Just Released New Books April 2011

English Titles

"Sorted by author and title within the main subject"
Biomedicine

Cancer Cell Culture

Methods and Protocols

With many recent advances, cancer cell culture research is more important than ever before. This timely edition of Cancer Cell Culture: Methods and Protocols covers the basic concepts of cancer cell biology and culture while expanding upon the recent shift in cell culture methods from the generation of new cell lines to the use of primary cells. There are methods to characterize and authenticate cell lines, to isolate and develop specific types of cancer cells, and to develop new cell line models. Functional assays are provided for the evaluation of clonogenicity, cell proliferation, apoptosis, adhesion, migration, invasion, senescence, angiogenesis, and cell cycle parameters. Other methods permit the modification of cells for transfection, drug resistance, immortalization, and transfer in vivo, the co-culture of different cell types, and the detection and treatment of contamination. In this new edition, specific emphasis is placed on safe working practice for both cells and laboratory researchers.

Contents

**Cell Fusion in Health and Disease**

II: Cell Fusion in Disease

Although cell fusion is an omnipresent process in life, to date considerably less is still known about the mechanisms and the molecules being involved in this biological phenomenon in higher organisms. In Cell Fusion in Health and Disease Vol 1 & Vol 2 leading experts will present up to-date overviews about cell fusion in physiological and patho-physiological processes, which further covers the current knowledge about cell fusion mediating molecules. Volume 1 deals with Cell Fusion in Health and will cover aspects of cell fusion in fertilization, placentaion, in C. elegans, in skeletal muscle development and tissue repair, and the use of cell fusion for cellular reprogramming and cancer vaccine development. Volume 2 focuses on Cell Fusion in Disease with a particular emphasis on the role of cell fusion in cancer development and progression. Thus, Cell Fusion in Health and Disease Vol 1 & Vol 2 represents a state-of-the-art work for researchers, physicians or professionals being interested in the...[...]

**Features**

Although cell fusion is an omnipresent process in life, to date considerably less is still known about the mechanisms and the molecules being involved in this biological phenomenon in higher organisms. In Cell Fusion in Health and Disease Vol 1 & Vol 2 leading experts will present up to-date overviews about cell fusion in physiological and patho-physiological processes, which further covers the current [...]

**Contents**

Preface. Thomas Dittmar, Kurt S. Zänker; 1 Introduction. Thomas Dittmar, Kurt S. Zänker; 2 Horizontal gene transfers with or without cell fusions in all categories of the living matter, Joseph G. Sinkovic; 3 Class III viral membrane fusion proteins, Marija Backovic, Theodore S. Jardetzky; 4 Human trophoblast in trisomy 21: a model for cell fusion dynamic investigation, André Malassiné, Guillaume Pidoux, Pascale Gerbaud, Jean Louis Frendo, Danièle Evain-Brion; 5 Cell fusion and horizontal gene transfers with or without cell fusions in all categories of the living matter, Joseph G. Sinkovic, in skeletal muscle development and tissue repair, and the use of cell fusion for cellular reprogramming and cancer vaccine development. Volume 2 focuses on Cell Fusion in Disease with a particular emphasis on the role of cell fusion in cancer development and progression. Thus, Cell Fusion in Health and Disease Vol 1 & Vol 2 represents a state-of-the-art work for researchers, physicians or professionals being interested in the [...]

**Target groups**

Graduate/advanced undergraduate textbook

**Type of publication**

Contributed volume

**Available**

2011. XII, 214 p. 58 illus. Softcover

39.95 €

ISBN 978-1-4419-5628-6

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**Drug Metabolism and Pharmacokinetics Quick Guide**

Drug Metabolism and Pharmacokinetics Quick Guide covers a number of aspects of drug assessment at drug discovery and development stages, topics such as pharmacokinetics, absorption, metabolism, enzyme kinetics, drug transporters, drug interactions, drug-like properties, assays and in silico calculations. It covers key concepts, with useful tables on physiological parameters (eg. blood flow to organs in x-species, expression and localization of enzymes and transporters), chemical structure, nomenclature, and moieties leading to bioactivation (with examples). Overall it includes a number of key topics useful at the drug discovery stage, which would serve as a quick reference with several examples from the literature to illustrate the concept.

**Features**

Drug Metabolism and Pharmacokinetics Quick Guide is intended for broad readership of those interested in the discipline of drug metabolism and pharmacokinetics who work in drug discovery coming from the various disciplines, a background such as of medicinal chemistry, pharmacology, drug metabolism and pharmacokinetics, bioanalysis, clinical sciences, biochemistry, pharmaceutics or [...]

**Contents**

Pharmacokinetics.- Drug Metabolizing Enzymes.- Oral Absorption.- Transporters.- Metabolism-Based Drug Interactions.- Biotransformation and Bioactivation.- Prediction of Human Pharmacokinetics.- Advances in Bioanalysis as it Relates to ADME-ADME Properties and Their Dependence on Physicochemical Properties.- In Silico ADME Tools.- Approved Drugs.- Chemical Nomenclature.

**Fields of interest**

Pharmacology / Toxicology; Pharmacy; Biochemistry

**Target groups**

Research

**Type of publication**

Manual

**Available**

2011. XIII, 214 p. 58 illus. Softcover

39.95 €

ISBN 978-1-4419-5628-6

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**Epidemiological Research: Terms and Concepts**

This book is by a single author – someone who, after medical school, has devoted half-a-century of full-time effort to ever better understand both clinical and community medicine and the research that is needed to produce the scientific knowledge-base of these. The book is organized so as to address in separate sections first the preparatory topics of medicine (clinical and epidemiological), science in general, and statistics (mathematical); then topics of epidemiological research proper; and, finally, topics of ‘meta-epidemiological’ clinical research. In those two main sections, a further grouping is based on the distinction between objects and methods of study. In this framework, the particular topics are addressed both descriptively and quasi-prescriptively, commonly with a number of explicationary annotations. This book is intended to serve as a handbook for whomever is, in whatever way, concerned with epidemiological or ‘meta-epidemiological’ clinical research. But besides, it is intended to...[...]

**Features**

This book is by a single author – someone who, after medical school, has devoted half-a-century of full-time effort to ever better understand both clinical and community medicine and the research that is needed to produce the scientific knowledge-base of these. The book is organized so as to address in separate sections first the preparatory topics of medicine (clinical and epidemiological), science [...]

**Contents**


**Fields of interest**

Biomedicine (general); Epidemiology; Public Health; Medicine (general); Biometrics; Biostatistics

**Target groups**

Lower undergraduate

**Type of publication**

Graduate/advanced undergraduate textbook

**Available**

2011. XVI, 175 p. Hardcover

39.95 €

Epigenetic Aspects of Chronic Diseases

Epigenetic Aspects of Chronic Diseases assembles in comprehensive form what is known about the role of epigenetics in chronic disease development. This book provides new insights into treatment, including modulation of epigenetic regulation. Each chapter gives an outline of a respective disease, explains why epigenetics may be involved in the disease process and then presents the evidence of how changes in epigenetic status contribute to initiation and progress of the disease. The final chapters look towards future therapeutic treatment, based on manipulation of epigenetic aspects. Written by widely published experts, Epigenetic Aspects of Chronic Diseases is a valuable reference tool for clinicians and researchers who investigate and treat chronic diseases, as well as health care personnel, post-doctoral fellows and medical or dental students.

Features
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Handbook of Schizophrenia Spectrum Disorders, Volume I

A few disorders have some of the same symptoms as schizophrenia including schizoaffective disorders, schizophréniform disorder, schizotypal and schizoid personality disorders, delusional disorder, and autism (schizophrenia spectrum disorders). Since the 2000 there has been significant progress in our understanding of the early presentations, assessment, suspected neuropathology, and treatment of these disorders. Recent technological breakthroughs in basic sciences hold promise for advancing our understanding of the pathophysiology of schizophrenia spectrum disorders. This collective monograph reviews recent researches regarding the origins, onset, course, and outcome of schizophrenia spectrum disorders. In particular, this book will be illustrate new developments in terms of conceptual models, and research methodology, genetics and genomics, brain imaging and neurochemical studies, neurophysiology and information processing in schizophrenia spectrum disorders patients. Also will be highlighted new [...]}

Features
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Handbook of Schizophrenia Spectrum Disorders, Volume III

A few disorders have some of the same symptoms as schizophrenia including schizoaffective disorders, schizophréniform disorder, schizotypal and schizoid personality disorders, delusional disorder, and autism (schizophrenia spectrum disorders). Since the 2000 there has been significant progress in our understanding of the early presentations, assessment, suspected neuropathology, and treatment of these disorders. Recent technological breakthroughs in basic sciences hold promise for advancing our understanding of the pathophysiology of schizophrenia spectrum disorders. This collective monograph reviews recent researches regarding the origins, onset, course, and outcome of schizophrenia spectrum disorders. In particular, this book will be illustrate new developments in terms of conceptual models, and research methodology, genetics and genomics, brain imaging and neurochemical studies, neurophysiology and information processing in schizophrenia spectrum disorders patients. Also will be highlighted new [...]}

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M.S. Ritsner, Professor of Psychiatry and Head of Cognitive & Psychobiology Research Laboratory, the Rappaport Faculty of Medicine, Technion - Israel Institute of Technology, Haifa, Israel (Ed.)

Handbook of Schizophrenia Spectrum Disorders, Volume II
Phenotypic and Endophenotypic Presentations

A few disorders have some of the same symptoms as schizophrenia including schizoaffective disorders, schizoaffective disorder, schizotypal and schizoid personality disorders, delusional disorder, and autism (schizophrenia spectrum disorders). Since the 2000 there has been significant progress in our understanding of the early presentations, assessment, suspected neuropathology, and treatment of these disorders. Recent technological breakthroughs in basic sciences hold promise for advancing our understanding of the pathophysiology of schizophrenia spectrum disorders. This collective monograph reviews recent researches regarding the origins, onset, course, and outcome of schizophrenia spectrum disorders. In particular, this book will illustrate new developments in terms of conceptual models, and research methodology, genetics and genomics, brain imaging and neurochemical studies, neurophysiology and information processing in schizophrenia spectrum disorders patients. Also will be highlighted new [...] Features

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Fields of interest
Neurosciences; Neurobiology; Neurology; Neuropsychology

Target groups
Research

Type of publication
Contributed volume

Available
2011, X, 190 p. 21 illus., 11 in color. Hardcover
139,95 €
ISBN 978-94-007-0830-3

U.N. Das, UND Life Science, Shaker Heights, OH, USA

Molecular Basis of Health and Disease

The book describes how the balance between pro- and anti-inflammatory molecules is related to health and disease. It is suggested that many diseases are initiated and their progress is influenced by inflammatory molecules and a decrease in the production and/or action of anti-inflammatory molecules and this imbalance between pro- and anti-inflammatory molecules seems to have been initiated in the perinatal period. This implies that strategies to prevent and manage various adult diseases should start in the perinatal period. An alteration in the metabolism of essential fatty acids and their anti-inflammatory molecules such as lipoxins, resolvents, protecins, maresins and nitrolipids seems to play a major role in the pathobiology of several adult diseases. Based on these concepts, novel therapeutic approaches in schizophrenia spectrum disorders patients. Also will be highlighted new [...] Features

The book describes how the balance between pro- and anti-inflammatory molecules is related to health and disease. It is suggested that many diseases are initiated and their progress is influenced by inflammatory molecules and a decrease in the production and/or action of anti-inflammatory molecules and this imbalance between pro- and anti-inflammatory molecules seems to have been initiated in the perinatal period. [...] Contents

About the Author. - Preface. - Dedication. - Chapter 1: Introduction. - Chapter 2: Health and Disease as two sides of the same coin. - Chapter 3: Inflammation. - Chapter 4: Essential fatty acids - Biochemistry, Physiology and Clinical Significance. - Chapter 5: Cell membrane organization. - Chapter 6: Low-grade systemic inflammation is common in diseases/disorders. - Chapter 7: Obesity. - Chapter 8: Hypertension. - Chapter 9: Insulin resistance, dyslipidemia, type 2 diabetes Mellitus, metabolic syndrome, cancer, lupus, rheumatoid arthritis and other auto-immune diseases are presented. Based on these [...] Features

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About the Author. - Preface. - Dedication. - Chapter 1: Introduction. - Chapter 2: Health and Disease as two sides of the same coin. - Chapter 3: Inflammation. - Chapter 4: Essential fatty acids - Biochemistry, Physiology and Clinical Significance. - Chapter 5: Cell membrane organization. - Chapter 6: Low-grade systemic inflammation is common in diseases/disorders. - Chapter 7: Obesity. - Chapter 8: Hypertension. - Chapter 9: Insulin resistance, dyslipidemia, type 2 diabetes Mellitus, metabolic syndrome. - Chapter 10: Atherosclerosis. - Chapter 11: Osteoporosis. - Chapter 12: Alzheimer’s disease. [...] Fields of interest
Biomedicine (general); Human Physiology; Molecular Medicine; Internal Medicine; Diabetes; Endocrinology

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011, XX, 583 p. Hardcover
169,95 €
ISBN 978-94-007-0494-7

J.J. Hagan, Global Medical Excellence Cluster GMEC, King’s College London, UK (Ed.)

Molecular and Functional Models in Neuropsychiatry

The development of more effective treatments for neuropsychiatric disorders requires scientific progress on a broad front. Animal models have a vital role to play in advancing the field. When deployed in conjunction with detailed study of these diseases in man they bring the power to make controlled experimental interventions which allow the functional consequences of genetic variations and polymorphisms to be understood in terms of their cellular, systems and behavioral effects. Further, they provide a means by which complex cognitive and behavioral phenomena may be dissected and understood. Finally, they provide a bridge to understanding the effects of drugs on the functioning of the central nervous system, thereby improving our understanding of the actions of those drugs in man. Features

Common neuropsychiatric diseases are associated with significant human and economic cost. The development of more effective treatments requires scientific progress on a broad front and animal models have a vital role to play in these advances, enabling exploration of the functional consequences of molecular changes at the cellular, systems and behavioral levels. This volume discusses some of the latest and [...] Contents

Neurosciences; Molecular Medicine; Psychopharmacology; Psychiatry; Neurology; Behavioural Sciences

Target groups
Research

Type of publication
Contributed volume

Available
2011, XVI, 392 p. 29 illus. (Current Topics in Behavioral Neurosciences, Vol. 7) Hardcover
149,95 €
ISBN 978-3-642-19702-4
Adaptive immune responses serve as a key defense mechanism for the control of infections in vertebrates. Immune responses must be of sufficient strength to contain invading pathogens, antigen specific responses require regulatory mechanisms to ensure termination or downmodulation to avoid excessive damage to the host tissue. For both branches of the adaptive immune system, regulatory molecules i.e. coreceptors and ligands have been identified that control the signaling cascades initiated by engagement of the T cell and B cell antigen receptors. This book describes biological functions as well as molecular mechanisms of these molecules.

**Features**

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**Fields of interest**

Immunology

**Target groups**

Research

**Type of publication**

Contributed volume

**Available**

2011. VIII, 151 p. 21 illus. in color. (Current Topics in Microbiology and Immunology, Vol. 350) Hardcover

99,95 €
ISBN 978-3-642-19544-0

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Oxygen Transport to Tissue XXXII

This book covers all aspects of oxygen delivery to tissue, including blood flow and its regulation as well as oxygen metabolism. Special attention will be paid to methods of oxygen measurement in living tissue and application of these technologies to understanding physiological and biochemical basis for pathology related to tissue oxygenation. This book is multidisciplinary and designed to bring together experts and students from a range of research fields including biochemical engineering, physiology, microcirculation, and hematology.

