Control and Management**

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<td>This volume contains revised and extended research articles written by prominent researchers participating in the ICF4C 2011 conference. 2011 International Conference on Future Communication, Computing, Control and Management (ICF4C 2011) has been held on December 16-17, 2011, Phuket, Thailand. Topics covered include intelligent computing, network management, wireless networks, telecommunication, power engineering, control engineering, signal and image processing, machine learning, control systems and applications. The book will offer the states of arts of tremendous advances in computing, communication, control, and management and also serve as an excellent reference work for researchers and graduate students working on computing, communication, control, and management research.</td>
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Handbook of Climate Change Mitigation

There is a mounting consensus that human behavior is changing the global climate and its consequence could be catastrophic. Reducing the 24 billion metric tons of carbon dioxide emissions from stationary and mobile sources is a gigantic task involving both technological challenges and monumental financial and societal costs. The pursuit of sustainable energy resources, environment, and economy has become a complex issue of global scale that affects the daily life of every citizen of the world. The present mitigation activities range from energy conservation, carbon-neutral energy conversions, carbon advanced combustion process that produce no greenhouse gases and that enable carbon capture and sequestration, to other advanced technologies. From its causes and impacts to its solutions, the issues surrounding climate change involve multidisciplinary science and technology. This handbook will provide a single source of this information. The book will be divided into the following sections: Scientific [...] Features

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Renewable and Green Energy; Climate Change; Industrial Chemistry / Chemical Engineering; Environmental Chemistry; Analytical Chemistry; Catalysis

Target groups

Research

Type of publication

Handbook

Due: February 15, 2012

2012. XXVII, 2130 p. Print + eReference. In 4 volumes, not available separately. Hardcover

$1,350.00

Handbook of Intelligent Vehicles

The Handbook of Intelligent Vehicles provides a complete coverage of the fundamentals, new technologies, and sub-areas essential to the development of intelligent vehicles; it also includes advances made to date, challenges, and future trends. Significant strides in the field have been made to date; however, so far there has been no single book or volume which captures these advances in a comprehensive format, addressing all essential components and sub-specialties of intelligent vehicles, as this book does. Since the intended users are engineering practitioners, as well as researchers and graduate students, the book chapters do not only cover fundamentals, methods, and algorithms but also include how software/hardware are implemented, and demonstrate the advances along with their present challenges. Research at both component and systems levels are required to advance the functionality of intelligent vehicles. This volume covers both of these aspects in addition to the fundamentals listed above.

Features

The Handbook of Intelligent Vehicles provides a complete coverage of the fundamentals, new technologies, and sub-areas essential to the development of intelligent vehicles; it also includes advances made to date, challenges, and future trends. Significant strides in the field have been made to date; however, so far there has been no single book or volume which captures these advances in a comprehensive [...] Contents


Automotive Engineering; Artificial Intelligence (incl. Robotics); Control, Robotics, Mechatronics

Target groups

Research

Type of publication

Handbook

Usually dispatched within 3 to 5 business days

February 25, 2012

2012. 1675 p. 600 illus. In 2 volumes, not available separately. Hardcover

$949.00

ISBN 978-0-85729-084-7
Hybrid Modeling and Optimization of Manufacturing

Combining Artificial Intelligence and Finite Element Method

Artificial intelligence (AI) techniques and the finite element method (FEM) are both powerful computing tools, which are extensively used for modeling and optimizing manufacturing processes. The combination of these tools has resulted in a new flexible and robust approach as several recent studies have shown. This book aims to review the work already done in this field as well as to expose the new possibilities and unforeseen trends. The book is expected to be useful for postgraduate students and researchers, working in the area of modeling and optimization of manufacturing processes.

Features

Artificial intelligence (AI) techniques and the finite element method (FEM) are both powerful computing tools, which are extensively used for modeling and optimizing manufacturing processes. The combination of these tools has resulted in a new flexible and robust approach as several recent studies have shown. This book aims to review the work already done in this field as well as to expose the new possibilities and unforeseen trends. The book is expected to be useful for postgraduate students and researchers, working in the area of modeling and optimization of manufacturing processes.

Contents


Fields of interest

Operating Procedures, Materials Treatment; Continuum Mechanics and Mechanics of Materials; Computational Intelligence

Target groups

Research

Type of publication

Brief

Usually dispatched within 3 to 5 business days April 28, 2012

2012. VIII, 95 p. 67 illus. (SpringerBriefs in Computational Mechanics) Softcover

$49.95
ISBN 978-3-642-28084-9

Information Technology and Agricultural Engineering

This volume comprises the papers from 2011 International Conference on Information Technology and Agricultural Engineering (ICITAE 2011). 2011 International Conference on Information Technology and Agricultural Engineering (ICITAE 2011) has been held in Sanya, China, December 1-2, 2011. All the papers have been peer reviewed by the selected experts. These papers represent the latest development in the field of materials manufacturing technology, spanning from the fundamentals to new technologies and applications. Specially, these papers cover the topics of Information Technology and Agricultural Engineering. This book provides a greatly valuable reference for researchers in the field of Information Technology and Agricultural Engineering who wish to further understand the underlying mechanisms and create innovative and practical techniques, systems and processes. It should also be particularly useful for engineers in information technology and agriculture who are responsible for the efficient and...-

Features

This volume comprises the papers from 2011 International Conference on Information Technology and Agricultural Engineering (ICITAE 2011). 2011 International Conference on Information Technology and Agricultural Engineering (ICITAE 2011) has been held in Sanya, China, December 1-2, 2011. All the papers have been peer reviewed by the selected experts. These papers represent the latest development in the...-

Contents

From the content: Optimum condition for 2,6-DNT-microbe degrading using uniform design.- Effects of juglone on ROS production and mitochondrial transmembrane potential in SGC-7901 cells.- The study about the degradation of nitrobenzene by domesticated activated sludge and the initial validation of toxicology before and after the degradation.- Study on the screening for chloronitrobenzene -degrading bacteria and degradation of chloronitrobenzene.- Identification and Characterization of Lactobacillus plantarum TH1.- Broth recycling in liquid cultivation of Nostoc flagelliforme cells.-...-

Fields of interest

Applied Mathematics; Agricultural and Biological Sciences; Agricultural Engineering; Agricultural Engineering, Food and Bioprocess Engineering; Food and Bioprocess Engineering; Food Science and Technology; Agricultural and Biological Engineering; Environment-Related; Environmental Engineering; Environmental Engineering and Protection; Environmental Engineering and Technology; and Agricultural, Food, and Bioprocess Engineering. These papers represent the latest development in the field of Information Technology and Agricultural Engineering. This book provides a greatly valuable reference for researchers in the field of Information Technology and Agricultural Engineering who wish to further understand the underlying mechanisms and create innovative and practical techniques, systems and processes. It should also be particularly useful for engineers in information technology and agriculture who are responsible for the efficient and...-

Fuzzy logic and neuro-fuzzy system.- Bayesian probability.- AI tool for optimization.- Evolutionary algorithms.- Swarm intelligence.- Finite element method for manufacturing modeling.- Plasticity models.- Constitutive equations.- Finite element discretization.- Case of study.- Experimental study.- FEM-based...-

Fields of interest

Computational Intelligence; Artificial Intelligence (incl. Robotics); Machinery and Machine Elements

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days


$399.00
ISBN 978-3-642-27536-4
Logistic Core Operations with SAP

Inventory Management, Warehousing, Transportation, and Compliance

“Logistic Core Operations with SAP” not only provides an overview of core logistics processes and functionality—it also shows how SAP’s Business Suite covers logistic core operations, what features are supported, and which systems can be used to implement end-to-end processes in the following logistic core disciplines: Procurement, Distribution, Transportation, Warehouse Logistics and Inventory Management, and Compliance and Reporting. In this context the authors not only explain their integration, the organizational set-up, and master data, but also which solution fits best for a particular business need. This book serves as a solid foundation for understanding SAP software. No matter whether you are a student or a manager involved in an SAP implementation, the authors go far beyond traditional function and feature descriptions, helping you ask the right questions, providing answers, and making recommendations. The book assists you in understanding SAP terminology, concepts and technological.[..]

Contents

Transport Logistics.- Warehouse Logistics and Inventory Management.- Trade Formalities - Governance, Risk, Compliance.- Controlling and Reporting.

Fields of interest

Engineering Economics, Organization, Logistics, Marketing, Computer Applications; Management of Computing and Information Systems; Production / Logistics; Information Systems Applications (incl.Internet)

Target groups

Professional/practitioner

Type of publication

Professional book

Originally dispatched within 3 to 5 business days April 28, 2012

2012, VIII, 293 p. 162 illus. Hardcover

$89.95
ISBN 978-1-84996-168-4

Machine Vision Handbook

The automation of visual inspection is becoming more and more important in modern industry as a consistent, reliable means of judging the quality of raw materials and manufactured goods. The Machine Vision Handbook equips the reader with the practical details required to engineer integrated mechanical-optical-electronic-software systems. Machine vision is first set in the context of basic information on light, natural vision, colour sensing and optics. The physical apparatus required for mechanized image capture – lenses, cameras, scanners and light sources – are discussed following by detailed treatment of various image-processing methods including an introduction to the QT image processing system. QT is unique to this book, and provides an example of a practical machine vision system along with extensive libraries of useful commands, functions and images which can be implemented by the reader. The main text of the book is completed by studies of a wide variety of applications of machine vision in[..]

Features

The automation of visual inspection is becoming more and more important in modern industry as a consistent, reliable means of judging the quality of raw materials and manufactured goods. The Machine Vision Handbook equips the reader with the practical details required to engineer integrated mechanical-optical-electronic-software systems. Machine vision is first set in the context of basic information on[..]

Contents


Fields of interest

Electrical Engineering; Image Processing and Computer Vision; Control , Robotics, Mechatronics; Quality Control, Reliability, Safety and Risk; Machinery and Machine Elements

Target groups

Professional/practitioner

Type of publication

Handbook

Originally dispatched within 3 to 5 business days February 5, 2012

2012, XVIII, 2272 p. In 3 volumes, not available separately. Hardcover

$1,350.00
ISBN 978-1-84996-168-4
Maintenance Management in Network Utilities
Framework and Practical Implementation

In order to satisfy the needs of their customers, network utilities require specially developed maintenance management capabilities. Maintenance Management information systems are essential to ensure control, gain knowledge and improve decision making in companies dealing with network infrastructure, such as distribution of gas, water, electricity and telecommunications. Maintenance Management in Network Utilities studies specified characteristics of maintenance management in this sector to offer a practical approach to defining and implementing the best management practices and suitable frameworks. Divided into three major sections, Maintenance Management in Network Utilities defines a series of stages which can be followed to manage maintenance frameworks properly. Different case studies provide detailed descriptions which illustrate the experience in real company situations. An introduction to the concepts is followed by main sections including: • A Literature Review: covering the basic concepts[...]

Features
In order to satisfy the needs of their customers, network utilities require specially developed maintenance management capabilities. Maintenance Management information systems are essential to ensure control, gain knowledge and improve decision making in companies dealing with network infrastructure, such as distribution of gas, water, electricity and telecommunications. Maintenance Management in Network Utilities[...]

Contents

Fields of interest
Quality Control, Reliability, Safety and Risk; Organization / Planning; Simulation and Modeling; Facility Management; Engineering Economics, Organization, Logistics, Marketing

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
Modeling Multi-commodity Trade: Information Exchange Methods

This book contains revised versions of papers presented on scientific workshops “Modeling Multi-commodity Trade: Information exchange methods”, which took place in November 2010 at Warsaw University of Technology. It summarizes results of the research work supported so far by scientific grant “Methods and architectures of information interchange for electronic trade on infrastructural markets” (see page xi), and some earlier research work on multi-commodity markets modeling. Though partial results of the research were published earlier, the book gives the most complete view on results of our research in the field of modeling the trade on complex multi-commodity infrastructural markets.

Features
Market mechanisms are entering into new fields of economy, in which some constraints of physical world, e.g. Kirchoffs Law in power grid, must be taken into account during trading. On such markets, some of commodities, like telecommunication bandwidth or electrical energy, appear to be non-storable, and must be exchanged in real-time. On the other hand, the markets tend to react at shortest possible time. […]

Contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics); e-commerce / e-business; Business Information Systems

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012


$199.00
ISBN 978-3-642-25648-6

Multifunctional Nanoparticles for Drug Delivery Applications

Imaging, Targeting, and Delivery

This book clearly demonstrates the progression of nanoparticle therapeutics from basic research to applications. Unlike other books covering nanoparticles used in medical applications, Multifunctional Nanoparticles for Drug Delivery Applications presents the medical challenges that can be reduced or even overcome by recent advances in nanoscale drug delivery. Each chapter highlights recent progress in the design and engineering of select multifunctional nanoparticles with topics covering targeting, imaging, delivery, diagnostics, and therapy.

Features
This book clearly demonstrates the progression of nanoparticle therapeutics from basic research to applications. Unlike other books covering nanoparticles used in medical applications, Multifunctional Nanoparticles for Drug Delivery Applications presents the medical challenges that can be reduced or even overcome by recent advances in nanoscale drug delivery. Each chapter highlights recent progress in […]

Contents

Fields of interest
Nanotechnology and Microengineering; Pharmacology / Toxicology; Organic Chemistry; Spectroscopy / Spectrometry; Immunology

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. X, 373 p. 88 illus., 28 in color. (Nanostructure Science and Technology) Hardcover

$189.00
ISBN 978-1-4614-2304-1

Nano-Antimicrobials
Progress and Prospects

There is a high demand for antimicrobials for the treatment of new and emerging microbial diseases. In particular, microbes developing multidrug resistance have created a pressing need to search for a new generation of antimicrobial agents, which are effective, safe and can be used for the cure of multidrug-resistant microbial infections. Nano-antimicrobials offer effective solutions for these challenges; the details of these new technologies are presented here. The book includes chapters by an international team of experts. Chemical, physical, electrochemical, photochemical and mechanical methods of synthesis are covered. Moreover, biological synthesis using microbes, an option that is both eco-friendly and economically viable, is presented. The antimicrobial potential of different nanoparticles is also covered, bioactivity mechanisms are elaborated on, and several applications are reviewed in separate sections. Lastly, the toxicology of nano-antimicrobials is briefly assessed.

Features
There is a high demand for antimicrobials for the treatment of new and emerging microbial diseases. In particular, microbes developing multidrug resistance have created a pressing need to search for anew generation of antimicrobial agents, which are effective, safe and can be used for the cure of multidrug-resistant microbial infections. Nano-antimicrobials offer effective solutions for these challenges; […]

Contents

Fields of interest
Nanotechnology and Microengineering; Medical Microbiology; Medicinal Chemistry; Microbiology

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. XVI, 556 p. 204 illus., 21 in color. Hardcover

$259.00
ISBN 978-3-642-24427-8
Nature-Inspired Fluid Mechanics

Results of the DFG Priority Programme 1207 ‘Nature-inspired Fluid Mechanics’ 2006-2012

This book is the closing report of the national priority programme Nature-Inspired Fluid Mechanics (Schröpfpunktprogramm SPP 1207: Strömungsbeeinflussung in der Natur und Technik). Nature-inspired fluid mechanics is one subset of biomimetics, a discipline which has received increased attention over the last decade, with numerous faculties and degree courses devoted solely to exploring ‘nature as a model’ for engineering applications. To save locomotion energy, evolution has optimized the design of animals such that friction loss is minimized. In addition to many morphological adaptations, animals that are often exposed to water or air currents have developed special behaviors that allow them to use the energy contained in air or water fluctuations for energy savings. Such flow manipulation and control is not only important for many animals, but also for many engineering applications. Since living beings have been optimized by several million years of evolution it is very likely that many engineering [...] Features

This book is the closing report of the national priority programme Nature-Inspired Fluid Mechanics (Schröpfpunktprogramm SPP 1207: Strömungsbeeinflussung in der Natur und Technik). Nature-inspired fluid mechanics is one subset of biomimetics, a discipline which has received increased attention over the last decade, with numerous faculties and degree courses devoted solely to exploring ‘nature [...] Contents


Fields of interest

Engineering Fluid Dynamics; Computational Biology / Bioinformatics; Appl. Mathematics / Computational Methods of Engineering; Bioinformatics

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012


$219.00
ISBN 978-3-642-28301-7

Nonlinear Control Synthesis for Electrical Power Systems Using Controllable Series Capacitors

In this work we derive asymptotically stabilizing control laws for electrical power systems using two nonlinear control synthesis techniques. For this transient stabilization problem the actuator considered is a power electronic device, a controllable series capacitor (CSC). The power system is described using two different nonlinear models - the second order swing equation and the third order flux-decay model. To start with, the CSC is modeled by the injection model which is based on the assumption that the CSC dynamics is very fast as compared to the dynamics of the power system and hence can be approximated by an algebraic equation. Here, by neglecting the CSC dynamics, the input vector $g(x)$ in the open loop system takes a complex form - the injection model. Using this model, interconnection and damping assignment passivity-based control (IDA-PBC) methodology is demonstrated on two power systems: a single machine infinite bus (SMIB) system and a two machine system. Further, IDA-PBC is used to [...] Features

In this work we derive asymptotically stabilizing control laws for electrical power systems using two nonlinear control synthesis techniques. For this transient stabilization problem the actuator considered is a power electronic device, a controllable series capacitor (CSC). The power system is described using two different nonlinear models - the second order swing equation and the third [...] Fields of interest

Power Electronics, Electrical Machines and Networks; Energy Systems; Control; Energy Technology; Complexity

Target groups

Research

Type of publication

Brief

Usually dispatched within 3 to 5 business days

April 28, 2012

2012. XI, 90 p. 36 illus. (SpringerBriefs in Applied Sciences and Technology) Softcover

$49.95
ISBN 978-3-642-27530-2

Novel Techniques for Dialectal Arabic Speech Recognition

Novel Techniques for Dialectal Arabic Speech describes approaches to improve automatic speech recognition for dialectal Arabic. Since speech resources for dialectal Arabic speech recognition are very sparse, the authors describe how existing Modern Standard Arabic (MSA) speech data can be applied to dialectal Arabic speech recognition, while assuming that MSA is always a second language for all Arabic speakers. In this book, Egyptian Colloquial Arabic (ECA) has been chosen as a typical Arabic dialect. ECA is the first ranked Arabic dialect in terms of number of speakers, and a high quality ECA speech corpus with accurate phonetic transcription has been collected. MSA acoustic models were trained using news broadcast speech. In order to cross-lingually use MSA in dialectal Arabic speech recognition, the authors have normalized the phoneme sets for MSA and ECA. After this normalization, they have applied state-of-the-art acoustic model adaptation techniques like Maximum Likelihood Linear Regression [...] Features

Novel Techniques for Dialectal Arabic Speech describes approaches to improve automatic speech recognition for dialectal Arabic. Since speech resources for dialectal Arabic speech recognition are very sparse, the authors describe how existing Modern Standard Arabic (MSA) speech data can be applied to dialectal Arabic speech recognition, while assuming that MSA is always a second language for all [...] Contents


Fields of interest

Signal, Image and Speech Processing; Language Translation and Linguistics; Communications Engineering, Networks; Arabic; Computational Linguistics

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

2012. XXI, 110 p. 28 illus. Hardcover

$129.00
ISBN 978-1-4614-1905-1
Optimal Sensor Networks Scheduling in Identification of Distributed Parameter Systems

Sensor networks have recently come into prominence because they hold the potential to revolutionize a wide spectrum of both civilian and military applications. An ingenious characteristic of sensor networks is the distributed nature of data acquisition. Therefore they seem to be ideally prepared for the task of monitoring processes with spatio-temporal dynamics which constitute one of most general and important classes of systems in modelling of the real-world phenomena. It is clear that careful deployment and activation of sensor nodes are critical for collecting the most valuable information from the observed environment. Optimal Sensor Network Scheduling in Identification of Distributed Parameter Systems discusses the characteristic features of the sensor scheduling problem, analyzes classical and recent approaches, and proposes a wide range of original solutions, especially dedicated for networks with mobile and scanning nodes. Both researchers and practitioners will find the case studies, the...

Features
Sensor networks have recently come into prominence because they hold the potential to revolutionize a wide spectrum of both civilian and military applications. An ingenious characteristic of sensor networks is the distributed nature of data acquisition. Therefore they seem to be ideally prepared for the task of monitoring processes with spatio-temporal dynamics which constitute one of most general and [...]

Contents
Introduction.- Experimental design in sensor scheduling.- Sensor activation for scanning networks.- Resource aware mobile sensor routing.- Decentralized sensor scheduling using randomized gossip algorithms.- Combinatorial approach to sensor activation.- Sensor location under parametric and location uncertainty.- Sensor network design for fault diagnosis in DPPs.- Extensions toward challenging problems of network scheduling.- Conclusions and further research directions.

Fields of interest
Control; Systems Theory, Control

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

2012, XIV, 294 p. (Lecture Notes in Control and Information Sciences, Vol. 425) Softcover

$109.00
ISBN 978-3-642-28229-4

PID Control in the Third Millennium
Lessons Learned and New Approaches

The early 21st century has seen a renewed interest in research in the widely-adopted proportional-integral-differential (PID) form of control. PID Control in the Third Millennium provides an overview of the advances made as a result. Featuring: new approaches for controller tuning; control structures and configurations for more efficient control; practical issues in PID implementation; and non-standard approaches to PID including fractional-order, event-based, nonlinear, data-driven and predictive control; the nearly twenty chapters provide a state-of-the-art resume of PID controller theory, design and realization. Each chapter has specialist authorship and ideas clearly characterized from both academic and industrial viewpoints. PID Control in the Third Millennium is of interest to academics requiring a reference for the current state of PID-related research and a stimulus for further inquiry. Industrial practitioners and manufacturers of control systems with application problems relating to PID.-

Features
The early 21st century has seen a renewed interest in research in the widely-adopted proportional-integral-derivative (PID) controllers. PID Control in the Third Millennium provides an overview of the advances made as a result. Featuring: new approaches for controller tuning; control structures and configurations for more efficient control; [...]
Power Electronic Packaging
Design, Assembly Process, Reliability and Modeling

Power Electronic Packaging presents an in-depth overview of power electronic packaging design, assembly, reliability and modeling. Since there is a drastic difference between IC fabrication and power electronic packaging, the book systematically introduces typical power electronic packaging design, assembly, reliability and failure analysis and material selection so readers can clearly understand each task’s unique characteristics. Power electronic packaging is one of the fastest growing segments in the power electronic industry, due to the rapid growth of power integrated circuit (IC) fabrication, especially for applications like portable, consumer, home, computing and automotive electronics. This book also covers how advances in both semiconductor content and power advanced package design have helped cause advances in power device capability in recent years. The author extrapolates the most recent trends in the book’s areas of focus to highlight where further improvement in materials and techniques.[...]

Features
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Contents

Fields of interest
Power Electronics, Electrical Machines and Networks; Electronics and Microelectronics, Instrumentation; Solid State Physics; Spectroscopy and Microscopy; Circuits and Systems

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XVIII, 591 p. 638 illus. Hardcover

$229.00

Power Theories for Improved Power Quality

Power quality describes a set of parameters of electric power and the load’s ability to function properly under specific conditions. It is estimated that problems relating to power quality costs the European industry hundreds of billions of Euros annually. In contrast, financing for the prevention of these problems amount to fragments of these costs. Power Theories for Improved Power Quality addresses this imbalance by presenting and assessing a range of methods and problems related to improving the quality of electric power supply. Focusing particularly on active compensators and the DSP based control algorithms, Power Theories for Improved Power Quality introduces the fundamental problems of electrical power. This introduction is followed by chapters which discuss: ‘Power theories’ including their historical development and application to practical problems, operational principles of active compensator’s DSP control based algorithms using examples and results from laboratory research, and the key.[...]

Features
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Contents
Principles of Electrical Power Control. - Active Power Quality Compensators. - Realization of Digital Control Algorithm. - Power Theories Applications to Control Active Compensators. - Practical Applications of Active Compensators.

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

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days


$129.00

Practical Applications of Evolutionary Computation to Financial Engineering

Robust Techniques for Forecasting, Trading and Hedging

“Practical Applications of Evolutionary Computation to Financial Engineering” presents the state of the art techniques in Financial Engineering using recent results in Machine Learning and Evolutionary Computation. This book bridges the gap between academics in computer science and traders and explains the basic ideas of the proposed systems and the financial problems in ways that can be understood by readers without previous knowledge on either of the fields. To cement the ideas discussed in the book, software packages are offered that implement the systems described within. The book is structured so that each chapter can be read independently from the others. Chapters 1 and 2 describe evolutionary computation. The third chapter is an introduction to financial engineering problems for readers who are unfamiliar with this area. The following chapters each deal, in turn, with a different problem in the financial engineering field describing each problem in detail and focusing on solutions based on[...]

Features
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Contents

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

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XII, 248 p. 163 illus., 89 in color. (Adaptation, Learning, and Optimization, Vol. 11) Hardcover

$129.00
ISBN 978-3-642-27647-7

H. Iba, University of Tokyo, Japan; C.C. Aranha, University of Tokyo, Japan
Y.-Q. Ni, The Hong Kong Polytechnic University, China; X.-W. Ye, The Hong Kong Polytechnic University, China (Eds.)

Proceedings of the 1st International Workshop on High-Speed and Intercity Railways

Volume 1
This book contains the papers included in the proceedings of the 1st International Workshop on High-speed and Intercity Railways (IWHIR 2011) held in Shenzhen and Hong Kong, China from July 19 to July 22, 2011, which is organized by The Hong Kong Polytechnic University, in collaboration with Southwest Jiaotong University, Beijing Jiaotong University, Dalian Jiaotong University, China Engineering Consultants, Inc., Zhejiang University, and Tsinghua University. Continuing the great initiatives and momentum of the rapid development in high-speed and intercity railways worldwide in recent years, IWHIR 2011 aims at providing a platform for academic scholars and practitioners to learn knowledge and experience, to share research results and the latest R&D activities related to railway engineering. Engineers, scientists, professors, and students from universities, research institutes, and related industrial companies have been cordially invited to participate in the workshop. These papers have...[ ]

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Contents
From the content: Advance in coupling vibration of wind-vehicle-bridge systems. - Semi-active control and its robustness for a bogie model with uncertain parameters. - The reasonable fastener damping of Ballastless Turnout's vibration decrease and noise reduction of 350 km/h passenger dedicated line. - High speed train bogie wheel-rail relative vibration with bench reconstruction technology. - Research on high-speed railway passenger dedicated service system core technologies. - The research and implementation of intercity railway ticketing system. - A study on intelligent onboard rail...[ ]

Fields of interest
Electrical Engineering; Engineering Design; Control

Target groups
Research

Type of publication
Proceedings

Usually dispatched within 3 to 5 business days
March 31, 2012

2012, X IV, 498 p. 369 illus., 234 in color. ( Lecture Notes in Electrica l Engineering, Vol. 147) Hardcover

$179.00
ISBN 978-3-642-27959-1

Y.-Q. Ni, The Hong Kong Polytechnic University, China; X.-W. Ye, The Hong Kong Polytechnic University, China (Eds.)

Proceedings of the 1st International Workshop on High-Speed and Intercity Railways

Volume 2
This book contains the papers included in the proceedings of the 1st International Workshop on High-speed and Intercity Railways (IWHIR 2011) held in Shenzhen and Hong Kong, China from July 19 to July 22, 2011, which is organized by The Hong Kong Polytechnic University, in collaboration with Southwest Jiaotong University, Beijing Jiaotong University, Dalian Jiaotong University, China Engineering Consultants, Inc., Zhejiang University, and Tsinghua University. Continuing the great initiatives and momentum of the rapid development in high-speed and intercity railways worldwide in recent years, IWHIR 2011 aims at providing a platform for academic scholars and practitioners to share knowledge and experience, to promote collaboration, and to strengthen R&D activities related to railway engineering. Engineers, scientists, professors, and students from universities, research institutes, and related industrial companies have been cordially invited to participate in the workshop. These papers have...[ ]

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Contents
From the content: A Survey of Science Literacy Level for Senior High School Students in Taiwan. - A position estimation method based on modified integrator of PMSM sensorless control for high-speed vehicles. - The influence of different cross-section shapes of train body on aerodynamic performance. - Investigation of aerodynamic performance of high-speed train by detached eddy simulation. - The influence of pantograph aerodynamic characteristics caused by its shroud. - Railway track allocation - simulation, aggregation, and optimization. - Experimental modal analysis of high-speed EMU carbodies. [ ]

Fields of interest
Electrical Engineering; Engineering Design; Control

Target groups
Research

Type of publication
Proceedings

Usually dispatched within 3 to 5 business days
March 31, 2012


$179.00
ISBN 978-3-642-27962-1

F.L. Gaol, Bina Nusantara University, Caking, Indonesia; Q.V. Nguyen, University of Western Sydney, Penrith, NSW, Australia (Eds.)

Proceedings of the 2011 2nd International Congress on Computer Applications and Computational Science

Volume 1
The latest inventions in computer technology influence most of human daily activities. In the near future, there is tendency that all of aspect of human life will be dependent on computer applications. In manufacturing, robotics and automation have become vital for high quality products. In education, the model of teaching and learning is focusing more on electronic media than traditional ones. Issues related to energy savings and environment is becoming critical. Computational Science should enhance the quality of human life, not only solve their problems. Computational Science should help humans to make wise decisions by presenting choices and their possible consequences. Computational Science should help us make sense of observations, understand natural language, plan and reason with extensive background knowledge. Intelligence with wisdom is perhaps an ultimate goal for human-oriented science. This book is a compilation of some recent research findings in computer application and computational...[ ]

Features
The latest inventions in computer technology influence most of human daily activities. In the near future, there is tendency that all of aspect of human life will be dependent on computer applications. In manufacturing, robotics and automation have become vital for high quality products. In education, the model of teaching and learning is focusing more on electronic media than traditional ones. Issues...[ ]

Contents

Fields of interest
Computational Intelligence; Computer Applications

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012


$179.00
ISBN 978-3-642-78266-9
Proceedings of the 2011 2nd International Congress on Computer Applications and Computational Science

Volume 2

The latest inventions in computer technology influence most of human daily activities. In the near future, there is tendencty that all of aspect of human life will be dependent on computer applications. In manufacturing, robotics and automation have become vital for high quality products. In education, the model of teaching and learning is focusing more on electronic media than traditional ones. Issues related to energy savings and environment is becoming critical. Computational Science should enhance the quality of human life, not only solve their problems. Computational Science should help humans to make wise decisions by presenting choices and their possible consequences. Computational Science should help us make sense of observations, understand natural language, plan and reason with extensive background knowledge. Intelligence with wisdom is perhaps an ultimate goal for human-oriented science. This book is a compilation of some recent research findings in computer application and computational...

Features

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Contents


Fields of interest

Computational Intelligence; Computer Applications

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012


$259.00
Proceedings of the International Conference on Information Systems Design and Intelligent Applications 2012 (India 2012) held in Visakhapatnam, India, January 2012

This volume contains the papers presented at INDIA-2012: International conference on Information system Design and Intelligent Applications held on January 5-7, 2012 in Visakhapatnam, India. This conference was organized by Computer Society of India (CSI), Visakhapatnam chapter well supported by Visakhapatnam Steel, RINL, Govt of India. It contains 108 papers contributed by authors from six different countries across four continents. These research papers mainly focused on intelligent applications and various system design issues. The papers cover a wide range of topics of computer science and information technology discipline ranging from image processing, data base application, data mining, grid and cloud computing, bioinformatics among many others. The various intelligent tools like swarm intelligence, artificial intelligence, evolutionary algorithms, bio-inspired algorithms have been applied in different papers for solving various challenging IT related problems.

Features
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Contents
From the content: Optimization of Task Allocation using Quantum Game Theory with Artificial Intelligence.- Improving the Grid Scheduling Performance with Fault Tolerance Using Genetic Algorithm.- The Performance Analysis of a Novel Enhanced Artificial Bee colony inspired Global Best Harmony Search Algorithm for Clustering.- Artificial Bee Colony based Image Clustering.- Novel Approach To Polygamous Selection In Genetic Algorithms.- Gang Scheduling Strategy for Request Processing in Cluster Based Video-on-Demand Systems.- Does Social Communicability Mediate the Role of Trust in Mobile[...]

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

Target groups
Research

Type of publication
Proceedings

Programming with Multiple Precision

GMP and MPFR are portable libraries for arbitrary precision arithmetic, large set of functions which allows to organize the computational process with different digit capacity. This book is a real guide for writing programs in C/C++ using the GMP and MPFR libraries to improve the accuracy of the solutions, including in parallel programming. The book contains many examples of the program code with its experiments results. It will be interesting for many scientists, programmers and students, who want to study programming, improve or expand their level programming. The book is useful for graduates in computer science and mathematics (perhaps too specialized for the most of undergraduates, at least in its present state), researchers in Numerical Analysis, Computer Algebra and developers of the multiple-precision libraries.

Features
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Contents

Fields of interest
Computational Intelligence; Programming Techniques

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XIV, 234 p. 21 illus. (Studies in Computational Intelligence, Vol. 397) Hardcover

$129.00
ISBN 978-3-642-25672-1
RF Transceiver Design for MIMO Wireless Communications

This practical resource offers a thorough examination of RF transceiver design for MIMO communications. Offering a practical view on MIMO wireless systems, this book extends fundamental concepts on classic wireless transceiver design techniques to MIMO transceivers. This helps reader gain a very comprehensive understanding of the subject. This in-depth volume describes many theoretical and implementation challenges on MIMO transceivers and provides the practical solutions for these issues. This comprehensive book provides thorough descriptions of MIMO theoretical concepts, MIMO single carrier and OFDM modulation, RF transceiver design concepts, power amplifier, MIMO transmitter design techniques and their RF impairments, MIMO receiver design methods, RF impairments study including nonlinearity, DC-offset, I/Q imbalance and phase noise and their compensation in OFDM and MIMO techniques. In addition, it provides the most practical techniques to realize RF front-ends in MIMO systems. This book is:[...]

Contents


Fields of interest

Microwaves, RF and Optical Engineering; Electrical Engineering; Communications Engineering, Networks

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XII, 296 p. (Lecture Notes in Electrical Engineering, Vol. 145) Hardcover

$179.00
ISBN 978-3-642-27634-7

RF-Frontend Design for Process-Variation-Tolerant Receivers

This book discusses a number of challenges faced by designers of wireless receivers, given complications caused by the shrinking of electronic and mobile devices circuitry into ever-smaller sizes and the resulting complications on the manufacturability, production yield, and the end price of the products. The authors describe the impact of process technology on the performance of the end product and equip RF designers with countermeasures to cope with such problems. The mechanisms by which these problems arise are analyzed in detail and novel solutions are provided, including design guidelines for receivers with robustness to process variations and details of circuit blocks that obtain the required performance level. Describes RF receiver frontends and their building blocks from a system- and circuit-level perspective. Provides system-level analysis of a generic RF receiver frontend with robustness to process variations; Includes details of CMOS circuit design at 60GHz and reconfigurable circuits at[...]

Contents

System-level design for robustness.- Layout- and measurements at 60GHz.- Component design at 60GHz.- Smart-component design at 60GHz.

Fields of interest

Circuits and Systems; Electronics and Microelectronics, Instrumentation

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days


$129.00
ISBN 978-1-4614-2121-4

Recent Advances in Computer Science and Information Engineering

Volume 3

CSIE 2011 is an international scientific Congress for distinguished scholars engaged in scientific, engineering and technological research, dedicated to build a platform for exploring and discussing the future of Computer Science and Information Engineering with existing and potential application scenarios. The congress has been held twice, in Los Angeles, USA for the first and in Changshun, China for the second time, each of which attracted a large number of researchers from all over the world. The congress turns out to develop a spirit of cooperation that leads to new friendship for addressing a wide variety of ongoing problems in this vibrant area of technology and fostering more collaboration over the world. The congress, CSIE 2011, received 2483 full paper and abstract submissions from 27 countries and regions over the world. Through a rigorous peer review process, all submissions were refereed based on their quality of content, level of innovation, significance, originality and legibility, 688[...]

Contents

From the content: The Design and Realize of Slope Safety Assessment System along Highway in Mountainous Area.- The Study in the Application of Multi-scale Mathematical Morphology in Amplitude Compensation of Seismic Data.- Analysis of Sustainability of Basic Endowment Insurance Fund on Markov Chain And Actuarial. - Supply Chain Coordination under Buyback Contract with Multiple Newsvendors.- The Prediction of Continuity of Basic Endowment Insurance Fund Based on Markov Chain And Actuarial.

Fields of interest

Electrical Engineering; Computer Engineering

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days


$279.00
ISBN 978-3-642-25765-0
Recent Advances in Computer Science and Information Engineering

Volume 4

CSIE 2011 is an international scientific Congress for distinguished scholars engaged in scientific, engineering and technological research, dedicated to build a platform for exploring and discussing the future of Computer Science and Information Engineering with existing and potential application scenarios. The congress has been held twice, in Los Angeles, USA for the first and in Changchun, China for the second time, each of which attracted a large number of researchers from all over the world. The congress turns out to develop a spirit of cooperation that leads to new friendship for addressing a wide variety of ongoing problems in this vibrant area of technology and fostering more collaboration over the world. The congress, CSIE 2011, received 2483 full paper and abstract submissions from 27 countries and regions over the world. Through a rigorous peer review process, all submissions were refereed based on their quality of content, level of innovation, significance, originality and legibility. 688...[...]

Features

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Contents

From the content: The Control Program Design of Multi-station Production Line in Ammunition Ready System Based on PLC. - The design and implementation of a general evacuation simulation system. - The design of heart sounds and electrocardiogram monitor system based Atmega128L. - The Implementation of infinity nested matrices operation Based on MATLAB.- The implementation of text categorization with ARC-BC algorithm. - The Properties of Petri Nets Refinement.

Fields of interest

Electrical Engineering; Computer Engineering

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

64 Engineering

Recent Advances in Computer Science and Information Engineering

Volume 6

CSIE 2011 is an international scientific Congress for distinguished scholars engaged in scientific, engineering and technological research, dedicated to build a platform for exploring and discussing the future of Computer Science and Information Engineering with existing and potential application scenarios. The congress has been held twice, in Los Angeles, USA for the first and in Changchun, China for the second time, each of which attracted a large number of researchers from all over the world. The congress turns out to develop a spirit of cooperation that leads to new friendship for addressing a wide variety of ongoing problems in this vibrant area of technology and fostering more collaboration over the world. The congress, CSIE 2011, received 2483 full paper and abstract submissions from 27 countries and regions over the world. Through a rigorous peer review process, all submissions were refereed based on their quality of content, level of innovation, significance, originality and legibility. 688...[...]

Features

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Contents


Fields of interest

Electrical Engineering; Computer Engineering

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012, XX, 783 p. 382 illus. (Lecture Notes in Electrical Engineering, Vol. 127) Hardcover

$279.00
ISBN 978-3-642-25768-1

2012, XX, 814 p. 442 illus. (Lecture Notes in Electrical Engineering, Vol. 129) Hardcover

$279.00
ISBN 978-3-642-25777-3

Resource-Aware Data Fusion Algorithms for Wireless Sensor Networks

This book introduces resource-aware data fusion algorithms to gather and combine data from multiple sources (e.g., sensors) in order to achieve inferences. These techniques can be used in centralized and distributed systems to overcome sensor failure, technological limitation, and spatial and temporal coverage problems. The algorithms described in this book are evaluated with simulation and experimental results to show they will maintain data integrity and make data useful and informative. Describes techniques to overcome real problems posed by wireless sensor networks deployed in circumstances that might interfere with measurements provided, such as strong variations of pressure, temperature, radiation, and electromagnetic noise; Uses simulation and experimental results to evaluate algorithms presented and includes real test-bed. Includes case study implementing data fusion algorithms on a remote monitoring framework for sand production in oil pipelines.

Features

This book introduces resource-aware data fusion algorithms to gather and combine data from multiple sources (e.g., sensors) in order to achieve inferences. These techniques can be used in centralized and distributed systems to overcome sensor failure, technological limitation, and spatial and temporal coverage problems. The algorithms described in this book are evaluated with simulation and experimental...[...]

Contents

Introduction to wireless sensor networks. - Data fusion in wireless sensor networks. - Centralized data fusion algorithms. - Introduction to Kalman filters. - Proposed distributed Kalman filter. - Simulation and experimental results.

Fields of interest

Circuits and Systems; Signal, Image and Speech Processing; Algorithms

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

2012, XV, 140 p. 48 illus. (Lecture Notes in Electrical Engineering, Vol. 118) Hardcover

$129.00
Smart Sensing Technology for Agriculture and Environmental Monitoring

The book focuses 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 aims to monitor agricultural and environmental parameters. This book is dedicated to Sensing systems for Agricultural and Environmental Monitoring offers to variety of users, namely, Master and PhD degree students, researchers, practitioners, especially Agriculture and Environmental 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
The book focuses 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 aims to monitor agricultural and environmental parameters. This book is dedicated to Sensing systems for Agricultural and Environmental Monitoring offers to...

Contents

Fields of interest
Electronics and Microelectronics; Instrumentation; Electrical Engineering; Signal, Image and Speech Processing

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XII, 384 p. 233 illus., 179 in color. (Lecture Notes in Electrical Engineering, Vol. 146) Hardcover
$129.00
ISBN 978-3-642-27637-8

Soft Computing Methods for Microwave and Millimeter-Wave Design Problems

The growing commercial market of Microwave/ Millimeter wave industry over the past decade has led to the explosion of interests and opportunities for the design and development of microwave components. The design of most microwave components requires the use of commercially available electromagnetic (EM) simulation tools for their analysis. In the design process, the simulations are carried out by varying the design parameters until the desired response is obtained. The optimization of design parameters by manual searching is a cumbersome and time consuming process. Soft computing methods such as Genetic Algorithm (GA), Artificial Neural Network (ANN) and Fuzzy Logic (FL) have been widely used by EM researchers for microwave design since last decade. The aim of these methods is to tolerate imprecision, uncertainty, and approximation to achieve robust and low cost solution in a small time frame. Modeling and optimization are essential parts and powerful tools for the microwave/millimeter wave design...

Features
The growing commercial market of Microwave/ Millimeter wave industry over the past decade has led to the explosion of interests and opportunities for the design and development of microwave components. The design of most microwave components requires the use of commercially available electromagnetic (EM) simulation tools for their analysis. In the design process, the simulations are carried out by varying the...

Contents

Fields of interest
Computational Intelligence; Appl. Mathematics / Computational Methods of Engineering; Microwaves, RF and Optical Engineering; Numerical and Computational Physics; Programming Techniques; Applied and Technical Physics

Target groups
Professional/practitioner

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XIV, 114 p. 40 illus. (Studies in Computational Intelligence, Vol. 392) Hardcover
$129.00
ISBN 978-3-642-25562-5

Soft Computing Techniques in Vision Science

This Special Edited Volume is a unique approach towards Computational solution for the upcoming field of study called Vision Science. From a scientific firmament Optics, Ophthalmology, and Optical Science has surpassed an Odyssey of optimizing configurations of Optical systems, Surveillance Cameras and other Nano optical devices with the metaphor of Nano Science and Technology. Still these systems are falling short of its computational aspect to achieve the pinnacle of human vision system. In this edited volume much attention has been given to address the coupling issues Computational Science and Vision Studies. It is a comprehensive collection of research works addressing various related areas of Vision Science like Visual Perception and Visual system, Cognitive Psychology, Neurosciences, Psychophysics and Ophthalmology, linguistic relativity, color vision etc. This issue carries some latest developments in the form of research articles and presentations. The volume is rich of contents with...

Features
This Special Edited Volume is a unique approach towards Computational solution for the upcoming field of study called Vision Science. From a scientific firmament Optics, Ophthalmology, and Optical Science has surpassed an Odyssey of optimizing configurations of Optical systems, Surveillance Cameras and other Nano optical devices with the metaphor of Nano Science and Technology. Still these systems are ...

Contents
From the content: Genetic Algorithm Based Fuzzy Frequent Pattern Mining from Gene Expression Data.- Prediction of Protein Tertiary Structure Using Genetic Algorithm.- Hybrid Image mining Methods to Classify the Abnormality in Complete Field Image Mammograms Based on Normal Regions.- Handwritten Script Recognition using DCT, Gabor Filter and Wavelet Features at Line Level.- Character Recognition using 2D View and Support Vector Machine.- Automatic localization of pupil using histogram thresholding and region based mask filter.

Fields of interest
Computational Intelligence; Image Processing and Computer Vision

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XII, 218 p. 101 illus., 56 in color. (Studies in Computational Intelligence, Vol. 395) Hardcover
$129.00
ISBN 978-3-642-25506-9
Software Engineering and Knowledge Engineering: Theory and Practice

Volume 2

The volume includes a set of selected papers extended and revised from the 2009 Pacific-Asia Conference on Knowledge Engineering and Software Engineering (KESE 2009) held on December 19–20, 2009, Shenzhen, China. Volume 2 is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of Knowledge Engineering and Communication Technology to disseminate their latest research results and exchange views on the future research directions of these fields. 135 high-quality papers are included in the volume. Each paper has been peer-reviewed by at least 2 program committee members and selected by the volume editor Prof. Yanwen Wu. On behalf of the this volume, we would like to express our sincere appreciation to all of authors and referees for their efforts reviewing the papers. Hoping you can find lots of profound research ideas and results on the related fields of Knowledge Engineering and Communication Technology.

Features

The volume includes a set of selected papers extended and revised from the 2009 Pacific-Asia Conference on Knowledge Engineering and Software Engineering (KESE 2009) held on December 19–20, 2009, Shenzhen, China. Volume 2 is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of Knowledge Engineering and Communication Technology.

Contents

From the Content: Analytic Solutions of a second-order Functional Differential Equation.- Analytic Solutions of an Iterative Functional Differential Equation with State Dependent Delay.- The Study of Optimal Conditions of Electroporation in Gluconacetobacter Xylinum.- Study on the Mechanism of Apoptosis in the Swine Small Intestine Epithelium Treated BY Heat Stress.- Effect of Spleen Deficiency Syndrome on the expression of TLR2 and TLR4 in Rats.- Reserpine Caused Gastrointestinal Damages and Hormonal Changes in Rats.- Heat Stress Induced Apoptosis in Rat Intestinal Epithelial Cell(s).-

Fields of interest

Computational Intelligence; Computer Engineering; Appl. Mathematics / Computational Methods of Engineering

Target groups

Research

Type of publication

Proceedings

Usually dispatched within 3 to 5 business days


$399.00
ISBN 978-3-642-25348-5

Sol-Gel Processing for Conventional and Alternative Energy

Sol-Gel Processing for Conventional and Alternative Energy is a comprehensive source of information on the use of sol-gel processing in materials in energy systems, conversion, storage, and generation. The volume editors include numerous applications, primarily in nuclear fuel processing, electrolytes for fuel cells, and dye-sensitized solar cells (DSSC). In addition to examining contemporary processing, properties, and industrial applications, “Sol-Gel Processing for Conventional and Alternative Energy” identifies materials challenges presented by conventional and alternative energy generation that require new materials and innovative processing. Each chapter is written by an internationally respected researcher. The book provides a state-of-the-art treatment of different aspects of materials for energy production, with a focus on processing, and covers related topics such as carbon sequestration, clean energy, and biofuels.

Features

Sol-Gel Processing for Conventional and Alternative Energy is a comprehensive source of information on the use of sol-gel processing in materials in energy systems, conversion, storage, and generation. The volume editors include numerous applications, primarily in nuclear fuel processing, electrolytes for fuel cells, and dye-sensitized solar cells (DSSC). In addition to examining contemporary processing, properties, and industrial applications, “Sol-Gel Processing for Conventional and Alternative Energy” identifies materials challenges presented by conventional and alternative energy generation that require new materials and innovative processing. Each chapter is written by an internationally respected researcher. The book provides a state-of-the-art treatment of different aspects of materials for energy production, with a focus on processing, and covers related topics such as carbon sequestration, clean energy, and biofuels.

Contents


Fields of interest

Energy Technology; Renewable and Green Energy; Industrial Chemistry / Chemical Engineering

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days February 29, 2012

2012, X, 397 p. 159 illus. in color. (Advances in Sol-Gel Derived Materials and Technologies) Hardcover

$179.00

Subjective Quality Measurement of Speech

Its Evaluation, Estimation and Applications

It is becoming crucial to accurately estimate and monitor speech quality in various ambient environments to guarantee high quality speech communication. This practical hands-on book shows speech intelligibility measurement methods so that the readers can start measuring or estimating speech intelligibility of their own system. The book also introduces subjective and objective speech quality measures, and describes in detail speech intelligibility measurement methods. It introduces a diagnostic rhyme test which uses rhyming word-pairs, and includes: An investigation into the effect of word familiarity on speech intelligibility. Speech intelligibility measurement of localized speech in virtual 3-D acoustic space using the rhyme test. Estimation of speech intelligibility using objective measures, including the ITU standard PESQ measures, and automatic speech recognizers.

Features

It is becoming crucial to accurately estimate and monitor speech quality in various ambient environments to guarantee high quality speech communication. This practical hands-on book shows speech intelligibility measurement methods so that the readers can start measuring or estimating speech intelligibility of their own system. The book also introduces subjective and objective speech quality measures, and [...]
Supervised Sequence Labelling with Recurrent Neural Networks

Supervised sequence labelling is a vital area of machine learning, encompassing tasks such as speech, handwriting and gesture recognition, protein secondary structure prediction and part-of-speech tagging. Recurrent neural networks are powerful sequence learning tools—robust to input noise and distortion, able to exploit long-range contextual information—that would seem ideally suited to such problems. However their role in large-scale sequence labelling systems has so far been auxiliary. The goal of this book is a complete framework for classifying and transcribing sequential data with recurrent neural networks only. Three main innovations are introduced in order to realise this goal. Firstly, the connectionist temporal classification output layer allows the framework to be trained with unsegmented target sequences, such as phoneme-level speech transcriptions; this is in contrast to previous connectionist approaches, which were dependent on error-prone prior segmentation. Secondly,...

Features
Supervised sequence labelling is a vital area of machine learning, encompassing tasks such as speech, handwriting and gesture recognition, protein secondary structure prediction and part-of-speech tagging. Recurrent neural networks are powerful sequence learning tools—robust to input noise and distortion, able to exploit long-range contextual information—that would seem ideally suited to such problems. [...]
SystemVerilog for Verification
A Guide to Learning the Testbench Language Features

Based on the highly successful second edition, this extended edition of SystemVerilog for Verification: A Guide to Learning the Testbench Language Features teaches all verification features of the SystemVerilog language, providing hundreds of examples to clearly explain the concepts and basic fundamentals. It contains materials for both the full-time verification engineer and the student learning this valuable skill. In the third edition, authors Chris Spear and Greg Tumbush start with how to verify a design, and then use that context to demonstrate the language features, including the advantages and disadvantages of different styles, allowing readers to choose between alternatives. This textbook contains end-of-chapter exercises designed to enhance students’ understanding of the material. Other features of this revision include: New static variables, print specifiers, and DPI from the 2009 IEEE language standard. Descriptions of UVM features such as factories, the test registry, and the configuration...[

Features
Based on the highly successful second edition, this extended edition of SystemVerilog for Verification: A Guide to Learning the Testbench Language Features teaches all verification features of the SystemVerilog language, providing hundreds of examples to clearly explain the concepts and basic fundamentals. It contains materials for both the full-time verification engineer and the student learning...[

Contents

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

Type of publication
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days

2012. XLII, 464 p. 720 illus. Hardcover

$99.00
ISBN 978-1-4614-0714-0

The Global Age
NGIOA @ Risk

Dr. Jayshree Pandya, founder of Risk Group LLC (http://www.riskgroupllc.com), is ahead of the curve in addressing the changing global fundamentals of the emerging Global Age. Global Age, and its changing global fundamentals has brought complex, chaotic, and turbulent times for every nation—where failures at all levels have come to become self-evident, repetitive, destructive, and potentially hopeless in nature and uncertainty. Nations are caught off guard. From what is visible across nations today, the promise of progress and prosperity for all nations does not seem to have materialized in a Global Age. Instead of progress and prosperity, what is visible today is crisis and catastrophe that is overpowering and overwhelming the capability of most nations to meet their promise of progress and prosperity. Nations are in crisis. This introductory book Global Age: NGIOA @ Risk addresses the global shifts and the changing global fundamentals of Global Age, to lay out much needed foundation of an...[

Features
Dr. Jayshree Pandya, founder of Risk Group LLC, is ahead of the curve in addressing the changing global fundamentals of the emerging Global Age: The Global Age, and its changing global fundamentals has brought complex, chaotic, and turbulent times for every nation—where failures at all levels have become self-evident, repetitive, destructive, and potentially hopeless in nature and...[

Contents

Fields of interest
Control, Reliability, Safety and Risk; International Economics; Business & Management Science; Private International Law, International & Foreign Law, Comparative Law

Type of publication
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012


$129.00
ISBN 978-94-007-1259-1

Thermo-Gas Dynamics of Hydrogen Combustion and Explosion

The potential of hydrogen as an important future energy source has generated fresh interest in the study of hydrogenous gas mixtures. Indeed, both its high caloricity and reactivity are unique properties, the latter underscoring safety considerations when handling such mixtures. The present monograph is devoted to the various aspects of hydrogen combustion and explosion processes. In addition to theoretical and phenomenological considerations, this work also collates the results of many experiments from less well known sources. The text reviews the literature in this respect, thereby providing valuable information about the thermo-gas-dynamical parameters of combustion processes for selected experimental settings in a range of scientific and industrial applications.