**Features**

Based on the 2009 proceedings of the 37th annual ISOFT conference, this volume covers all aspects of oxygen delivery to tissue, everything from near infrared spectroscopy, tumor biology, angiogenesis and mitochondrial metabolism to systems modeling, gas transport, hypoxic adaptation and exercise physiology. Special emphasis is placed on methods of oxygen measurement in living tissue and application of these [...]
In the coming decade, the focus of medicine will shift from a disease-oriented approach, where the physician prescribes according to the disease the patient has, to a personalized approach, in which the physician first considers the patient’s individual biochemistry before prescribing a treatment. Personalized medicine has the potential to improve efficacy and safety in virtually all fields of medicine. Unfortunately, few physicians feel confident in their ability to apply the principles of genetics and genomics upon which personalized medicine is based to their practice. This book is intended to help the practicing physician understand and apply the principles of genetic and genomic medicine, regardless of his/her level of background in the field. It provides a thorough foundation/review of classical genetic principles, with an emphasis on how these principles apply to personalized medicine and common complex diseases. In addition, it provides a wide-ranging review of the inroads that...
Economics and Policy, Tentative volume 1) Hardcover

Available

Monograph

Features

This book arose from our conviction that the NNS-DSGE approach to the analysis of aggregate market outcomes is fundamentally flawed. The practice of overcoming the SMD result by recurring to a fictitious RA leads to insurmountable methodological problems and lies at the root of DSGE models’ failure to satisfactorily explain real world features, like exchange rate and banking crises, bubbles and herding in financial markets, swings in the sentiment of consumers and entrepreneurs, asymmetries and persistence in aggregate variables, and so on. At odds with this view, our critique rests on the premise that any modern macroeconomy should be modeled instead as a complex system of heterogeneous interacting individuals, acting adaptively and autonomously according to simple and empirically validated rules of thumb. We call our proposed approach Bottom-up Adaptive Macroeconomics (BAM). The reason why we claim that the contents of this book can be inscribed in the realm of macroeconomics is threefold: i) We [...] Features

The recent economic events driven by the big financial crisis of 2007-08 has cogently put to the fore the limits and drawbacks of the ruling research paradigm in macroeconomics. This volume goes to the root of the problem by offering a workable alternative to the renewed issue of the microeconomic foundations of macroeconomic theory. Bringing together techniques from agent-based computational economics and [...] Features

Contents


Fields of interest

Macroeconomics / Monetary Economics; Economic Growth; Statistics for Business, Economics, Mathematical Finance, Insurance; Industrial Organization; Microeconomics

Target groups

Graduate

Type of publication

Monograph

Available

2011. XII, 124 p. 20 illus. (New Economic Windows) Hardcover

89,95 €

Mass Customization

An Exploration of European Characteristics

Mass Customization excites both Researchers and Practitioners because of the possibility to produce customized products with mass production efficiency. Mass Customization - An Exploration of European Characteristics gives an overview on the need for personalisation from a customer perspective, analyses Mass Customization theories and assesses relevant best practices of European and International markets. The results of a survey among more than 500 European customers show a declining willingness of customers to compromise on the issue of suitability of products to their personal needs and preferences, the possibility for companies to break brand loyalty and the influence of immediate availability, delivery time and price to the customer’s willingness to take part in the co-creation process. Mass Customization has become important to business because of the difficulties of customers to find what they want despite an increase in product variety for many products over the past decades. The emergence [...] Features

Mass Customization excites both Researchers and Practitioners because of the possibility to produce customized products with mass production efficiency. Mass Customization - An Exploration of European Characteristics gives an overview on the need for personalisation from a customer perspective, analyses Mass Customization theories and assesses relevant best practices of European and International [...] Features

Fields of interest

Marketing; e-commerce / e-business; Business & Management Science; Statistics for Social Science, Behavioral Science, Education, Public Policy, and Law; Production / Logistics

Target groups

Research

Type of publication

Monograph

Available

2011. X, 106 p. 20 illus. (SpringerBriefs in Business, 0) Softcover

49,95 €
ISBN 978-3-642-18389-8
Organizational Systems
Managing Complexity with the Viable System Model

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

Features
This book clarifies the application of cybernetic ideas, particularly those of Beer’s Viable System Model, to organizational diagnosis and design. Readers learn to appreciate the relevance of seeing the systemic coherence of the world. The book argues that many of the problems we experience today are routed in our practice of fragmenting that needs to be connected as a whole. It offers a method to [...]

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

Fields of interest
Organization / Planning; Business & Economics (general); Social Sciences (general)

Target groups
Graduate

Type of publication
Monograph

Available
2011. XII, 264 p. 130 illus., 76 in color. Hardcover
99.95 €
ISBN 978-3-642-19108-4

Overview of the PMBOK® Guide
Short Cuts for PMP® Certification

This book is for everyone who wants a readable introduction to best practice Project Management, as described by the PMBOK® Guide 4th Edition of the Project Management Institute (PMI), “the world’s leading association for the project management profession.” It is particularly useful for applicants for the PMI’s PMP® (Project Management Professional) and CAPM® (Certified Associate of Project Management) examinations, which are based mostly on the PMBOK® Guide. This book can also be studied alone by anyone as a general introduction to Project Management. The style and language of this book have also been selected to make them particularly suitable for readers who use English as a foreign language.

Features
This book is for everyone who wants a readable introduction to best practice Project Management, as described by the PMBOK® Guide 4th Edition of the Project Management Institute (PMI), “the world’s leading association for the project management profession.” It is particularly useful for applicants for the PMI’s PMP® (Project Management Professional) and CAPM® (Certified Associate of Project [...]".

Contents
Understanding the PMBOK1 Guide. - Integration Management Processes. - Preparing for the PMP1 Examination.

Fields of interest
Management/Business for Professionals; Data Mining and Knowledge Discovery; Information Storage and Retrieval; Database Management; Mathematical Logic and Formal Languages; Algorithm Analysis and Problem Complexity

Target groups
Professional/practitioner

Type of publication
Monograph

Available
2011. XVI, 213 p. 2 illus., 1 in color. Hardcover
39.95 €
ISBN 978-3-642-19121-3

Responsible Investment in Times of Turmoil

The SRI phenomenon is said to be entering the mainstream of financial intermediation. From a fairly marginal practice promoted or campaigned for by NGO’s and at odds with financial practice and orthodoxy it grew into well formulated policy adopted by a wide range of investors. Academic literature on SRI has also boomed on the assumption that mainstreaming is taking place. However, little thinking has been carried out on questions specifically arising from this alleged ‘mainstreaming’. This book, addressed to those with a scholarly or practitioner’s interest in SRI, starts filling this neglected dimension. Today, one cannot ignore the difficulties of mainstream financing. The financial spheres are trembling globally in one of the worst crises since the 1930’s. As a response to the crisis, the intermediation of ‘financial responsibility’ will undoubtedly be the subject of new regulation and scrutinizing. This book looks into what these turbulences will imply for SRI. In view of these circumstances,...

Features
The SRI phenomenon is said to be entering the mainstream of financial intermediation. From a fairly marginal practice promoted or campaigned for by NGO’s and at odds with financial practice and orthodoxy it grew into well formulated policy adopted by a wide range of investors. Academic literature on SRI has also boomed on the assumption that mainstreaming is taking place. However, little thinking has been [...]

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Foreword; Alejo José G. Sison. - List of tables.- List of figures.- About the editors.- About the authors.- Introduction; Wim Vandekerckhove, Jos Leys, Kristian Alm, Bert Scholtens, Silvana Signori and Henry Schafer. - Chapter 1. Global finance and the role of responsible investors; Steve Waddell. - Chapter 2. New values in responsible investment; Neil Eccles.- Chapter 3. The legitimacy of ESG standards as an analytical framework for responsible investment; Tim Cadman.- Chapter 4. Reputational penalties in financial markets: an ethical mechanism?; Peter-Jan Engelen and Marc van [...]
Schuman Report on Europe
State of the Union 2011

The Schuman report 2011 on European union is both a reference and a tool on European affairs: A reference book: gathering contributions from best experts, it helps the readers to build their own point of view on key issues: European politics, State of the economies in the current crisis, Europe in the world and challenges on international security. A tool book: with around 30 original maps, it gathers a full set of key information: Synthesis of political life in Europe, Key figures on Europe, with comments and analysis.

Features
The Schuman 2011 Report on the State of the Union is both a reference and a tool. A reference: bringing together contributions from leading specialists, including an interview with Herman Van Rompuy, President of the European Council. This Report proposes a novel analytical framework, so that everyone can form his/her opinion on a series of key questions: The European Union in the [..]

Fields of interest
Economic Policy; European Integration; Financial Economics; Law and Economics

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. 224 p. 67 illus., 28 in color. Softcover
34,95 €
ISBN 978-3-642-17806-1

Social Ethics and Normative Economics
Essays in Honour of Serge-Christophe Kolm

This collection of thirteen essays on social ethics and normative economics honouring Serge-Christophe Kolm's seminal contributions to this field addresses the following questions: How should the public sector price its production and services? What are the normative foundations of criteria for comparing distributions of riches and advantages? How should intergenerational social immobility and inequality in circumstances be measured? What is a fair way to form partnerships? How vulnerable to manipulation is the Lindahl rule for allocating public goods? What are the properties of Kolm's ELIE tax proposal? Would the addition of EU-level income taxes enhance equity? How should we compare different scenarios for future societies with different population sizes? How can domain conditions in social choice theory be justified using Kolm's epistemic counterfactuals? How can Kolm's distributive liberal contract be implemented? What are the implications of norms of reciprocity for the organization of society? [...]?

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Contents

Fields of interest
Microeconomics; Ethics; Public Finance & Economics; Sociology; Economic Theory

Target groups
Research

Type of publication
Contributed volume

Available
119,95 €
ISBN 978-3-642-17806-1

Spirituality and Ethics in Management

The book - which was originally published by Kluwer in 2004 - is a collection of scholarly papers focusing on the role of spirituality and ethics in renewing the contemporary management praxis. The basic argument is that a more inclusive, holistic and peaceful approach to management is needed if business and political leaders are to uplift the environmentally degrading and socially disintegrating world of our age. The book uses diverse value perspectives (Hindu, Catholic, Buddhist, and Humanist) and a variety of disciplines (philosophy, ethics, management studies, psychology, and organizational sciences) to extend traditional reflections on corporate purpose and focuses on a self-referential organizational-existential search for meaning, identity and success.

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Fields of interest
Business & Management Science; Ethics

Target groups
Research

Type of publication
Contributed volume

Available
99,95 €
Territorial Governance
Local Development, Rural Areas and Agrofood Systems

This work aims to present the most recent developments regarding territorial governance, placing particular emphasis on rural and periurban areas. The reader will find information on the processes of development of European regions, as well as on the behaviours and strategies adopted by the different actors who live in these territories and contribute to the latter’s livelihood. The first part of the book analyses the structural changes in the modes of production that have affected these territories. The second part addresses the questions of methodology and of the structures of governance of local development in rural areas. The last section makes an assessment of the geographical indications as tools of governance of local agrifood chains. The book was written by economists, geographers, land use planners and specialists of the questions of governance and management of rural and periurban areas.

Features
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Contents

Fields of interest
Regional Science

Target groups
Research

Type of publication
Contributed volume

Available
2011. XXIL, 207 p. 6 illus. Hardcover

99,95 €
ISBN 978-3-7908-2421-6

The Basel II Risk Parameters
Estimation, Validation, Stress Testing - with Applications to Loan Risk Management

The estimation and the validation of the Basel II risk parameters PD (default probability), LGD (loss given default), and EAD (exposure at default) is an important problem in banking practice. These parameters are used on the one hand as inputs to credit portfolio models and in loan pricing frameworks, on the other to compute regulatory capital according to the new Basel rules. This book covers the state-of-the-art in designing and validating rating systems and default probability estimations. Furthermore, it presents techniques to estimate LGD and EAD and includes a chapter on stress testing of the Basel II risk parameters. The second edition is extended by three chapters explaining how the Basel II risk parameters can be used for building a framework for risk-adjusted pricing and risk management of loans.

Features
The estimation and the validation of the Basel II risk parameters PD (default probability), LGD (loss given default), and EAD (exposure at default) is an important problem in banking practice. These parameters are used on the one hand as inputs to credit portfolio models and in loan pricing frameworks, on the other to compute regulatory capital according to the new Basel rules. This book covers the [...]

Contents

Fields of interest
Finance / Banking; Management/Business for Professionals; Quantitative Finance; Econometrics

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XIV, 426 p. Hardcover

74,95 €
ISBN 978-3-642-16113-1

The Ethics of Banking
Conclusions from the Financial Crisis

The Ethics of Banking analyzes the systemic and the ethical mistakes that have led to the crisis. It keeps the middle ground between accusing all failures by the argument of a systemic crisis not to be taken responsibility for by the financial managers and the moralistic reproach that only moral failure is at the origin of the crisis. It investigates the role of speculation in the formation of the crisis and distinguishes between productive speculation for hedging and for securing market liquidity on the one hand, and unproductive and even detrimental hyper-speculation going far beyond of the degree of speculation that is necessary in a developed economy for the liquidity of financial markets, on the other hand. Hyper-speculation has increased the risks of the financial system and is still doing so.

Features
This book analyzes the systemic and the ethical mistakes that have led to the financial crisis of 2008. It explores the middle ground between the argument that financial managers cannot be expected to take responsibility for a systemic crisis and the argument that moral failure is the one and only origin of the crisis. The book investigates the role of speculation in the formation of the crisis. It [...]

Contents
Preface.- Introduction: Is the Finance Industry Ethically Irrelevant?.- Part A Foundations of Business and Finance Ethics.- Chapter 1 Ethical Economy, Economic Ethics, Business Ethics.- Part B The Ethical Economy and Finance Ethics of the Markets for Credit, Capital, Corporate Control, and Derivatives.- Chapter 2 The Ethical Economy of the Credit Market.- Chapter 3 The Ethical Economy of the Capital Market.- Chapter 4 Insider Knowledge and Insider Trading as Central Problems of Finance Ethics.- Chapter 5 The Ethical Economy of the Market for Corporate Control and for Corporate Know-How.- [...]

Fields of interest
Finance / Banking; Ethics

Target groups
Research

Type of publication
Monograph

Available

99,95 €
The Konstantinos Karamanlis Institute for Democracy Yearbook

2011

The Global Economic Crisis and the Case of Greece

The global economy is still experiencing the effects of the worst economic crisis since the Great Depression of the 1930s. Over the last three years economies worldwide have slowed and international trade has declined. Most importantly, the crisis has negatively affected the lives of ordinary people, creating a sense of uncertainty about the future and thus posing a direct threat to social cohesion, thus posing new challenges to political leadership. Climate change is also forcing the developed world to formulate a common strategy that will balance growth and environmental protection. The aim of the book is to examine these international trends and comprehend the transformations that take place internationally. The multi-authored work presents several accounts on the course of vital aspects of politics and economy. As a result, the contents of the book focuses on four main subjects: 1) global economic crisis and its consequences, 2) economic governance, 3) political leadership, and 4) climate change.

Features
In all probability 2011 is going to be one of the most critical years in recent decades. The problems created by the global economic crisis continue to affect the lives of ordinary people and could become a source of social instability. At the same time, developments at international level are creating a sense of uncertainty since long-established balances are facing profound challenges. With [...] 

Contents

Fields of interest
Economic Policy; International Economics; Climate Change; Political Science

Target groups
Research

Type of publication
Contributed volume

Available
2011. XVII, 195 p. 6 illus. in col. (The Konstantinos Karamanlis Institute for Democracy Yearbook Series, 0) Hardcover
99,95 €

ISBN 978-3-642-18414-7

Transport Moving to Climate Intelligence

New Chances for Controlling Climate Impacts of Transport after the Economic Crisis

Transportation contributes to roughly a fifth of greenhouse gas emissions, and as a growing sector of the economy, its contribution to climate change, if remained unchanged, could even grow. This is particularly true in the developing world, where the growth rates of air and ship transport are expected to exceed those of the EU, and worldwide objectives to curb greenhouse gas emissions by 2050 by sixty to eighty percent could be placed in serious jeopardy. This book addresses the key issues of controlling transportation growth and identifying and implementing measures that would significantly reduce the emissions of greenhouse gases from transport while maintaining its vital role in generating prosperity and mobility for future generations. This book describes the challenge that transport contributes today as well as its role in the future for climate policy. It will discuss and provide hands-on suggestions for transportation policy that will mitigate the greenhouse gas emissions from [...] 

Features
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Contents

Fields of interest
Environmental Economics; Climate Change; Economic Policy; Regional Science

Target groups
Research

Type of publication
Contributed volume

Available
99,95 €
Ways Out of the Working Capital Trap
Empowering Self-Financing Growth Through Modern Supply Management

Especially in times of an economic boom following a crisis, companies have to deal with the phenomenon of the “working capital trap,” which signifies a company’s increasing need for financial liquidity in times of hindered access to debt capital, caused by the increasingly restrictive credit approval processes of financial institutions. As a consequence of cost savings, this situation is often reinforced by a low level of inventory. This book takes up the problem and shows ways of escaping the “trap” by identifying and strengthening in-house financing potential. First, different operating ratios will be introduced. These refer to the amount of capital committed to the flow of goods and to the amount of in-house financing possible. Subsequently, methods for consolidating in-house financing that are affected by procurement processes will be presented from the company’s and the supply chain’s perspective. From a company’s perspective, the methods for consolidating the amount of in-house financing over...[

Features
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Contents

Fields of interest
Production / Logistics; Organization / Planning

Target groups
Professional/practitioner

Type of publication
Monograph

Available
34,95 €
ISBN 978-3-642-17270-0

Advances in Food Protection
Focus on Food Safety and Defense

The global food-supply chain is vulnerable to threats from a variety of directions. Hence food security and safety remains a hot topic worldwide in academic research arenas and food industry practices. This book describes efforts from academia, government, and industry to counter food terrorism and to protect the food supply against any threat. In addition, it evaluates the global food supply, production capabilities, and food availability during and after disasters. Articles in the book assess food safety emergencies, and the prevention of, and response to deliberate contamination by microbial or chemical substances. Minimization of health and economic risks following a terrorist act or unintentional contamination is likewise discussed. The book also examines novel preservation techniques, methods to produce safe food products, and other concerns for ensuring a stable and safe food supply.

Features
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Contents

Fields of interest
Chemistry (general); Applied Microbiology; Food Science; Safety in Chemistry / Dangerous Goods

Target groups
Graduate

Type of publication
Proceedings

Available
139,95 €
ISBN 978-94-007-1099-3

Advances in Food Protection
Focus on Food Safety and Defense

The global food-supply chain is vulnerable to threats from a variety of directions. Hence food security and safety remains a hot topic worldwide in academic research arenas and food industry practices. This book describes efforts from academia, government, and industry to counter food terrorism and to protect the food supply against any threat. In addition, it evaluates the global food supply, production capabilities, and food availability during and after disasters. Articles in the book assess food safety emergencies, and the prevention of, and response to deliberate contamination by microbial or chemical substances. Minimization of health and economic risks following a terrorist act or unintentional contamination is likewise discussed. The book also examines novel preservation techniques, methods to produce safe food products, and other concerns for ensuring a stable and safe food supply.

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Contents

Fields of interest
Chemistry (general); Applied Microbiology; Food Science; Safety in Chemistry / Dangerous Goods

Target groups
Graduate

Type of publication
Proceedings

Available
69,95 €
ISBN 978-94-007-1102-0
Biodegradable Poly (Lactic Acid)
Synthesis, Modification, Processing and Applications

"Biodegradable Poly (Lactic Acid): Synthesis, Modification, Processing and Applications" describes the preparation, modification, processing, and the research and applications of biodegradable poly (lactic acid), which belong to the biomedical and environment-friendly materials. Highly illustrated, the book introduces systematically the synthesis, physical and chemical modifications, and the latest developments of research and applications of poly (lactic acid) in biomedical materials. The book is intended for researchers and graduate students in the fields of materials science and engineering, polymer science and engineering, biomedicine, chemistry, environmental sciences, textile science and engineering, package materials, and so on. Dr. Jie Ren is a professor at the Institute of Nano- and Bio-Polymeric Materials, School of Material Science and Engineering, Tongji University, Shanghai, China.

Features
"Biodegradable Poly (Lactic Acid): Synthesis, Modification, Processing and Applications" describes the preparation, modification, processing, and the research and applications of biodegradable poly (lactic acid), which belong to the biomedical and environment-friendly materials. Highly illustrated, the book introduces systematically the synthesis, physical and chemical modifications, and the latest […]

Contents

Fields of interest
Polymer Sciences; Biochemical Engineering; Waste Management / Waste Technology; Biomedical Engineering

Target groups
Research

Type of publication
Monograph

Available
2011. 240 p. 120 illus. Hardcover
119,95 €
ISBN 978-3-642-17595-4

Cellulose Fibers: Bio- and Nano-Polymer Composites
Green Chemistry and Technology

Because we are living in an era of Green Science and Technology, developments in the field of bio- and nano-polymer composite materials for advanced structural and medical applications is a rapidly emerging area and the subject of scientific attention. In light of the continuously deteriorating environmental conditions, researchers all over the world have focused an enormous amount of scientific research towards bio-based materials because of their cost effectiveness, eco-friendliness and renewability. This handbook deals with cellulose fibers and nano-fibers and covers the latest advances in bio- and nano-polymer composite materials. This rapidly expanding field is generating many exciting new materials with novel properties and promises to yield advanced applications in diverse fields. This book reviews vital issues and topics and will be of interest to academicians, research scholars, polymer engineers and researchers in industries working in the subject area. It will also be a valuable […]

Features
Because we are living in an era of Green Science and Technology, developments in the field of bio- and nano-polymer composite materials for advanced structural and medical applications is a rapidly emerging area and the subject of scientific attention. In light of the continuously deteriorating environmental conditions, researchers all over the world have focused an enormous amount of scientific research […]

Contents

Fields of interest
Polymer Sciences; Environmental Chemistry; Biomaterials; Industrial Chemistry / Chemical Engineering

Target groups
Research

Type of publication
Monograph

Available
2011. XIX, 750 p. Hardcover
239,00 €
ISBN 978-3-642-17369-1

Design, Synthesis and Characterization of new Supramolecular Architectures

This thesis focuses on the bottom-up design, construction and operation of supramolecular systems capable of behaving as devices and machines on the molecular scale, which is a topic of great interest in nanoscience and a fascinating challenge in nanotechnology. In particular, the systems investigated here include: polyviologen dendrimers capable of behaving as hosts and chargestoring devices; molecular machines based on pseudorotaxanes/rotaxanes and operated by photoinduced proton transfer, or photoisomerization reactions; and a simple unimolecular multifunction/demifunction. The systems have been characterized using a variety of techniques including absorption and emission spectra, laser flash photolysis, NMR spectroscopy, electrochemical experiments, stopped flow measurements. This research addresses a large number of open problems in the nanosciences, dealing with a wide range of the most advanced applications of supramolecular systems.

Features
This thesis focuses on the bottom-up design, construction and operation of supramolecular systems capable of behaving as devices and machines on the molecular scale, which is a topic of great interest in nanoscience and a fascinating challenge in nanotechnology. In particular, the systems investigated here include: polyviologen dendrimers capable of behaving as hosts and chargestoring devices; molecular machines based on pseudorotaxanes/rotaxanes and operated by photoinduced proton transfer, or photoisomerization reactions; and a simple unimolecular multifunction/demifunction. The systems have been characterized using a variety of techniques including absorption and emission spectra, laser flash photolysis, NMR spectroscopy, electrochemical experiments, stopped flow measurements. This research addresses a large number of open problems in the nanosciences, dealing with a wide range of the most advanced applications of supramolecular systems.

Contents

Fields of interest
Physical Chemistry; Nanotechnology; Nanoscience

Target groups
Research

Type of publication
Monograph

Available
2011. XIII, 90 p. 60 illus., 16 in color. (Springer Theses) Hardcover
79,95 €
ISBN 978-3-642-19284-5
Interfacial Phenomena in Electrocatalysis

This volume analyzes and summarizes recent developments and breakthroughs in several key interfacial electrochemical systems in fuel cell electrocatalysis. The chapters are written by internationally recognized experts or rising stars in electrocatalysis addressing both the fundamental and practical aspects of several emerging key electrochemical technologies.

Features
Topics in Number 51 include: temperature effects on platinum single-crystal and aqueous solution interfaces, surface thermodynamics of the metal and solution interfaces, XAS investigations of PEM fuel cells, Palladium-Based electrocatalysts for alcohol oxidation in direct alcohol fuel cells, structure and reactivity of Pt aqueous solution interface.

Contents

Fields of interest
Electrochemistry; Catalysis; Energy Technology

Target groups
Professional/practitioner

Type of publication
Monograph

Available
139,95 €
ISBN 978-1-4419-5579-1

L. Prodi, University of Bologna, Bologna, Italy; M. Montalti, University of Bologna, Department of Chemistry; N. Zaccheroni, University of Bologna, Department of Chemistry (Eds.)

Luminescence Applied in Sensor Science


Features

Contents

Fields of interest
Organic Chemistry; Analytical Chemistry; Nanochemistry

Target groups
Research

Type of publication
Reviews

Available
189,95 €
ISBN 978-3-642-19419-1

J. Aldrich-Wright, University of Western Sydney, Australia (Ed.)

Metallointercalators

Synthesis and Techniques to Probe Their Interactions with Biomolecules

A comprehensive treatment of the characterization techniques used in investigating inorganic and organic molecules that interact with biomolecules is presented to the reader in a clear fashion. The work consists of two parts: (i) synthetic aspects of metallointercalators along with targeting and improving transport and (ii) the various techniques that are used for probing their interactions, such as; DNA-NMR, PGSE-NMR, DNA ESI-MS, Linear and Circular Dichroism, Fluorescence Spectroscopy, Confocal Microscopy, Viscosity, TGA and dialysis, Microarrays, biological analysis. Chapters are devoted to the synthesis and the techniques used to study the interactions of inorganic complexes with biomolecules. Considerably detailed examples are used to help illustrate the application of these techniques. This book is a useful resource for an array of inorganic and organic advanced undergraduate and graduate courses and for researchers in drug discovery.

Features
A comprehensive treatment of the characterization techniques used in investigating inorganic and organic molecules that interact with biomolecules is presented to the reader in a clear fashion. The work consists of two parts: (i) synthetic aspects of metallointercalators along with targeting and improving transport and (ii) the various techniques that are used for probing their interactions, such as; DNA-NMR, PGSE-NMR, DNA ESI-MS, Linear and Circular Dichroism, Fluorescence Spectroscopy, Confocal Microscopy, Viscosity, TGA and dialysis, Microarrays, biological analysis. Chapters are devoted to the synthesis and the techniques used to study the interactions of inorganic complexes with biomolecules. Considerably detailed examples are used to help illustrate the application of these techniques. This book is a useful resource for an array of inorganic and organic advanced undergraduate and graduate courses and for researchers in drug discovery.

Contents
Introduction.- Synthesis: Platinum Interkalating Complexes; Binuclear Platinum Complexes; Binuclear Ruthenium and Platinum Intercalating Complexes; Sequence Selective Intercalating Complexes; Targeting and Improving Transport, Cucurbit[n]uril, Cyclodextrin and Derivatives.- Techniques to Probe Interactions with Biomolecules: Introduction to NMR, DNA-NMR, PGSE-NMR, DNA ESI-MS; Investigating Binding Interactions using Linear Dichroism and Circular Dichroism; Fluorescence Spectroscopy; Confocal Microscopy; Implementation of synchrotron X-ray microscopy for investigations of the cellular uptake...

Fields of interest
Inorganic Chemistry; Pharmacy; Biochemistry; Physical Chemistry; Spectroscopy / Spectrometry

Target groups
Research

Type of publication
Monograph

Available
2011. XXVIII, 427 p. 120 illus., 40 in color. Hardcover
139,95 €
ISBN 978-3-211-09427-3
Scaffolds for Tissue Engineering

The development and application of bioactive nanostructured constructs for tissue regeneration is the focus of the research summarised in this thesis. Moreover, a particular focus is the rational use of supercritical carbon dioxide foaming and electrospinning technologies which can lead to innovative polymeric bioresorbable scaffolds made of hydrolysable (both commercial and ‘ad-hoc’ synthesized) polyesters. Mainly, the author discusses the manipulation of polymer chemical structure and composition to tune scaffold physical properties, and optimization of scaffold 3D architecture by a smart use of both fabrication techniques. The multidisciplinary nature of this research is imperative in pursuing the challenge of tissue regeneration successfully. One of the strengths of this thesis is the integration of knowledge from chemistry, physics, engineering, materials science and biomedical science which has contributed to setting up new national and international collaborations, while strengthening [...] 

Features
The development and application of bioactive nanostructured constructs for tissue regeneration is the focus of the research summarised in this thesis. Moreover, a particular focus is the rational use of supercritical carbon dioxide foaming and electrospinning technologies which can lead to innovative polymeric bioresorbable scaffolds made of hydrolysable (both commercial and ‘ad-hoc’ synthesized) polyesters. [...] 

Contents

Fields of interest
Polymer Sciences; Biomaterials; Biomedical Engineering

Target groups
Research

Type of publication
Monograph

Available
2011. XI, 121 p. 68 illus., 22 in color. (Springer Theses) Hardcover
99,95 €
ISBN 978-3-642-19271-5

Computer Science

Advanced Research on Electronic Commerce, Web Application, and Communication

International Conference, ECWAC 2011, Guangzhou, China, April 16-17, 2011. Proceedings, Part II

The two-volume set CCIS 143 and CCIS 144 constitutes the refereed proceedings of the International Conference on Electronic Commerce, Web Application, and Communication, ECWAC 2011, held in Guangzhou, China, in April 2011. The 148 revised full papers presented in both volumes were carefully reviewed and selected from a large number of submissions. Providing a forum for engineers, scientists, researchers in electronic commerce, Web application, and communication fields, the conference will put special focus also on aspects such as e-business, e-learning, and e-security, intelligent information applications, database and system security, image and video signal processing, pattern recognition, information science, industrial automation, process control, user/machine systems, security, integrity, and protection, as well as mobile and multimedia communications.

Features
The two-volume set CCIS 143 and CCIS 144 constitutes the refereed proceedings of the International Conference on Electronic Commerce, Web Application, and Communication, ECWAC 2011, held in Guangzhou, China, in April 2011. The 148 revised full papers presented in both volumes were carefully reviewed and selected from a large number of submissions. Providing a forum for engineers, scientists, researchers in [...] 

Fields of interest
Computer Science (general)

Target groups
Research

Type of publication
Proceedings

Available
79,00 €
ISBN 978-3-642-20464-7

Advances in Cryptology -- EUROCRYPT 2011

This book constitutes the refereed proceedings of the 30th Annual International Conference on the Theory and Applications of Cryptographic Techniques, EUROCRYPT 2011, held in Tallinn, Estonia, in May 2011. The 31 papers, presented together with 2 invited talks, were carefully reviewed and selected from 167 submissions. The papers are organized in topical sections on lattice-base cryptography, implementation and side channels, homomorphic cryptography, signature schemes, information-theoretic cryptography, symmetric key cryptography, attacks and algorithms, secure computation, composability, key-dependent message security, and public key encryption.

Features
This book constitutes the refereed proceedings of the 30th Annual International Conference on the Theory and Applications of Cryptographic Techniques, EUROCRYPT 2011, held in Tallinn, Estonia, in May 2011. The 31 papers, presented together with 2 invited talks, were carefully reviewed and selected from 167 submissions. The papers are organized in topical sections on lattice-base cryptography, implementation [...] 

Fields of interest
Data Encryption; Computer Communication Networks; Systems and Data Security; Algorithm Analysis and Problem Complexity; Discrete Mathematics in Computer Science; Management of Computing and Information Systems

Target groups
Research

Type of publication
Proceedings

Available
79,00 €
ISBN 978-3-642-20464-7
Advances in Information Retrieval
33rd European Conference on IR Research, ECIR 2011, Dublin, Ireland, April 18-21, 2011, Proceedings

This book constitutes the refereed proceedings of the 33rd annual European Conference on Information Retrieval, ECIR 2011, held in Dublin, Ireland, in April 2011. The 45 revised full papers presented with 24 poster papers, 17 short papers, and 6 tool demonstrations were carefully reviewed and selected from 223 full paper submissions and 64 poster/demo submissions. The papers are organized topical sections on text categorization, recommender systems, Web IR, IR evaluation, IR for social networking, and IR for digital libraries.

Features
This book constitutes the refereed proceedings of the 33rd annual European Conference on Information Retrieval Research, ECIR 2011, held in Dublin, Ireland, in April 2011. The 45 revised full papers presented with 24 poster papers, 17 short papers, and 6 tool demonstrations were carefully reviewed and selected from 223 full paper submissions and 64 poster/demo submissions. The papers are organized topical sections on text categorization, recommender systems, Web IR, IR evaluation, IR for social networking, and IR for digital libraries.

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

Target groups
Professional/practitioner

Type of publication
Proceedings

Available

87.00 €
ISBN 978-3-642-20160-8

Advances in Power Electronics and Instrumentation Engineering

This book constitutes the refereed proceedings of the Second International Conference on Advances in Power Electronics and Instrumentation Engineering, PEIE 2011, held at Nagpur, India, in April 2011. The 9 revised full papers presented together with 4 short papers and 7 poster papers were carefully reviewed and selected from numerous submissions. The papers address current issues in the field of power electronics, communication engineering, instrumentation engineering, digital electronics, electrical power engineering, electrical machines, information technology, control systems, and the like.

Features
This book constitutes the refereed proceedings of the Second International Conference on Advances in Power Electronics and Instrumentation Engineering, PEIE 2011, held at Nagpur, India, in April 2011. The 9 revised full papers presented together with 4 short papers and 7 poster papers were carefully reviewed and selected from numerous submissions. The papers address current issues in the field of power electronics, communication engineering, instrumentation engineering, digital electronics, electrical power engineering, electrical machines, information technology, control systems, and the like.

Fields of interest
Special Purpose and Application-Based Systems; Software Engineering; Processor Architectures; Logic Design; Computer Hardware; Control Structures and Microprogramming

Target groups
Research

Type of publication
Proceedings

Available

56.00 €
ISBN 978-3-642-20498-2

Applications of Declarative Programming and Knowledge Management
18th International Conference, INAP 2009, Évora, Portugal, November 3-5, 2009, Revised Selected Papers

This book constitutes the thoroughly refereed post-conference proceedings of the 18th International Conference on Applications of Declarative Programming and Knowledge Management, INAP 2009, held in Évora, Portugal, in November 2009. The 12 revised full papers presented together with 2 invited talks were carefully reviewed and selected during two rounds of reviewing and improvement. The conference comprehensively covers the impact of programmable logic solvers in the internet society, its underlying technologies, and leading edge applications in industry, commerce, government, and societal services. The topics of the selected papers concentrate on three currently important fields: foundations and extensions of logic programming, databases and query languages, declarative programming with logic languages, and applications thereof.

Features
This book constitutes the thoroughly refereed post-conference proceedings of the 18th International Conference on Applications of Declarative Programming and Knowledge Management, INAP 2009, held in Évora, Portugal, in November 2009. The 12 revised full papers presented together with 2 invited talks were carefully reviewed and selected during two rounds of reviewing and improvement. The conference comprehensively covers the impact of programmable logic solvers in the internet society, its underlying technologies, and leading edge applications in industry, commerce, government, and societal services. The topics of the selected papers concentrate on three currently important fields: foundations and extensions of logic programming, databases and query languages, declarative programming with logic languages, and applications thereof.