Features
The potential of hydrogen as an important future energy source has generated fresh interest in the study of hydrogenous gas mixtures. Indeed, both its high caloricity and reactivity are unique properties, the latter underscoring safety considerations when handling such mixtures. The present monograph is devoted to the various aspects of hydrogen combustion and explosion processes. In addition...[

Contents

Fields of interest
Engineering Thermodynamics, Heat and Mass Transfer, Fluid- and Aerodynamics; Thermodynamics; Energy Systems

Type of publication
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

February 29, 2012

2012. XXI, 324 p. 310 illus. (Shock Wave and High Pressure Phenomena) Hardcover

$179.00
ISBN 978-3-642-25351-5
**Time Delay Systems: Methods, Applications and New Trends**

This volume is concerned with the control and dynamics of time delay systems; a research field with at least six-decade long history that has been very active especially in the past two decades. In parallel to the new challenges emerging from engineering, physics, mathematics, and economics, the volume covers several new directions including topology induced stability, large-scale interconnected systems, roles of networks in stability, and new trends in predictor-based control and consensus dynamics. The associated applications/problems are described by highly complex models, and require solving inverse problems as well as the development of new theories, mathematical tools, numerically-tractable algorithms for real-time control. The volume, which is targeted to present these developments in this rapidly evolving field, captures a careful selection of the most recent papers contributed by experts and collected under five parts: (i) Methodology: From Retarded to Neutral Continuous Delay Models, (ii) [...] Features

This volume is concerned with the control and dynamics of time delay systems; a research field with at least six-decade long history that has been very active especially in the past two decades. In parallel to the new challenges emerging from engineering, physics, mathematics, and economics, the volume covers several new directions including topology induced stability, large-scale interconnected systems, roles [...] Contents


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

**Target groups**
Research

**Type of publication**
Monograph

**Usually dispatched within 3 to 5 business days**
March 31, 2012

**Towards Modern Collaborative Knowledge Sharing Systems**

The development of new technologies still accelerates. As a result the requirement of easy access to high quality information is essential in modern scientific society. We believe that new cloud-based online system will replace the old system of books and magazines in the future. This is mainly because contemporary system of journal and conference publications appears to be outdated, especially in such domains as computer science, because process of publishing of an article takes too much time. In this book a new approach of sharing knowledge is proposed. The main idea behind this new approach is to take advantage of collaboration techniques used in industry to share the knowledge and build teams which work on the same subject at different locations. This will allow to accelerate the exchange of information between scientists and allow to build global teams of researchers who deal with the same scientific subjects. Furthermore, an easy access to structured knowledge will facilitate cross domain [...] Features

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From the content: Information Platform TEWI.- Introduction to integration of PLM and CAD systems within TEWI platform.- Access control management using extended RBAC model.- Evaluation of DocBook 5.0 in Documenting Research Applications.- Augmented Reality as a space for presenting and passing the information about works of art and architectural monuments.- 3D scene exploration with external controllers.- System for Developing Photon Mapping algorithms.- A compiler for a domain-specific language for rapid implementation of DSP transforms and filter banks.

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

**Target groups**
Research

**Type of publication**
Monograph

**Usually dispatched within 3 to 5 business days**
March 31, 2012

2012, XVI, 242 p. 89 illus. (Lecture Notes in Control and Information Sciences, Vol. 423) Softcover

$159.00
ISBN 978-3-642-25220-4

**Transport Phenomena in Porous Media**

Aspects of Micro/Macro Behaviour

This monograph presents an integrated perspective of the wide range of phenomena and processes applicable to the study of transport of species in porous materials. In order to formulate the entire range of porous media and their uses, this book gives the basics of continuum mechanics, thermodynamics, seepage and consolidation and diffusion, including multiscale homogenization methods. The particular structure of the book has been chosen because it is essential to be aware of the true properties of porous materials particularly in terms of nano, micro and macro mechanisms. This book is of pedagogical and practical importance to the fields covered by civil, environmental, nuclear and petroleum engineering and also in chemical physics and geophysics as it relates to radioactive waste disposal, geotechnical engineering, mining and petroleum engineering and chemical engineering.

**Features**
This monograph presents an integrated perspective of the wide range of phenomena and processes applicable to the study of transport of species in porous materials. In order to formulate the entire range of porous media and their uses, this book gives the basics of continuum mechanics, thermodynamics, seepage and consolidation and diffusion, including multiscale homogenization methods. The particular [...] Contents

Overview.- Basic continuum mechanics.- Non-equilibrium thermodynamics.- The virtual work equation, the variational method, and the minimum energy principle.- Diffusion and seepage problems.- Consolidation for saturated porous media.- Homogenization theory.- Homogenization theory for seepage. Diffusion in saturated porous media.- Long-term consolidation of bentonite and homogenization analysis.

**Fields of interest**
Engineering Thermodynamics, Heat and Mass Transfer; Thermodynamics; Physical Chemistry; Characterization and Evaluation of Materials; Geochemistry

**Target groups**
Research

**Type of publication**
Monograph

**Usually dispatched within 3 to 5 business days**
March 31, 2012

2012, XXII, 383 p. 122 illus., 1 in color. Hardcover

$179.00
ISBN 978-3-642-25332-4
Transport of Dangerous Goods
Methods and Tools for Reducing the Risks of Accidents and Terrorist Attack

This book addresses the various risks associated with the transport of dangerous goods within a territory. The emphasis of the contributions is on methods and tools to reduce the vulnerability of both the environment and human society to accidents or malicious acts involving such transport. With topics ranging from game theory to governance principles, the authors together cover technical, legal, financial, and logistic aspects of this problem. The intended audience includes responsible persons in territorial organizations, managers of transport infrastructures, as well as students, teachers and researchers wishing to deepen their knowledge in this area.

Features
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Fields of interest
Quality Control, Reliability, Safety and Risk; Transportation; Safety in Chemistry / Dangerous Goods

Target groups
Graduate

Type of publication
Proceedings

Usually dispatched within 3 to 5 business days March 31, 2012


$229.00
ISBN 978-94-007-2683-3

Transport of Dangerous Goods
Methods and Tools for Reducing the Risks of Accidents and Terrorist Attack

This book addresses the various risks associated with the transport of dangerous goods within a territory. The emphasis of the contributions is on methods and tools to reduce the vulnerability of both the environment and human society to accidents or malicious acts involving such transport. With topics ranging from game theory to governance principles, the authors together cover technical, legal, financial, and logistic aspects of this problem. The intended audience includes responsible persons in territorial organizations, managers of transport infrastructures, as well as students, teachers and researchers wishing to deepen their knowledge in this area.

Fields of interest
Quality Control, Reliability, Safety and Risk; Transportation; Safety in Chemistry / Dangerous Goods

Target groups
Graduate

Type of publication
Proceedings

Usually dispatched within 3 to 5 business days April 28, 2012


$119.00
ISBN 978-94-007-2686-4

Underwater Acoustic Networking Techniques

This literature study presents an overview of underwater acoustic networking. It provides a background and describes the state of the art of all networking facets that are relevant for underwater applications. This report serves both as an introduction to the subject and as a summary of existing protocols, providing support and inspiration for the development of network architectures.

Fields of interest
Communications Engineering, Networks; Oceanography; Engineering Acoustics; Signal, Image and Speech Processing

Target groups
Research

Type of publication
Brief

Usually dispatched within 3 to 5 business days

2012, XI, 83 p. 37 illus., 5 in color. (SpringerBriefs in Electrical and Computer Engineering) Softcover

$49.95
ISBN 978-3-642-25223-5
Vector Control of Induction Machines

Desensitisation and Optimisation Through Fuzzy Logic

After a brief introduction to the main law of physics and fundamental concepts inherent in electromechanical conversion, Vector Control of Induction Machines introduces the standard mathematical models for induction machines – whichever rotor technology is used – as well as several squirrel-cage induction machine vector-control strategies. The use of causal ordering graphs allows systematization of the design stage, as well as standardization of the structure of control devices. Vector Control of Induction Machines suggests a unique approach aimed at reducing parameter sensitivity for vector controls based on a theoretical analysis of this sensitivity. This analysis naturally leads to the introduction of control strategies that are based on the combination of different controls with different robustness properties, through the use of fuzzy logic supervisors. Numerous applications and experiments confirm the validity of this simple solution, which is both reproducible and applicable to other complex [...]
## Environment

**R.S. Tjeerdema, University of California Davis, CA, USA (Ed.)**

### Aquatic Life Water Quality Criteria for Selected Pesticides

Reviews of Environmental Contamination and Toxicology attempts to provide concise, critical reviews of timely advances, philosophy and significant areas of accomplished or needed endeavor in the total field of xenobiotics, in any segment of the environment, as well as toxicological implications.

### Contents

- Special Foreword
- Preface
- Aquatic Life Water Quality Criteria Derived via the UC Davis Method I. Organophosphate Insecticides
  - Amanda J. Palumbo, Patti L. TenBrook, Tessa L. Fojut, Isabel R. Faria and Ronald S. Tjeerdema
- Aquatic Life Water Quality Criteria Derived via the UC Davis Method II. Pyrethroid Insecticides
  - Tessa L. Fojut, Amanda J. Palumbo & Ronald S. Tjeerdema

### Fields of interest

- Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution
- Monitoring / Environmental Analysis; Ecotoxicology; Terrestrial Pollution

### Target groups

- Research

### Type of publication

- Contributed volume

*Usually dispatched within 3 to 5 business days*

2012. XI, 146 p. 8 illus. With online files/update. (Reviews of Environmental Contamination and Toxicology, Vol. 216) Hardcover

**$129.00**

ISBN 978-1-4614-2259-4

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**H. Guasch, University of Girona, Spain; A. Ginebreda, IDAEA-CSIC, Barcelona, Spain; A. Geislinger, University of Girona, Spain (Eds.)**

### Emerging and Priority Pollutants in Rivers

**Bringing Science Into River Management Plans**

The enduring changes in the aquatic environment and the increasing influx of contaminants call for novel conceptual and methodological approaches to relating chemical pollution and ecological alterations in ecosystems. This volume highlights the latest advances concerning the sampling, analyses, occurrence, bioavailability, and effects of emerging and priority pollutants in European rivers, the current status of the River Management Plans in Europe, and the applicability of the newly developed techniques for water monitoring purposes. The topics are discussed in the context of the EU Water Framework Directive, evaluating their shortcomings and providing a basis for doing away with them. Linking scientific research and river management practices, this book is an invaluable source of information for environmental chemists, aquatic scientists, ecologists and water managers.

### Contents

- Special Foreword
- Foreword
- Preface
- Aquatic Life Water Quality Criteria Derived via the UC Davis Method I. Organophosphate Insecticides
- Aquatic Life Water Quality Criteria Derived via the UC Davis Method II. Pyrethroid Insecticides
- Aquatic Life Water Quality Criteria Derived via the UC Davis Method III. Diuron.

### Fields of interest

- Water Pollution Control / Water Management / Aquatic Pollution
- Monitoring / Environmental Analysis; Ecotoxicology; Terrestrial Pollution

### Target groups

- Research

### Type of publication

- Contributed volume

*Usually dispatched within 3 to 5 business days*


**$309.00**

ISBN 978-3-642-25721-6

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**E. Holzbecher, Georg-August University, Göttingen, Germany**

### Environmental Modeling

**Using MATLAB**

The book has two aims: to introduce basic concepts of environmental modelling and to facilitate the application of the concepts using modern numerical tools such as MATLAB. It is targeted at all natural scientists dealing with the environment: process and chemical engineers, physicists, chemists, biologists, biochemists, hydrogeologists, geochemists and ecologists. MATLAB was chosen as the major computer tool for modeling, firstly because it is unique in it’s capabilities, and secondly because it is available in most academic institutions, in all universities and in the research departments of many companies. In the 2nd edition many chapters will include updated and extended material. In addition the MATLAB command index will be updated and a new chapter on numerical methods will be added.

*For the second edition of ‘Environmental Modeling’ the first edition was completely revised. Text and figures were adapted to the recent MATLAB® version. Several chapters were extended. Correspondingly the index of [...]*

### Contents

- Part I: Primer to Modeling with MATLAB
- Introduction
- Fundamentals of Modeling
- Principles and MATLAB
- Transport
- Transport Solutions (Gaussian Puffs and ...)
- Drawdown by Pumping
- Aquifer Baseflow and 2D Meshing
- Potential and Flow Visualization
- Streamfunction and Complex Potential
- 2D and 3D Transport Solutions

### Fields of interest

- Math. Appl. in Environmental Science; Earth Sciences (general)
- Appl. Mathematics / Computational Methods of Engineering

### Target groups

- Research

### Type of publication

- Monograph

*Usually dispatched within 3 to 5 business days*


**$179.00**

ISBN 978-3-642-22041-8

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Enzymatic polymerization of phenolic compounds by oxidoreductases

The enzymatic polymerization of phenolic compounds continues to generate interest in several diverse fields such as food, cosmetics, and pharmaceuticals. The use of these compounds for their antioxidant properties is limited by their low solubility and thermal stability. Polymerization can improve their solubility and their thermal stability thus creating new properties. These properties are dependent on the molecular mass and the structure of polymers. The reaction yield, the polydispersity, the molecular mass, the structure and thus the properties of synthesized polymers can be controlled by the mode of control of the reaction and by the reaction conditions. In this brief, the authors analyze the processes used and the key factors (temperature, solvent, origin of the enzyme, structure of the substrate, reactor design, …) which control the polymerization of phenolic species by these oxidoreductase enzymes, to obtain polymers with desired characteristics and properties.

Features
The enzymatic polymerization of phenolic compounds continues to generate interest in several diverse fields such as food, cosmetics, and pharmaceuticals. The use of these compounds for their antioxidant properties is limited by their low solubility and thermal stability. Polymerization can improve their solubility and their thermal stability thus creating new properties. These properties are dependent on the […]

Fields of interest
Environmental Chemistry; Polymer Sciences

Type of publication
Research

Usually dispatched within 3 to 5 business days
February 29, 2012

2012, V, 47 p. 9 illus. (SpringerBriefs in Green Chemistry for Sustainability) Softcover

$49.95

Governing the Uncertain
Adaptation and Climate in Russia and Finland

The book provides a detailed analysis of the development of adaptive governance in Russia and Finland. It presents a case study from the Sakha Republic in Russia that focuses on community’s participation in the process of governing of the flood events in the Tatta River area. Local adaptive practices are analyzed in relation to federal and regional responses that may mandate, encourage or collide with community’s agency. A second case study is centered on the Finnish community of Kuttaura, Ivalo. It explores the mounting challenges presented by changing environmental conditions to traditional reindeer herding, as well as the efforts made to cope with these new factors. Combining anthropological research and political science, this penetrating work offers revealing scrutiny of governmental responses to one of the most urgent issues facing both politicians and the citizens who live in their domains.

Features
This assessment of governmental approaches to the vital task of adapting to climate change posits this undertaking as a central issue of governance. It argues a close relation of governance to existing political and administrative practices. The product of a pan-Arctic research initiative called CAVIAR, it examines the technique of ‘responsibilisation’, in which the task of realising adaptive strategies is […]

Contents

Fields of interest
Environment (general); Philosophy of Nature; Ethics; Human Geography; Phenomenology; Metaphysics

Type of publication
Research

Usually dispatched within 3 to 5 business days
March 31, 2012

2012, X, 138 p. 19 illus., 17 in color. Hardcover

$129.00
ISBN 978-94-007-3842-3

Human-Environment Relations
Transformative Values in Theory and Practice

This fresh and innovative approach to human-environmental relations will revolutionise our understanding of the boundaries between ourselves and the environment we inhabit. The anthology is predicated on the notion that values shift back and forth between humans and the world around them in an ethical communicative zone called ‘valuespace’. The contributors examine the transformative interplay between external environments and human values, and identify concrete ways in which these norms, residing in and derived from self and society, are projected onto the environment.

Features
This fresh and innovative approach to human-environmental relations will revolutionise our understanding of the boundaries between ourselves and the environment we inhabit. The anthology is predicated on the notion that values shift back and forth between humans and the world around them in an ethical communicative zone called ‘valuespace’. The contributors examine the transformative interplay between […]

Contents
**Impacts of Large Dams: A Global Assessment**

One of the most controversial issues of the water sector in recent years has been the impacts of large dams. Proponents have claimed that such structures are essential to meet the increasing water demands of the world and that their overall societal benefits far outweigh the costs. In contrast, the opponents claim that social and environmental costs of large dams far exceed their benefits, and that the era of construction of large dams is over. A major reason as to why there is no consensus on the overall benefits of large dams is because objective, authoritative and comprehensive evaluations of their impacts, especially ten or more years after their construction, are conspicuous by their absence. This book debates impartially, comprehensively and objectively, the positive and negative impacts of large dams based on facts, figures and authoritative analyses. These in-depth case studies are expected to promote a healthy and balanced debate on the needs, impacts and relevance of large dams, with case [...] 

**Fields of interest**

Environment (general); Landscape, Regional and Urban Planning; Environmental Management; Ecotoxicology; Nature Conservation; Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution

**Target groups**

Professional/practitioner

**Type of publication**

Contributed volume

*Usually dispatched within 3 to 5 business days*

2012. XIV, 407 p. 44 illus. (Water Resources Development and Management) Hardcover

$179.00

ISBN 978-1-4419-0632-8

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**Integrating Ecology and Poverty Reduction**

**Ecological Dimensions**

In the past, the science of ecology has frequently been excluded from the development agenda for various reasons. Increasingly however there has been a renewed interest in finding more ecologically sustainable means of development that have required a strong foundation in ecological knowledge (for example EcoAgriculture Partnerships, EcoHealth presented at ESA, and EcoNutrition proposed by Deckelbaum et al). Each of these examples has already taken the critical first step at integrating ecological knowledge with agriculture, health and nutrition, respectively. However, this is only the first step; more attention needs to be placed not only on the role that two fields can play towards poverty alleviation, but on the role of a truly integrated, interdisciplinary approach towards development goals that is firmly grounded in ecological understanding. We feel that a critical look at what ecology can and cannot provide to the development agenda, in light of the Millennium Development goals, is timely and [...] 

**Features**

Integrating Ecology and Poverty Reduction offers a timely assessment of the current and potential role of ecological science and tools for contributing to poverty reduction. The chapters in the first volume, Ecological Dimensions, address the ecological aspects of major development challenges and the contributions of ecological science to solving these problems. In the second volume, [...] 

**Contents**


**Fields of interest**

Environmental Management; Sustainable Development; Environmental Law / Policy / Ecotourism; Applied Ecology; Development Economics; Public Health

**Target groups**

Professional/practitioner

**Type of publication**

Contributed volume

*Usually dispatched within 3 to 5 business days*

2012. XIV, 425 p. 55 illus., 34 in color. (Environmental Sciences) Hardcover

$179.00

ISBN 978-1-4419-0632-8

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**Intraseasonal Variability in the Atmosphere-Ocean Climate System**

Improving the reliability of long-range forecasts of natural disasters, such as severe weather, droughts and floods, in North America, South America, Africa and the Asian/Australasian monsoon regions is of vital importance to the livelihood of millions of people who are affected by these events. In recent years the significance of major short-term climatic variability, and events such as the El Nino/Southern Oscillation in the Pacific, with its worldwide effect on rainfall patterns, has been all to clearly demonstrated. Understanding and predicting the intra-seasonal variability (ISV) of the ocean and atmosphere is crucial to improving long range environmental forecasts and the reliability of climate change projects through climate models. In the second edition of this classic book on the subject, the authors have updated the original chapters, where appropriate, and added a new chapter that includes short subjects representing substantial new development in ISV research since the publication of the [...] 

**Features**

This updated multi-author, comprehensive and authoritative review of intra-seasonal variability (ISV), has a balance of observation, theory and modeling and provides a single source of reference for all those interested in this important, multi-faceted natural phenomenon and its relation to major short-term climatic variations. All the original chapters are updated, where [...] 

**Contents**


**Fields of interest**

Climate Change; Monitoring / Environmental Analysis; Atmospheric Protection / Air Quality Control / Air Pollution; Physics (general)

**Target groups**

Research

**Type of publication**

Monograph

*Usually dispatched within 3 to 5 business days*

2012. XXXIII, 613 p. 189 illus., 59 in color. (Environmental Sciences) Hardcover

$229.00

ISBN 978-3-642-13913-0
Restoring Lands - Coordinating Science, Politics and Action

Complexities of Climate and Governance

Environmental issues, vast and varied in their details, unfold at the confluence of people and place. They present complexities in their biophysical details, their scope and scale, and the dynamic character of human action and natural systems. Addressing environmental issues often invokes tensions among battling interests and competing priorities. Air and water pollution, the effects of climate change, ecosystem transformations—these and other environmental issues involve scientific, social, economic, and institutional challenges. This book analyses why tackling many of these problems is so difficult and why sustainability involves more than adoption of greener, cleaner technologies. Sustainability, as discussed in this book, involves knowledge flows and collaborative decision processes that integrate scientific and technological methods and tools, political and governance structures and regimes, and social and community values. The authors synthesize a holistic and adaptive approach to rethinking...[1]

Features

Environmental issues, vast and varied in their details, unfold at the confluence of people and place. They present complexities in their biophysical details, their scope and scale, and the dynamic character of human action and natural systems. Addressing environmental issues often invokes tensions among battling interests and competing priorities. Air and water pollution, the effects of climate change, [..]...

Contents


Fields of interest

Climate Change; Coastal Sciences; Philosophy of Technology

Target groups

Research

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

2012. XV, 538 p. 83 illus., 66 in color. Hardcover

$229.00

Reviews of Environmental Contamination and Toxicology Volume 217

Reviews of Environmental Contamination and Toxicology attempts to provide concise, critical reviews of timely advances, philosophy and significant areas of accomplished or needed endeavor in the total field of xenobiotics, in any segment of the environment, as well as toxicological implications.

Features


Contents

Foreword - Preface - Chiral Pesticides: Identification, Description, and Environmental Implications - Strategies for Chromium Bioremediation of Tannery Effluent - Index

Fields of interest

Ecotoxicology; Environmental Management; Waste Management / Waste Technology

Target groups

Research

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

2012. XI, 144 p. 9 illus. (Reviews of Environmental Contamination and Toxicology, Vol. 217) Hardcover

$129.00
ISBN 978-1-4614-2328-7

Soil-Subsurface Change

Chemical Pollutant Impacts

This book combines soil science, earth science, and environmental geochemistry, providing comprehensive background information for specialists interested in chemical-induced changes in the soil-subsurface system. Readers are introduced to the chemistry of contaminants that often disturb the natural soil-subsurface equilibrium as a result of human activity. While the soil-subsurface system has in many cases been affected by human impact, the effects of chemical contaminants on the actual matrix and properties have been largely neglected. The major focus of the book is on changes to the soil-subsurface matrix and properties caused by chemical pollution. By integrating results available in the literature, we observe that chemical pollutants may lead to the irreversible formation of a new soil-subsurface regime characterized by a matrix and properties different than those of the natural regime. In contrast to the geological time scales dictating natural changes to the matrix and properties of the...[1]

Features

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Contents


Fields of interest

Terrestrial Pollution; Ecotoxicology; Geochemistry; Soil Science & Conservation

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XIV, 366 p. 227 illus., 20 in color. Hardcover

$209.00
ISBN 978-3-642-24386-8
General Science

W. de Jong-Lambert, City University of New York, NY, USA

The Cold War Politics of Genetic Research

An Introduction to the Lysenko Affair

This book uses the reaction of a number of biologists in the United States and Great Britain to provide an overview of one of the most important controversies in Twentieth Century biology, the "Lysenko Affair." The book is written for advanced undergraduate and graduate students of history/history of science. It covers a number of topics which are relevant to understanding the sources and dimensions of the Lysenko controversy, including the interwar eugenics movement, the Scopes Trial, the popularity of Lamarckism as a theory of heredity prior to the synthesis of genetics and Natural Selection, and the Cold War. The book focuses particularly on portrayals—both positive and negative—of Lysenko in the popular press in the U.S. and Europe, and thus by extension the relationship between scientists and society. Because the Lysenko controversy attracted a high level of interest among the lay community, it constitutes a useful historical example to consider in context with current topics that have received...[...]

Contents

Fields of interest
History of Science; Evolutionary Biology

Target groups
Upper undergraduate

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XXII, 185 p. 3 illus. (Archimedes, Vol. 24) Hardcover

$139.00
ISBN 978-94-007-2839-4

Geography

E. Bocher, Institute for Research on Urban Sciences and Techniques, Nantes, France; M. Neteler, Fondazione E. Mach, S. Michele all’Adige, Italy (Eds.)

Geospatial Free and Open Source Software in the 21st Century

This book contains papers presented at the first Open Source Geospatial Research Symposium held in Nantes City, France, 8-10 July, 2009. It brings together insights and ideas in the fields of Geospatial Information and Geoinformatics. It demonstrates the scientific community dynamism related to open source and free software as well as in defining new concepts, standards or tools.

Features
This book contains papers presented at the first Open Source Geospatial Research Symposium held in Nantes City, France, 8-10 July, 2009. It brings together insights and ideas in the fields of Geospatial Information and Geoinformatics. It demonstrates the scientific community dynamism related to open source and free software as well as in defining new concepts, standards or tools.

Contents
Geospatial Information and Geoinformatics.- GEOWEB and Standards.- Open Source Software Users and Developers.- Sustainable Development.- Environmental Planning and Monitoring.- Information Systems/Database/Communication Services.

Fields of interest
Geographical Information Systems / Cartography; Earth Sciences (general)

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XV, 261 p. 77 illus., 36 in color. (Lecture Notes in Geoinformation and Cartography) Hardcover

$199.00
ISBN 978-3-642-10594-4

Remote Sensing

Remote Sensing provides information on how remote sensing relates to the natural resources inventory, management, and monitoring, as well as environmental concerns. It explains the role of this new technology in current global challenges. "Remote Sensing" will discuss remotely sensed data application payloads and platforms, along with the methodologies involving image processing techniques as applied to remotely sensed data. This title provides information on image classification techniques and image registration, data integration, and data fusion techniques. How this technology applies to natural resources and environmental concerns will also be discussed.

Features
N/A

Contents

Fields of interest
Remote Sensing / Photogrammetry; Aerospace Technology and Astronautics; Extraterrestrial Physics, Space Sciences

Target groups
Research

Type of publication
Brief

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. VII, 134 p. 76 illus., 31 in color. (SpringerBriefs in Space Development) Softcover

$49.95
Springer Handbook of Geographic Information

Computer science provides a powerful tool that was virtually unknown three generations ago. Some of the classical fields of knowledge are geodesy (surveying), cartography, and geography. Electronics have revolutionized geodetic methods. Cartography has faced the dominance of the computer that results in simplified cartographic products. All three fields make use of basic components such as the Internet and databases. The Springer Handbook of Geographic Information is organized in three parts, Basics, Geographic Information and Applications. Some parts of the basics belong to the larger field of computer science. However, the reader gets a comprehensive view on geographic information because the topics selected from computer science have a close relation to geographic information. The Springer Handbook of Geographic Information is written for scientists at universities and industry as well as advanced and PhD students.