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

Target groups
Research

Type of publication
Proceedings

Available

46.00 €
ISBN 978-3-642-20588-0
This book constitutes the refereed proceedings of the International Conference on the Applications of Evolutionary Computation, EvoApplications 2011, held in Torino, Italy, in April 2011 colocated with the Evo* 2011 events. Thanks to the large number of submissions received, the proceedings for EvoApplications 2011 are divided across two volumes (LNCS 6624 and 6625). The present volume contains contributions for EvoCOMNET, EvoFIN, EvoHOT, EvoMUSART, EvoSTIM, and EvoTRANSLOC. The 51 revised full papers presented carefully reviewed and selected from numerous submissions. This volume presents an overview about the latest research in EC. Areas where evolutionary computation techniques have been applied range from telecommunication networks to complex systems, finance and economics, games, image analysis, evolutionary music and art, parameter optimization, scheduling, and logistics. These papers may provide guidelines to help new researchers tackling their own problem using EC.

Features
This book constitutes the refereed proceedings of the International Conference on the Applications of Evolutionary Computation, EvoApplications 2011, held in Torino, Italy, in April 2011 colocated with the Evo* 2011 events. Thanks to the large number of submissions received, the proceedings for EvoApplications 2011 are divided across two volumes (LNCS 6624 and 6625). The present volume contains contributions [...]

Fields of interest
- Computation by Abstract Devices; Programming Techniques; Computer Communication Networks;
- Mathematical Applications in Computer Science; Image Processing and Computer Vision; Artificial Intelligence (incl. Robotics)

Target groups
- Research

Type of publication
- Proceedings

Available
- 70,00 €
- ISBN 978-3-642-20519-4

Beyond Deep Blue
Chess in the Stratosphere

More than a decade has passed since IBM’s Deep Blue computer stunned the world by defeating Garry Kasparov, the world chess champion at that time. Beyond Deep Blue tells the continuing story of the chess engine and its steady improvement. The book provides a detailed examination of the remarkable technological progress made by the engines – asking which one is best, how good is it, and how much better can it get. Features: presents a total of 118 games, played by 17 different chess engines, collected together for the first time in a single reference; details the processor speeds, memory sizes, and the number of processors used by each chess engine; includes games from 10 World Computer Chess Championships, and three computer chess tournaments of the Internet Chess Club; covers the man-machine matches between Fritz and Kramnik, and Kasparov and Deep Junior; describes three historical matches between leading engines – Hydra vs. Shredder, Junior vs. Fritz, and Zappa vs. Rybka.

Features
- More than a decade has passed since IBM’s Deep Blue computer stunned the world by defeating Garry Kasparov, the world chess champion at that time.
- Following Deep Blue’s retirement, there has been a succession of better and better chess playing computers, or chess engines, and today there is little question that the world’s best engines are stronger at the game than the world’s best human [...]
Computational Color Imaging
Third International Workshop, CCIW 2010, Milan, Italy, April 20-21, 2011, Proceedings

This book constitutes the refereed proceedings of the Third Computational Color Imaging Workshop, CCIW 2010, held in Milan, Italy, in April 2010. The 16 revised full papers, presented together with three invited papers, were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on computational photography, color and perception, color imaging, and computational imaging.

Features
This book constitutes the refereed proceedings of the Third Computational Color Imaging Workshop, CCIW 2010, held in Milan, Italy, in April 2010. The 16 revised full papers, presented together with three invited papers, were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on computational photography, color and perception, color imaging, and computational imaging.

Fields of interest
Image Processing and Computer Vision; Computer Graphics; Pattern Recognition; Artificial Intelligence (incl. Robotics); Computer Imaging, Vision, Pattern Recognition and Graphics; Biometrics

Target groups
Research

Type of publication
Proceedings

Available
46,00 €
ISBN 978-3-642-20403-6

Core Concepts in Data Analysis: Summarization, Correlation and Visualization

Core Concepts in Data Analysis: Summarization, Correlation and Visualization provides in-depth descriptions of those data analysis approaches that either summarize data (principal component analysis and clustering) or correlate different aspects of data (decision trees, linear rules, neuron networks, and Bayes rule). Boris Mirkin takes an unconventional approach and introduces the concept of multivariate data summarization as a counterpart to conventional machine learning prediction schemes, utilizing techniques from statistics, data analysis, data mining, machine learning, computational intelligence, and information retrieval. Innovations following from his in-depth analysis of the models underlying summarization techniques are introduced, and applied to challenging issues such as the number of clusters, mixed scale data standardization, interpretation of the solutions, as well as relations between seemingly unrelated concepts: goodness-of-fit functions [...] Features
Core Concepts in Data Analysis: Summarization, Correlation and Visualization provides in-depth descriptions of those data analysis approaches that either summarize data (principal component analysis and clustering) or correlate different aspects of data (decision trees, linear rules, neuron networks, and Bayes rule). Boris Mirkin [...] Contents

Fields of interest
Discrete Mathematics in Computer Science; Probability and Statistics in Computer Science; Mathematical Applications in Computer Science; Artificial Intelligence (incl. Robotics); Pattern Recognition

Target groups
Upper undergraduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XX, 390 p. 129 illus. (Undergraduate Topics in Computer Science) Softcover
34,95 €

Current Challenges in Patent Information Retrieval

Features
Patents form an important knowledge resource – much technical information represented in patents is not represented in scientific literature – and at the same time they are important, and economically highly relevant, legal documents. Between 1998 and 2008, the number of patent applications filed yearly worldwide grew by more than 50 percent. Yet still we see a huge gap between, on the one hand, the [...] Contents
Information Storage and Retrieval; Document Preparation and Text Processing; Computer Appl. in Administrative Data Processing; Commercial Law

Target groups
Research

Type of publication
Monograph

Available
99,95 €
ISBN 978-3-642-19230-2
This book constitutes the workshop proceedings of the 16th International Conference on Database Systems for Advanced Applications, DASFAA 2011, held in Hong Kong, China, in April 2011. The volume contains six workshops, each focusing on specific research issues that contribute to the main themes of the DASFAA conference: The First International Workshop on Graph-structured Data Bases (GDB 2011); the First International Workshop on Spatial Information Modeling, Management and Mining (SIM3 2011); the International Workshop on Flash-based Database Systems (FlashDB 2011); the Second International Workshop on Social Networks and Social Media Mining on the Web (SNSMW 2011); the First International Workshop on Data Management for Emerging Network Infrastructures (DaMEN 2011); and the Fourth International Workshop on Data Quality in Integration Systems (DQIS 2011).

Features
This book constitutes the workshop proceedings of the 16th International Conference on Database Systems for Advanced Applications, DASFAA 2011, held in Hong Kong, China, in April 2011. The volume contains six workshops, each focusing on specific research issues that contribute to the main themes of the DASFAA conference: The First International Workshop on Graph-structured Data Bases (GDB 2011); the First International Workshop on Spatial Information Modeling, Management and Mining (SIM3 2011); the International Workshop on Flash-based Database Systems (FlashDB 2011); the Second International Workshop on Social Networks and Social Media Mining on the Web (SNSMW 2011); the First International Workshop on Data Management for Emerging Network Infrastructures (DaMEN 2011); and the Fourth International Workshop on Data Quality in Integration Systems (DQIS 2011).

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

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
79,00 €
ISBN 978-3-642-20148-6

Database Systems for Advanced Applications
16th International Conference, DASFAA 2011, Hong Kong, China, April 22-25, 2011, Proceedings, Part I

This two volume set LNCS 6587 and LNCS 6588 constitutes the refereed proceedings of the 16th International Conference on Database Systems for Advanced Applications, DASFAA 2011, held in Saarbrücken, Germany, in April 2010. The 53 revised full papers and 12 revised short papers presented together with 2 invited keynote papers, 22 demonstration papers, 4 industrial papers, 8 demo papers, and the abstract of 1 panel discussion, were carefully reviewed and selected from a total of 225 submissions. The topics covered are social network, social network and privacy, data mining, probability and uncertainty, stream processing, graph, XML, XML and graph, similarity, searching and digital preservation, spatial queries, query processing, as well as indexing and high performance.

Features
This two volume set LNCS 6587 and LNCS 6588 constitutes the refereed proceedings of the 16th International Conference on Database Systems for Advanced Applications, DASFAA 2011, held in Saarbrücken, Germany, in April 2010. The 53 revised full papers and 12 revised short papers presented together with 2 invited keynote papers, 22 demonstration papers, 4 industrial papers, 8 demo papers, and the abstract of 1 panel discussion, were carefully reviewed and selected from a total of 225 submissions. The topics covered are social network, social network and privacy, data mining, probability and uncertainty, stream processing, graph, XML, XML and graph, similarity, searching and digital preservation, spatial queries, query processing, as well as indexing and high performance.

Fields of interest
Database Management; Data Mining and Knowledge Discovery; Information Storage and Retrieval; Information Systems Applications (incl.Internet); Multimedia Information Systems; User Interfaces and Human Computer Interaction

Target groups
Research

Type of publication
Proceedings

Available
62,00 €
ISBN 978-3-642-20151-6
Declarative Agent Languages and Technologies VIII

8th International Workshop, DALT 2009, Toronto, Canada, May 10, 2010, Revised Selected and Invited Papers

This book constitutes the thoroughly refereed post-workshop proceedings of the 8th International Workshop on Declarative Agent Languages and Technologies, DALT 2010, held in Toronto, Canada, on May 10, 2010, as a satellite workshop of the 9th International Joint Conference on Autonomous Agents and Multiagent Systems, AAMAS 2010.

The 7 revised full papers presented together with 4 invited lectures were carefully selected during two rounds of reviewing and improvement from 24 initial submissions. DALT aims to make formal methods and declarative technologies and approaches available to and understood by a broader segment of the multi-agent research community; the papers are organized in topical sections on BDI rational agents, communication, coordination and negotiation, as well as social aspects and control systems.

Fields of interest

Artificial Intelligence (incl. Robotics); Models and Principles; Computer Communication Networks; Software Engineering; Programming Languages; Compilers, Interpreters; Logics and Meanings of Programs

Target groups

Research

Type of publication

Proceedings

Available


46,00 €

ISBN 978-3-642-20714-3

Digital Privacy

PRIME - Privacy and Identity Management for Europe

This book documents the R&D outcome of the PRIME Project, an R&D project partially funded by the European Union’s Sixth Framework Programme and the Swiss Federal Office for Education and Science. PRIME has focused on privacy-enhancing identity management techniques and systems to support users’ sovereignty over their personal privacy and enterprises’ privacy-compliant data processing. During the course of four years, the project has involved over a hundred researchers and professionals from 22 major European academic and industrial organizations conducting R&D work in areas relevant to digital privacy. The book presents 28 detailed chapters organized in five parts: Introductory summary, legal, social, and economic aspects, realization of privacy-enhancing user-centric identity management, exploitation of PRIME results for applications, conclusions drawn and an outlook on future work. As the first coherent presentation of the topic, this book will serve as a valuable source of reference and...[.]

Contents


Fields of interest

Computers and Society; Management of Computing and Information Systems; Information Systems Applications (inc.Internet); Models and Principles; Computer Appl. in Administrative Data Processing; Data Encryption

Target groups

Research

Type of publication

Contributed volume

Available


87,00 €
E-Librarian Service
User-Friendly Semantic Search in Digital Libraries

This book introduces a new approach to designing E-Librarian Services. With the help of this system, users will be able to retrieve multimedia resources from digital libraries more efficiently than they would by browsing through an index or by using a simple keyword search. E-Librarian Services combine recent advances in multimedia information retrieval with aspects of human-machine interfaces, such as the ability to ask questions in natural language. They simulate a human librarian by finding and delivering the most relevant documents that offer users potential answers to their queries. The premise is that more pertinent results can be retrieved if the search engine understands the meaning of the query; the returned results are therefore logical consequences of an inference rather than of keyword matches. Moreover, E-Librarian Services always provide users with a solution, even in situations where they are unable to offer a comprehensive answer.

Features
This book introduces a new approach to designing E-Librarian Services. With the help of this system, users will be able to retrieve multimedia resources from digital libraries more efficiently than they would by browsing through an index or by using a simple keyword search. E-Librarian Services combine recent advances in multimedia information retrieval with aspects of human-machine interfaces, such as the [...]

Contents
- Part II: Key Technologies of E-Librarian Services.
- Part III: Design and Utilization of E-Librarian Services.

Fields of interest
Information Storage and Retrieval; Multimedia Information Systems; User Interfaces and Human Computer Interaction; Information Systems and Communication Service; Language Translation and Linguistics; Computer Communication Networks

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XV, 212 p. 67 illus., 10 in color. (X.media.publishing) Hardcover

99,95 €
ISBN 978-3-642-17742-2

Engineering of Software
The Continuing Contributions of Leon J. Osterweil

Features
Software engineering research can trace its roots to a few highly influential individuals. Among that select group is Leon J. Osterweil, who has been a major force in driving software engineering from its infancy to its modern reality. For more than three decades, Prof. Osterweil’s work has fundamentally defined or significantly impacted major directions in software analysis, development tools and [...]}

Contents

Fields of interest
Software Engineering; Management of Computing and Information Systems

Target groups
Research

Type of publication
Commemorative publication

Available
2011. VIII, 400 p. Hardcover

99,95 €
ISBN 978-3-642-19822-9

Evolutionary Computation in Combinatorial Optimization

This book constitutes the refereed proceedings of the 11th European Conference on Evolutionary Computation in Combinatorial Optimization, EvoCOP 2011, held in Torino, Italy, in April 2011. The 22 revised full papers presented were carefully reviewed and selected from 42 submissions. The papers present the latest research and discuss current developments and applications in metaheuristics - a paradigm to effectively solve difficult combinatorial optimization problems appearing in various industrial, economical, and scientific domains. Prominent examples of metaheuristics are evolutionary algorithms, simulated annealing, tabu search, scatter search, memetic algorithms, variable neighborhood search, iterated local search, greedy randomized adaptive search procedures, estimation of distribution algorithms, and ant colony optimization.

Features
This book constitutes the refereed proceedings of the 11th European Conference on Evolutionary Computation in Combinatorial Optimization, EvoCOP 2011, held in Torino, Italy, in April 2011. The 22 revised full papers presented were carefully reviewed and selected from 42 submissions. The papers present the latest research and discuss current developments and applications in metaheuristics - a paradigm to [...]}

Fields of interest
Algorithm Analysis and Problem Complexity; Computation by Abstract Devices; Pattern Recognition; Discrete Mathematics in Computer Science; Probability and Statistics in Computer Science

Target groups
Research

Type of publication
Proceedings

Available

46,00 €
ISBN 978-3-642-20363-3
Evolutionary Computation, Machine Learning and Data Mining in Bioinformatics


This book constitutes the refereed proceedings of the 9th European Conference on Evolutionary Computation, Machine Learning and Data Mining in Bioinformatics, EvoBIO 2011, held in Torino, Italy, in April 2011 co-located with the Evo* 2011 events. The 12 revised full papers presented together with 7 poster papers were carefully reviewed and selected from numerous submissions. All papers included topics of interest such as biomarker discovery, cell simulation and modeling, ecological modeling, fluxomics, gene networks, biotechnology, metabolomics, microarray analysis, phylogenetics, protein interactions, proteomics, sequence analysis and alignment, and systems biology.

Features
This book constitutes the refereed proceedings of the 9th European Conference on Evolutionary Computation, Machine Learning and Data Mining in Bioinformatics, EvoBIO 2011, held in Torino, Italy, in April 2011 co-located with the Evo* 2011 events. The 12 revised full papers presented together with 7 poster papers were carefully reviewed and selected from numerous submissions. All papers included topics of interest such as biomarker discovery, cell simulation and modeling, ecological modeling, fluxomics, gene networks, biotechnology, metabolomics, microarray analysis, phylogenetics, protein interactions, proteomics, sequence analysis and alignment, and systems biology.

Fields of interest
Computational Biology / Bioinformatics; Algorithm Analysis and Problem Complexity; Database Management; Artificial Intelligence (incl. Robotics); Computation by Abstract Devices; Data Structures

Target groups
Professional/practitioner

Type of publication
Proceedings

Available

46,00 €
ISBN 978-3-642-20388-6

Evolutionary Optimization: the µGP toolkit

This book describes an award-winning evolutionary algorithm that outperformed experts and conventional heuristics in solving several industrial problems. It presents a discussion of the theoretical and practical aspects that enabled µGP (MicroGP) to autonomously find the optimal solution of hard problems, handling highly structured data, such as full-fledged assembly programs, with functions and interrupt handlers. For a practitioner, µGP is simply a versatile optimizer to tackle most problems with limited setup effort. The book is valuable for all who require heuristic problem-solving methodologies, such as engineers dealing with verification and test of electronic circuits; or researchers working in robotics and mobile communication. Examples are provided to guide the reader through the process, from problem definition to gathering results. For an evolutionary computation researcher, µGP may be regarded as a platform where new operators and strategies can be easily tested. MicroGP (the toolkit) is an [..]

Features
This book describes an award-winning evolutionary algorithm that outperformed experts and conventional heuristics in solving several industrial problems. It presents a discussion of the theoretical and practical aspects that enabled µGP (MicroGP) to autonomously find the optimal solution of hard problems, handling highly structured data, such as full-fledged assembly programs, with functions and interrupt [..]

Contents
Evolutionary computation.- Why yet another one evolutionary optimizer?.- The µGP architecture.- Advanced features.- Performing an evolutionary run.- Command line syntax.- Syntax of the settings file.- Syntax of the population parameters file.- Syntax of the external constraints file.- Writing a compliant evaluator.- Implementation details.- Examples and applications.- Argument and option synopsis.- External constraints synopsis.- Index.- References

Fields of interest
Artificial Intelligence (incl. Robotics); Computer Applications; Computer-Aided Engineering (CAD, CAE) and Design

Target groups
Research

Type of publication
Monograph

Available

62,00 €
ISBN 978-3-642-20661-0

Experimental Algorithms


This volume constitutes the refereed proceedings of the 10th International Symposium on Experimental Algorithms, SEA 2011, held in Kolimpari, Chania, Crete, Greece, in May 2011. The 36 revised full papers presented together with 2 invited papers were carefully reviewed and selected from 83 submissions and present current research in the area of design, analysis, and experimental evaluation and engineering of algorithms, as well as in various aspects of computational optimization and its applications.

Features
This volume constitutes the refereed proceedings of the 10th International Symposium on Experimental Algorithms, SEA 2011, held in Kolimpari, Chania, Crete, Greece, in May 2011. The 36 revised full papers presented together with 2 invited papers were carefully reviewed and selected from 83 submissions and present current research in the area of design, analysis, and experimental evaluation and engineering of algorithms, as well as in various aspects of computational optimization and its applications.

Fields of interest
Algorithm Analysis and Problem Complexity; Artificial Intelligence (incl. Robotics); Information Systems Applications (incl.Internet); Computer Communication Networks; Programming Techniques; Algorithms

Target groups
Research

Type of publication
Proceedings

Available

62,00 €
ISBN 978-3-642-20661-0
Formal Concept Analysis
9th International Conference, ICFCA 2011, Nicosia, Cyprus, May 2-6, 2011, Proceedings

This book constitutes the refereed proceedings of the 9th International Conference on Formal Concept Analysis, ICFCA 2011, held in Nicosia, Cyprus, in May 2011. The 16 revised full papers presented together with 3 invited talks were carefully reviewed and selected from 49 submissions. The central theme was the mathematical formalization of concept and conceptual hierarchy. The field has developed into a constantly growing research area in its own right with a thriving theoretical community and an increasing number of applications in data and knowledge processing including disciplines such as data visualization, information retrieval, machine learning, software engineering, data analysis, data mining, social networks analysis, etc.

Features
This book constitutes the refereed proceedings of the 9th International Conference on Formal Concept Analysis, ICFCA 2011, held in Nicosia, Cyprus, in May 2011. The 16 revised full papers presented together with 3 invited talks were carefully reviewed and selected from 49 submissions. The central theme was the mathematical formalization of concept and conceptual hierarchy. The field has developed into a constantly growing research area in its own right with a thriving theoretical community and an increasing number of applications in data and knowledge processing including disciplines such as data visualization, information retrieval, machine learning, software engineering, data analysis, data mining, social networks analysis, etc.

Fields of interest
Artificial Intelligence (incl. Robotics); Software Engineering; Data Mining and Knowledge Discovery; Mathematical Logic and Formal Languages; Discrete Mathematics in Computer Science; Order, Lattices, Ordered Algebraic Structures

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
2011, X, 266 p. (Lecture Notes in Artificial Intelligence, Vol. 6628) Softcover
46,00 €
ISBN 978-3-642-20513-2

Formal Grammar
14th International Conference, FG 2009, Bordeaux, France, July 25-26, 2009, Revised Selected Papers

This book constitutes the refereed proceedings of the 14th International Conference on Formal Grammar 2009, held in Bordeaux, France, in July 2009. The 13 revised full papers presented, including two invited talks, were carefully reviewed and selected from 26 submissions. These articles in this book give an overview of new and original research on formal grammar, mathematical linguistics and the application of formal and mathematical methods to the study of natural language.

Features
This book constitutes the refereed proceedings of the 14th International Conference on Formal Grammar 2009, held in Bordeaux, France, in July 2009. The 13 revised full papers presented, including two invited talks, were carefully reviewed and selected from 26 submissions. These articles in this book give an overview of new and original research on formal grammar, mathematical linguistics and the application of formal and mathematical methods to the study of natural language.

Fields of interest
Artificial Intelligence (incl. Robotics); Mathematical Logic and Formal Languages; Computation by Abstract Devices; Symbolic and Algebraic Manipulation; Computational Linguistics; Grammar

Target groups
Professional/practitioner

Type of publication
Proceedings

Available
46,00 €
ISBN 978-3-642-20168-4

Genetic Programming

This book constitutes the refereed proceedings of the 14th European Conference on Genetic Programming, EuroGP 2011, held in Torino, Italy, in April 2011 co-located with the Evo* 2011 events. This 20 revised full papers presented together with 9 poster papers were carefully reviewed and selected from 59 submissions. The wide range of topics in this volume reflect the current state of research in the field, including representations, theory, novel operators and techniques, self organization, and applications.

Features
This book constitutes the refereed proceedings of the 14th European Conference on Genetic Programming, EuroGP 2011, held in Torino, Italy, in April 2011 co-located with the Evo* 2011 events. This 20 revised full papers presented together with 9 poster papers were carefully reviewed and selected from 59 submissions. The wide range of topics in this volume reflect the current state of research in the field, including representations, theory, novel operators and techniques, self organization, and applications.

Fields of interest
Programming Techniques; Computation by Abstract Devices; Algorithm Analysis and Problem Complexity; Pattern Recognition; Artificial Intelligence (incl. Robotics); Computational Biology / Bioinformatics

Target groups
Research

Type of publication
Proceedings

Available
54,00 €
ISBN 978-3-642-20406-7

P. Valtchev, Université du Québec, Montreal, QC, Canada; R. Jäschke, Universität Kassel, Germany (Eds.)
J. Ashbourn, Verus Mundus, Hertfordshire, UK

Guide to Biometrics for Large-Scale Systems
Technological, Operational, and User-Related Factors

This book considers biometric technology in a broad light, integrating the concept seamlessly into mainstream IT, while discussing the cultural attitudes and the societal impact of identity management. Features: summarizes the material covered at the beginning of every chapter, and provides chapter-ending review questions and discussion points; reviews identity verification in nature, and early historical interest in anatomical measurement; provides an overview of biometric technology, presents a focus on biometric systems and true systems integration, examines the concept of identity management, and predicts future trends; investigates performance issues in biometric systems, the management and security of biometric data, and the impact of mobile devices on biometrics technology; explains the equivalence of performance across operational nodes, introducing the APEX system; considers the legal, political and societal factors of biometric technology, in addition to user psychology and other human factors.

Features
Although there have been significant developments in the field of biometrics in recent years, much of the research in this area has focused upon the front-end technology. This unique Guide to Biometrics for Large-Scale Systems considers biometric technology in a broader light, integrating the concept more seamlessly into mainstream Information Technology, while also striving to understand the […]

Contents

Fields of interest
Biometrics

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XIV, 209 p. 22 illus. Hardcover
54,95 €
ISBN 978-0-85729-466-1

O. Hazzan, Technion - Israel Institute of Technology Haifa, Israel; T. Lapidot, Technion - Israel Institute of Technology Haifa, Israel; N. Ragonis, Beit Berl College, Israel

Guide to Teaching Computer Science
An Activity-Based Approach

This guide presents both a conceptual framework and detailed implementation guidelines for general computer science (CS) teaching. The content is clearly written and structured to be applicable to all levels of CS education and for any teaching organization, without limiting its focus to instruction for any specific curriculum, programming language or paradigm. Features: presents an overview of research in CS education; examines strategies for teaching problem-solving, evaluating pupils, and for dealing with pupils’ misunderstandings; provides learning activities throughout the book; proposes active-learning based classroom teaching methods, as well as methods specifically for lab-based teaching; discusses various types of questions that a CS instructor, tutor, or trainer can use for a range of different teaching situations; investigates thoroughly issues of lesson planning and course design; describes frameworks by which prospective CS teachers gain their first teaching experience.

Features
The dynamic evolution of the field of computer science (CS) also poses educational and pedagogical challenges, such as issues of CS teacher recruitment, pre-service teacher preparation, support for teachers’ ongoing professional development, and the design of teaching and learning material. This unique Guide to Teaching Computer Science presents both a conceptual framework and detailed […]

Contents
Introduction. - Active Learning and the Active-Learning-Based Teaching Model. - Overview of the Discipline of Computer Science. - Research in Computer Science Education. - Problem Solving Strategies. - Learners’ Alternative Conceptions. - Teaching Methods in Computer Science Education. - Lab-Based Teaching. - Types of Questions in Computer Science Education. - Evaluation. - Teaching Planning. - Integrated View at the MTCS Course Organization: The Case of Recursion. - Getting Experience in Computer Science Education. - Design of a Methods of Teaching Computer Science Course. - High School Computer […]

Fields of interest
Computers and Education; Teaching and Teacher Education; Science Education

Target groups
Upper undergraduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XXV, 260 p. 25 illus., 1 in color. Hardcover
69,95 €

Z. Vetulani, Adam Mickiewicz University, Poznan, Poland (Ed.)

Human Language Technology. Challenges for Computer Science and Linguistics

4th Language and Technology Conference, LTC 2009, Poznan, Poland, November 6-8, 2009, Revised Selected Papers

This book constitutes the refereed proceedings of the 4th Language and Technology Conference: Challenges for Computer Science and Linguistics, LTC 2009, held in Poznan, Poland, in November 2009. The 52 revised and in many cases substantially extended papers presented in this volume were carefully reviewed and selected from 103 submissions. The contributions are organized in topical sections on speech processing, computational morphology/lexicography, parsing, computational semantics, dialogue modeling and processing, digital language resources, WordNet, document processing, information processing, and machine translation.

Features
This book constitutes the refereed proceedings of the 4th Language and Technology Conference: Challenges for Computer Science and Linguistics, LTC 2009, held in Poznan, Poland, in November 2009. The 52 revised and in many cases substantially extended papers presented in this volume were carefully reviewed and selected from 103 submissions. The contributions are organized in topical […]

Fields of interest
Language Translation and Linguistics; Document Preparation and Text Processing; Computer Appl. in Arts and Humanities; Biometrics; Pattern Recognition; Artificial Intelligence (incl. Robotics)

Target groups
Research

Type of publication
Proceedings

Available
2011. XIX, 578 p. (Lecture Notes in Artificial Intelligence, Vol. 6562) Softcover
70,00 €
ISBN 978-3-642-20094-6
Information Technology and Mobile Communication

International Conference, AIM 2011, Nagpur, Maharashtra, India, April 21-22, 2011, Proceedings

This book constitutes the refereed proceedings of the International Conference on Advances in Information Technology and Mobile Communication, AIM 2011, held at Nagpur, India, in April 2011. The 31 revised full papers presented together with 27 short papers and 34 poster papers were carefully reviewed and selected from 313 submissions. The papers cover all current issues in theory, practices, and applications of Information Technology, Computer and Mobile Communication Technology and related topics.

Features
This book constitutes the refereed proceedings of the International Conference on Advances in Information Technology and Mobile Communication, AIM 2011, held at Nagpur, India, in April 2011. The 31 revised full papers presented together with 27 short papers and 34 poster papers were carefully reviewed and selected from 313 submissions. The papers cover all current issues in theory, practices, and applications of Information Technology, Computer and Mobile Communication Technology and related topics.

Fields of interest
Computer Communication Networks; Software Engineering; Information Systems Applications (incl.Internet); Data Mining and Knowledge Discovery; Artificial Intelligence (incl. Robotics); Computers and Society

Target groups
Research

Type of publication
Proceedings

Available
2011. X, 520 p. (Communications in Computer and Information Science, Vol. 147) Softcover
80,00 €
ISBN 978-3-642-20572-9

Information and Automation

International Symposium, ISIA 2010, Guangzhou, China, November 10-11, 2010. Revised Selected Papers

This book constitutes the refereed proceedings of the International Symposium on Information and Automation, ISIA 2010, held in Guangzhou, China, in November 2010. The 110 revised full papers presented were carefully reviewed and selected from numerous submissions. The symposium provides a forum for researchers, educators, engineers, and government officials to present and discuss their future research directions in the general areas of Information and Automation.

Features
This book constitutes the refereed proceedings of the International Symposium on Information and Automation, ISIA 2010, held in Guangzhou, China, in November 2010. The 110 revised full papers presented were carefully reviewed and selected from numerous submissions. The symposium provides a forum for researchers, educators, engineers, and government officials to present and discuss their future research directions in the general areas of Information and Automation.

Fields of interest
Computer Communication Networks; Computer Imaging, Vision, Pattern Recognition and Graphics; Data Encryption; Data Mining and Knowledge Discovery; Multimedia Information Systems; Artificial Intelligence (incl. Robotics)

Target groups
Research

Type of publication
Proceedings

Available
2011. XIX, 758 p. (Communications in Computer and Information Science, Vol. 66) Softcover
97,00 €
ISBN 978-3-642-19852-6

Intelligent Information and Database Systems


The two-volume set LNAI 6591 and LNCS 6592 constitutes the refereed proceedings of the Third International Conference on Intelligent Information and Database Systems, ACIIDS 2011, held in Daegu, Korea, in April 2011. The 110 revised papers presented together with 2 keynote speeches were carefully reviewed and selected from 310 submissions. The papers are thematically divided into two volumes; they cover the following topics: intelligent database systems, data warehouses and data mining, natural language processing and computational linguistics, semantic Web, social networks and recommendation systems, technologies for intelligent information systems, collaborative systems and applications, e-business and e-commerce systems, e-learning systems, information modeling and requirements engineering, information retrieval systems, intelligent agents and multi-agent systems, intelligent information systems, intelligent internet systems, intelligent optimization techniques, object-relational DBMS, etc.

Features
The two-volume set LNAI 6591 and LNCS 6592 constitutes the refereed proceedings of the Third International Conference on Intelligent Information and Database Systems, ACIIDS 2011, held in Daegu, Korea, in April 2011. The 110 revised papers presented together with 2 keynote speeches were carefully reviewed and selected from 310 submissions. The papers are thematically divided into two volumes; they cover the following topics: intelligent database systems, data warehouses and data mining, natural language processing and computational linguistics, semantic Web, social networks and recommendation systems, technologies for intelligent information systems, collaborative systems and applications, e-business and e-commerce systems, e-learning systems, information modeling and requirements engineering, information retrieval systems, intelligent agents and multi-agent systems, intelligent information systems, intelligent internet systems, intelligent optimization techniques, object-relational DBMS, etc.

Fields of interest
Artificial Intelligence (incl. Robotics); Data Mining and Knowledge Discovery; Information Systems Applications (incl.Internet); Database Management; User Interfaces and Human Computer Interaction; Algorithm Analysis and Problem Complexity

Target groups
Research

Type of publication
Proceedings

Available
2011. XXVIII, 570 p. (Lecture Notes in Artificial Intelligence, Vol. 6591) Softcover
70,00 €
ISBN 978-3-642-20038-0
Intelligent Information and Database Systems

Third International Conference, ACIIDS 2011, Daegu, Korea, April 20-22, 2011, Proceedings, Part II

The two-volume set LNAI 6591 and LNCS 6592 constitutes the refereed proceedings of the Third International Conference on Intelligent Information and Database Systems, ACIIDS 2011, held in Daegu, Korea, in April 2011. The 110 revised papers presented together with 2 keynote speeches were carefully reviewed and selected from 310 submissions. The papers are thematically divided into two volumes; they cover the following topics: intelligent database systems, data warehouses and data mining, natural language processing and computational linguistics, semantic Web, social networks and recommendation systems, technologies for intelligent information systems, collaborative systems and applications, e-business and e-commerce systems, e-learning systems, information modeling and requirements engineering, information retrieval systems, intelligent agents and multi-agent systems, intelligent information systems, intelligent internet systems, intelligent optimization techniques, object-relational DBMS,...

Features
The two-volume set LNAI 6591 and LNCS 6592 constitutes the refereed proceedings of the Third International Conference on Intelligent Information and Database Systems, ACIIDS 2011, held in Daegu, Korea, in April 2011. The 110 revised papers presented together with 2 keynote speeches were carefully reviewed and selected from 310 submissions. The papers are thematically divided into two volumes; they [...]
NETWORKING 2011


The two-volume set LNCS 6640 and 6641 constitutes the refereed proceedings of the 10th International IFIP TC 6 Networking Conference held in Valencia, Spain, in May 2011. The 64 revised full papers presented were carefully reviewed and selected from a total of 294 submissions. The papers feature innovative research in the areas of applications and services, next generation Internet, wireless and sensor networks, and network science. The first volume includes 36 papers and is organized in topical sections on anomaly detection, content management, DTN and sensor networks, energy efficiency, mobility modeling, network science, network topology configuration, next generation Internet, and path diversity.