Contents

Fields of interest
Geographical Information Systems / Cartography; Information Systems and Communication Service; Earth Sciences (general); Ecotoxicology; Appl. Mathematics / Computational Methods of Engineering

Target groups
Professional/practitioner

Type of publication
Handbook

Due: May 28, 2012

2012. XXX, 1100 p. 600 illus. in color. Hardcover

$339.00
ISBN 978-3-540-72678-4

Civil Litigation in a Globalising World

Globalization of legal traffic and the inherent necessity of having to litigate in foreign courts or to enforce judgments in other countries considerably complicate civil proceedings due to great differences in civil procedure. This may consequently jeopardize access to justice. This triggers the debate on the need for harmonization of civil procedure. In recent years, this debate has gained in importance because of new legislative and practical developments both at the European and the global level. This book discusses the globalization and harmonization of civil procedure from the angles of legal history, law and economics and (European) policy. Attention is paid to the interaction with private law and private international law, and European and global projects that aim at the harmonization of civil procedure or providing guidelines for fair and efficient adjudication. It further includes contributions that focus on globalization and harmonization of civil procedure from the viewpoint of eight...

Features
This book is an important contribution to the discussion about globalisation of civil procedure. Globalisation of legal matters and the inherent necessity of having to litigate in foreign courts or to enforce judgments in other countries considerably complicate civil proceedings due to great differences in civil procedure. This may jeopardise access to justice. As a result, the debate on the need for the...

Contents
Civil litigation in a globalising world – an introduction.- Fundamental principles of civil procedure: order out of chaos.- Harmonisation of civil procedure: a historical and comparative perspective.- A Law and Economics view on harmonisation of procedural law.- Harmonisation of civil procedure – policy perspectives.- Harmonisation of civil procedure and the interaction with private international law.- Harmonisation of civil procedure and the interaction with substantive private law.- Procedural harmonisation in a European context.- Harmonised civil procedure in a world of structural...

Fields of interest
Dispute Resolution, Mediation, Arbitration; Private International Law, International & Foreign Law, Comparative Law, Fundamentals of Law

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. VIII, 74 p. (SpringerBriefs in Law) Softcover

$49.95
ISBN 978-3-642-27499-2

Does International Trade Need a Doctrine of Transnational Law?

Some Thoughts at the Launch of a European Contract Law

This paper looks at the current status and role of specific commercial contract law both national and international in view of recent European contract law reform. It reviews the value and necessity of a special and separate contract law for merchants in a global market and discusses critically the terminology, doctrine and objectives which this law is based upon. For a long time the choice of transnational law rules which are often non-state law has been marginalised and made impossible in state court proceedings. The new Common European Sales Law circumvents this problem by proposing to be used as national law. International practice in commercial dispute settlement may therefore still remain at the forefront of promoting and modelling the use of transnational contract law.

Features

Fields of interest
Private International Law, International & Foreign Law, Comparative Law

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. VIII, 74 p. (SpringerBriefs in Law) Softcover

$49.95
ISBN 978-3-642-27499-2

M. Heidemann, Institute of Advanced Legal Studies, London, UK

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2012. VIII, 74 p. (SpringerBriefs in Law) Softcover

$49.95
ISBN 978-3-642-27499-2

M. Heidemann, Institute of Advanced Legal Studies, London, UK
European Data Protection: In Good Health?

Although Europe has a significant legal data protection framework, built up around EU Directive 95/46/EC and the Charter of Fundamental Rights, the question of whether data protection and its legal framework are ‘in good health’ is increasingly being posed. Advanced technologies raise fundamental issues regarding key concepts of data protection. Falling storage prices, increasing chips performance, the fact that technology is becoming increasingly embedded and ubiquitous, the convergence of technologies and other technological developments are broadening the scope and possibilities of applications rapidly. Society however, is also changing, affecting the privacy and data protection landscape. The ‘demand’ for free services, security, convenience, governance, etc, changes the mindset of all the stakeholders involved. Privacy is being proclaimed dead or at least worthy of dying by the captains of industry; governments and policy makers are having to manoeuvre between competing and incompatible aims; [...] Features

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Preface: Serge Gutwirth, Ronald Leenes, Paul De Hert & Yves Poulet. - Chapter 1: Surveillance, profiling and prediction.- 1. We are all connected to Facebook...by Facebook: Arnold Roosendaal.- 2. Behavioural tracking on the Internet: Claude Castelluccia.- 3. Privacy for loan applicants versus predictive ower for Loan Providers: is it possible to bridge the gap? Charlene Jennett, Miguel Malheiros, Sachi Brostoff and M. Angela Sasse.- 4. Cookie wars: Castelluccia.- 5. Examining legislation and economics for the determination of transfer prices is under increasing pressure. Many countries and international bodies are now taking a closer look at the use of transfer prices for profit shifting and are exploring alternative mechanisms such as formulary apportionment for the allocation of taxing rights. With regard to this topic, this volume is the first to offer a concise analysis of transfer pricing in the international tax arena from an interdisciplinary legal and economic point of view. Fundamentals such as the efficient allocation of resources within multi-unit firms and distortions between different goals of transfer pricing as well as different aspects of it in tax and corporate law, the traditional OECD approach and practical aspects concerning intangibles, capital and risk allocation are covered by [...] Features

The taxation of multinational corporate groups has become a major concern in the academic and political debate on the future of international taxation. In particular the arm’s length standard for the determination of transfer prices is under increasing pressure. Many countries and international bodies are now taking a closer look at the use of transfer prices for profit shifting and are exploring [...] Contents

From the contents: The Roles and Functions of Transfer Pricing in Organisations.- The OECD Approach to Transfer Pricing.- Transfer Pricing in Practice.- Separate Accounting, Profit Split and Formulary Apportionment. Fields of interest

International Economic Law, Trade Law; Public Finance & Economics; Private International Law, International & Foreign Law, Comparative Law; Law and Economics Target groups

Research Type of publication

Contributed volume Usually dispatched within 3 to 5 business days February 29, 2012


1. We are all connected to Facebook...by Facebook: Arnold Roosendaal.- 2. Behavioural tracking on the Internet: Claude Castelluccia.- 3. Privacy for loan applicants versus predictive ower for Loan Providers: is it possible to bridge the gap? Charlene Jennett, Miguel Malheiros, Sachi Brostoff and M. Angela Sasse.- 4. Cookie wars: Castelluccia.- 5. Examining legislation and economics for the determination of transfer prices is under increasing pressure. Many countries and international bodies are now taking a closer look at the use of transfer prices for profit shifting and are exploring alternative mechanisms such as formulary apportionment for the allocation of taxing rights. With regard to this topic, this volume is the first to offer a concise analysis of transfer pricing in the international tax arena from an interdisciplinary legal and economic point of view. Fundamentals such as the efficient allocation of resources within multi-unit firms and distortions between different goals of transfer pricing as well as different aspects of it in tax and corporate law, the traditional OECD approach and practical aspects concerning intangibles, capital and risk allocation are covered by [...] Features

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International Economic Law, Trade Law; Public Finance & Economics; Private International Law, International & Foreign Law, Comparative Law; Law and Economics Target groups

Research Type of publication

Contributed volume Usually dispatched within 3 to 5 business days February 29, 2012


Google and the Law

Empirical Approaches to Legal Aspects of Knowledge-Economy Business Models

Google’s has proved to be one of the most successful business models in today’s knowledge economy. Its services and applications have become part of our day-to-day life. However, Google has repeatedly been accused of acting outside the law in the development of services such as Adwords, Googlebooks or YouTube. One of the main purposes of this book is to assess whether those accusations are well-founded. But more important than that, this book provides a deeper reflection: are current legal systems adapted to business models such as that of Google or are they conceived for an industrial economy? Do the various lawsuits involving Google show an evolution of the existing legal framework that might favour the flourishing of other knowledge-economy businesses? Or do they simply reflect that Google has gone too far? What lessons can other knowledge-based businesses learn from all the disputes in which Google has been or is involved? This book is valuable reading for legal practitioners and academics [...] Features

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International IT and Media Law, Intellectual Property Law, Legal Aspects of Computing Target groups

Research Type of publication

Contributed volume Usually dispatched within 3 to 5 business days March 31, 2012

A. Wagner, Université du Littoral, Côte d'Opale, France; J.M. Broekman, Penn State University, Altoona, PA, USA (Eds.)

Prospects of Legal Semiotics

This book examines the progress to date in the many facets – conceptual, epistemological and methodological – of the field of legal semiotics. It reflects the fulfilment of the promise of legal semiotics when used to explore the law, its processes and interpretation. This study in Legal Semiotics brings together the theory, structure and practice of legal semiotics in an accessible style. The book introduces the concepts of legal semiotics and offers an insight in contemporary and future directions which the semiotics of law is going to take. A theoretical and practical oriented synthesis of the historical, contemporary and most recent ideas pertaining to legal semiotics, the book will be of interest to scholars and researchers in law and social sciences, as well as those who are interested in the interdisciplinary dynamics of law and semiotics.

**Features**

This book examines the progress to date in the many facets – conceptual, epistemological and methodological – of the field of legal semiotics. It reflects the fulfilment of the promise of legal semiotics when used to explore the law, its processes and interpretation. This study in Legal Semiotics brings together the theory, structure and practice of legal semiotics in an accessible style. The book introduces [...]
Trust in Biobanking

Dealing with Ethical, Legal and Social Issues in an Emerging Field of Biotechnology

Biobanks are promising instruments of biomedical research and of transnational medicine in particular. Ethical, legal and social issues associated with biobanking, however, have recently led to a more critical view on this concept. All efforts addressing these concerns have been grounded on well-established standards of biomedical ethics such as informed consent procedures, protection of individual autonomy, benefit sharing etc. By additionally highlighting the widely neglected aspect of trust, this book aims at broadening the horizon of the ELISI-debate and thus filling a gap in current research on biobanking. The contributions of leading experts and junior researchers cover a wide field of disciplines relevant for biobanking including law, ethics, medicine, public health, social sciences, philosophy and theology.

Features

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Contents

From the contents: Framing the Field of Biobanking and Trust.- Ethical Issues.- Legal Issues.- Social Issues.

Fields of interest

Public International Law; Medical Law; Ethics; Philosophy of Medicine; Biotechnology; Biomedicine (general)

Target groups

Research

Type of publication

Proceedings

Usually dispatched within 3 to 5 business days April 28, 2012

2012. XII, 266 p. 10 illus. (Veröffentlichungen des Institutes für Deutsches, Europäisches und Internationales Medizinrecht, Gesundheitsrecht und Bioethik der Universitäten Heidelberg und Mannheim, Vol. 33) Softcover

$139.00
ISBN 978-3-540-78844-7

Life Sciences

K. Turkcan, Ottawa Hospital Research Institute, Ottawa, Canada (Ed.)

Adult and Embryonic Stem Cells

This volume will cover a series of reviews on stem cells including adult and embryonic stem cells. Speakers were invited to present these talks during the Stem Cell Symposia in fall of 2010, in Samsun, Turkey. Unique aspect of this volume is that it brings a multidisciplinary aspect of stem cells extracted from a symposium.

Features

Stem cells and regenerative medicine have emerged as amongst the most exciting areas of biomedical and translational research, with huge anticipation for their use in restoration, repair and regeneration of human tissues and organs. Characterization of stem cells from various sources and attempts to demonstrate their potential in normal biological or pathological settings are two of the primary goals of the.[...]

Contents

Introduction: Stem Cells in Samsun.- Searching for the in vivo Traces of MSCs and their Ancestors.- Isolation and Identification of Mesenchymal Stem Cells.- Mesenchymal Stromal Cells and Umbilical Cord Blood Transplantation.- Immunoregulatory Functions of Mesenchymal Stromal Cells.- Mesenchymal Stem Cells: Possibilities of New Treatment Options.- Tissue Engineering Based on The Importance of Collaboration between Clinician and Basic Scientist and Mesenchymal Stromal Cells.- Synchronrotron Radiation and Nanotechnology for Stem Cell Researchers.- Controversies in Corneal Epithelial Stem Cell etc.[...]

Fields of interest

Stem Cells; Cell Biology; Biotechnology

Target groups

Research

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

2012. XV, 260 p. 75 illus., 50 in color. (Stem Cell Biology and Regenerative Medicine) Hardcover

$189.00
ISBN 978-1-61779-629-6

Amyloid Proteins

Methods and Protocols

Amyloid diseases are characterized by the deposition of insoluble fibrous amyloid proteins. The word “amyloid” indicates a starch-like compound, and though a misnomer, continues to be the accepted term for this group of protein conformational disorders. The second edition of Amyloid Proteins expands upon the previous edition with current, detailed protocols for the preparation of amyloid and its precursors, specific analytical methods for studying these proteins, cell culture models and assays for production of amyloid proteins, and protocols for amyloid extraction from tissue, its detection in vitro and in vivo, as well as nontransgenic methods for developing amyloid mouse models. Written in the highly successful Methods in Molecular Biology™ series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Authoritative and[...]

Features

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Contents


Fields of interest

Protein Science

Target groups

Professional/practitioner

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

2012. XV, 548 p. 115 illus., 46 in color. (Methods in Molecular Biology, Vol. 849) Hardcover

$159.00
Difference Gel Electrophoresis (DIGE)

Methods and Protocols

Protein analysis is increasingly becoming a cornerstone in deciphering the molecular mechanisms of life. Proteomics, the large-scale and high-sensitivity analysis of proteins, is already pivotal to the new life sciences such as Systems Biology and Systems Medicine. Proteomics, however, relies heavily on the past and future advances of protein purification and analysis methods. DIGE, being able to quantify proteins in their intact form, is one of a few methods that can facilitate this type of analysis and still provide the protein isoforms in an MS-compatible state for further identification and characterization with high analytical sensitivity. Differential Gel Electrophoresis: Methods and Protocols introduces the concept of DIGE and its advantages in quantitative protein analysis. It provides detailed protocols and important notes on the practical aspects of DIGE with both generic and specific applications in the various areas of Quantitative Proteomics. Divided into four concise sections, this book provides an overview of DIGE, being able to quantify proteins in their intact form.

Features

Protein analysis is increasingly becoming a cornerstone in deciphering the molecular mechanisms of life. Proteomics, the large-scale and high-sensitivity analysis of proteins, is already pivotal to the new life sciences such as Systems Biology and Systems Medicine. Proteomics, however, relies heavily on the past and future advances of protein purification and analysis methods. DIGE, being able to quantify proteins in their intact form, is one of a few methods that can facilitate this type of analysis and still provide the protein isoforms in an MS-compatible state for further identification and characterization with high analytical sensitivity. Differential Gel Electrophoresis: Methods and Protocols introduces the concept of DIGE and its advantages in quantitative protein analysis. It provides detailed protocols and important notes on the practical aspects of DIGE with both generic and specific applications in the various areas of Quantitative Proteomics. Divided into four concise sections, this book provides an overview of DIGE, being able to quantify proteins in their intact form.

Contents


Fields of interest

Protein Science; Proteomics

Target groups

Professional/practitioner

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

Edible Medicinal And Non Medicinal Plants

Volume 3, Fruits

This book continues as volume 3 of a multi-compendium on Edible Medicinal and Non-Medicinal Plants. It covers edible fruits/seeds used fresh or processed, as vegetables, spices, stimulants, edible oils and beverages. It encompasses species from the following families: Ginkgoaceae, Gnetaceae, Juglandaceae, Lauraceae, Lecythidaceae, Magnoliaceae, Malpighiaceae, Malvacaeae, Mangiferae, Melleaceae, Moringaceae, Muntingiae, Musaceae, Myristicaceae and Myrtaceae. This work will be of significant interest to scientists, researchers, medical practitioners, pharmacologists, ethnobotanists, horticulturists, food nutritionists, agriculturists, botanists, conservationists, lecturers, students and the general public. Topics covered include: taxonomy; common/English and vernacular names; origin and distribution; agroecological requirements; edible plant parts and uses; botany; nutritive and pharmacological properties; medicinal uses and research findings; nonedible uses; and selected references.

Features

This book continues as volume 3 of a multi-compendium on Edible Medicinal and Non-Medicinal Plants. It covers edible fruits/seeds used fresh or processed, as vegetables, spices, stimulants, edible oils and beverages. It encompasses species from the following families: Ginkgoaceae, Gnetaceae, Juglandaceae, Lauraceae, Lecythidaceae, Magnoliaceae, [...]

Contents


Fields of interest

Plant Sciences; Agriculture; Biomedicine (general); Medicine (general); Biodiversity; Chemistry (general)

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

2012, XIII, 898 p. 449 illus., 169 in color. Hardcover

$279.00
ISBN 978-94-007-2533-1

Edible Medicinal And Non-Medicinal Plants

Volume 2, Fruits

This book continues as volume 2 of a multi-compendium on Edible Medicinal and Non-Medicinal Plants. It covers edible fruits/seeds used fresh or processed, as vegetables, spices, stimulants, pulses, edible oils and beverages. It encompasses species from the following families: Clusiaceae, Combretaceae, Cucurbitaceae, Dilleniaceae, Ebenaceae, Euphorbiaceae, Ericaceae and Fabaceae. This work will be of significant interest to scientists, researchers, medical practitioners, pharmacologists, ethnobotanists, horticulturists, food nutritionists, agriculturists, botanists, herbalists, conservationists, teachers, lecturers, students and the general public. Topics covered include: taxonomy (botanical name and synonyms); common English and vernacular names; origin and distribution; agroecological requirements; edible plant parts and uses; botany; nutritive and medicinal/pharmacological properties; medicinal uses and current research findings; non-edible uses; and selected/cited references.

Features

This book continues as volume 2 of a multi-compendium on Edible Medicinal and Non-Medicinal Plants. It covers edible fruits/seeds used fresh or processed, as vegetables, spices, stimulants, pulses, edible oils and beverages. It encompasses species from the following families: Clusiaceae, Combretaceae, Cucurbitaceae, Dilleniaceae, Ebenaceae, [...]

Contents


Fields of interest

Plant Sciences; Agriculture; Biomedicine (general); Medicine (general); Biodiversity; Chemistry (general)

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

2012, XII, 1100 p. 504 illus. Hardcover

$299.00
ISBN 978-94-007-1763-3
Endocrine FGFs and Klothos

Fibroblast growth factors (FGFs) have been recognized primarily as autocrine/paracrine factors that regulate embryonic development and organogenesis. However, recent studies have revealed that some FGFs function as endocrine factors and regulate various metabolic processes in adulthood. Such FGFs, collectively called endocrine FGFs, are comprised of three members (FGF15/19, FGF21, and FGF23: FGF15 is the mouse ortholog of human FGF19). These endocrine FGFs share a common structural feature that enables the endocrine mode of action at the expense of the affinity to FGF receptors. To restore the affinity to FGF receptors in their target organs, the endocrine FGFs have designated the Klotho family of transmembrane proteins as obligate co-receptors. By expressing Klothos in a tissue-specific manner, this unique co-receptor system also enables the endocrine FGFs to specify their target organs among many tissues that express FGF receptors.

Features

Contents

The Structural Biology of the FGF19 Subfamily: Klotho and bKlotho - FGF23 and Syndromes of Abnormal Renal Phosphate Handling - Evidence For FGF23 Involvement in a Bone/Kidney Axis - Regulation of Bone Mineralization and Systemic Phosphate and Vitamin D Homeostasis - Klotho, Klotho and Vitamin D Interactions: What Have We Learned from In Vivo Mouse Genetics Studies? - FGF23 and the Parathyroid - Regulation of Ion Channels by Secreted Klotho - FGF23 in Chronic Kidney Disease - Secreted Klotho and Chronic Kidney Disease - FGF23 as a Novel Therapeutic Target - Physiology of FGF15/19 - FGF19 and [...]
Host-Fungus Interactions

Methods and Protocols

Microbiologists, medical mycologists, immunologists, and biochemists are increasingly working together to focus on the processes involved in the progression and treatment of fungal disease.

Host-Fungus Interactions: Methods and Protocols is designed for research scientists who are involved in this work and interested in undertaking new or comparative studies of interactions between the mammalian host and clinically important fungal pathogens. Aiming to combine approaches for reverse genetics in pathogenic fungi with methods for their application in vitro and in vivo models of disease, the book includes methods for the culture and genetic manipulation of the primary fungal pathogens and the opportunistic pathogens, as well as methods for investigating host-fungus interactions in model systems. Written in the highly successful Methods in Molecular Biology™ series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily [...]

Features

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Host-Fungus Interactions: Methods and Protocols is designed for research scientists who are involved in this work and interested in undertaking new or comparative studies of interactions between the mammalian [...]
### Private or Socialistic Forestry?

Forest Transition in Finland vs. Deforestation in the Tropics

While deforestation continues at an alarming rate around the world, discussions on the range of underlying causes continue. The premise is that studying successful transitions from deforestation to sustainable forestry ex post in Finland can provide novel insights into how deforestation in the tropics might be reduced in the future. Our fundamental question here is why Finland succeeded to stop deforestation for a century ago and why not the same is feasible in the contemporary tropical countries? This book presents a novel integrated theory within which this case study on Finland and contemporary modeling of underlying causes of tropical deforestation are developed. Finland remains the world’s second largest net exporter of forest products, while maintaining the highest forest cover in Europe. A transition from deforestation to sustainable industrial forestry took place in Finland during the first part of the 20th century. The underlying causes of this transition are compared via our theory with[...]

### Features

While deforestation continues at an alarming rate around the world, discussions on the range of underlying causes continue. The premise is that studying successful transitions from deforestation to sustainable forestry ex post in Finland can provide novel insights into how deforestation in the tropics might be reduced in the future. Our fundamental question here is why Finland succeeded to stop[...]

### Contents

1. Rationale of the Book. 1.1 Problem of Continuous Tropical Deforestation. 1.2 Research on Causes of Tropical Deforestation. 1.3 Forest Transitions in Finland. 1.4 Role of Theories and Purpose of the Book. 1.5 Structure of the Book. References. - 2. Theory. Method and Data. 2.1 Sustained Yield Industrial Forestry. 2.2 Existing Theories of Forest Transition. 2.3 Theory of Ecological Economics. 2.4 Theory of Institutional Economics. 2.5 Theories of Property Rights and Public Goods. 2.6 Forest-based Development Theory. 2.7 Universal System Causality Model of Forest Transition. 2.8 Methods[...]

### Fields of interest

Forestry; Environment (general); Development Economics; Economic Theory; Political Science, general

### Target groups

Research

### Type of publication

Monograph

**Usually dispatched within 3 to 5 business days**

### Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XXIV, 461 p. 100 illus., 71 in color. (World Forests, Vol. 10) Hardcover

$209.00


### Regulatory RNAs

**Basics, Methods and Applications**

Recent progress in high-throughput technologies and genome wide transcriptome studies have lead to a significant scientific milestone of discovering non-coding RNAs (ncRNAs) which spans through a major portion of the genome. These RNAs most often act as riboregulators, and actively participate in the regulation of important cellular functions at the transcriptional and/or post-transcriptional levels rather than simply being an intermediated messenger between DNA and proteins. As the appreciation for the importance of ncRNAs continues to emerge, it is also increasingly clear that these play critical roles in gene regulatory processes during development and differentiation. Further, regulatory RNAs are useful biomarkers for diagnosis of diseases. Hence these RNA regulators are essential to the development of therapeutics. This book on “Regulatory RNAs” offers a comprehensive view on our current understanding of these regulatory RNAs viz. siRNA, miRNA, piRNA, snoRNA, long non-coding RNA, small RNA etc.[...]

#### Features

Recent progress in high-throughput technologies and genome wide transcriptome studies have lead to a significant scientific milestone of discovering non-coding RNAs (ncRNAs) which spans through a major portion of the genome. These RNAs most often act as riboregulators, and actively participate in the regulation of important cellular functions at the transcriptional and/or post-transcriptional levels rather[...]

#### Contents

- Renaissance of Regulatory RNAs. - Diversity, overlap and relationships in the small RNA landscape. - Fragments of small nuclear RNAs as a new source for non-coding RNAs. - Small regulatory RNAs (sRNAs) - key players in prokaryotic metabolism, stress response and virulence. - The canonical RNA interference pathway in animals. - Generation of functional long non-coding RNA through transcription and natural selection. - MicroRNA regulation of neuronal differentiation and plasticity. - Long Non-coding RNA Function and Expression in Cancer. - Expression profiling of ncRNAs employing RNP libraries[...]

### Fields of interest

Biochemistry

### Target groups

Professional/practitioner

### Type of publication

Contributed volume

**Usually dispatched within 3 to 5 business days**

2012. IX, 552 p. 65 illus., 37 in color. (Methods in Molecular Biology, Vol. 848) Hardcover

$209.00

ISBN 978-3-642-22516-1

### Ribozymes

**Methods and Protocols**

Over the past decade, there have been a variety of fundamental insights into ribozymes which have changed the perspective on RNA catalysis. In, Ribozymes: Methods and Protocols, researchers in the field detail many of the protocols and techniques which are now commonly used to study individual ribozymes and the characterization of ribozymes. Written in the highly successful Methods in Molecular Biology® series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Authoritative and practical, Ribozymes: Methods and Protocols seeks to aid scientists in further understanding the catalytically active RNAs.

**Features**

Over the past decade, there have been a variety of fundamental insights into ribozymes which have changed the perspective on RNA catalysis. In, Ribozymes: Methods and Protocols, researchers in the field detail many of the protocols and techniques which are now commonly used to study individual ribozymes and the characterization of ribozymes. Written in the highly successful Methods in Molecular[...]