Features
The two-volume set LNCS 6640 and 6641 constitutes the refereed proceedings of the 10th International IFIP TC 6 Networking Conference held in Valencia, Spain, in May 2011. The 64 revised full papers presented were carefully reviewed and selected from a total of 294 submissions. The papers feature innovative research in the areas of applications and services, next generation Internet, wireless and sensor networks, and path diversity.

Fields of interest
Computer Communication Networks; Information Systems Applications (incl.Internet); Algorithm Analysis and Problem Complexity; Software Engineering; Management of Computing and Information Systems; Data Encryption

Target groups
Research

Type of publication
Proceedings

Available
81,00 € ISBN 978-3-642-20756-3

NETWORKING 2011


The two-volume set LNCS 6640 and 6641 constitutes the refereed proceedings of the 10th International IFIP TC 6 Networking Conference held in Valencia, Spain, in May 2011. The 64 revised full papers presented were carefully reviewed and selected from a total of 294 submissions. The papers feature innovative research in the areas of applications and services, next generation Internet, wireless and sensor networks, and network science. The second volume includes 28 papers organized in topical sections on peer-to-peer, pricing, resource allocation, resource allocation radio, resource allocation wireless, social networks, and TCP.

Features
The two-volume set LNCS 6640 and 6641 constitutes the refereed proceedings of the 10th International IFIP TC 6 Networking Conference held in Valencia, Spain, in May 2011. The 64 revised full papers presented were carefully reviewed and selected from a total of 294 submissions. The papers feature innovative research in the areas of applications and services, next generation Internet, wireless and sensor networks, and TCP.

Fields of interest
Computer Communication Networks; Information Systems Applications (incl.Internet); Algorithm Analysis and Problem Complexity; Software Engineering; Management of Computing and Information Systems; Data Encryption

Target groups
Research

Type of publication
Proceedings

Available
71,00 € ISBN 978-3-642-20797-6

Privacy and Identity Management for Life


This book constitutes the thoroughly refereed post conference proceedings of the 6th IFIP WG 9.2, 9.6/11.7, 11.4, 11.6/PrimeLife International Summer School, held in Helsingborg, Sweden, in August 2010. The 27 revised papers were carefully selected from numerous submissions during two rounds of reviewing. They are organized in topical sections on terminology, privacy metrics, ethical, social, and legal aspects, data protection and identity management, eID cards and eID interoperability, emerging technologies, privacy for eGovernment and AAL applications, social networks and privacy, privacy policies, and usable privacy.

Features
This book constitutes the thoroughly refereed post conference proceedings of the 6th IFIP WG 9.2, 9.6/11.7, 11.4, 11.6/PrimeLife International Summer School, held in Helsingborg, Sweden, in August 2010. The 27 revised papers were carefully selected from numerous submissions during two rounds of reviewing. They are organized in topical sections on terminology, privacy metrics, ethical, social, and legal aspects, data protection and identity management, eID cards and eID interoperability, emerging technologies, privacy for eGovernment and AAL applications, social networks and privacy, privacy policies, and usable privacy.

Fields of interest
Computer Communication Networks; Management of Computing and Information Systems; Data Encryption; Computers and Society; Information Systems Applications (incl.Internet); Algorithm Analysis and Problem Complexity

Target groups
Research

Type of publication
Proceedings

Available
92,00 € ISBN 978-3-642-20768-6
Process Mining
Discovery, Conformance and Enhancement of Business Processes

Features
More and more information about business processes is recorded by information systems in the form of so-called "event logs". Despite the omnipresence of such data, most organizations diagnose problems based on fiction rather than facts. Process mining is an emerging discipline based on process model-driven approaches and data mining. It not only allows organizations to fully benefit from the information [...] 

Contents

Fields of interest
Information Systems Applications (incl.Internet); Information Storage and Retrieval; Business Information Systems; Software Engineering; Logics and Information Storage and Retrieval; Business Information Systems Applications (incl.Internet); Information Systems and Communications Networks; Computer Communication Networks; Circuits and Systems; System Performance and Evaluation; Computer Communication Networks; Processor Architectures 

Target groups
Research 

Type of publication
Professional book 

Available
2011. XVI, 352 p. 184 illus., 6 in color. Hardcover
54.95 €
ISBN 978-3-642-19344-6

Ranking Queries on Uncertain Data

Uncertain data is inherent in many important applications, such as environmental surveillance, market analysis, and quantitative economics research. Due to the importance of those applications and rapidly increasing amounts of uncertain data collected and accumulated, analyzing large collections of uncertain data has become an important task. Ranking queries (also known as top-k queries) are often natural and useful in analyzing uncertain data. Ranking Queries on Uncertain Data discusses the motivations/applications, challenging problems, the fundamental principles, and the evaluation algorithms of ranking queries on uncertain data. Theoretical and algorithmic results of ranking queries on uncertain data are presented in the last section of this book. Ranking Queries on Uncertain Data is the first book to systematically discuss the problem of ranking queries on uncertain data. 

Features
Uncertain data is inherent in many important applications, such as environmental surveillance, market analysis, and quantitative economics research. Due to the importance of those applications and rapidly increasing amounts of uncertain data collected and accumulated, analyzing large collections of uncertain data has become an important task. Ranking queries (also known as top-k queries) are often natural [...] 

Contents
Introduction. - Probabilistic Ranking Queries on Uncertain Data. - Related Work. - Top-k Typicality Queries on Uncertain Data. - Probabilistic Ranking Queries on Uncertain Data. - Continuous Ranking Queries on Uncertain Streams. - Ranking Queries on Probabilistic Linkages. - Probabilistic Path Queries on Road Networks. - Conclusions. - References 

Fields of interest
Database Management; Data Mining and Knowledge Discovery; Information Systems Applications (incl.Internet); Information Systems and Communication Service 

Target groups
Research 

Type of publication
Monograph 

Available
79.95 €

Real-Time Systems
Design Principles for Distributed Embedded Applications

"This book is a comprehensive text for the design of safety critical, hard real-time embedded systems. It offers a splendid example for the balanced, integrated treatment of systems and software engineering, helping readers tackle the hardest problems of advanced real-time system design, such as determinism, compositionality, timing and fault management. This book is an essential reading for advanced undergraduates and graduate students in a wide range of disciplines impacted by embedded computing and software. Its conceptual clarity, the style of explanations and the examples make the abstract concepts accessible for a wide audience." Janos Sztipanovits, Director E. Bronson Ingram Distinguished Professor of EngineeringInstitute for Software Integrated Systems,Vanderbilt University

Real-Time Systems focuses on hard real-time systems, which are computing systems that must meet their temporal specification in all anticipated load and fault scenarios. The book stresses the system aspects of distributed [...] 

Features
"This book is a comprehensive text for the design of safety critical, hard real-time embedded systems. It offers a splendid example for the balanced, integrated treatment of systems and software engineering, helping readers tackle the hardest problems of advanced real-time system design, such as determinism, compositionality, timing and fault management. This book is an essential reading for advanced [...] 

Contents

Fields of interest
Special Purpose and Application-Based Systems; Circuits and Systems; System Performance and Evaluation; Computer Communication Networks; Processor Architectures 

Target groups
Graduate 

Type of publication
Graduate/advanced undergraduate textbook 

Available
69.95 €
ISBN 978-1-4419-8236-0
RoboCup 2010: Robot Soccer World Cup XIV

This book includes the thoroughly refereed postconference proceedings of the 14th RoboCup International Symposium, held in Singapore, in June, 2010 - representing the scientific tracks structured in four sessions entitled simulation and rescue robots; robot perception and localization; robot motion and humanoid robots; and human robot interaction and semantic scene analysis. The 20 revised full papers and 16 revised short papers presented were carefully reviewed and selected from 78 submissions. Documenting the research advances of the RoboCup community since the predecessor symposium, this book constitutes a valuable source of reference and inspiration for R&D professionals interested in RoboCup or in robotics and distributed AI more generally.

Contents

Fields of interest
Artificial Intelligence (incl. Robotics); Computer Communication Networks; User Interfaces and Human Computer Interaction; Robotics and Automation; Image Processing and Computer Vision

Target groups
Research

Type of publication
Contributed volume

Available
62.00 €
ISBN 978-3-642-20216-2

Semantic Web Services

A paradigm shift is taking place in computer science: one generation ago, we learned to abstract from hardware to software, now we are abstracting from software to serviceware implemented through service-oriented computing. Yet ensuring interoperability in open, heterogeneous, and dynamically changing environments, such as the Internet, remains a major challenge for actual machine-to-machine integration. Usually significant problems in aligning data, processes, and protocols appear as soon as a specific piece of functionality is used within a different application context. The Semantic Web Services (SWS) approach is about describing services with metadata on the basis of domain ontologies as a means to enable their automatic location, execution, combination, and use. Fensel and his coauthors provide a comprehensive overview of SWS in line with actual industrial practice. They introduce the main sociotechnological components that ground the SWS vision (like Web Science, Service Science, and[...])

Features
A paradigm shift is taking place in computer science: one generation ago, we learned to abstract from hardware to software, now we are abstracting from software to serviceware implemented through service-oriented computing. Yet ensuring interoperability in open, heterogeneous, and dynamically changing environments, such as the Internet, remains a major challenge for actual machine-to-machine integration. [...]

Contents

Fields of interest
Information Systems Applications (incl.Internet); Artificial Intelligence (incl. Robotics); Business Information Systems; Software Engineering

Target groups
Professional/practitioner

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XI, 357 p. Hardcover
54.95 €
ISBN 978-3-642-19192-3

Service Design and Delivery

Service Design and Delivery provides a comprehensive overview of the increasingly important role played by the service industry. Focusing on the development of different processes employed by service organizations, the book emphasizes management of service in relation to products. It not only explores the complexity of this relationship, but also introduces strategies used in the design and management of service across various sectors, highlighting where tools, techniques and processes applicable to one sector may prove useful in another. The implementation methods introduced in the book also illustrate how and why companies can transform themselves into service organizations. While the book is primarily intended as a text for advanced-level courses in service design and delivery, it also provides a comprehensive overview of SWS in line with actual industrial practice. They introduce the main sociotechnological components that ground the SWS vision (like Web Science, Service Science, and[...])

Features
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Contents

Fields of interest
Management of Computing and Information Systems; Management/Business for Professionals; Operation Research / Decision Theory; Business Information Systems

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XXII, 169 p. 100 illus. (Service Science: Research and Innovations in the Service Economy) Hardcover
79.95 €
ISBN 978-1-4419-8320-6
Service-Oriented Perspectives in Design Science Research
6th International Conference, DESRIST 2011, Milwaukee, WI, USA, May 5-6, 2011, Proceedings

This book constitutes the refereed proceedings of the 6th International Conference on Service-Oriented Perspectives in Design Science Research, DESRIST 2011, held in Milwaukee, WI, USA, in May 2011. The 29 revised full papers presented together with 5 revised short papers were carefully reviewed and selected from 50 submissions. The papers are organized in topical sections on design theory, design science research strategies, design methods and techniques, design evaluation, design guidelines, service-oriented perspectives in design science, process design, neuroscience in design research, and designing for social media.

Features
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Fields of interest
Information Systems Applications (incl.Internet); Computer Communication Networks; Artificial Intelligence (incl. Robotics); Software Engineering; Information Storage and Retrieval; User Interfaces and Human Computer Interaction

Target groups
Professional/practitioner

Type of publication
Proceedings

Available

62.00 €
ISBN 978-3-642-20632-0

Software and Data Technologies

This book constitutes the refereed proceedings of the 4th International Conference on Software and Data Technologies, ICSOFT 2009, held in Sofia, Bulgaria, in July 2009. The 19 revised full papers presented together with two invited papers were carefully reviewed and selected as best papers from 212 submissions. The papers are organized in topical sections on enterprise software technology; software engineering; distributed systems; data management; knowledge-based systems.

Features
This book constitutes the refereed proceedings of the 4th International Conference on Software and Data Technologies, ICSOFT 2009, held in Sofia, Bulgaria, in July 2009. The 19 revised full papers presented together with two invited papers were carefully reviewed and selected as best papers from 212 submissions. The papers are organized in topical sections on enterprise software technology; software engineering; distributed systems; data management; knowledge-based systems.

Fields of interest
Software Engineering / Programming and Operating Systems; Programming Languages, Compilers, Interpreters; Data Structures; Database Management; Data Mining and Knowledge Discovery; Information Systems Applications (incl.Internet)

Target groups
Research

Type of publication
Proceedings

Available
2011. XIII, 291 p. (Communications in Computer and Information Science, Vol 50) Softcover

64.00 €
ISBN 978-3-642-20115-8

Technology Systems and Management

This book constitutes the refereed proceedings of the First International Conference on Technology Systems and Management, ICTSM 2011, held in Mumbai, India, in February 2011. The 47 revised full papers presented were carefully reviewed and selected from 276 submissions. The papers are organized in topical sections on computer engineering and information technology; electronics and telecommunication; as well as technology management.

Features
This book constitutes the refereed proceedings of the First International Conference on Technology Systems and Management, ICTSM 2011, held in Mumbai, India, in February 2011. The 47 revised full papers presented were carefully reviewed and selected from 276 submissions. The papers are organized in topical sections on computer engineering and information technology; electronics and telecommunication; as well as technology management.

Fields of interest
Computer Systems Organization and Communication Networks; Software Engineering / Programming and Operating Systems; Information Systems and Communication Service; Computer Appl. in Administrative Data Processing; Communications Engineering, Networks; Electrical Engineering

Target groups
Research

Type of publication
Proceedings

Available
2011. XVIII, 334 p. (Communications in Computer and Information Science, Vol. 145) Softcover

64.00 €
ISBN 978-3-642-20208-7
Temporal Information Processing Technology and Its Applications

"Temporal Information Processing Technology and Its Applications" systematically studies temporal information processing technology and its applications. The book covers following subjects: 1) time model, calculus and logic; 2) temporal data models, semantics of temporal variable 'now' temporal database concepts; 3) temporal query language, a typical temporal database management system: Temp-pDB; 4) temporal extension on XML, workflow and knowledge base; and, 5) implementation patterns of temporal applications, a typical example of temporal application. The book is intended for researchers, practitioners and graduate students of databases, data/knowledge management and temporal information processing. Dr. Yong Tang is a professor at the Computer School, South China Normal University, China.

Features
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Voice over IP Security
A Comprehensive Survey of Vulnerabilities and Academic Research

Voice over IP (VoIP) and Internet Multimedia Subsystem technologies (IMS) are rapidly being adopted by consumers, enterprises, governments and militaries. These technologies offer higher flexibility and more features than traditional telephony (PSTN) infrastructures, as well as the potential for lower cost through equipment consolidation and, for the consumer market, new business models. However, VoIP systems also represent a higher complexity in terms of architecture, protocols and implementation, with a corresponding increase in the potential for misuse. In this book, the authors examine the current state of affairs on VoIP security through a survey of 221 known/disclosed security vulnerabilities in bug-tracking databases. We complement this with a comprehensive survey of the state of the art in VoIP security research that covers 245 papers. Juxtaposing our findings, we identify current areas of risk and deficiencies in research focus. This book should serve as a starting point for understanding.[…]

Features
Voice over IP (VoIP) and Internet Multimedia Subsystem technologies (IMS) are rapidly being adopted by consumers, enterprises, governments and militaries. These technologies offer higher flexibility and more features than traditional telephony (PSTN) infrastructures, as well as the potential for lower cost through equipment consolidation and, for the consumer market, new business models. However, VoIP […]

Contents

Fields of interest
Systems and Data Security; Data Encryption; Data Structures, Cryptology and Information Theory; Computer Communication Networks

Target groups
Professional/practitioner

Type of publication
Brief

Available

2011. XIII, 83 p. (SpringerBriefs in Computer Science) Softcover
39,95 €
ISBN 978-1-4419-9865-1

Diamonds in Nature
A Guide to Rough Diamonds

Diamonds in Nature: A Guide to Rough Diamonds illustrates the range of crystal shapes, colours, surface textures, and mineral inclusions of rough, uncut, naturally forming diamonds. Each chapter contains photographs that show the unique physical characteristics of the diamonds, and the accompanying text describes the processes that led to their formation. This book is an invaluable reference manual for professional geoscientists—including gemmologists and exploration geologists.

Features
Voice over IP (VoIP) and Internet Multimedia Subsystem technologies (IMS) are rapidly being adopted by consumers, enterprises, governments and militaries. These technologies offer higher flexibility and more features than traditional telephony (PSTN) infrastructures, as well as the potential for lower cost through equipment consolidation and, for the consumer market, new business models. However, VoIP systems also represent a higher complexity in terms of architecture, protocols and implementation, with a corresponding increase in the potential for misuse. In this book, the authors examine the current state of affairs on VoIP security through a survey of 221 known/disclosed security vulnerabilities in bug-tracking databases. We complement this with a comprehensive survey of the state of the art in VoIP security research that covers 245 papers. Juxtaposing our findings, we identify current areas of risk and deficiencies in research focus. This book should serve as a starting point for understanding.[…]

Contents

Fields of interest
Mineralogy

Target groups
Professional

Type of publication
Professional book

Available

2011. IX, 212 p. 221 illus. in color. Hardcover
69,95 €
ISBN 978-3-642-12571-3

Global Change and Baltic Coastal Zones

Climate change and ongoing transformation processes in economy and agriculture will have strong and multiple impacts in the Baltic region. In particular coastal zones face increasing hazards, e.g. due to sea level rise or changes in riverine nutrient loads and eutrophication. These changes also offer a wide range of new opportunities in the Baltic Region. Adaptation measures are needed but require a thorough and spatially differentiated understanding of underlying ecological, economic and social processes. Sixteen contributions by authors from eight countries give a comprehensive overview of these changes, their consequences and practical challenges with focus on coastal zones. Besides risks, the chances and opportunities of changes for the region are addressed and adaptation examples and strategies are given. The practitioners’ perspective and their demands are integrated in the various contributions.

Features
Climate change and ongoing transformation processes in economy and agriculture will have strong and multiple impacts in the Baltic region. In particular coastal zones face increasing hazards, e.g. due to sea level rise or changes in riverine nutrient loads and eutrophication. These changes also offer a wide range of new opportunities in the Baltic Region. Adaptation measures are needed but require a […]

Contents
Preface.- Regionalisation of climate scenarios for the western Baltic Sea Climate Change impacts on the Baltic Sea.- The CO2 system of the Baltic Sea - its relationship to biogeochemistry and future change.- Climate Change impacts on the German Baltic coast - ecosystem and human interactions.- Global change impacts on agricultural land use in the Baltic Coastal Zones of Germany.- Climate Change and the need for Integrated Coastal Risk Management.- Climate Change and Coastal Protection: Adaptation Strategies for Sandy Coasts at the German Baltic Sea Coast.- Coastal area protection[…]

Fields of interest
Coastal Sciences; Climate Change; Environmental Management; Marine & Freshwater Sciences

Target groups
Research

Type of publication
Monograph

Available

2011. XIII, 296 p. 160 illus., 60 in color. (Coastal Research Library, Vol. 1) Hardcover
99,95 €

Earth Sciences

R. Tappert, University of Alberta, Edmonton, Canada; M.C. Tappert, University of Alberta, Edmonton, Canada
Operational Oceanography in the 21st Century

Over the past decade the significant advances in real-time ocean observing systems, ocean modelling, ocean data assimilation and super-computing has seen the development and implementation of operational ocean forecast systems of the global ocean. At the conclusion of the Global Ocean Data Assimilation Experiment (GODAE) in 2008 ocean analysis and forecasting services were being supported by 12 international centres. This book is about ocean forecasting - a maturing field which remains an active area of research, and includes such topics as ocean predictability, observing system design, high resolution ocean modelling and ocean data assimilation. It presents the introduction to ocean forecasting which provides a foundation for new opportunities in areas of coupled bio-geochemical forecasting and coupled atmosphere-wave-ocean forecasting. The book describes an updated account of research and development to improve forecast systems, determining how best to service the marine user community with [...] Features

Over the past decade the significant advances in real-time ocean observing systems, ocean modelling, ocean data assimilation and super-computing has seen the development and implementation of operational ocean forecasts of the global ocean. At the conclusion of the Global Ocean Data Assimilation Experiment (GODAE) in 2008 ocean forecasting services were being supported by 12 international centres. The [...] Contents


Oceanography; Climate Change; Physical Geography Target groups

Research Type of publication

Monograph Available


Action Leadership

Towards a Participatory Paradigm

Action leadership is a creative, innovative, collaborative and self-developed way to lead. It eschews the hierarchical structure usually associated with leadership and is based instead on the democratic values of freedom, equality, inclusion and self-realization. It takes responsibility for, not control over, people through networking and orchestrating human energy towards a holistic outcome that benefits the common interest. Action leaders are passionate people who abide by the motto that “Learning does not mean to fill a barrel but rather to ignite a flame” in others. And in this time of rapid economic, political, technological, social and ecological changes, action leadership and action leaders are precisely what’s needed to improve how people and organizations engage constructively to address the myriad complex issues challenging society at all levels. Action Leadership: Towards a Participatory Paradigm explains and illustrates how action leadership can be developed through participatory action [...] Features

Action leadership is a creative, innovative, collaborative and self-developed way to lead. It eschews the hierarchical structure usually associated with leadership and is based instead on the democratic values of freedom, equality, inclusion and self-realization. It takes responsibility for, not control over, people through networking and orchestrating human energy towards a holistic outcome that benefits [...] Contents

Reviewers’ CommentsForewordMorwenna Griffiths About the AuthorAcknowledgements List of TablesList of FiguresList of AppendicesList of Acronyms Introduction Chapter 1 From Action Learning and Action Research to Action Leadership Part 1 Conceptual Framework for Participatory Action Learning and Action Research (PALAR) Chapter 2 PALAR Concepts, Models and Values Chapter 3 PALAR: Dialectic of Theory and Practice Chapter 4 PALAR: Paradigm and Methodology Part 2 Action Leadership Development and Applications Chapter 5 Action Leadership Development in Higher Education Chapter 6 Management Education [...] Fields of interest

Oceography; Climate Change; Physical Geography Target groups

Research Type of publication

Monograph Available


Building Learning Experiences in a Changing World

Advances in Business Education & Training is a Book Series to foster advancement in the field of Business Education and Training. It serves as an international forum for scholarly and state-of-the-art research and development into all aspects of Business Education and Training. This new volume deals with several aspects of the challenge to design learning in and for a changing world. The [..] Features

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Professional and Vocational Education; Higher Education; Learning and Instruction; Educational Technology; Curriculum Studies Target groups

Research Type of publication

Contributed volume Available

Children, Development and Education
Cultural, Historical, Anthropological Perspectives

Historical anthropology is a revision of the German philosophical anthropology under the influences of the French historical school of Annales and the Anglo-Saxon cultural anthropology. Cultural-historical psychology is a school of thought which emerged in the context of the Soviet revolution and deeply affected the disciplines of psychology and education in the 20th century. This book draws on these two schools to advance current scholarship in child and youth development and education. It also enters in dialogue with other relational approaches and suggests alternatives to mainstream western developmental theories and educational practices. This book emphasizes communication and semiotic processes as well as the use of artifacts, pictures and technologies in education and childhood development, placing a special focus on active subjectivity, historicity and performativity. Within this theoretical framework, contributors from Europe and the U.S. highlight the dynamic and creative aspects of school.

Features
Historical anthropology is a revision of the German philosophical anthropology under the influences of the French historical school of Annales and the Anglo-Saxon cultural anthropology. Cultural-historical psychology is a school of thought which emerged in the context of the Soviet revolution and deeply affected the disciplines of psychology and education in the 20th century. This.

Contents

Fields of interest
Childhood Education; Educational Psychology; Developmental Psychology; Anthropology

Target groups
Research

Type of publication
Contributed volume

Available

99,95 €
ISBN 978-94-007-0242-4

Constructing Knowledge for Teaching Secondary Mathematics

Teacher education seeks to transform prospective and/or practicing teachers from neophyte possibly uncritical perspectives on teaching and learning to more knowledgeable, adaptable, analytic, insightful, observant, resourceful, reflective and confident professionals ready to address whatever challenges teaching secondary mathematics presents. This transformation occurs optimally through constructivist engagement in tasks that foster knowledge for teaching secondary mathematics. Ideally such tasks provide a bridge between theory and practice, and challenge, surprise, disturb, confront, extend, or provoke examination of alternatives, drawn from the context of teaching. We define tasks as the problems or activities that, having been developed, evaluated and refined over time, are posed to teacher education participants. Such participants are expected to engage in these tasks collaboratively, energetically, and intellectually with an open mind and an orientation to future practice. The tasks might be.

Features
Teacher education seeks to transform prospective and/or practicing teachers from neophyte possibly uncritical perspectives on teaching and learning to more knowledgeable, adaptable, analytic, insightful, observant, resourceful, reflective and confident professionals ready to address whatever challenges teaching secondary mathematics presents. This transformation occurs optimally through constructive engagement in tasks that foster knowledge for teaching secondary mathematics. Ideally such tasks provide a bridge between theory and practice, and challenge, surprise, disturb, confront, extend, or provoke examination of alternatives, drawn from the context of teaching. We define tasks as the problems or activities that, having been developed, evaluated and refined over time, are posed to teacher education participants. Such participants are expected to engage in these tasks collaboratively, energetically, and intellectually with an open mind and an orientation to future practice. The tasks might be.

Contents
Introduction. - Varying, Adapting and Considering Alternatives. - Classification and Noticing Similarities and Differences. - Conflict, Dilemmas and Their Resolution. - Designing and Solving Problems. - Learning from the Study of Practice. - Selecting and Using Appropriate Tools for Teaching. - Identifying and Overcoming Barriers to Student Learning and Becoming Sensitive to Students’ Thinking and Inventive Ideas. - Sharing and Revealing Self, Peer, and Student Dispositions. - Summary.

Fields of interest
Mathematics Education; Teaching and Teacher Education

Target groups
Research

Type of publication
Contributed volume

Available

89,95 €
**English for Writing Research Papers**

Publishing your research in an international journal is key to your success in academia. This guide is based on a study of referees' reports and letters from journal editors on reasons why papers written by non-native researchers are rejected due to problems with English usage. It draws on English-related errors from around 5000 papers written by non-native authors, 500 abstracts by PhD students, and over 1000 hours of teaching researchers how to write and present research papers. With easy-to-follow rules and tips, and with examples taken from published and unpublished papers, you will learn how to prepare and structure a manuscript increase readability and reduce the number of mistakes you make in English by writing concisely, with no redundancy and no ambiguity/plan and organize your paper, and structure each paragraph and each sentence so that the reader can easily follow the logical build-up towards various conclusions.write a title and an abstract that will attract attention and be readid[...]

**Features**

Publishing your research in an international journal is key to your success in academia. This guide is based on a study of referees' reports and letters from journal editors on reasons why papers written by non-native researchers are rejected due to problems with English usage. It draws on English-related errors from around 5000 papers written by non-native authors, 500 abstracts by PhD students, and over [...] 

**Contents**


**Fields of interest**

Language Education; Science; Biomedicine (general); Chemistry (general); Medicine (general)

**Target groups**

Professional/practitioner

**Type of publication**

Monograph

**Available**

2011, XII, 325 p. Softcover

24.95 €

ISBN 978-1-4419-7921-6

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**International Handbook of Jewish Education**

The International Handbook of Jewish Education, a two volume publication, brings together scholars and practitioners engaged in the field of Jewish Education and its cognate fields world-wide. Their submissions make a significant contribution to our knowledge of the field of Jewish Education as we start the second decade of the 21st century. The Handbook is divided broadly into four main sections: Vision and Practice; focusing on issues of philosophy, identity and planning – the big issues of Jewish Education; Teaching and Learning; focusing on areas of curriculum and engagement; Applications, focusing on the ways that Jewish Education is transmitted in particular contexts, both formal and informal, for children and adults; Geographical, focusing on historical, demographic, social and other issues that are specific to a region or where an issue or range of issues can be compared and contrasted between two or more locations. This comprehensive collection of articles provides high quality content[...] 

**Features**

The International Handbook of Jewish Education, a two volume publication, brings together scholars and practitioners engaged in the field of Jewish Education and its cognate fields world-wide. Their submissions make a significant contribution to our knowledge of the field of Jewish Education as we start the second decade of the 21st century. The Handbook is divided broadly into [...] 

**Contents**


**Fields of interest**

Religion and Education; Religious Studies; Educational Philosophy; Educational Policy and Politics; Curriculum Studies

**Target groups**

Research

**Type of publication**

Handbook

**Available**


399,00 €

ISBN 978-94-007-0353-7

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**Learning in Information-Rich Environments**

I-LEARN and the Construction of Knowledge in the 21st Century

The amount and range of information available to today’s students—and indeed to all learners—is unprecedented. Phrases like “the information revolution”, “the information (or knowledge) society”, and “the knowledge economy” underscore the truism that our society has been transformed by virtually instantaneous access to virtually unlimited information. Thomas Friedman tells us that “The World Is Flat” and that we must devise new political and economic understandings based on the ceaseless communication of information from all corners of the world. The Bush administration tells us that information relating to the “war on terrorism” is so critical that we must allow new kinds of surveillance to keep society safe. Teenage subscribers to social-computing networks not only access information but enter text and video images and publish them widely—becoming the first adolescents in history to be creators as well as consumers of vast quantities of information. If the characteristics of “the information age”[...]

**Features**

Learning in Information-Rich Environmental–I-LEARN and the Construction of Knowledge in the 21st Century Delia Neuman. Human beings are bombarded with information at all times—not just electronically, but through our senses and experiences, affecting how we seek, process, and create information. From this limitless complexity comes an important question: [...] 

**Contents**


**Fields of interest**

Learning and Instruction; Library Science; Computers and Education

**Target groups**

Research

**Type of publication**

Monograph

**Available**

2011. XV, 141 p. Ill. illus. Hardcover

89.95 €

Perspectives on Educational Quality

Illustrative Outcomes on Primary and Secondary Schooling in the Netherlands

The quality of education is a term that is frequently used in public debates. Understood in the sense of education being “generally okay”, or rather, most frequently, as “not okay”. Perhaps there is an over-ruling nostalgic view that formerly education was better than today. In scholarly discourse there are those who maintain that the quality of education is an illusive term, with varying interpretations in different settings and by different stakeholders. In this book the complexity of the concept of education quality is recognized, but a conceptual framework is presented that makes quality, despite its complexity, amenable to rational and empirical analysis. Productivity, equity, effectiveness, efficiency and responsibility of education systems are seen as key facets of quality. A concrete set of indicators is presented that makes for the measurement of these quality facets. In the second part of the book the quality framework is applied to an analysis of the quality of education in the...[...]

Features

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Contents


Fields of interest

Higher Education; International and Comparative Education; Assessment, Testing and Evaluation; Educational Policy and Politics; Administration, Organization and Leadership

Target groups

Research

Type of publication

Brief

Available


49,95 €
ISBN 978-94-007-0925-6

Promoting Social Justice for Young Children

This book explores important current social justice issues that confront young children in America. A broad range of topics related to the fair treatment of young children and their families are approached with a fresh and hopeful energy. The central argument of this volume is that a fair and just society must protect the basic needs of all children so they are able to reach their full potential to learn, grow, and ultimately become productive democratic citizens. The book includes contributions from an impressive group of authors who have been consistent voices for the fair and equitable treatment of children in school and society. Each chapter examines a critical issue in child social justice with a focus on the current problem, historical importance of the issue, potential solutions, and a vision for the future. The book has been developed to reach a wide audience of professionals whose work involves children and who have grown concerned about social forces that cause child suffering and threaten...[...]

Features

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Contents


Fields of interest

Childhood Education; Quality of Life Research; Learning and Instruction

Target groups

Research

Type of publication

Contributed volume

Available

2011, XV, 179 p. 10 illus. (Educating the Young Child, Vol. 3) Hardcover

99,95 €

Rethinking Educational Practice Through Reflexive Inquiry

Essays in Honour of Susan Groundwater-Smith

Susan Groundwater-Smith is one of the most influential voices in the world of educational practitioner inquiry. The convener in Australia of the Coalition of Knowledge Building Schools, she is a staunch advocate of innovative methods of practitioner inquiry and teacher professional learning is dedicated to her. Rethinking Educational Practice Through Reflexive Inquiry is a compilation of essays that explore contemporary issues in practitioner inquiry and action research from the perspective of both university-based and school-based authors. The essays discuss the practical, political and theoretical dimensions of practitioner inquiry, advancing the argument that the adoption of an inquiring approach to practice is both an integral dimension of teachers’ work in the modern school as well as...[...]

Features

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Contents

Foreword, Jennifer Nias. - Nicole Mockler, University of Newcastle, Australia; J. Sachs, Macquarie University, Australia (Eds.)


Fields of interest

Childhood Education; Quality of Life Research; Learning and Instruction

Target groups

Research

Type of publication

Contributed volume

Available


99,95 €
ISBN 978-94-007-0804-4
Theories of Learning and Studies of Instructional Practice

This is a book about an attempt to change the way math was taught in a particular classroom. Its title plays on our everyday usage of the terms theory and practice. In education, these terms are conventionally treated oppositionally—we have theories about what we should do and we have what teachers actually do do. In this way, theory stands prior, logically and chronologically, to practice; practice inevitably becoming theory’s imperfect realization. We seek in this volume, however, to develop a different stance with regard to the relationship between the two. Taking the details of instructional practice as our principle object of study, we explore what role theories of learning might play in illuminating such practices. The book is about actual practices by which teaching is done and how contemporary theories of learning might help us understand those practices. It seeks to provide a foundation for future practice-based inquiry in education, by addressing the methodological question: How do we go [...]?

Features
Theories of Learning and Studies of Instructional Practice Timothy Koschmann, editor Though there have been numerous calls for educational researchers to attend more closely to the details of how teaching is actually done, instructional practice remains an inadequately studied topic. Theories of Learning and Studies of Instructional Practice seeks to remedy this by helping construct a foundation for a [...]?

Contents
Section 1: Introductions.- Ch 1: Theorizing Instructional Practice.- Ch 2: Invention in the Classroom: Structuring Natural Variability as Distribution.- Appendix A: Transcription conventions.- Appendix B: Classroom excerpts.- Section II: The Situated Action Perspective.- Ch 3: A Situative Perspective on Cognition and Learning in Interaction.- Ch 4: A Commentary on Incommensurate Programs.- Ch 5: Representational Competence: A Commentary.- Ch 6: The Interaction of Content and Control in Group Problem Solving and Learning.- Ch 7: Working Both Sides.- Responses to the Commentaries by Jim[...]