### Contents


### Fields of interest

Biochemistry

### Target groups

Professional/practitioner

### Type of publication

Contributed volume

**Usually dispatched within 3 to 5 business days**

2012. XIV, 480 p. 102 illus., 27 in color. (Methods in Molecular Biology, Vol. 848) Hardcover

$139.00

Single-Cell Analysis

Methods and Protocols

Today, cells are commonly analyzed en masse, with thousands of cells per sample, yielding results on the average response of the cells. However, cellular heterogeneity implies that in order to learn more about cellular behaviour, it is important to study how individual cells respond, one by one. In Single-Cell Analysis: Methods and Protocols, experts in the field provide an update on the field of single-cell analysis wherein the latest findings and applications are described in detail. The methods described in this book include a few examples of conventional methods and several examples of miniaturized methods. Written in the highly successful Methods in Molecular Biology™ series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Authoritative and accessible, Single-Cell Analysis: Methods and Protocols encourages [...] Features

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Cell Biology; Cell Physiology

Target groups

Professional/practitioner

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

$139.00
ISBN 978-1-61779-566-4

Statistical Human Genetics

Methods and Protocols

Recent advances in genetics over the last quarter of a century, especially in molecular techniques, have dramatically reduced the cost of determining genetic markers and hence opened up a field of research that is increasingly helping to detect, prevent and/or cure many diseases that afflict humans. In Statistical Human Genetics: Methods and Protocols expert researchers in the field describe statistical methods and computer programs in the detail necessary to make them more easily accessible to the beginner analyzing data. Written in the highly successful Methods in Molecular Biology™ series format, with examples of running the programs and interpreting the program outputs, the chapters include the kind of detailed description and implementation advice that is crucial for getting optimal results from human genetic data collected in the laboratory. Thorough and as much as possible intuitive, Statistical Human Genetics: Methods and Protocols aids scientists in understanding the computer programs and [...] Features

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Animal Genetics and Genomics; Human Genetics; Biostatistics

Target groups

Professional/practitioner

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

$159.00
ISBN 978-1-61779-554-1

Studies on Retinal and Choroidal Disorders

Methods and Protocols

Studies on Retinal and Choroidal Disorders examines the role that oxidative and nitrosative stress plays in the complex physiology and pathophysiology of the retina and choroid. Both the basic science researcher and the clinical practitioner can use this book as a guide to the current understanding of retinal and choroidal cellular mechanisms involved in aging and disease. Beginning with a review of oxidative stress and inflammation in the pathobiology of AMD and a review of the complement system in the retina, the book then takes a detailed look at oxidative stress in lipid metabolism and oxidized lipoproteins in the retina. It examines the anti-apoptotic activity of α-crystallins in the presence of glutathione, oxidative stress in the mitochondria and endoplasmic reticulum, the role of iron in retinal disease, the mechanisms of pathological VEGF expression, NAPDH oxidase mechanisms, and Hepatocyte Growth Factor in oxidative stress in the retina. A detailed look at the Cx32 /-/-/Cx43/-/- mouse [...] Features

Studies on Retinal and Choroidal Disorders examines the role that oxidative and nitrosative stress plays in the complex physiology and pathophysiology of the retina and choroid. Both the basic science researcher and the clinical practitioner can use this book as a guide to the current understanding of retinal and choroidal cellular mechanisms involved in aging and disease. Beginning with a review [...] Contents

Review of Emerging Treatments for Age-Related Macular Degeneration.- Complement Pathways and Oxidative Stress in Models of Age-Related Macular Degeneration.- Oxidative Modifications As Triggers of AMD Pathology.- Role of Malondialdehyde in the Age-Related Macular Degeneration.- Bistretinoid Lipofuscin in the Retinal Pigment Epithelium: Oxidative Processes and Disease Implications.- Age-related Changes in RPE Lipofuscin Leads to Hydrophobic Polymers.- Docosahexaenoic Acid Signaling in the Homeostatic Modulation of Photoreceptor/Retinal Pigment Epithelial Cell Integrity During[...] Fields of interest

Oxidative Stress; Cell Biology; Ophthalmology

Target groups

Professional/practitioner

Type of publication

Contributed volume

Usually dispatched within 3 to 5 business days

$239.00
ISBN 978-1-61779-605-0
Materials Science

Transgenic Plants
Methods and Protocols

In 2010 the global area of transgenic crops reached 148 million hectares, an 87-fold increase since 1996, making it the most rapidly adopted technology in the history of modern agriculture. In Transgenic Plants: Methods and Protocols, Second Edition expert researchers in the field provide key techniques to investigate production and analysis of transgenic plants. Focusing on selection and detection methods, transformation technology, gene targeting, silencing and directed mutation, metabolic engineering and pharming, the book encompasses protocols relating to major crops and model plants being used for genomic analysis. Written in the highly successful Methods in Molecular Biology series format, the chapters include the kind of detailed description and implementation advice that is crucial for getting optimal results in the laboratory. Thorough and intuitive, Transgenic Plants: Methods and Protocols, Second Edition aids scientists in the continuous improvements being made for the production and [...] Features

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Three Decades of Studies to Understand the Functions of the Ubiquitin Family.- Structure and Evolution of Ubiquitin and Ubiquitin-Related Domains.- Deciphering Tissue-Specific Ubiquitylation by Mass Spectrometry.- Analysis of Cellular SUMO and SUMO-Ubiquitin Hybrid Conjugates.- Recombinant Reconstitution of Sumoylation Reactions In vitro.- Reconstitution of SUMO-Dependent Ubiquitylation In vitro. Detection and Analysis of FAT10 Modification.- Isolation of NEDDylated Proteins in Human Cells.- The I-515 Conjugation System.- Pupylation: Proteasomal Targeting by a Protein Modifier in [...] Features

The ubiquitin-proteasome system (UPS) and ubiquitin-related modifiers are not only involved in cellular protein quality control but also in the regulation of many fundamental cellular processes/pathways as well as in the disease-relevant aberrations. Ubiquitin Family Modifiers and Proteasome: Reviews and Protocols presents both novel developments in UPS research and important methods related to the main recent advances in the field of ubiquitin family modifiers. Divided into five convenient sections, this volume focuses on the enzymology and substrate identification of ubiquitin family modifiers, the recognition and chain formation of these modifiers, the analysis of proteasome biogenesis and function, protein quality control, and finally the use of small molecules and strategies to study or manipulate the function of the UPS and of ubiquitin family modifiers, respectively. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their [...] Contents


$159.00

Materials Science

Electromagnetic Processing of Materials

Materials Processing by Using Electric and Magnetic Functions

This book is both a course book and a monograph. In fact, it has developed from notes given to graduate course students on materials processing in the years 1989 to 2006. Electromagnetic Processing of Materials (EPM), originates from a branch of materials science and engineering developed in the 1980s as a field aiming to create new materials and/or design processes by making use of various functions which appear when applying the electric and magnetic fields to materials. It is based on transport phenomena, materials processing and magnetohydrodynamics. The first chapter briefly introduces the history, background and technology of EPM. In the second chapter, the concept of transport phenomena is concisely introduced and in the third chapter the essential part of magnetohydrodynamics is transcribed and readers are shown that the concept of transport phenomena does not only apply to heat, mass and momentum, but also magnetic field. The fourth chapter describes electromagnetic processing of [...] Features

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Molecular Biology; Vol. 99) Hardcover

$129.00
ISBN 978-94-007-2644-4
How Glass Changed the World

The History and Chemistry of Glass from Antiquity to the 13th Century

Glass production is thought to date to ~2500 BC and had found numerous uses by the height of the Roman Empire. Yet the modern view of glass-based chemical apparatus (beakers, flasks, stills, etc.) was quite limited due to a lack of glass durability under rapid temperature changes and chemical attack. This "brief" gives an overview of the history and chemistry of glass technology from its origins in antiquity to its dramatic expansion in the 13th century, concluding with its impact on society in general, particularly its effect on chemical practices.

Contents

Origins of glass: Myth and known history.
- Development and growth of glass through the Roman period.
- Reinventing an old material: Venice and the new glass.
- Impact on society and its effect on chemical progress.

Fields of interest

Ceramics, Glass, Composites, Natural Materials;
History of Science; Physical Chemistry

Target groups

Research

Type of publication

Brief

Usually dispatched within 3 to 5 business days April 28, 2012

$49.95
ISBN 978-3-642-28182-2

Structural Connections for Lightweight Metallic Structures

Increasing concern with fuel consumption leads to widespread interest in lightweight structures for transportation vehicles. Several competing technologies are available for the structural connections of these structures, namely welding, mechanical fastening / riveting, and adhesive technologies. Arranged in a single volume, this work is to presents state-of-the-art discussions of those aspects and processes presenting greater novelty whilst simultaneously keeping wide applicability potential and interest. The topics chosen have the common feature of being of currently applied in lightweight structures, and one of the characteristics of this work is bringing together relevant state-of-the-art information usually presented in separate publications specializing in a single technology. The book provides discussions and examples of concrete applications, so that it appeals to researchers and designers and engineers involved in the design and fabrication of lightweight structures.

Features

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Algebraic Geometry over the Complex Numbers

This is a relatively fast paced graduate level introduction to complex algebraic geometry, from the basics to the frontier of the subject. It covers sheaf theory, cohomology, some Hodge theory, as well as some of the more algebraic aspects of algebraic geometry. The author frequently refers the reader if the treatment of a certain topic is readily available elsewhere but goes into considerable detail on topics for which his treatment puts a twist or a more transparent viewpoint. His cases of exploration and are chosen very carefully and deliberately. The textbook achieves its purpose of taking new students of complex algebraic geometry through this a deep yet broad introduction to a vast subject, eventually bringing them to the forefront of the topic via a non-intimidating style.

Features
This textbook is a strong addition to existing introductory literature on algebraic geometry. The author’s treatment combines the study of algebraic geometry with differential and complex geometry and unifies these subjects using sheaf-theoretic ideas. It is also an ideal text for showing students the connections between algebraic geometry, complex geometry, and topology, and brings the reader close to the [...] Contents

Fields of interest
Algebraic Geometry; Several Complex Variables and Analytic Spaces; Topology

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days

2012. XII, 329 p. 17 illus., 1 in color. (Universitext)
Softcover
$74.95

Ancient Astronomical Observations and the Study of the Moon’s Motion (1691-1757)

The discovery of a gradual acceleration in the moon’s mean motion by Edmond Halley in the last decade of the seventeenth century led to a revival of interest in reports of astronomical observations from antiquity. These observations provided the only means to study the moon’s ‘secular acceleration’, as this newly-discovered acceleration became known. This book contains the first detailed study of the use of ancient and medieval astronomical observations in order to investigate the moon’s secular acceleration from its discovery by Halley to the establishment of the magnitude of the acceleration by Richard Dunthorne, Tobias Mayer and Jérôme Lalande in the 1740s and 1750s. Making extensive use of previously unstudied manuscripts, this work shows how different astronomers used the same small body of preserved ancient observations in different ways in their work on the secular acceleration. In addition, this work looks at the wider context of the study of the moon’s secular acceleration, including its[...]

Features
Historians of astronomy, historians of the ancient world, and astronomers will be enriched by the unique and captivating topics covered in this book. This volume contains the first detailed study of the use of ancient and medieval astronomical observations in order to investigate the moon’s secular acceleration—from its discovery by Edmond Halley to the establishment of the magnitude of the acceleration by [...] Contents

Fields of interest
History of Mathematics; Astronomy, Observations and Techniques; Astronomy, Astrophysics and Cosmology; History and Philosophical Foundations of Physics

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. XIV, 154 p. 13 illus. (Sources and Studies in the History of Mathematics and Physical Sciences)
Hardcover
$124.00
ISBN 978-1-4614-2148-1
Anticipatory Systems

Robert Rosen was not only a biologist, he was also a brilliant mathematician whose extraordinary contributions to theoretical biology were tremendous. Founding, with this book, the area of Anticipatory Systems Theory is a remarkable outcome of his work in theoretical biology. This second edition of his book Anticipatory Systems, has been carefully revised and edited, and includes an Introduction by Judith Rosen. It has also been expanded with a set of Prolegomena by Dr. Mihai Nadin, who offers an historical survey of this fast growing field since the original work was published. There is also some exciting new work, in the form of an additional chapter on the Ontology of Anticipation, by Dr. John Kineman. An addendum—with autobiographical reminiscences by Robert Rosen, himself, and a short story by Judith Rosen about her father—adds a personal touch. This work, now available again, serves as the guiding foundations for the growing field of Anticipatory Systems and, indeed, any area of science.[…]

Features
Robert Rosen was not only a biologist, he was also a brilliant mathematician whose extraordinary contributions to theoretical biology were tremendous. Founding, with this book, the area of Anticipatory Systems Theory is a remarkable outcome of his work in theoretical biology. This second edition of his book Anticipatory Systems, has been carefully revised and edited, and includes an […]

Contents

Fields of interest
Mathematical and Computational Biology; Systems Biology; Systems Theory, Control

Target groups
Research

Type of publication
Monograph

Automated Solution of Differential Equations by the Finite Element Method

The FEniCS Book

This book is a tutorial written by researchers and developers behind the FEniCS Project and explores an advanced, expressive approach to the development of mathematical software. The presentation spans mathematical background, software design and the use of FEniCS in applications. Theoretical aspects are complemented with computer code which is available as free/open source software. The book begins with a special introductory tutorial for beginners. Following are chapters in Part I addressing fundamental aspects of the approach to automating the creation of finite element solvers. Chapters in Part II address the design and implementation of the FEniCS software. Chapters in Part III present the application of FEniCS to a wide range of applications, including fluid flow, solid mechanics, electromagnetics and geophysics.

Features
This book is written by researchers and developers behind the FEniCS Project and explores an advanced, expressive approach to the development of mathematical software. The presentation spans mathematical background, software design and the use of FEniCS in applications. Theoretical aspects are complemented with computer code which is available as free/open source software. The book begins with a tutorial for […]

Fields of interest
Mathematical Software; Theoretical, Mathematical and Computational Physics; Numeric Computing; Appl. Mathematics / Computational Methods of Engineering; Computational Science and Engineering; Earth Sciences (general)

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XII, 723 p. 346 illus., 52 in color. (Lecture Notes in Computational Science and Engineering, Vol. 84) Hardcover

$89.95
ISBN 978-3-642-23098-1

Data Mining for Biomarker Discovery

Biomarker discovery is an important area of biomedical research that may lead to significant breakthroughs in disease analysis and targeted therapy. Biomarkers are biological entities whose alterations are measurable and are characteristic of a particular biological condition. Discovering, managing, and interpreting knowledge of new biomarkers are challenging and attractive problems in the emerging field of biomedical informatics. This volume is a collection of state-of-the-art research into the application of data mining to the discovery and analysis of new biomarkers. Presenting new results, models and algorithms, the included contributions focus on biomarker data integration, information retrieval methods, and statistical machine learning techniques. This volume is intended for students, and researchers in bioinformatics, proteomics, and genomics, as well engineers and applied scientists interested in the interdisciplinary application of data mining techniques.

Features
Data Mining for Biomarker Discovery is designed to motivate collaboration and discussion among various disciplines and will be of interest to students and researchers in engineering, computer science, applied mathematics, medicine, and anyone interested in the interdisciplinary application of data mining techniques. Biomarker discovery is an important area of biomedical research that can lead to […]

Contents

Fields of interest
Operations Research, Mathematical Programming; Data Mining and Knowledge Discovery; Health Informatics; Biochemical Engineering

Target groups
Research

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days

2012. XIV, 246 p. 92 illus., 58 in color. (Springer Optimization and Its Applications, Vol. 65) Hardcover

$124.00
ISBN 978-1-4614-2106-1
Demand Flexibility in Supply Chain Planning

This work encapsulates the essential developments in this field into a single resource, as well as to set an agenda for further development in the field. This brief focuses on the demand flexibility in supply chains with fragmented results distributed throughout the literature. These results have strong implications for managing real-world complex operations planning problems. This book exploits dimensions of demand flexibility in supply chains and characterizes the best fit between demand properties and operations capabilities and constraints. The origins and seminal works are traced in integrated demand and operations planning and an in-depth documentation is provided for the current state of the art. Systems with inherent costs and constraints that must respond to some set of demands at a minimum cost are examined. Crucial unanswered questions are explored and the high-value research directions are highlighted for both practice and for the development of new and interesting optimization models.[...]

Features
This work encapsulates the essential developments in this field into a single resource, as well as to set an agenda for further development in the field. This brief focuses on the demand flexibility in supply chains with fragmented results distributed throughout the literature. These results have strong implications for managing real-world complex operations planning problems. This book exploits [...]

Contents

Fields of interest
Operations Research, Mathematical Programming; Engineering Economics, Organization, Logistics; Marketing; Optimization; Production / Logistics

Type of publication
Research

Due: March 31, 2012

2012. XIV, 430 p. 83 illus., 23 in color. Hardcover
$99.00
ISBN 978-1-4614-2280-8

Discrete-Time Linear Systems

Theory and Design with Applications

Discrete-Time Linear Systems: Theory and Design with Applications combines system theory and design in order to show the importance of system theory and its role in system design. The book focuses on system theory (including optimal state feedback and optimal state estimation) and system design (with applications to feedback control systems and wireless transceivers, plus system identification and channel estimation).

Features
Discrete-Time Linear Systems: Theory and Design with Applications combines system theory and design in order to show the importance of system theory and its role in system design. The book focuses on system theory (including optimal state feedback and optimal state estimation) and system design (with applications to feedback control systems and wireless transceivers, plus system identification and [...]

Contents

Fields of interest
Systems Theory, Control; Calculus of Variations and Optimal Control; Optimization; Circuits and Systems

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Due: March 31, 2012

2012. XIV, 430 p. 83 illus., 23 in color. Hardcover
$99.00
ISBN 978-1-4614-2280-8

Logic: a Brief Course

This short book, geared towards undergraduate students of computer science and mathematics, is specifically designed for a first course in mathematical logic. A proof of Gödel’s completeness theorem and its main consequences is given using Robinson’s completeness theorem and Gödel’s compactness theorem for propositional logic. The reader will familiarize himself with many basic ideas and artifacts of mathematical logic: a non-ambiguous syntax, logical equivalence and consequence relation, the Davis-Putnam procedure, Tarski semantics, Herbrand models, the axioms of identity, Skolem normal forms, nonstandard models and, interestingly enough, proofs and refutations viewed as graphic objects. The mathematical prerequisites are minimal: the book is accessible to anybody having some familiarity with proofs by induction. Many exercises on the relationship between natural language and formal proofs make the book also interesting to a wide range of students of philosophy and linguistics.

Features
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Contents

Fields of interest
Mathematical Logic and Foundations; Mathematical Logic and Formal Languages; Semantics

Target groups
Upper undergraduate

Type of publication
Graduate/advanced undergraduate textbook

Due: February 24, 2012

2012. X, 130 p. (La Matematica per il 3+2) Softcover
$49.95
ISBN 978-88-470-2360-4

Logic: a Brief Course

This short book, geared towards undergraduate students of computer science and mathematics, is specifically designed for a first course in mathematical logic. A proof of Gödel’s completeness theorem and its main consequences is given using Robinson’s completeness theorem and Gödel’s compactness theorem for propositional logic. The reader will familiarize himself with many basic ideas and artifacts of mathematical logic: a non-ambiguous syntax, logical equivalence and consequence relation, the Davis-Putnam procedure, Tarski semantics, Herbrand models, the axioms of identity, Skolem normal forms, nonstandard models and, interestingly enough, proofs and refutations viewed as graphic objects. The mathematical prerequisites are minimal: the book is accessible to anybody having some familiarity with proofs by induction. Many exercises on the relationship between natural language and formal proofs make the book also interesting to a wide range of students of philosophy and linguistics.

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Fields of interest
Mathematical Logic and Foundations; Mathematical Logic and Formal Languages; Semantics

Target groups
Upper undergraduate

Type of publication
Graduate/advanced undergraduate textbook

Due: February 24, 2012

2012. X, 130 p. (La Matematica per il 3+2) Softcover
$49.95
ISBN 978-88-470-2360-4
Modeling, Simulation and Optimization of Complex Processes


This proceedings volume contains a selection of papers presented at the Fourth International Conference on High Performance Scientific Computing held at the Hanoi Institute of Mathematics, Vietnamese Academy of Science and Technology (VAST), March 2-6, 2009. The conference was organized by the Hanoi Institute of Mathematics, the Interdisciplinary Center for Scientific Computing (IWR), Heidelberg, and its Heidelberg Graduate School of Mathematical and Computational Methods for the Sciences, and Ho Chi Minh City University of Technology. The contributions cover the broad interdisciplinary spectrum of scientific computing and present recent advances in theory, development of methods, and applications in practice. Subjects covered are mathematical modelling, numerical simulation, methods for optimization and control, parallel computing, software development, applications of scientific computing in physics, mechanics, biology and medicine, engineering, hydrology problems, transport, communication, etc.

Features

This proceedings volume contains a selection of papers presented at the Fourth International Conference on High Performance Scientific Computing held at the Hanoi Institute of Mathematics, Vietnamese Academy of Science and Technology (VAST), March 2-6, 2009. The conference was organized by the Hanoi Institute of Mathematics, the Interdisciplinary Center for Scientific Computing (IWR), Heidelberg, and its...

Fields of interest

Computational Science and Engineering; Mathematical Modeling and Industrial Mathematics; Optimization; Theoretical, Mathematical and Computational Physics; Appl. Mathematics / Computational Methods of Engineering

Target groups

Research

Type of publication

Proceedings

Usually dispatched within 3 to 5 business days

2012, IX, 337 p. 88 illus., 45 in color. Hardcover

$149.00

ISBN 978-3-642-24608-1

Phase Change in Mechanics

Predictive theories of phenomena involving phase change with applications in engineering are investigated in this volume, e.g. solid-liquid phase change, volume and surface damage, and phase change involving temperature discontinuities. Many other phase change phenomena such as solid-solid phase change in shape memory alloys and vapor-liquid phase change are also explored. Modeling is based on continuum thermomechanics. This involves a renewed principle of virtual power introducing the power of the microscopic motions responsible for phase change. This improvement yields a new equation of motion related to microscopic motions, beyond the classical equation of motion for macroscopic motions. The new theory sensibly improves the phase change modeling. For example, when warm rain falls on frozen soil, the dangerous black ice phenomenon can be comprehensively predicted. In addition, novel equations predict the evolution of clouds, which are themselves a mixture of air, liquid water and vapor.

Features

Predictive theories of phenomena involving phase change with applications in engineering are investigated in this volume, e.g. solid-liquid phase change, volume and surface damage, and phase change involving temperature discontinuities. Many other phase change phenomena such as solid-solid phase change in shape memory alloys and vapor-liquid phase change are also explored. Modeling is based on continuum...
### Pyomo – Optimization Modeling in Python

This book provides a complete and comprehensive reference/guide to Pyomo (Python Optimization Modeling Objects) for both beginning and advanced modelers, including students at the undergraduate and graduate levels, academic researchers, and practitioners. The text illustrates the breadth of the modeling and analysis capabilities that are supported by the software and support of complex real-world applications. Pyomo is an open source software package for formulating and solving large-scale optimization and operations research problems. The text begins with a tutorial on simple linear and integer programming models. A detailed reference of Pyomo’s modeling components is illustrated with extensive examples, including a discussion of how to load data from data sources like spreadsheets and databases. Chapters describing advanced modeling capabilities for nonlinear and stochastic optimization are also included. The Pyomo software provides familiar modeling features within Python, a powerful dynamic environment.

#### Features

This book provides a complete and comprehensive guide to Pyomo (Python Optimization Modeling Objects) for both beginning and advanced modelers, including students at the undergraduate and graduate levels, academic researchers, and practitioners. Modeling is a fundamental process in many aspects of scientific research, engineering, and business. This text beautifully illustrates the breadth of the modeling.

#### Contents


#### Fields of interest

Optimization; Simulation and Modeling; Computational Mathematics and Numerical Analysis; Mathematical Applications in Computer Science; Mathematical Software; Operations Research, Mathematical Programming

#### Target groups

Graduate

#### Type of publication

Graduate/advanced undergraduate textbook

#### Usually dispatched within 3 to 5 business days


$59.95

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### Quantum Field Theory and Gravity

#### Conceptual and Mathematical Advances in the Search for a Unified Framework

One of the most challenging problems of contemporary theoretical physics is the mathematically rigorous construction of a theory which describes gravitation and the other fundamental physical interactions within a common framework. The physical ideas which grew from attempts to develop such a theory require highly advanced mathematical methods and radically new physical concepts. This book presents different approaches to a rigorous unified description of quantum fields and gravity. It contains a carefully selected cross-section of lively discussions which took place in autumn 2010 at the fifth conference “Quantum field theory and gravity - Conceptual and mathematical advances in the search for a unified framework” in Regensburg, Germany. In the tradition of the other proceedings covering this series of conferences, a special feature of this book is the exposition of a wide variety of approaches, with the intention to facilitate a comparison. The book is mainly addressed to mathematicians and physicists.

#### Features

One of the most challenging problems of contemporary theoretical physics is the mathematically rigorous construction of a theory which describes gravitation and the other fundamental physical interactions within a common framework. The physical ideas which grew from attempts to develop such a theory require highly advanced mathematical methods and radically new physical concepts. This book presents different approaches to a rigorous unified description of quantum fields and gravity. It contains a carefully selected cross-section of lively discussions which took place in autumn 2010 at the fifth conference “Quantum field theory and gravity - Conceptual and mathematical advances in the search for a unified framework” in Regensburg, Germany. In the tradition of the other proceedings covering this series of conferences, a special feature of this book is the exposition of a wide variety of approaches, with the intention to facilitate a comparison. The book is mainly addressed to mathematicians and physicists.

#### Contents


#### Fields of interest

Global Analysis and Analysis on Manifolds; Field Theory and Polynomials

#### Target groups

Research

#### Type of publication

Contributed volume

#### Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XIV, 380 p. 34 illus. Hardcover

$129.00
Rainbow Connections of Graphs

Rainbow connections are natural combinatorial measures that are used in applications to secure the transfer of classified information between agencies in communication networks. Rainbow Connections of Graphs covers this new and emerging topic in graph theory and brings together a majority of the results that deal with the concept of rainbow connections, first introduced by Chartrand et al. in 2006. The authors begin with an introduction to rainbow connectedness, rainbow coloring, and rainbow connection number. The work is organized into the following categories, computation of the exact values of the rainbow connection numbers for some special graphs, algorithms and complexity analysis, upper bounds in terms of other graph parameters, rainbow connection for dense and sparse graphs, for some graph classes and graph products, rainbow k-connectivity and k-rainbow index, and, rainbow vertex-connection number. Rainbow Connections of Graphs appeals to researchers and graduate students in the field of graph theory.

Features
Rainbow connections are natural combinatorial measures that are used in applications to secure the transfer of classified information between agencies in communication networks. Rainbow Connections of Graphs covers this new and emerging topic in graph theory and brings together a majority of the results that deal with the concept of rainbow connections, first introduced by Chartrand et al. in 2006. 

Contents

References.

Fields of interest
Graph Theory; Data Structures, Cryptology and Information Theory; Number Theory

Target groups
Research

Type of publication
Brief

Usually dispatched within 3 to 5 business days

2012. VIII, 103 p. (SpringerBriefs in Mathematics) Softcover

$49.95
Spherical Harmonics and Approximations on the Unit Sphere: An Introduction

These notes provide an introduction to the theory of spherical harmonics in an arbitrary dimension as well as an overview of classical and recent results on some aspects of the approximation of functions by spherical polynomials and numerical integration over the unit sphere. The notes are intended for graduate students in the mathematical sciences and researchers who are interested in solving problems involving partial differential and integral equations on the unit sphere, especially on the unit sphere in three-dimensional Euclidean space. Some related work for approximation on the unit disk in the plane is also briefly discussed, with results being generalizable to the unit ball in more dimensions.

Features
These notes provide an introduction to the theory of spherical harmonics in an arbitrary dimension as well as an overview of classical and recent results on some aspects of the approximation of functions by spherical polynomials and numerical integration over the unit sphere. The notes are intended for graduate students in the mathematical sciences and researchers who are interested in solving problems in this area.

Contents
1 Preliminaries.- 2 Spherical Harmonics.- 3 Differentiation and Integration over the Sphere.- 4 Approximation Theory.- 5 Numerical Quadrature.- 6 Applications: Spectral Methods.

Fields of interest
Numerical Analysis; Special Functions; Approximation Theory; Numerical Quadrature; Applications in Computer Science.

Target groups
Researchers in the fields of numerical analysis and special functions.

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

Stochastic Reachability Analysis of Hybrid Systems

Stochastic reachability analysis (SRA) is a method of analyzing the behavior of control systems which mix discrete and continuous dynamics. For probabilistic discrete systems it has been shown to be a practical verification method but for stochastic hybrid systems it can be rather more. As a verification technique SRA can assess the safety and performance of, for example, autonomous systems, robots and aircraft path planning and multi-agent coordination but it can also be used for the adaptive control of such systems. Stochastic Reachability Analysis of Hybrid Systems is a self-contained and accessible introduction to this novel topic in the analysis and development of stochastic hybrid systems. Beginning with the relevant aspects of Markov models and introducing stochastic hybrid systems, the book then moves on to coverage of reachability analysis for stochastic hybrid systems. Following this build up, the core of the text first formally defines the concept of reachability in the stochastic[...]

Features
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Contents

Fields of interest
Systems Theory, Control; Control; Mathematical Applications in Computer Science

Target groups
Researchers in the fields of systems theory, control, and mathematical applications in computer science.

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

Tensor Spaces and Numerical Tensor Calculus

Special numerical techniques are already needed to deal with nxn matrices for large n. Tensor data are of size nmxnxn^d, where n^d exceeds the computer memory by far. They appear for problems of high spatial dimensions. Since standard methods fail, a particular tensor calculus is needed to treat such problems. The monograph describes the methods how tensors can be practically treated and how numerical operations can be performed. Applications are problems from quantum chemistry, approximation of multivariate functions, solution of pde, etc., with stochastic coefficients, etc.

Features
Special numerical techniques are already needed to deal with nxn matrices for large n. Tensor data are of size nmxnxn^d, where n^d exceeds the computer memory by far. They appear for problems of high spatial dimensions. Since standard methods fail, a particular tensor calculus is needed to treat such problems. The monograph describes the methods how tensors can be practically treated and[...]

Contents

Fields of interest
Numerical Analysis; Theoretical and Computational Chemistry; Theoretical, Mathematical and Computational Physics

Target groups
Researchers in the fields of numerical analysis, computational chemistry, and theoretical and computational physics.

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. IX, 244 p. 19 illus., 11 in color. (Lecture Notes in Mathematics, Vol. 2044) Softcover

$59.95

K. Atkinson, University of Iowa, Iowa City, IA, USA; W. Han, University of Iowa, Iowa City, IA, USA

L.M. Bujorianu, University of Manchester, UK

W. Hackbusch, Max-Planck Institute for Mathematics in the Sciences, Leipzig, Germany


$149.00
ISBN 978-3-642-28026-9

2012. XVII, 248 p. 14 illus., 8 in color. (Communications in Mathematical Sciences, Vol. 12) Hardcover

$109.00
ISBN 978-3-642-25982-1
The Cinderella.2 Manual

Working with The Interactive Geometry Software

Cinderella.2, the new version of the well-known interactive geometry software, has become an even more versatile tool than its predecessor. It now consists of three connected parts: An enhanced geometry component with new features like transformations and dynamic fructals, a simulation laboratory to explore basic laws of Newton mechanics, and an easy to use scripting language that enables any user to quickly extend the software even further. The Cinderella.2 Manual is the first book to offer complete instruction and techniques for using Cinderella.2. It contains a wealth of examples, in particular for the CindyScript language which interacts smoothly with the geometry and simulation components, and a complete reference. Cinderella.2 is Math in Motion all the way, and this book provides comprehensive documentation from start to finish.

Features

Cinderella.2, the new version of the well-known interactive geometry software, has become an even more versatile tool than its predecessor. It now consists of three connected parts: An enhanced geometry component with new features like transformations and dynamic fructals, a simulation laboratory to explore basic laws of Newton mechanics, and an easy to use scripting language that enables any user to quickly extend the software even further.

Fields of interest

Geometry; Electronics and Microelectronics; Instrumentation; Algorithms; Classical Continuum Mechanics; Programming Techniques

Target groups

Lower undergraduate

Type of publication

Graduate textbook

Due:

March 28, 2012

2012, XIV, 458 p. 377 illus., 300 in color. Hardcover

$49.95

ISBN 978-3-540-34924-2

The Linear Algebra a Beginning Graduate Student Ought to Know

Linear algebra is a living, active branch of mathematics which is central to almost all other areas of mathematics, both pure and applied, as well as to computer science, to the physical, biological, and social sciences, and to engineering. It encompasses an extensive corpus of theoretical results as well as a large and rapidly-growing body of computational techniques. Unfortunately, in the past decade, the content of linear algebra courses required to complete an undergraduate degree in mathematics has been depleted to the extent that they fail to provide a sufficient theoretical or computational background. Students are not only less able to formulate or even follow mathematical proofs, they are also less able to understand the mathematics of the numerical algorithms they need for applications. Certainly, the material presented in the average undergraduate course is insufficient for graduate study. This book is intended to fill the gap which has developed by providing enough theoretical and practical material for applications. Fortunately, in the past decade, the classical theory of linear algebra has been enriched by new results and by the development of new fields of interest such as numerical analysis, and by the development of new applications to the physical, biological, and social sciences.

Features

Linear algebra is a living, active branch of mathematics which is central to almost all other areas of mathematics, both pure and applied, as well as to computer science, to the physical, biological, and social sciences, and to engineering. It encompasses an extensive corpus of theoretical results as well as a large and rapidly-growing body of computational techniques. Unfortunately, in the past decade, the classical theory of linear algebra has been enriched by new results and by the development of new fields of interest such as numerical analysis, and by the development of new applications to the physical, biological, and social sciences.

Fields of interest

Linear and Multilinear Algebra; Matrix Theory; Associative Rings and Algebras; Non-associative Rings and Algebras; Numeric Computing; Algorithms

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days

March 31, 2012

2012, XI, 497 p. 199 illus. Softcover

$69.95


The Playful Machine

Theoretical Foundation and Practical Realization of Self-Organizing Robots

Autonomous robots may become our closest companions in the near future. While the technology for physically building such machines is already available today, a problem lies in the generation of the behavior for such complex machines. Nature proposes a solution: young children and higher animals learn to master their complex brain-body systems by playing. Can this be an option for robots? How can a machine be playful? The book provides answers by developing a general principle—homeoconsultation, the dynamical symbiosis between brain, body, and environment—that is shown to drive robots to self-determined, individual development in a playful and obviously embodied way. The book also develops guided self-organization, a new method.

Features

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Fields of interest

Applications of Mathematics; Artificial Intelligence (incl. Robotics)

Target groups

Research

Type of publication

Monograph

Due:

February 29, 2012


$109.00

ISBN 978-3-642-20252-0
The Vexing Case of Igor Shafarevich, a Russian Political Thinker

This is the first comprehensive study about the non-mathematical writings and activities of the Russian algebraic geometer and number theorist Igor Shafarevich (b. 1923). In the 1970s Shafarevich was a prominent member of the dissidents’ human rights movement and a noted author of clandestine anti-communist literature in the Soviet Union. Shafarevich’s public image suffered a terrible blow around 1989 when he was declared as a dangerous ideologue of anti-Semitism due to his newly surfaced old manuscript Russophobia. The scandal culminated when the President of the National Academy of Sciences of the United States suggested that Shafarevich, an honorary member, resign. The present study establishes that the allegations about anti-Semitism in Shafarevich’s texts were unfounded and that Shafarevich’s terrible reputation was cemented on a false basis.

Features
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A Primer of Neuroimmunological Disease

A Primer of Neuroimmunological Disease is a significant new resource for anyone interested in conditions such as multiple sclerosis (MS), myasthenia gravis, and neurological infections. It is a practical and balanced guide to the diagnosis and treatment of neuroimmunological disease. A Primer of Neuroimmunological Disease distinguishes itself by providing a range of features not generally included in texts on neuroimmunology. These include broad presentation of information in the form of figures and tables; strong cohesion among topics by focusing on a few prototypic neuroimmunological diseases, which serve as a foundation from which to explore other neuroimmunological diseases; a single author perspective, with references across chapters; and a focus on the overlap between neuroimmunological and neuroinfectious diseases.

Features
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Contents

Fields of interest
Neurology; Immunology; Infectious Diseases; Neurosciences

Target groups
Professional/practitioner

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

2012. XV, 208 p. 54 illus., 31 in color. Hardcover

$189.00
Chemical and Physical Behavior of Human Hair

Human hair is the subject of a remarkably wide range of scientific investigations. Its chemical and physical properties are of importance to the cosmetics industry, forensic scientists and to biomedical researchers. The fifth edition of this book confirms its position as the definitive monograph on the subject. Previous editions were recognized as "concise and thorough" (Journal of the American Chemical Society), "an invaluable resource" (Canadian Forensic Science Society Journal), and "highly recommended" (Textile Research Journal). Chemical and Physical Behavior of Human Hair is a teaching guide and reference volume for cosmetic chemists and other scientists in the hair products industry, academic researchers studying hair and hair growth, textile scientists and forensic specialists. Features of the Fifth Edition: Recent advances in the classification and characterization of the different proteins and genes in IF and keratin associated proteins in human hair are described. The mechanism and...[\]

Features
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Clinical Cardiac MRI

Clinical Cardiac MRI is a comprehensive textbook intended for everyone involved in magnetic resonance imaging of the heart. It is designed both as a useful guide for newcomers to the field and as an aid for those who routinely perform such studies. The first edition, published in 2004-5, was very well received within the cardiac imaging community, and has generally been considered the reference because of its completeness, its clarity, and the number and quality of the illustrations. Moreover, the addition of a CD-ROM showing 50 real-life cases significantly enhanced the value of the book. In this second edition, the aim has been to maintain the same quality while incorporating the newest insights and developments in this rapidly evolving domain of medical imaging. The four editors, all experts in the field, have taken great care to ensure a homogeneous high standard throughout the book. Finally, the selection of 100 real-life cases, added as online material, will further enhance the value of this.[\]

Features
Clinical Cardiac MRI is a comprehensive textbook intended for everyone involved in magnetic resonance imaging of the heart. It is designed both as a useful guide for newcomers to the field and as an aid for those who routinely perform such studies. The first edition, published in 2004-5, was very well received within the cardiac imaging community, and has generally been considered the reference.[\]

Contents
Cardiac MR Physics.- MR Contrast Agents for Cardiac Imaging.- Practical Setup.- Cardiac Anatomy.- Cardiovascular MR Imaging Planes and Segmentation.- Cardiac Function.- Myocardial Perfusion.- Ischemic Heart Disease.- Nonischemic Myocardial Disease.- Pulmonary Hypertension.- Heart Failure and Heart Transplantation.- Pericardial Disease.- Cardiac Masses.- Valvular Heart Disease.- Coronary Artery Disease.- Congenital Heart Disease.- Great Vessels.- MR-Guided Cardiac Catheterization.- Cardiac Modelling.- Future Perspectives.- General Conclusion.

Fields of interest
Imaging / Radiology; Diagnostic Radiology; Cardiology; Pathology

Target groups
Professional/practitioner

Type of publication
Professional book

Due: March 28, 2012

2012. XII, 709 p. 535 illus., 165 in color. With online files/ update. (Diagnostic Imaging) Hardcover

$319.00
ISBN 978-1-84882-520-8
Clinical Research Informatics

The purpose of the book is to provide an overview of clinical research (types), activities, and areas where informatics and IT could fit into various activities and business practices. This book will introduce and apply informatics concepts only as they have particular relevance to clinical research settings.

Features
Clinical research informatics (CRI) is the application of informatics principles and techniques to support the spectrum of activities and business processes that instantiate clinical research. Informatics, defined generally as the intersection of information and computer science with a health-related discipline, has a foundation drawn from many well-established, theory-based disciplines, including computer science.

Contents

Fields of interest
Health Informatics; Health Administration; Laboratory Medicine

Target groups
Research

Type of publication
Reference work

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. IX, 419 p. 29 illus., 15 in color. (Health Informatics) Hardcover
$89.95 ISBN 978-1-84882-447-8

Contemporary Coloproctology

Contemporary Coloproctology covers colorectal surgery, as practiced today, in an easily accessible format with emphasis on bringing key facts rapidly into focus. It is ideal reading both for the medical trainee and the practicing colorectal surgeon. As well as a succinct presentation of the current colorectal knowledge base, each chapter contains practical advice and pearls of wisdom from established practicing clinicians. A unique feature of the format is the identification of key references and questions and scenarios that present real life decisions in colorectal surgery. Edited and authored by outstanding surgeons in their fields, this book brings the reader expertise in surgery and management across the various conditions encountered in coloproctology.

Features
Contemporary Coloproctology covers colorectal surgery, as practiced today, in an easily accessible format with emphasis on bringing key facts rapidly into focus. It is ideal reading both for the medical trainee and the practicing colorectal surgeon. As well as a succinct presentation of the current colorectal knowledge base, each chapter contains practical advice and pearls of wisdom from established practicing clinicians. A unique feature of the format is the identification of key references and questions and scenarios that present real life decisions in colorectal surgery. Edited and authored by outstanding surgeons in their fields, this book brings the reader expertise in surgery and management across the various conditions encountered in coloproctology.

Contents

Fields of interest
Colorectal Surgery; Proctology; Medicine (general)

Target groups
Professional/practitioner

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. XIV, 659 p. 94 illus., 53 in color. Hardcover
$239.00 ISBN 978-0-85729-888-1

Coronary Heart Disease

Coronary Heart Disease: Clinical, Pathological, Imaging, and Molecular Profiles presents a comprehensive picture of ischemic heart disease for practitioners, students, and investigators dealing with the varied facets of this complex subject. Individual chapters introduce the anatomy of the coronary blood vessels and cardiac development, while others consider current imaging modalities utilized for ischemic heart disease, including stress echo, nuclear diagnostic tests, non-invasive coronary artery imaging, and coronary angiography. Imaging chapters provide key clinical information on techniques and indications, and include examples of both normal and abnormal patterns. The principle thrust of the book concerns coronary atherosclerosis, the pathology of which is presented in conjunction with the results of anatomic, non-invasive imaging and angiographic studies. Related chapters cover atherogenesis, presenting new insights into the pathophysiology of the vulnerable plaque, the role of progenitor cells, and atherogenesis.

Features
Coronary Heart Disease: Clinical, Pathological, Imaging, and Molecular Profiles presents a comprehensive picture of ischemic heart disease for practitioners, students, and investigators dealing with the varied facets of this complex subject. Individual chapters introduce the anatomy of the coronary blood vessels and cardiac development, while others consider current imaging modalities.

Contents

Fields of interest
Cardiology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. XV, 540 p. 473 illus., 166 in color. Hardcover
$239.00 ISBN 978-1-4614-1474-2
<table>
<thead>
<tr>
<th>Title</th>
<th>ISBN</th>
<th>Price</th>
<th>Publication Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutaneous Manifestations of Infection in the Immunocompromised Host</td>
<td>978-1-4419-1577-1</td>
<td>$189.00</td>
<td>2012</td>
<td>The updated second edition of Cutaneous Manifestations of Infection in the Immunocompromised Host is an invaluable reference for physicians and ancillary medical professionals involved in the care of patients with impaired immune systems due to cancer, chemotherapy, systemic steroids and other immunosuppressive drugs, HIV/AIDS or organ transplantation. This volume will help you recognize skin lesions and diagnose their infectious cause. Textbook features include: Over 350 color images demonstrating pathognomonic, atypical, rare and routine skin lesions. Tables for differential diagnosis of different skin lesions in the immunocompromised host. Complete coverage of infectious pathogens with the patterns of infection and the likely causes in various clinical settings (HIV/AIDS versus solid organ transplantation versus neutropenia post-chemotherapy versus bone marrow recovery post hematopoietic stem cell transplantation). New chapter discussing the role of viruses.</td>
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<tr>
<td>Disorders of Sex Development: An Integrated Approach to Management</td>
<td>978-3-642-22963-3</td>
<td>$219.00</td>
<td>2012</td>
<td>The rapid advances in medicine over the last 50 years have totally changed the outlook for children with disorders of sex development (DSD), but there is still much to learn. This book crystallizes the combined experience of a leading dedicated unit over 25 years in delivering expert medical and surgical care to children with DSD in a holistic environment. It documents the most recent advances in the molecular biology and embryology of sex development, and describes each disorder in detail. The clinical presentation and approach to diagnosis are described both for babies and for children presenting later in childhood or at adolescence. The chapters on management highlight all the latest knowledge and include the shared wisdom of the authors on current controversies, such as the timing of surgical treatment. Finally, the authors describe their short-, medium-, and long-term outcomes, which demonstrate the strengths of holistic team management.</td>
</tr>
<tr>
<td>Handbook of Anthropometry</td>
<td>978-1-4419-1787-4</td>
<td>$1,100.00</td>
<td>2012</td>
<td>Although its underlying concept is a relatively simple one—the measurement of the human body and its parts—anthropometry employs a myriad of methods and instruments, and is useful for a variety of purposes, from understanding the impact of disease on individuals to tracking changes in populations over time. The first interdisciplinary reference on the subject, the Handbook of Anthropometry brings this wide-ranging field together: basic theory and highly specialized topics in normal and abnormal anthropometry in terms of health, disease prevention, and intervention. Over 140 self-contained chapters cover up-to-date indices, the latest studies on computerized methods, shape-capturing systems, and bioelectrical impedance, data concerning single tissues and whole-body variables, and reports from different areas of the world. Chapters feature helpful charts and illustrations, cross-references to related chapters are included, and key points are presented in bullet form for ease of comprehension.</td>
</tr>
</tbody>
</table>
Handbook of Parathyroid Diseases
A Case-Based Practical Guide

The Handbook on Parathyroid Diseases presents a comprehensive and concise overview of our current knowledge in the area of parathyroid function, hormone regulation, and disease states. The Handbook educates the reader using a case-based approach presenting current evidence in the field. The material is presented in an easy to read and understandable language and uses a plethora of tables and text boxes where possible. Complex concepts are conveyed in simple and clear language. Leading international experts contribute to this state of the art book providing a true depth of knowledge and practicality.

Features
The Handbook of Parathyroid Diseases presents a comprehensive and concise overview of our current knowledge in the area of parathyroid function, hormone regulation, and disease states. The Handbook educates the reader using a case-based approach presenting current evidence in the field. The material is presented in an easy to read and understandable language and uses a plethora of tables and text boxes where possible. Complex concepts are conveyed in simple and clear language. Leading international experts contribute to this state of the art book providing a true depth of knowledge and practicality.

Contents
Preface.- Foreward.- Mechanisms Underlying Extracellular Calcium Homeostasis.- Preoperative Parathyroid Imaging For the Endocrine Surgeon.- Primary and secondary hyperparathyroidism Testing and Assays.- Symptomatic Primary Hyperparathyroidism Medical therapy.- Surgical Management of Primary Hyperparathyroidism.- Primary Hyperparathyroidism - Asymptomatic Medical Management.- Surgical Management of Asymptomatic Primary Hyperparathyroidism.- Nonclassic, Extraskeletal Manifestations of Primary Hyperparathyroidism: A Brief Review and Possible Mechanisms.- Secondary Hyperparathyroidism.- [...] Fields of interest Internal Medicine; Endocrinology; Surgery; Imaging / Radiology; Geriatrics / Gerontology; Primary Care Medicine

Target groups
Professional/practitioner

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days

2012. XV, 280 p. 54 illus., 47 in color. Softcover

$99.00
ISBN 978-1-4614-2163-4

Imaging of Gynecological Disorders in Infants and Children

This textbook provides a comprehensive review of gynecological imaging in infancy, childhood, and adolescence. Experts from the disciplines of pediatric radiology, gynecology, surgery, and endocrinology have come together to produce a textbook that, while written primarily from the perspective of the radiologist, will be of value to all professionals involved in the management of these patients. The normal development of the female reproductive tract is described in detail through embryological development, normal childhood appearances, and puberty. Congenital abnormalities are addressed in chapters reviewing structural abnormalities of the reproductive tract and disorders of sex development. A symptoms-based approach is followed in chapters devoted to the assessment of the patient with gynecological pain and disorders of menstruation. Disorders of the breast and the imaging of patients with gynecological neoplasia are considered in dedicated chapters.

Features
This textbook provides a comprehensive review of gynecological imaging in infancy, childhood, and adolescence. Experts from the disciplines of pediatric radiology, gynecology, surgery, and endocrinology have come together to produce a textbook that, while written primarily from the perspective of the radiologist, will be of interest to all professionals involved in the management of these patients.

Contents
Diagnostic Techniques . - Embryology of the Female Reproductive Tract . - Structural Abnormalities of the Female Reproductive Tract . - Disorders of Sex Development . - Normal Puberty . - Delayed and Precocious Puberty . - Disorders of Menstruation . - Gynaecological Neoplasia . - Gynaecological Pain . - Disorders of the Breast . - Appendix: Normal Values . - Subject Index . - Fields of interest Imaging / Radiology; Pediatric Radiology; Gynecology; Pediatric Surgery; Urology / Andrology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Due: March 28, 2012

2012. XII, 255 p. 223 illus., 74 in color. (Diagnostic Imaging) Hardcover

$239.00
ISBN 978-3-540-85601-6

Koss’s Cytology of the Urinary Tract with Histopathologic Correlations

This new volume fills the gap in the literature as it will guide urologists and pathologists in the proper utilization of a variety of laboratory methods that are currently available to determine the presence, persistence or progression of tumors of the lower urinary tract. The volume emphasizes cytology of the urinary tract which is preferred over other methods (i.e. biochemical, immunological and cytogenetic) for its accuracy, especially for the important high grade tumors. This volume will appeal to urologists as well as pathologists, cytopathologists and related professions. The illustrations, nearly all in color, stress the key points of the text and enhance basic understanding of urothelial and other tumors of the urinary tract.

Features
Fifteen years have elapsed since the publication of the original book under the same title. With the passage of time little has changed and the same conceptual mistakes continue to be made in the practice of urinary cytopathology as in the past. For this reason a much simplified new edition of this book with the application of new processing techniques has been thought to be a worthwhile undertaking.

Contents

Fields of interest Pathology; Urology / Andrology

Target groups
Professional/practitioner

Type of publication
Monograph

Online orders shipping within 2-3 days

2012. XVI, 125 p. 81 illus., 71 in color. Hardcover

$139.00
Manual of Neonatal Respiratory Care

This popular book covers the “how-to” of the respiratory care of newborns in outline format. It includes case studies for self-review and is illustrated with high quality radiographic images, figures, tables, and algorithms. Written and edited by international experts, the Third Edition is a thorough update and remains a convenient source of practical information on respiratory physiology, exam techniques, tips for performing procedures, radiography, ventilation, pain management, transport, and discharge planning. Up-to-date clinical information from world experts Case studies Easy-to-consult outline format Condensed information about all of the major mechanical ventilators (e.g., modes, displays, and alarms) The extent of coverage, easy readability, superb organization and practical pearls make this book worthwhile simply a great bargain.

- Journal of Perinatology (review of a previous edition)

Features
This popular book covers the “how-to” of the respiratory care of newborns in outline format. It includes case studies for self-review and is illustrated with high quality radiographic images, figures, tables, and algorithms. Written and edited by international experts, the Third Edition is a thorough update and remains a convenient source of practical information on respiratory physiology, exam [-]

Contents

Fields of interest
Pediatrics; Pneumology/Respiratory System; Intensive / Critical Care Medicine; Anesthesiology; Emergency Medicine

Target groups
Professional/practitioner

Type of publication
Professional book

Usually dispatched within 3 to 5 business days

Myeloproliferative Neoplasms

Critical Concepts and Management

This book focuses on three of the main categories of myeloproliferative neoplasms: polycythemia vera, essential thrombocythemia, and primary myelofibrosis. Relevant laboratory and clinical advances are comprehensively covered, and great emphasis is placed on the practical issues that challenge physicians in their daily practice. The main topics considered thus include contemporary diagnostic approaches, the value and limitations of mutation screening for diagnostic and prognostic purposes, risk stratification in terms of both survival and other disease complications such as leukemic transformation and thrombosis, and modern therapeutic strategies, including conventional drugs, allogeneic stem cell transplantation, and experimental drugs still under study. The reader will find Critical Concepts and Management Recommendations in Myeloproliferative Neoplasms to be an invaluable and up-to-date source of information from leading authorities in the field.

Features
Myeloproliferative neoplasms (MPNs) are clonal stem cell diseases that, under the World Health Organization classification, are subcategorized into eight clinicopathologic entities. The current book focuses on three of these categories: polycythemia vera, essential thrombocythemia, and primary myelofibrosis. A number of important questions regarding the diagnosis, prognosis, and treatment of these diseases ...

Contents

Fields of interest
Hematology; Internal Medicine; Oncology

Target groups
Professional/practitioner

Type of publication
Contributed volume

Due: March 28, 2012

2012. VIII, 240 p. 22 illus., 13 in color. (Hematologic Malignancies) Hardcover

$189.00
ISBN 978-3-642-24988-4

Neonatal Cranial Ultrasonography

Cranial ultrasonography is the most important, accessible, patient friendly, and cheapest neuroimaging technique on the neonatal ward. It provides important information on brain maturation in the (preterm) neonate and enables the detection of frequently occurring brain anomalies. In this second edition of Neonatal Cranial Ultrasonography, the focus is on the basics of the technique, from patient preparation through to screening strategies and the classification of abnormalities. Many new ultrasound images have been included to reflect the improvements in image quality since the first edition. Essential information is provided about both the procedure itself and the normal ultrasound anatomy. Standard technique is described and illustrated, but emphasis is also placed on the value of supplementary acoustic windows. The compact design of the book makes it an ideal and handy reference that will guide the novice but also provide useful information for the more experienced practitioner.

Features
Cranial ultrasonography is the most accessible, patient friendly, and cheapest neuroimaging technique on the neonatal ward. It provides important information on brain maturation in the (preterm) neonate and enables the detection of frequently occurring brain anomalies in both preterm and full term neonates. Furthermore, it can be repeated as often as is necessary. In this second ...

Contents

Fields of interest
Neuroradiology; Pediatrics

Target groups
Professional/practitioner

Type of publication
Professional book

Due: March 28, 2012

2012. XI, 160 p. 86 illus., 75 in color. Softcover

$49.95
ISBN 978-3-642-21319-9
Nuclear Medicine Imaging: An Encyclopedic Dictionary

The rapidly growing area of nuclear medicine imaging receives only limited attention in broad-based medical dictionaries. This encyclopedic dictionary is intended to fill the gap. More than 400 entries of between one and three paragraphs are included, defining and carefully explaining terms in an appropriate degree of detail. The dictionary encompasses concepts used in planar, SPECT, and PET imaging protocols and covers both scanner operations and popular data analysis approaches. In spite of the mathematical complexities in the acquisition and analysis of images, the explanations given are easy to understand and many helpful concrete examples are provided. The book will be ideal for those who wish to obtain a rapid grasp of a concept beyond a definition of a few words but do not have the time to search the reference literature. The almost tutorial-like style accommodates the needs of students, nuclear medicine technologists, and varieties of other medical professionals.

Features
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Real-Time Three-Dimensional Transesophageal Echocardiography

A Step-by-Step Guide

Three-dimensional (3D) transesophageal echocardiography (TEE) is a powerful visual tool which the novice or experienced echocardiographer, cardiologist, or cardiac surgeon can use to achieve a better understanding and assessment of normal and pathological cardiac function and anatomy. A complement to traditional 2D imaging, 3D TEE enables visualization of any cardiac structure from multiple perspectives. For the echocardiographer, it demands a different set of skills for image acquisition and manipulation. Real-Time Three-Dimensional Transesophageal Echocardiography is a practical illustrated step-by-step guide to the latest in 3D technology and image acquisition. Each chapter systematically focuses on different cardiac structures with practical tips to image acquisition. Features: Up-to-date synoptic presentation of essential "how-to" and relevant clinical information. More than 300 color figures. Practical fundamentals, including altered knobology, and how to acquire and manipulate images.

Features

Three-dimensional (3D) transesophageal echocardiography (TEE) is a powerful visual tool which the novice or experienced echocardiographer, cardiologist, or cardiac surgeon can use to achieve a better understanding and assessment of normal and pathological cardiac function and anatomy. A complement to traditional 2D imaging, 3D TEE enables visualization of any cardiac structure from multiple perspectives.

Contents


Fields of interest

Anesthesiology; Imaging; Radiology; Cardiology

Target groups

Professional/practitioner

Type of publication

Professional book

Online orders shipping within 2-3 days

2012, XVI, 234 p. 188 illus., 185 in color. Spiral binding

$49.95

The Manual of Dermatology

The Manual of Dermatology was developed by Dr. J.A. Cafardi. The Manual of Dermatology was developed by Dr. Cafardi at the University of Alabama at Birmingham, Department of Dermatology, and covers broad dermatological topics necessary for any dermatology resident treating patients. Topics include alopecia, medication dosing and management pearls, fungal disorders, genodermatoses, differential diagnoses of various skin diseases, management of infections, surgical anatomy and tips, HIV dermatology, pediatric dermatology, and skin cancer management and terminology. The practicality of this book is unique and includes key clinical data for residents, making it essential as a reference for quick differential diagnoses, work-up tips, management, and treatment options. This quick reference offers a more practical approach to dermatology, with drug names and dosing, and more information on mycology/onychomycosis than any other handbook on the market. The Manual of Dermatology is portable, comprehensive, easily accessible, and is based upon algorithms, tables, and [...] Features

The Manual of Dermatology was developed by Dr. Cafardi at the University of Alabama at Birmingham, Department of Dermatology, and covers broad dermatological topics necessary for any dermatology resident treating patients. Topics include alopecia, medication dosing and management pearls, fungal disorders, genodermatoses, differential diagnoses of various skin diseases, management of infections. [...] Contents


Fields of interest

Dermatology; Primary Care Medicine

Target groups

Professional/practitioner

Type of publication

Professional book

Usually dispatched within 3 to 5 business days

2012, XIII, 573 p. 15 illus. Softcover

$49.95

The Sclera

The Sclera is the definitive text on the diagnosis and treatment of scleral diseases, with in-depth chapters on non-infectious scleritis, infectious scleritis, non-inflammatory diseases of the sclera, and systemic implications of scleral disease. Basic physiology, anatomy, and biochemistry are addressed as well. Written for the ophthalmologist, the revised and updated new edition of The Sclera contains the most current information available on newer characterizations of the composition of the sclera, immune derangements of it, and success in medical and surgical treatment of the inflammatory diseases of the sclera.

Features

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Fields of interest

Ophthalmology; General Practice / Family Medicine

Target groups

Professional/practitioner

Type of publication

Professional book

Usually dispatched within 3 to 5 business days

2012, XII, 320 p. 165 illus., 33 in color. Hardcover

$219.00
ISBN 978-1-4419-6501-1
Tutorials in Endovascular Neurosurgery and Intervventional Neuroradiology

This book aims to provide the trainee and practicing minimally invasive neurological therapist with a comprehensive understanding of the background science and theory that forms the foundation of their work. The contents are based on the tutorial teaching techniques used at the University of Oxford and are authored by the MSc Course Director. The tutorial is a learning episode focussed on a particular topic and intended to guide the student/reader through the background literature, to highlight the research on which standard practices are based and to provide the insights of an experienced practitioner. Each chapter of the book covers a different topic to build a complete review of the subspecialty, with in-depth discussion of all currently used techniques. The literature is reviewed and presented in context to illustrate its importance to the practice of this rapidly expanding field of medical treatment.

Features
This book aims to provide the trainee and practicing minimally invasive neurological therapist with a comprehensive understanding of the background science and theory that forms the foundation of their work. The contents are based on the tutorial teaching techniques used at the University of Oxford and are authored by the MSc Course Director. The tutorial is a learning episode focussed on a particular topic. [...] 

Contents

Fields of interest
Neuroradiology; Neurology; Neurosurgery; Minimally Invasive Surgery

Target groups
Professional/practitioner

Type of publication
Professional book

Due: March 28, 2012

2012. XVI, 361 p. 99 illus., 45 in color. Hardcover
$139.00
ISBN 978-3-642-19153-4

Vortex Formation in the Cardiovascular System

Vortex Formation in the Cardiovascular System will recapitulate the current knowledge about the vortex formation in the cardiovascular system, from mechanics to cardiology. This can facilitate the interaction between basic scientists and clinicians on the topic of the circulatory system. The book begins with a synopsis of the fundamentals aspects of fluid mechanics to give the reader the essential background to address the proceeding chapters. Then the fundamental elements of vortex dynamics will be discussed, explaining the conditions for their formation and the rules governing their dynamics. The main equations are accompanied by mathematical models. Cardiovascular vortex formation is first analyzed in physiological, healthy conditions in the heart chambers and in the large arterial vessels. The analysis is initially presented with an intuitive appeal grounded on the physical phenomena and a focus on its clinical significance. In the proceeding chapters, the knowledge gained from either clinical or [...] 

Features
Vortex formation has received much attention over the past few years. Vortices occur in nature wherever propulsive flow exists; from erupting volcanoes to the ones generated by squid and jellyfish to propel them. There has been particular interest in the wide variety of vortices that develop in the cardiovascular system, particularly in the cardiac chambers and in large arteries. These vortices play [...] 

Contents

Fields of interest
Cardiology; Imaging / Radiology; Interventional Radiology; Biophysics and Biological Physics; Classical Continuum Physics

Target groups
Professional/practitioner

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
February 29, 2012

2012. XII, 164 p. 75 illus., 42 in color. Hardcover
$189.00
ISBN 978-1-4471-2287-6

Meteorology / Climatology

P. Warneck, Max Planck Institute for Chemistry, Mainz, Germany; J. Williams, Max Planck Institute for Chemistry, Mainz, Germany

The Atmospheric Chemist's Companion

Numerical Data for Use in the Atmospheric Sciences

This companion provides a collection of frequently needed numerical data as a convenient desk-top or pocket reference for atmospheric scientists as well as a concise source of information for others interested in this matter. The material contained in this book was extracted from the recent and the past scientific literature; it covers essentially all aspects of atmospheric chemistry. The data are presented primarily in the form of annotated tables while any explanatory text is kept to a minimum. In this condensed form of presentation, the volume may serve also as a supplement to many textbooks used in teaching the subject at various universities. Peter Warneck, a physical chemist specializing in atmospheric chemistry, received the diploma in 1954 and the doctorate in 1956 at the university in Bonn, Germany. In 1959, following several postdoctoral assignments, he joined the GCA Corporation in Bedford, Massachusetts, where he explored elementary processes in the atmospheres of the earth and other [...] 

Features
This companion provides a collection of frequently needed numerical data as a convenient desk-top or pocket reference for atmospheric scientists as well as a concise source of information for others interested in this matter. The material contained in this book was extracted from the recent and the past scientific literature; it covers essentially all aspects of atmospheric chemistry. The data are presented [...] 

Contents

Fields of interest
Meteorology / Climatology; Atmospheric Protection / Air Quality Control / Air Pollution; Thermodynamics

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. X, 436 p. 43 illus., 1 in color. Hardcover
$229.00
ISBN 978-94-007-2274-3
Analysis and Interpretation in the Exact Sciences

Essays in Honour of William Demopoulos

The essays in this volume concern the points of intersection between analytic philosophy and the philosophy of the exact sciences. More precisely, it concern connections between knowledge in mathematics and the exact sciences, on the one hand, and the conceptual foundations of knowledge in general. Its guiding idea is that, in contemporary philosophy of science, there are profound problems of theoretical interpretation– problems that transcend both the methodological concerns of general philosophy of science, and the technical concerns of philosophers of particular sciences. A fruitful approach to these problems combines the study of scientific detail with the kind of conceptual analysis that is characteristic of the modern analytic tradition. Such an approach is shared by these contributors: some primarily known as analytic philosophers, some as philosophers of science, but all deeply aware that the problems of analysis and interpretation link these fields together.

Features

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## Evolutionary Psychology and the Propositional-attitudes

**Two Mechanist Manifestos**

The two essays provide a critical examination of theory and research in the field of evolutionary psychology. The view advanced here is that philosophical materialism and minimalistic assumptions about adaptation serve Darwinian psychology better than the more popular alternative view that relies on cognitive dualism and propositional-attitude psychology to formulate evolutionary psychology theory. A commitment to cognitive dualism is destined to undermine the physical basis of behavior upon which evolutionary theory depends. Many evolutionary psychologists do not see this but are seduced by the easy way in which hypotheses can be formulated using the ‘propositional-attitude’ model. The challenge is to develop a materialistic and mechanistic approach to understanding human cognition and behavior, including linguistic and social behavior.

**Features**

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**Contents**

Preface. Evolutionary Psychology and the Propositional-attitudes: Two Mechanist Manifestos.- Why the Cognitive Turn is a Wrong Turn.- The Imperative Nature of Motivational Endowments/Postscript: The Virtues of 'Weak' Modularity.- Bibliography.- Index.

**Fields of interest**

Philosophy of Mind; Philosophy of Biology; Biological Psychology; Behavioural Sciences; Cognitive Psychology

**Target groups**

Research

**Type of publication**

Brief

**Usually dispatched within 3 to 5 business days**

March 31, 2012

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## Handbook of Risk Theory

**Epistemology, Decision Theory, Ethics, and Social Implications of Risk**

Risk has become one of the main topics in fields as diverse as engineering, medicine and economics, and it is also studied by social scientists, psychologists and legal scholars. But the topic of risk also leads to more fundamental questions such as: What is risk? What can decision theory contribute to the analysis of risk? What does the human perception of risk mean for society? How should we judge whether a risk is morally acceptable or not? Over the last couple of decades questions like these have attracted interest from philosophers and other scholars into risk theory. This handbook provides for an overview into key topics in a major new field of research. It addresses a wide range of topics, ranging from decision theory, risk perception to ethics and social implications of risk, and it also addresses specific case studies. It aims to promote communication and information among all those who are interested in theoretical issues concerning risk and uncertainty: This handbook brings together [...]

**Features**

Risk has become one of the main topics in fields as diverse as engineering, medicine and economics, and it is also studied by social scientists, psychologists and legal scholars. But the topic of risk also leads to more fundamental questions such as: What is risk? What can decision theory contribute to the analysis of risk? What does the human perception of risk mean for society? How should we judge whether [...]

**Contents**


**Fields of interest**

Philosophy of Science; Game Theory, Economics, Social and Behav. Sciences; Operation Research / Decision Theory; Quality Control, Reliability, Safety and Risk; Economic Theory; Philosophy of Technology

**Target groups**

Research

**Type of publication**

Handbook

**Due: February 16, 2012**

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## Probabilities, Laws, and Structures

This volume, the third in this Springer series, contains selected papers from the four workshops organized by the ESF Research Networking Programme “The Philosophy of Science in a European Perspective” (PSE) in 2010: Pluralism in the Foundations of Statistics Points of Contact between the Philosophy of Physics and the Philosophy of Biology The Debate on Mathematical Modeling in the Social Sciences Historical Debates about Logic, Probability and Statistics. The volume is accordingly divided in four sections, each of them containing papers coming from the workshop focussing on one of these themes. While the programme’s core topic for the year 2010 was probability and statistics, the organizers of the workshops embraced the opportunity of building bridges to more or less closely connected issues in general philosophy of science, philosophy of physics and philosophy of the special sciences. However, papers that analyze the concept of probability for various philosophical purposes are clearly a major [...]

**Features**

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**Contents**


**Fields of interest**

Philosophy of Science; Philosophy of the Social Sciences; Philosophy of Biology; Epistemology

**Target groups**

Research

**Type of publication**

Contributed volume

**Usually dispatched within 3 to 5 business days**

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Rudolf Carnap and the Legacy of Logical Empiricism

This Institute’s Yearbook for the most part, documents its recent activities and provides a forum for the discussion of exact philosophy, logical and empirical investigations, and analysis of language. This volume holds a collection of papers on various aspects of the work of Rudolf Carnap by an international group of distinguished scholars.

Features
A collection of papers on various aspects of the work of Rudolf Carnap by an international group of distinguished scholars. The volume shows the rich variety of Carnap’s concerns and his place within important intellectual traditions that shape our thinking even today.

Contents

Fields of interest
Philosophy of Science; History of Philosophy; Logic; Pragmatism

Target groups
Research

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days
March 31, 2012

Social Foundations of Human Space Exploration

This title presents a uniquely human perspective on the quest to explore space and to understand the universe through the lens of the arts, humanities, and social sciences. It considers early stories about the universe in various cultures; recent space fiction; the origins and cultural rationale for the space age; experiences of humans in space and their emerging interactions with robots and artificial intelligence; how humans should treat environments and alien life; and the alternative futures of space exploration and settlement.

Features
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Contents
Early Visions of Not-Earth and Space Fiction.- Origins of the Space Age.- Cultural Rationale for Space.- Humans in Space.- Humans and Posthumans.- Do Rocks Have Rights?- Never Again!.- Space Futures.- Top Ten Things to Know about Space and Society.- Key Words List.

Fields of interest
Philosophy of Technology; Aerospace Technology and Astronautics; Political Science, general; Law of the Sea, Air and Outer Space

Target groups
Research

Type of publication
Brief

Usually dispatched within 3 to 5 business days

2012. XI, 107 p. 4 illus. in color. (SpringerBriefs in Space Development) Softcover

$49.95

Special Sciences and the Unity of Science

Science is a dynamic process in which the assimilation of new phenomena, perspectives, and hypotheses into the scientific corpus takes place slowly. The apparent disparity of the sciences is the unavoidable consequence of this gradual integration process. Some thinkers label this dynamical circumstance a ‘crisis’. However, a retrospective view of the practical results of the scientific enterprise and of science itself, grants us a clear view of the unity of the human knowledge seeking enterprise. This book provides many arguments, case studies and examples in favor of the unity of science. These contributions touch upon various scientific perspectives and disciplines such as: Physics, Computer Science, Biology, Neuroscience, Cognitive Psychology, and Economics.

Features
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Contents

Fields of interest
Philosophy of Science; Logic; Mathematical Methods in Physics

Target groups
Research

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days


$139.00
ISBN 978-94-007-2029-9

R. Creath, Arizona State University, Tempe, AZ, USA (Ed.)

J.A. Dator, University of Hawaii, Honolulu, HI, USA

O. Pombo, Universidade de Lisboa, Lisboa, Portugal; J.M. Torres, Universidad Nacional de Cuyo, Mendoza, Argentina; J. Symons, University of Texas, El Paso, TX, USA; S. Rahman, Université Lille 3, Villeneuve-d’Ascq, France (Eds.)
Physics

3+1 Formalism in General Relativity

Bases of Numerical Relativity

This graduate-level, course-based text is devoted to the 3+1 formalism of general relativity, which also constitutes the theoretical foundations of numerical relativity. The book starts by establishing the mathematical background (differential geometry, hypersurfaces embedded in space-time, foliation of space-time by a family of space-like hypersurfaces), and then turns to the 3+1 decomposition of the Einstein equations, giving rise to the Cauchy problem with constraints, which constitutes the core of 3+1 formalism. The ADM Hamiltonian formulation of general relativity is also introduced at this stage. Finally, the decomposition of the matter and electromagnetic field equations is presented, focusing on the astrophysically relevant cases of a perfect fluid and a perfect conductor (ideal magnetohydrodynamics). The second part of the book introduces more advanced topics: the conformal transformation of the 3-metric on each hypersurface and the corresponding rewriting of the 3+1 Einstein equations, [..]

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Contents


Fields of interest

Numerical and Computational Physics; Classical and Quantum Gravitation, Relativity Theory; Astronomy, Astrophysics and Cosmology; Computational Mathematics and Numerical Analysis

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days April 28, 2012

3+1 Formalism in General Relativity

Bases of Numerical Relativity

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Contents


Fields of interest

Numerical and Computational Physics; Classical and Quantum Gravitation, Relativity Theory; Astronomy, Astrophysics and Cosmology; Computational Mathematics and Numerical Analysis

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days April 28, 2012

Basics of Laser Physics

For Students of Science and Engineering

Basics of Laser Physics provides an introductory presentation of the field of all types of lasers. It contains a general description of the laser, a theoretical treatment and a characterization of its operation as it deals with gas, solid state, free-electron and semiconductor lasers and, furthermore, with a few laser related topics. The different subjects are connected to each other by the central principle of the laser, namely, that it is a self-oscillating system. Special emphasis is put on a uniform treatment of gas and solid-state lasers, on the one hand, and semiconductor lasers, on the other hand. The discussions and the treatment of equations are presented in a way that a reader can immediately follow. The book addresses undergraduate and graduate students of science and engineering. Not only should it enable instructors to prepare their lectures, but it can be helpful to students for preparing for an examination.

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Contents


Fields of interest

Laser Technology and Physics, Photonics; Classical Electrodynamics, Wave Phenomena; Operating Procedures, Materials Treatment; Microwaves, RF and Optical Engineering

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Usually dispatched within 3 to 5 business days April 28, 2012
**Clusters in Nuclei, Vol.2**

Following the pioneering discovery of alpha clustering and of molecular resonances, the field of nuclear clustering is today one of those domains of heavy-ion nuclear physics that faces the greatest challenges, yet also contains the greatest opportunities. After many summer schools and workshops, in particular over the last decade, the community of nuclear molecular physicists has decided to collaborate in producing a comprehensive collection of lectures and tutorial reviews covering the field. This second volume follows the successful Lect. Notes Phys. 818 (Vol.1), and comprises six extensive lectures covering the following topics:

- Microscopic cluster models
- Neutron halo and breakup reactions
- Breakup reaction models for two- and three-cluster projectiles
- Clustering effects within the di-nuclear model
- Nuclear alpha-particle condensates
- Clusters in nuclei: experimental perspectives By promoting new ideas and developments while retaining a pedagogical style...

**Contents**


**Fields of interest**

Nuclear Physics, Heavy Ions, Hadrons

**Target groups**

Research

**Type of publication**

Monograph

**Usually dispatched within 3 to 5 business days**

April 28, 2012

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**Coherent States and Applications in Mathematical Physics**

This book presents the various types of coherent states introduced and studied in the physics and mathematics literature and describes their properties together with application to quantum physics problems. It is intended to serve as a compendium on coherent states and their applications for physicists and mathematicians, stretching from the basic mathematical structures of generalized coherent states in the sense of Perelomov via the semiclassical evolution of coherent states to various specific examples of coherent states (hydrogen atom, quantum oscillator, ...).

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**Contents**

The standard coherent states of quantum mechanics.- The Weyl-Heisenberg group and the coherent states of arbitrary profile.- The coherent states of the Harmonic Oscillator.- From Schrödinger to Fock-Bargmann representation.- Weyl quantization and coherent states: Classical and Quantum observables.- Wigner function.- Coherent states and operator norm estimates.- Product rule and applications.- Husimi functions, frequency sets and propagation.- The Wick and anti-Wick quantization.- The generalized coherent states in the sense of Perelomov.- The SU(1,1) coherent states: Definition and...[...]

**Fields of interest**

Quantum Physics; Applications of Mathematics; Mathematical Methods in Physics

**Target groups**

Research

**Type of publication**

Monograph

**Usually dispatched within 3 to 5 business days**

April 28, 2012

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**Computational Modeling of Biological Systems**

Computational modeling is emerging as a powerful new approach to study and manipulate biological systems. Multiple methods have been developed to model, visualize, and rationally alter systems at various length scales, from atomic resolution to cellular pathways and analysis. Higher time and length scale processes, such as molecular evolution, have also greatly benefited from new breeds of computational approaches. This book provides an overview of the established computational methods used for modeling biologically and medically relevant systems.

**Features**

Computational modeling is emerging as a powerful new approach for studying and manipulating biological systems. Many diverse methods have been developed to model, visualize, and rationally alter these systems at various length scales, from atomic resolution to the level of cellular pathways. Processes taking place at larger time and length scales, such as molecular evolution, have also greatly benefited [...]

**Contents**


**Fields of interest**

Biophysics and Biological Physics; Molecular Medicine; Mathematical and Computational Biology; Computational Biology / Bioinformatics

**Target groups**

Research

**Type of publication**

Monograph

**Usually dispatched within 3 to 5 business days**

April 28, 2012
Electromagnetic Vibration Energy Harvesting Devices

Architectures, Design, Modeling and Optimization

Electromagnetic vibration transducers are seen as an effective way of harvesting ambient energy for the supply of sensor monitoring systems. Different electromagnetic coupling architectures have been employed but no comprehensive comparison with respect to their output performance has been carried out up to now. Electromagnetic Vibration Energy Harvesting Devices introduces an optimization approach which is applied to determine optimal dimensions of the components (magnet, coil and back iron). Eight different commonly applied coupling architectures are investigated. The results show that correct dimensions are of great significance for maximizing the efficiency of the energy conversion. A comparison yields the architectures with the best output performance capability which should be preferably employed in applications. A prototype development is used to demonstrate how the optimization calculations can be integrated into the design flow. Electromagnetic Vibration Energy Harvesting Devices targets...[

Contents


Fields of interest

Electronic Circuits and Devices; Energy Harvesting; Circuits and Systems; Energy Technology

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days

March 31, 2012


$129.00

ISBN 978-94-007-2943-8

Fundamentals of Shallow Water Acoustics

Shallow water acoustics (SWA), the study of how low and medium frequency sound propagates and scatters on the continental shelves of the world’s oceans, has both technical interest and a large number of practical applications. Technically, shallow water poses an interesting medium for the study of acoustic scattering, inverse theory, and propagation physics in a complicated oceanic waveguide. Practically, shallow water acoustics has interest for geophysical exploration, marine mammal studies, and naval applications. Additionally, one notes the very interdisciplinary nature of shallow water acoustics, including acoustical physics, physical oceanography, marine geology, and marine biology. In this specialized volume the authors, all of whom have extensive at-sea experience in US and Russian research efforts, have tried to summarize the main experimental, theoretical, and computational results in shallow water acoustics, with an emphasis on providing physical insight into the topics presented.

Features

Shallow water acoustics (SWA), the study of how low and medium frequency sound propagates and scatters on the continental shelves of the world’s oceans, has both technical interest and a large number of practical applications. Technically, shallow water poses an interesting medium for the study of acoustic scattering, inverse theory, and propagation physics in a complicated oceanic waveguide. Practically, [...]
Linear Molecules

Molecular Constants Mostly from Microwave, Molecular Beam and Sub-Doppler Laser Spectroscopy, Subvol. B

Volume II/29 "Molecular Constants Mostly from Microwave, Molecular Beam, and Sub-Doppler Laser Spectroscopy" is planned to appear as a series A, B, C and D1, D2, D3 for the diamagnetic, and E for the paramagnetic linear and polyatomic species, respectively. Like in the preceding volumes II/24 and II/19, which have appeared in the years around 1999 and 1992, respectively, the diamagnetic substances are arranged in the manner suggested by Hill ('Hill's system', 1900), meaning an almost strict alphabetical order. The ionic species are included in the alphabetical arrangement of the neutral ones in each table. The information is grouped differently in comparison with the previous volumes. All relevant properties of a molecule and the corresponding parameters can be found concentrated under its sum formula in volume II/29. This diminishes the need of turning pages because rotational and related constants, dipole moments, barriers to internal rotation, hyperfine coupling parameters, or Zeeman data were [...] 

Features
Volume II/29 "Molecular Constants Mostly from Microwave, Molecular Beam, and Sub-Doppler Laser Spectroscopy" is planned to appear as a series A, B, C and D1, D2, D3 for the diamagnetic, and E for the paramagnetic linear and polyatomic species, respectively. Like in the preceding volumes II/24 and II/19, which have appeared in the years around 1999 and 1992, respectively, the diamagnetic substances are [...] 

Fields of interest
Physics (general); Atomic/Molecular Structure and Spectra

Target groups
Research

Type of publication
Reference work

Usually dispatched within 3 to 5 business days

2012. 200 p. (Molecules and Radicals, Subvolume 29B) Hardcover

$6,199.00
ISBN 978-3-540-60329-0

P. Pardasani, University of Delhi, India; R.T. Pardasani, University of Delhi, India; R.R. Gupta, India; A. Gupta, University of Delhi, India (Eds.)

Magnetic Susceptibility Data - Part 1.  

Magnetic Properties of Paramagnetic Compounds, Subvolume A

During the past three decades since the publication of the last volume on the magnetic susceptibilities of co-ordination and organometallic transition metal compounds thousands of new paramagnetic compounds of striking diversity and novelty have appeared. The present volume on the magnetic properties of paramagnetic compounds covers 1663 references published between 1985 and 1991. After an introduction into the theoretical aspects of the paramagnetic susceptibility, the data tables are providing experimental values for susceptibility, effective paramagnetic moment, and paramagnetic Curie constant. Where available the temperature dependence of the magnetic susceptibility is given in figures. The compounds are listed under their central metal ion (transition metal, lanthanide or actinide) of definite, or mixed, oxidation state. The substances include simple compounds, coordination compounds (N-ligands, O-ligands, S-ligands, etc.), organometallic compounds, homo- and hetero-multimetallic derivatives [...] 

Features
During the past three decades since the publication of the last volume on the magnetic susceptibilities of co-ordination and organometallic transition metal compounds thousands of new paramagnetic compounds of striking diversity and novelty have appeared. The present volume on the magnetic properties of paramagnetic compounds covers 1663 references published between 1985 and 1991. After an introduction into the theoretical aspects of the paramagnetic susceptibility, the data tables are providing experimental values for susceptibility, effective paramagnetic moment, and paramagnetic Curie constant. Where available the temperature dependence of the magnetic susceptibility is given in figures. The compounds are listed under their central metal ion (transition metal, lanthanide or actinide) of definite, or mixed, oxidation state. The substances include simple compounds, coordination compounds (N-ligands, O-ligands, S-ligands, etc.), organometallic compounds, homo- and hetero-multimetallic derivatives [...] 

Fields of interest
Physics (general)

Target groups
Research

Type of publication
Reference work

Usually dispatched within 3 to 5 business days

2012. 650 p. (Molecules and Radicals, Subvolume 31A) Hardcover

$6,739.00
ISBN 978-3-642-23683-9
**Next Generation of Photovoltaics**

**New Concepts**

This book presents new concepts for a next generation of PV. Among these concepts are:

- Multijunction solar cells, multiple excitation solar cells (or how to take benefit of high energy photons for the creation of more than one electron hole-pair), intermediate band solar cells (or how to take advantage of below band-gap energy photons) and related technologies (for quantum dots, nitrides, thin films), advanced light management approaches (plasmonics). Written by world-class experts in next generation photovoltaics this book is an essential reference guide accessible to both beginners and experts working with solar cell technology. The book deeply analyzes the current state-of-the-art of the new photovoltaic approaches and outlines the implementation paths of these advanced devices.

**Topics addressed range from the fundamentals to the description of state-of-the-art of the new types of solar cells.**

**Features**

This book presents new concepts for a next generation of PV. Among these concepts are:

- Multijunction solar cells, multiple excitation solar cells (or how to take benefit of high energy photons for the creation of more than one electron hole-pair), intermediate band solar cells (or how to take advantage of below band-gap energy photons) and related technologies (for quantum dots, nitrides, thin films). [...]}

**Contents**


**Fields of interest**

- Applied Optics, Optoelectronics, Optical Devices; Renewable and Green Energy; Optical and Electronic Materials; Microwaves, RF and Optical Engineering; Energy Technology; Condensed Matter Physics

**Target groups**

Research

**Type of publication**

Monograph

**Usually dispatched within 3 to 5 business days**

*March 31, 2012*

2012. XV, 354 p. 204 illus., 10 in color. (Springer Series in Optical Sciences, Vol. 165) Hardcover

$169.00

ISBN 978-3-642-23368-5

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**On Gauge Fixing Aspects of the Infrared Behavior of Yang-Mills Green Functions**

Quarks are the main constituents of protons and neutrons and hence are important building blocks of all the matter that surrounds us. However, quarks have the intriguing property that they never appear as isolated single particles but only in bound states. This phenomenon is called confinement and has been a central research topic of elementary particle physics for the last few decades. In order to find the mechanism that forbids the existence of free quarks many approaches and ideas are being followed, but by now it has become clear that they are not mutually exclusive but illuminate the problem from different perspectives. Two such confinement scenarios are investigated in this thesis: Firstly, the importance of Abelian field components for the low-energy regime is corroborated, thus supporting the dual superconductor picture of confinement and secondly, the influence of the Gribov horizon on non-perturbative solutions is studied.

**Features**

Quarks are the main constituents of protons and neutrons and hence are important building blocks of all the matter that surrounds us. However, quarks have the intriguing property that they never appear as isolated single particles but only in bound states. This phenomenon is called confinement and has been a central research topic of elementary particle physics for the last few decades. In order to find the [...]}

**Contents**


**Fields of interest**

- Elementary Particles, Quantum Field Theory; Theoretical, Mathematical and Computational Physics; Mathematical Physics; Mathematical Applications in the Physical Sciences

**Target groups**

Research

**Type of publication**

Monograph

**Usually dispatched within 3 to 5 business days**

*April 28, 2012*

2012. XI, 137 p. 31 illus. (Springer Theses) Hardcover

$129.00

ISBN 978-3-642-27690-3

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**Photons in Natural and Life Sciences**

**An Interdisciplinary Approach**

The book describes first the principle photon generation processes from nuclear reactions, electron motion and from discrete quantum transitions. It then focuses on the use of photons in various selected fields of modern natural and life sciences. It bridges disciplines such as physics, chemistry, earth- and materials science, proteomics, information technology, photoelectrochemistry, photosynthesis and spintronics. Advanced light sources and their use in natural and life sciences are emphasized and the effects related to the quantum nature of photons (quantum computing, teleportation) are described. The content encompasses among many other examples the role of photons on the origin of life and on homochirality in biology, femtosecond laser slicing, photothermal cancer therapy, the use of gamma rays in materials science, photoelectrochemical surface conditioning, quantum information aspects and photo-spintronics. The book is written for scientists and graduate students from all related disciplines. [...]}

**Features**

The book describes first the principle photon generation processes from nuclear reactions, electron motion and from discrete quantum transitions. It then focuses on the use of photons in various selected fields of modern natural and life sciences. It bridges disciplines such as physics, chemistry, earth- and materials science, proteomics, information technology, photoelectrochemistry, photosynthesis and [...]}

**Contents**


**Fields of interest**

- Applied Optics, Optoelectronics, Optical Devices; Nanotechnology; Biophysics and Biological Physics; Applied and Technical Physics; Quantum Optics, Quantum Electronics, Nonlinear Optics; Nanotechnology and Microengineering

**Target groups**

Research

**Type of publication**

Monograph

**Usually dispatched within 3 to 5 business days**

*April 28, 2012*


$169.00

ISBN 978-3-642-23748-5
Plasma for Bio-Decontamination, Medicine and Food Security

Non-thermal (cold) plasmas at atmospheric pressure have recently found many breakthrough applications in biology, medicine, and food security. Plasmas can efficiently kill bacteria, yeasts, moulds, spores, biofilms and other hazardous microorganisms, including potential bio-terrorism agents. They can be employed for bio-decontamination and sterilization of surfaces, medical instruments, water, air, food, even of living tissues without causing their damage. Direct or indirect plasma interaction with living cells of microorganisms or even humans enables novel bio-medical applications, e.g. treatment of skin diseases and ulcers. Plasma-enhanced blood coagulation coupled with its antiseptic properties proved success in wound healing and opens new possibilities in surgery, emergency medicine and military applications. Plasma treatment allows cell manipulations, their removal and targeted transfer into the injured area, which can accelerate wound healing. Plasma induced apoptosis (programmed cell death) [...] 

Features
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Fields of interest
Plasma Physics; Microbiology; Medicine (general); Dentistry; Food Science 

Target groups
Graduate 

Type of publication
Proceedings 

Usually dispatched within 3 to 5 business days

2012. XVII, 479 p. 251 illus., 6 in color. (NATO Science for Peace and Security Series A: Chemistry and Biology) Hardcover 

$229.00  
ISBN 978-94-007-2851-6

Plasma for Bio-Decontamination, Medicine and Food Security

Non-thermal (cold) plasmas at atmospheric pressure have recently found many breakthrough applications in biology, medicine, and food security. Plasmas can efficiently kill bacteria, yeasts, moulds, spores, biofilms and other hazardous microorganisms, including potential bio-terrorism agents. They can be employed for bio-decontamination and sterilization of surfaces, medical instruments, water, air, food, even of living tissues without causing their damage. Direct or indirect plasma interaction with living cells of microorganisms or even humans enables novel bio-medical applications, e.g. treatment of skin diseases and ulcers. Plasma-enhanced blood coagulation coupled with its antiseptic properties proved success in wound healing and opens new possibilities in surgery, emergency medicine and military applications. Plasma treatment allows cell manipulations, their removal and targeted transfer into the injured area, which can accelerate wound healing. Plasma induced apoptosis (programmed cell death) [...] 

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Fields of interest
Plasma Physics; Microbiology; Medicine (general); Dentistry; Food Science 

Target groups
Graduate 

Type of publication
Proceedings 

Usually dispatched within 3 to 5 business days

2012. XVI, 479 p. 251 illus., 6 in color. (NATO Science for Peace and Security Series A: Chemistry and Biology) Softcover 

$119.00  
ISBN 978-94-007-2909-4

Red Giants as Probes of the Structure and Evolution of the Milky Way

Exciting results are blooming, thanks to a convergence between unprecedented asteroseismic data obtained by the satellites CoRoT and KEPLER, and state-of-the-art models of the internal structure of red giants and of galactic evolution. The pulsation properties now available for thousands of red giants promise to add valuable and independent constraints to current models of structure and evolution of our galaxy. Such a close connection between these domains opens a new very promising gate in our understanding of stars and galaxies. In this book international leaders in the field offer a wide perspective of the recent advancements in: Asteroseismology of red giants - Models of the atmosphere, internal structure, and evolution of red giants - Stellar population synthesis and models of the Milky Way 

Features
Exciting results are blooming, thanks to a convergence between unprecedented asteroseismic data obtained by the satellites CoRoT and KEPLER, and state-of-the-art models of the internal structure of red giants and of galactic evolution. The pulsation properties now available for thousands of red giants promise to add valuable and independent constraints to current models of structure and evolution of our galaxy. [...] 

Contents
Part I Asteroseismology of red giants - Aspects of observational red giant population seismology - Asteroseismology of red giants as a tool for studying stellar populations: first steps - Adiabatic solar-like oscillations in red giant stars - Energetic aspects of non-radial solar-like oscillations in red giants - Part II Internal structure, atmosphere, and evolution of red giants: current models and their uncertainties - Evolution and internal structure of red giants - Uncertainties and systematics in stellar evolution models of Red Giant Stars - Convection modelling and the morphology [...] 

Fields of interest
Astronomy, Observations and Techniques; Astrophysics and Astroparticles 

Target groups
Research 

Type of publication
Proceedings 

Usually dispatched within 3 to 5 business days

March 31, 2012

2012. XIV, 182 p. 74 illus., 17 in color. (Astrophysics and Space Science Proceedings) Hardcover 

$199.00  
ISBN 978-3-642-18417-8
Study of the Inclusive Beauty Production at CMS and Construction and Commissioning of the CMS Pixel Barrel Detector

This thesis describes one of the first measurements made at CERN’s Large Hadron Collider, the world’s largest and highest-energy particle collider. The method of analysis described in the first part is applied to the first CMS collision data collected after the LHC startup in 2010 and leads to the first experimental result for the inclusive b cross section using semileptonic decays at a center of mass energy of 7 TeV. The second part of the thesis describes the building and testing of the barrel pixel detector, the author herself played an important role in its construction, commissioning and first exploitation. The CMS collaboration Thesis Award Committee selected this work as the best thesis of the year 2010.

Symmetries and Group Theory in Particle Physics

An Introduction to Space-Time and Internal Symmetries

Symmetries, coupled with the mathematical concept of group theory, are an essential conceptual backbone in the formulation of quantum field theories capable of describing the world of elementary particles. This primer is an introduction to and survey of the underlying concepts and structures needed in order to understand and handle these powerful tools. Specifically, in Part I of the book the symmetries and related group theoretical structures of the Minkowskian space-time manifold are analyzed, while Part II examines the internal symmetries and their related unitary groups, where the interactions between fundamental particles are encoded as we know them from the present standard model of particle physics. This book, based on several courses given by the authors, addresses advanced graduate students and non-specialist researchers wishing to enter active research in the field, and having a working knowledge of classical field theory and relativistic quantum mechanics. Numerous end-of-chapter exercises are provided.

The Plasma Environment of Venus, Mars and Titan

This volume summarizes the recent results of the exploration of Venus, Mars and Titan in the field of space plasma physics. These are the only non-magnetic solar system bodies having dense atmospheres. A number of space missions investigated these objects; the past and the current missions are put in context with modern theoretical descriptions. The strength of the book is the comparison of the similarities and differences in the plasma interaction of Venus, Mars and Titan; such comparisons have not yet been published. This volume is aimed at graduate students and researchers working in planetary science and space physics.

Features

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Theory of Nuclear Fission

A Textbook

This book brings together various aspects of the nuclear fission phenomenon discovered by Hahn, Strassmann and Meitner almost 70 years ago. Beginning with an historical introduction the authors present various models to describe the fission process of hot nuclei as well as the spontaneous fission of cold nuclei and their isomers. The role of transport coefficients, like inertia and friction in fission dynamics is discussed. The effect of the nuclear shell structure on the fission probability and the mass and kinetic energy distributions of the fission fragments is presented. The fusion-fission process leading to the synthesis of new isotopes including super-heavy elements is described. The book will thus be useful for theoretical and experimental physicists, as well as for graduate and PhD students.

Features

This book brings together various aspects of the nuclear fission phenomenon discovered by Hahn, Strassmann and Meitner almost 70 years ago. Beginning with an historical introduction the authors present various models to describe the fission process of hot nuclei as well as the spontaneous fission of cold nuclei and their isomers. The role of transport coefficients, like inertia and friction in fission.[…]

Contents


Fields of interest

Nuclear Physics, Heavy Ions, Hadrons; Nuclear Engineering

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days


$99.00

ISBN 978-3-642-23514-6

China’s Energy Economy

Situation, Reforms, Behavior, and Energy Intensity

In the new millennium, understanding China’s energy economy is crucial for politicians, businesspeople and energy economists, as China’s energy policy choices will mean both challenges and opportunities for the world in terms of an increasing share of primary energy consumption and investment. This book initially reviews the literature on China’s energy economy and in so doing reveals that many important areas have been overlooked or are outdated in their coverage. Given the size of China and its global importance, the book then reviews China’s current energy situation and fills the gaps in the literature for those who are interested in and concerned about China’s economic development and energy reform in the new millennium. The book is different from previous studies in several important ways: Firstly, it presents recent, pioneering research rather than a simple textbook, several sections of which have been published in high-quality energy journals. Secondly, the book first subdivides China’s[…]

Features

In the new millennium, understanding China’s energy economy is crucial for politicians, businesspeople and energy economists, as China’s energy policy choices will mean both challenges and opportunities for the world in terms of an increasing share of primary energy consumption and investment. This book initially reviews the literature on China’s energy economy and in so doing reveals that many important […]

Contents


Fields of interest

Energy (general); Energy Policy, Economics and Management

Target groups

Research

Type of publication

Monograph

Usually dispatched within 3 to 5 business days


$119.00
Handbook of Juvenile Forensic Psychology and Psychiatry

Juvenile justice centers have a long tradition as an unfortunate stop for young offenders who need mental health care. Reports estimate that as many as 70% of the youth in detention centers meet criteria for mental health disorders. As juvenile justice systems once again turn their focus from confinement to rehabilitation, mental health providers have major opportunities to inform and improve both practice and policy. The Handbook of Juvenile Forensic Psychology and Psychiatry explores these opportunities by emphasizing a developmental perspective, multifaceted assessment, and evidence-based practice in working with juvenile offenders. This comprehensive volume provides insights at virtually every intersection of mental health practice and juvenile justice, covering areas as wide-ranging as special populations, sentencing issues, educational and pharmacological interventions, family involvement, ethical issues, staff training concerns, and emerging challenges. Together, its chapters contain...

Features
Juvenile justice centers have a long tradition as an unfortunate stop for young offenders who need mental health care. Reports estimate that as many as 70% of the youth in detention centers meet criteria for mental health disorders. As juvenile justice systems once again turn their focus from confinement to rehabilitation, mental health providers have major opportunities to inform and improve both practice...

Contents
Introduction. - Developmental changes in adolescence and risks for delinquency. - The "why(s)" of criminal behavior in juveniles: The long and the short of it. - Race and sex disparity in juvenile justice processing. - Major principles in a minor context: Forensic practices involving adolescents. - Juveniles and criminal responsibility evaluations. - Sentencing juveniles to life in prison without the opportunity for parole. - Transfer to adult court: Enhancing clinical forensic evaluations and informing policy. - Need for and barriers to inclusion in health research of justice-involved youth.

Fields of interest
Child and School Psychology; Psychiatry; Criminology & Criminal Justice; Psychology and Law; Social Work; Medicine (general)

Type of publication
Handbook

Usually dispatched within 3 to 5 business days

2012. XXII, 596 p. 16 illus. Hardcover

$349.00

Handbook of Research on Student Engagement

For more than two decades, the concept of student engagement has grown from simple attention in class to a construct comprised of cognitive, emotional, and behavioral components that embody and further develop motivation for learning. Similarly, the goals of student engagement have evolved from dropout prevention to improved outcomes for lifelong learning. This robust expansion has led to numerous lines of research across disciplines and are brought together clearly and comprehensively in the Handbook of Research on Student Engagement. The Handbook guides readers through the field’s rich history, sorts out its component constructs, and identifies knowledge gaps to be filled by future research. Grounding data in real-world learning situations, contributors analyze indicators and facilitators of student engagement, link engagement to motivation, and gauge the impact of family, peers, and teachers on engagement in elementary and secondary grades. Findings on the effectiveness of classroom interventions...

Features
For more than two decades, the concept of student engagement has grown from simple attention in class to a construct comprised of cognitive, emotional, and behavioral components that embody and further develop motivation for learning. Similarly, the goals of student engagement have evolved from dropout prevention to improved outcomes for lifelong learning. This robust expansion has led to numerous lines of...

Contents

Fields of interest
Child and School Psychology; Educational Psychology; Public Health; Teaching and Teacher Education; Social Work; Educational Policy and Politics

Type of publication
Handbook

Usually dispatched within 3 to 5 business days

2012. XXVII, 840 p. 69 illus. Hardcover

$79.95

Stress Proof the Heart

Behavioral Interventions for Cardiac Patients

Cardiovascular disease is a leading cause of death throughout the world. Chronic negative emotions such as depression and anxiety place cardiac patients at greater risk for death and recurrence of cardiovascular disease. In 2008 the editor published a book related to this topic, titled Psychotherapy with Cardiac Patients: Behavioral Cardiology in Practice (American Psychological Association). Aside from that book, there are very few resources specifically written for clinicians who treat psychologically distressed cardiac patients. Unlike other medical specialty areas such as oncology, the field of cardiology has been slow to integrate behavioral treatments into the delivery of service. Perhaps because the field has been largely defined and dominated by researchers, mental health clinicians are only starting to recognize behavioral cardiology as a viable arena in which to practice. There is a large void in the practitioner literature on behavioral cardiology. In a review of Psychotherapy with...
Social Sciences

Aging, Health, and Longevity in the Mexican-Origin Population

Aging, Health, and Longevity in the Mexican-Origin Population creates a foundation for an interdisciplinary discussion of the trajectory of disability and long-term care for older people of Mexican-origin from a bi-national perspective. Although the literature on Latino elders in the United States is growing, few of these studies or publications offer the breadth and depth contained in this book.

Features
- As the nation’s largest Latino group, the Mexican-origin population will play a major role as America grows older: their situation is vital to understanding our aging, diverse society as national health care policy comes into a new era of analysis and revision.

Contents
- 4. Genetic and Cultural Influences on Obesity among aging Mexican Americans Toni Commute, Southwest Foundation for Biomedical Research. 5. Major Contextual and [...] Fields of interest
- Aging; Social Policy; Geriatrics / Gerontology; Family; Regional and Cultural Studies

Target groups
- Research

Type of publication
- Contributed volume

Usually dispatched within 3 to 5 business days

2012, XXX, 345 p. 23 illus., 16 in color. Hardcover

$169.00

Feminism and Migration

Feminism and Migration: Cross-Cultural Engagements is a rich, original, and diverse collection on the intersections of feminism and migration in western and non-western contexts.

This book explores the question: does migration empower women? Through wide-ranging topics on theorizing feminism in migration, contesting identities and agency, resistance and social justice, and religion for change, well-known and emerging scholars provide in-depth analysis of how social, cultural, political, and economic forces shape new modalities and perspectives among women upon migration. It highlights the centrality of the various meanings and interpretations of feminism(s) in the lives of immigrant and migrant women in Australia, Belgium, Brazil, Eastern Europe, France, Greece, Japan, Italy, Mexico, Morocco, Papua New Guinea, Spain, and the United States. The well-researched chapters explore the ways in which feminism and migration across cultures relate to women’s experiences in host societies — as women, [...] Features
- Feminism and Migration: Cross-Cultural Engagements is a rich, original, and diverse collection on the intersections of feminism and migration in western and non-western contexts.

Contents

Fields of interest
- Migration; Gender Studies; Sociology, general

Target groups
- Research

Type of publication
- Contributed volume

Usually dispatched within 3 to 5 business days

2011, XX, 374 p. (Ius Gentium: Comparative Perspectives on Law and Justice, Vol. 7) Softcover

$69.95
ISBN 978-94-007-3986-4
Flows of Faith

Religious Reach and Community in Asia and the Pacific

Unique local transformations of the practice of established religions in Asia and the Pacific are juxtaposed with the emergence of new religious movements whose incidence is growing across the region. In Flows of Faith, the contributing authors take as their starting point questions of how religions manifest outside their cultural boundaries and provide the basis for new social identities, political movements and social transformations. With fresh insights into the globalization of beliefs, their local inflections, and their institutionalization, the authors explore how old and new religions work in different settings, and how their reception and membership challenge orthodox understandings of religion and culture. The chapters – set in Asia, the Pacific, Australia, and the US – illustrate the contrasts and commonalities of these belief systems, and their allegiances and networks in the region and beyond. They include new religious movements – Falun Gong, Brahma Kumaris, the Hare Krishna – juxtaposed with the emergence of new social identities, political […]

Contents
Preface.– Chapter 1: Beliefs Beyond Borders and Communities of Faith; Manderson, Lenore; Smith, Wendy; Tomlinson, Matt.– Chapter 2: Religion in the Age of Globalization: Emerging trends, Indonesian examples; Reuter, Thomas A.– Chapter 3: Master Li encounters Jesus: Christianity and the configurations of Falun Gong; Penny, Benjamin.– Chapter 4: Brahma Kumaris: Purity and the globalization of faith; Ramsay, Tamasin; Smith, Wendy; Manderson, Lenore.– Chapter 5: Secularism, society and symbols of religion: Bosnian Muslim Australians encounter Christmas; Voloder, Lejla.– Chapter 6 […]

Fields of interest
Anthropology; Religious Studies; Social Sciences (general)

Target groups
Research

Type of publication
Contributed volume

Usually dispatched within 3 to 5 business days
March 31, 2012

2012. XV, 238 p. 14 illus. Hardcover
$139.00

J.R. Porter, City University of New York, NY, USA; F.M. Howell, Mississippi State University, Starkville, MS, USA

Marconi’s Wireless and the Rhetoric of a New Technology

This book examines the discourse surrounding the wireless, created by the Anglo-Italian inventor Guglielmo Marconi. The wireless excited early twentieth-century audiences before it even became a viable black box technology. The wireless adhered to modernist values – speed, efficiency, militarization, and progress. Language surrounding the wireless is a form of technical communication, overlooked by today’s practitioners. This book establishes a broader definition for technical communication by examining a selection of the discourse surrounding Marconi’s wireless. The book’s main themes are the following: 1) technical communication is all discourse surrounding technology; 2) the field of technical communication (or technical writing) should incorporate analyses of discourse surrounding technologies into its epistemology, 3) the wireless is a product of the society from which it comes (early twentieth-century Western civilization), and 4) the discourse surrounding the wireless is infused with tropes of […]

Features
This book examines the discourse surrounding the wireless, created by the Anglo-Italian inventor Guglielmo Marconi. The wireless excited early twentieth-century audiences before it even became a viable black box technology. The wireless adhered to modernist values – speed, efficiency, militarization, and progress. Language surrounding the wireless is a form of technical communication, overlooked by today’s […]

Contents

Fields of interest
Social Sciences (general); Regional and Cultural Studies; Philosophy (general); Humanities

Target groups
Research

Type of publication
Monograph

Usually dispatched within 3 to 5 business days
February 29, 2012

2012. XX, 145 p. 2 ilus. (SpringerBriefs in Sociology) Softcover
$49.95

L. Manderson, Monash University, Caulfield East, Vic, Australia; W. Smith, Monash University, Caulfield East, Vic, Australia; M. Tomlinson, Australian National University, Canberra, ACT 0200, Australia (Eds.)
Probability and Social Science
Methodological Relationships between the two Approaches
D. Courgeau, INED, Paris, France

Sociophysics
A Physicist's Modeling of Psycho-political Phenomena
S. Galam, Ecole Polytechnique et CNRS, Paris, France

State, Globalization and Multilateralism
The challenges of institutionalizing regionalism
M. Telò, Université Libre de Bruxelles, Belgium (Ed.)
Statistics

The United Nations and the Regions
Third World Report on Regional Integration

This unique book investigates the implications of the rising importance of supra-national regional organizations for global governance in general, and for the United Nations, in particular. It touches upon issues such as regional representation at the UN, high-level dialogues with regional organizations, as well as the coordination of UN member states' voting behaviour in the UN General Assembly and the UN Security Council. The book further explores the regional dimension and coordination of UN operations in areas such as peace and security, human rights, and sustainable development. The contributions to the book are both in-depth chapters and shorter viewpoints, written by a combination of academics, policy-makers at regional organizations, and experts from international think tanks. The book is essential reading for anyone interested in the future of global governance.

Advances in Meta-Analysis

The subject of the book is advanced statistical analyses for quantitative research synthesis (meta-analysis), and selected practical issues relating to research synthesis that are not covered in detail in the many existing introductory books on research synthesis (or meta-analysis). Complex statistical issues are arising more frequently as the primary research that is summarized in quantitative synthesis itself becomes more complex, and as researchers who are conducting meta-analyses become more ambitious in the questions they wish to address. Also as researchers have gained more experience in conducting research syntheses, several key issues have persisted and now appear fundamental to the enterprise of summarizing research. Specifically the book describes multivariate analyses for several indices commonly used in meta-analysis (e.g., correlations, effect sizes, proportions and/or odds ratios), will outline how to do power analysis for meta-analysis (again for each of the different kinds of study). . .

Features
Meta-analysis is used increasingly in the social sciences to synthesize research results. As both primary research and the questions addressed by meta-analysis have been grown more complex, meta-analysis techniques have evolved to address these issues. This book covers a number of advances in meta-analysis that are not covered in detail in many introductory books on research synthesis. More specifically, . . .

Contents

Fields of interest
Statistics for Social Science, Behavioral Science, Education, Public Policy, and Law; Statistics (general)

Type of publication
Monograph

Usually dispatched within 3 to 5 business days

Challenges at the Interface of Data Analysis, Computer Science, and Optimization

Proceedings of the 34th Annual Conference of the Gesellschaft für Klassifikation e. V., Karlsruhe, July 21 - 23, 2010

This volume provides approaches and solutions to challenging problems occurring at the interface of research fields such as data analysis, computer science, operations research, and statistics. It includes theoretically oriented contributions as well as papers from various application areas, where knowledge from different research directions is needed to find the best possible interpretation of data for the underlying problem situations. Beside traditional classification research, the book focuses on current interests in fields such as the analysis of social relationships as well as statistical musicology.

Features
This volume provides approaches and solutions to challenging problems occurring at the interface of research fields such as data analysis, computer science, operations research, and statistics. It includes theoretically oriented contributions as well as papers from various application areas, where knowledge from different research directions is needed to find an adequate analysis and interpretation of the . . .

Contents

Fields of interest
Statistics and Computing / Statistics Programs; Data Structures; Operations Research, Mathematical Programming; Operation Research / Decision Theory; Data Mining and Knowledge Discovery

Target groups
Research

Type of publication
Proceedings

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Graphical models in their modern form have been around since the late 1970s and appear today in many areas of the sciences. Along with the ongoing developments of graphical models, a number of different graphical modeling software programs have been written over the years. In recent years many of these software developments have taken place within the R community, either in the form of new packages or by providing an R interface to existing software. This book attempts to give the reader a gentle introduction to graphical modeling using R and the main features of some of these packages.

In addition, the book provides examples of how more advanced aspects of graphical modeling can be represented and handled within R. Topics covered in the seven chapters include graphical models for contingency tables, Gaussian and mixed graphical models, Bayesian networks and modeling high dimensional data.

Features

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The two volumes are divided into chapters of related works. Invited contributors have critiqued the papers in each chapter, and the reprinted group of papers follows each commentary. A complete bibliography that contains links to recorded talks by Erich Lehmann – and which are freely accessible to the public – and a list of Ph.D. students are also included. These volumes belong in every statistician’s personal collection and are a required holding for any[..]

Features

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Contents


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