Fields of interest
Learning and Instruction

Target groups
Research

Type of publication
Contributed volume

Available
129,95 €

Advanced Electrical and Electronics Engineering

Volume 2

2010 First International Conference on Electrical and Electronics Engineering was held in Wuhan, China December 4-5. Advanced Electrical and Electronics Engineering book contains 72 revised and extended research articles written by prominent researchers participating in the conference. Topics covered include, Power Engineering, Telecommunication, Control engineering, Signal processing, Integrated circuit, Electronic amplifier, Nano-technologies, Circuits and networks, Microelectronics, Analog circuits, Digital circuits, Nonlinear circuits, Mixed-mode circuits, Circuits design, Sensors, CAD tools, DNA computing, Superconductivity circuits. Electrical and Electronics Engineering will offer the state of art of tremendous advances in Electrical and Electronics Engineering and also serve as an excellent reference work for researchers and graduate students working with on Electrical and Electronics Engineering.

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Contents
Link Building on Demand in Multi-robots.- Energy conservation renovation on 600MW units condensate pump.- FPGA Based PCI Data Acquisition Synchronization Card of Railway Clearance Detection System.- Short-circuit Characteristics of Asynchronous Generators and Double-fed Induction Generators Inter-connected Grid.- Optimization Design of Lifetime Distribution in Power Diode with Fast and Soft Recovery.- Research on Double-Base Regions High-Power Fast Recovery Diode.- Analysis and Design on Drive Circuit of Integrated Gate Commutated Thyristor.- Multi-fuel combustion measurement in utility[...]

Fields of interest
Computational Intelligence; Electrical Engineering

Target groups
Research

Type of publication
Proceedings

Available
2011. XVI, 724 p. 424 illus., 7 in color. (Lecture Notes in Electrical Engineering, Vol. 87) Hardcover
299,00 €
ISBN 978-3-642-19711-6

Advances in Transport Phenomena

The term transport phenomena is used to describe processes in which mass, momentum, energy and entropy move about in matter. Advances in Transport Phenomena provide state-of-the-art expositions of major advances by theoretical, numerical and experimental studies from a molecular, microscopic, mesoscopic, macroscopic or megascopic point of view across the spectrum of transport phenomena, from scientific enquiries to practical applications. The annual review series intends to fill the information gap between regularly published journals and university-level textbooks by providing in-depth review articles over a broader scope than in journals. The authoritative articles, contributed by internationally-leading scientists and practitioners, establish the state of the art, disseminate the latest research discoveries, serve as a central source of reference for fundamentals and applications of transport phenomena, and provide potential textbooks to senior undergraduate and graduate students. This review[...]

Features
The term transport phenomena is used to describe processes in which mass, momentum, energy and entropy move about in matter. Advances in Transport Phenomena provide state-of-the-art expositions of major advances by theoretical, numerical and experimental studies from a molecular, microscopic, mesoscopic, macroscopic or megascopic point of view across the spectrum of transport phenomena, [...]

Contents

Fields of interest
Engineering Thermodynamics, Heat and Mass Transfer; Thermodynamics; Industrial Chemistry / Chemical Engineering; Mathematical Modeling and Industrial Mathematics; Engineering Fluid Dynamics; Classical Continuum Physics

Target groups
Research

Type of publication
Reviews

Available
129,95 €
ISBN 978-3-642-19465-8
Architecting the Internet of Things

Many of the initial developments towards the Internet of Things have focused on the combination of Auto-ID and networked infrastructures in business-to-business logistics and product lifecycle applications. However, the Internet of Things is more than a business tool for managing business processes more efficiently and more effectively – it will also enable a more convenient way of life. Since the term Internet of Things first came to attention when the Auto-ID center launched their initial vision for the EPC network for automatically identifying and tracing the flow of goods within supply-chains, increasing numbers of researchers and practitioners have further developed this vision. The authors in this book provide a research perspective on current and future developments in the Internet of Things. The different chapters cover a broad range of topics from system design aspects and core architectural approaches to end-user participation, business perspectives and applications.

Features

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Contents


Fields of interest

Engineering Economics, Organization, Logistics, Marketing: Computational Intelligence; e-commerce / e-business; Production / Logistics; Information Systems and Communication Service

Target groups

Professional/practitioner

Type of publication

Professional book

Available

2011, X, 351 p. 77 illus. Hardcover
99.95 €
ISBN 978-3-642-19156-5

Computer Recognition Systems 4

The computer recognition systems are nowadays one of the most promising directions in artificial intelligence. This book is the most comprehensive study of this field. It contains a collection of 78 carefully selected articles contributed by experts of pattern recognition. It reports on current research with respect to both methodology and applications. In particular, it includes the following sections: Biometrics, Features, learning and classifiers, Image processing and computer vision, Knowledge acquisition based on reasoning methods, Medical applications, Miscellaneous applications. This book is a great reference tool for scientists who deal with the problems of designing computer pattern recognition systems. Its target readers can be as well researchers as students of computer science, artificial intelligence or robotics.

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Contents


Fields of interest

Computational Intelligence; Artificial Intelligence (incl. Robotics)

Type of publication

Proceedings
Domain-Level Reasoning for Spoken Dialogue Systems

Reasoning for Information: Seeking and Planning Dialogues provides a logic-based reasoning component for spoken language dialogue systems. This component, called Problem Assistant is responsible for processing constraints on a possible solution obtained from various sources, namely user and the system’s domain-specific information. The authors also present findings on the implementation of a dialogue management interface to the Problem Assistant. The dialogue system supports simple mixed-initiative planning interactions in the TRAINS domain, which is still a relatively complex domain involving a number of logical constraints and relations forming the basis for the collaborative problem-solving behavior that drives the dialogue.

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Contents

Fields of interest
Computational Intelligence; Signal, Image and Speech Processing; User Interfaces and Human Computer Interaction; Language Translation and Linguistics

Target groups
Research

Type of publication
Monograph

Available
2011. XIII, 185 p. 60 illus. Hardcover

99,95 €

Engineering Mechanics 2

Mechanics of Materials

Mechanics of Materials is the second volume of a three-volume textbook on Engineering Mechanics. It was written with the intention of presenting to engineering students the basic concepts and principles of mechanics in as simple a form as the subject allows. A second objective of this book is to guide the students in their efforts to solve problems in mechanics in a systematic manner. The simple approach to the theory of mechanics allows for the different educational backgrounds of the students. Another aim of this book is to provide engineering students as well as practising engineers with a basis to help them bridge the gaps between undergraduate studies, advanced courses on mechanics and practical engineering problems. The book contains numerous examples and their solutions. Emphasis is placed upon student participation in solving the problems. The contents of the book correspond to the topics normally covered in courses on basic engineering mechanics at universities and colleges. Volume 1...

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Contents
1 Tension and Compression. - 2 Stress. - 3 Strain, Hooke’s Law. - 4 Bending of Beams. - 5 Torsion. - 6 Energy Methods. - 7 Buckling of Bars.

Fields of interest
Theoretical and Applied Mechanics; Continuum Mechanics and Mechanics of Materials; Structural Mechanics; Mechanical Engineering

Target groups
Lower undergraduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. IX, 309 p. 140 illus. in color. Softcover

29,95 €
ISBN 978-3-642-12885-1
Dynamics

Dynamics is the third volume of a three-volume textbook on Engineering Mechanics. It was written with the intention of presenting to engineering students the basic concepts and principles of mechanics in as simple a form as the subject allows. A second objective of this book is to guide the students in their efforts to solve problems in mechanics in a systematic manner. The simple approach to the theory of mechanics allows for the different educational backgrounds of the students. Another aim of this book is to provide engineering students as well as practicing engineers with a basis to help them bridge the gaps between undergraduate studies, advanced courses on mechanics and practical engineering problems. The book contains numerous examples and their solutions. Emphasis is placed upon student participation in solving the problems. The contents of this book correspond to the topics normally covered in courses on basic engineering mechanics at universities and colleges. Volume 1 deals with Statics. [...] Features

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Contents


Theoretical and Applied Mechanics; Continuum Mechanics and Mechanics of Materials; Structural Mechanics; Mechanical Engineering Target groups

Lower undergraduate Type of publication

Graduate/advanced undergraduate textbook

Available


Expert Fuzzy Information Processing

This book deals with expert evaluation models in the form of semantic spaces with completeness and orthogonality properties (complete orthogonal semantic spaces). Theoretical and practical studies of some researchers have shown that these spaces describe expert evaluations most adequately, and as a result they were often included in more sophisticated models of intellectual systems for decision making and data analysis. Methods for constructing expert evaluation models of characteristics, comparative analysis of these models, studies of structural composition of their sets and constructing of generalized models are described. Models to obtain rating points for objects and groups of objects with qualitative and quantitative characteristics are presented. A number of regression models combining elements of classical and fuzzy regressions are presented. All methods and models developed by the authors and described in the book are illustrated with examples from various fields of human activities. This [...] Features

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Contents

Chapter 1. The basic concepts of the fuzzy sets theory. - Methods of expert information formalization based on complete orthogonal semantic spaces. - Methods of comparative and fuzzy cluster analysis of formalized information. - Model-building methods of the generalized characteristic expert evaluation models. - Ratings of objects. - Complete orthogonal semantic spaces in problems of the fuzzy regression analysis. Fields of interest

Computational Intelligence; Artificial Intelligence (incl. Robotics) Target groups

Research Type of publication

Monograph

Available


Fault-Diagnosis Applications

Supervision, condition-monitoring, fault detection, fault diagnosis and fault management play an increasing role for technical processes and vehicles in order to improve reliability, availability, maintenance and lifetime. For safety-related processes fault-tolerant systems with redundancy are required in order to reach comprehensive system integrity. This book is a sequel of the book “Fault-Diagnosis Systems” published in 2006, where the basic methods were described. After a short introduction into fault-detection and fault-diagnosis methods the book shows how these methods can be applied for a selection of 20 real technical components and processes as examples, such as: Electrical drives (DC, AC) Electrical actuators Fluidic actuators (hydraulic, pneumatic) Centrifugal and reciprocating pumps Pipelines (leak detection) Industrial robots Machine tools (main and feed drive, drilling, milling, grinding) Heat exchangers Also realized fault-tolerant systems for electrical drives, actuators and sensors are [...] Features

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Contents


Control, Robotics, Mechatronics; Quality Control, Reliability, Safety and Risk; Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences; Computer Applications; Systems Theory; Control Target groups

Professional/practitioner Type of publication

Professional book

Available

Fundamentals of Combustion Processes

Fundamentals of Combustion Processes is designed as a textbook for an upper-division undergraduate and graduate level combustion course in mechanical engineering. The authors focus on the fundamental theory of combustion and provide a simplified discussion of basic combustion parameters and processes such as thermodynamics, chemical kinetics, ignition, diffusion and pre-mixed flames. The text includes exploration of applications, example exercises, suggested homework problems and videos of laboratory demonstrations.

Features

- Fundamentals of Combustion Processes serves students as a textbook for an upper-division undergraduate and graduate level combustion course in mechanical engineering. The authors focus on fundamental theory of combustion and provide a simplified discussion of basic combustion parameters and processes such as thermodynamics, chemical kinetics, ignition, diffusion, and pre-mixed flames.
- The text includes [...]

Contents

- Preface
- Nomenclature
- Fuel
- Thermodynamics of Combustion
- Chemical Kinetics
- Review of Transport Equations and Properties
- Ignition Phenomena
- Premixed Flames
- Non-Premixed Flames (Diffusion Flames)
- Droplet Evaporation and Combustion of Diesel Engines
- Combustion in Engines
- Properties of Fuels
- Properties of Air
- Properties of Ideal Combustion Gases
- Elementary Reaction Mechanisms
- Summary of Limits of Flammability
- Minimum Ignition Energy
- Antoine Equation
- Flash Points for Common Fuels
- Properties of Some Alcohol Fuels and Ammonia

Fields of interest

Engineering Thermodynamics, Heat and Mass Transfer, Physical Chemistry, Classical Continuum Physics, Engineering Fluid Dynamics

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Available


69.95 €
ISBN 978-1-4419-7942-1

Future Intelligent Information Systems

Volume 1

2010 First International Conference on Electrical and Electronics Engineering was held in Wuhan, China, December 4-5. Future Intelligent Information Systems book contains eighty-five revised and extended research articles written by prominent researchers participating in the conference. Topics covered include Tools and Methods of AI, Knowledge Discovery, Information Management and knowledge sharing, intelligent e-Technology, Information systems governance, and Informatics in Control. Intelligent Information System will offer the state of art of tremendous advances in Intelligent Information System and also serve as an excellent reference work for researchers and graduate students working with/on Intelligent Information System.

Features

- 2010 First International Conference on Electrical and Electronics Engineering was held in Wuhan, China, December 4-5. Future Intelligent Information Systems book contains eighty-five revised and extended research articles written by prominent researchers participating in the conference.
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Contents

- Design of Intelligent Supersonic Rangefinder
- A System Design Method for Gear Parameters Analyzing
- Research on Audio-Visual Asynchronous Correlation for Speaker Identification Based on DBN
- High Radix Montgomery Multipliers for Residue Arithmetic Channels on FPGAs
- Dual-Threshold CMOS Technique for Pass-Transistor Adiabatic Logic with FMOS Pull-Up Configuration
- Voltage Scaling for Adiabatic Register File Based on Complementary Pass-transistor Adiabatic Logic
- Near-Threshold Flip-Flops for Ultra Low-Power Applications
- Proposed of a GIS Cloud (GIS-C) System Architecture

Fields of interest

Computational Intelligence; Electrical Engineering

Target groups

Research

Type of publication

Proceedings

Available

2011, XVI, 572 p. 342 illus, 3 in color. (Lecture Notes in Electrical Engineering, Vol. 86) Hardcover

249,00 €
ISBN 978-3-642-19705-5
Granular Computing and Intelligent Systems

Design with Information Granules of Higher Order and Higher Type

Information granules are fundamental conceptual entities facilitating perception of complex phenomena and contributing to the enhancement of human centricity in intelligent systems. The formal frameworks of information granules and information granulation comprise fuzzy sets, interval analysis, probability, rough sets, and shadowed sets, to name only a few representatives. Among current developments of Granular Computing, interesting options concern information granules of higher order and of higher type. The higher order information granularity is concerned with an effective formation of information granules over the space being originally constructed by information granules of lower order. This construct is directly associated with the concept of hierarchy of systems composed of successive processing layers characterized by the increasing levels of abstraction. This idea of layered, hierarchical realization of models of complex systems has gained a significant level of viability in fuzzy modeling...

Features

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Hybrid Hydrogen Systems

Stationary and Transportation Applications

Renewable energy technologies have been used on a small scale for many years now. Issues of intermittency and cost have prevented their widespread use and acceptance. At present, discussion and research is aimed at moving the current global fossil fuels economy to one based on hydrogen as the universal energy carrier, with fuel cells as a means of converting this chemical energy to electrical energy. Hybrid Hydrogen Systems presents an original and comprehensive approach to hybrid energy system optimization, providing a much-needed systems approach to hydrogen energy applications. This book provides a comprehensive overview of the fundamentals of renewable power generation, conversion and storage, including: wind, solar photovoltaic, power, biomass, batteries, fuel cells, and hydrogen. As well as proposing a unique approach to minimize the cost and maximize the reliability of hybrid energy systems, Hybrid Hydrogen Systems introduces the benefits of hydrogen as an energy carrier in the context of...

Features

Renewable energy technologies have been used on a small scale for many years now. Issues of intermittency and cost have prevented their widespread use and acceptance. At present, discussion and research is aimed at moving the current global fossil fuels economy to one based on hydrogen as the universal energy carrier, with fuel cells as a means of converting this chemical energy to electrical energy...

Contents


Fields of interest

Renewable and Green Energy; Environmental Economics; Environment (general); Materials Science (general); Energy Systems

Target groups

Research

Type of publication

Monograph

Available

2011, X, 134 p. 71 illus., 9 in color. (Green Energy and Technology) Hardcover

99,95 €

ISBN 978-1-84628-466-3
Kinematics of Machinery Through HyperWorks

The concept of moving machine members during a thermodynamic cycle and the variation of displacement, velocities and accelerations forms the subject of kinematics. The study of forces that make the motion is the subject of mechanics; combining these two subjects leads to dynamics of machinery. When we include the machinery aspects such as links, kinematic chains, and mechanisms to form a given machine we have the subject of Theory of Machines. Usually this subject is introduced as a two-semester course, where kinematics and kinetics are taught simultaneously with thermodynamics or heat engines before progressing to the design of machine members. This book provides the material for first semester of a Theory of Machines course. It is book brings in the machine live onto the screen and explains the theory of machines concepts through animations and introduces how the problems are solved in industry to present a complete history in the shortest possible time rather than using graphical (or analytical).[

Features
The concept of moving machine members during a thermodynamic cycle and the variation of displacement, velocities and accelerations forms the subject of kinematics. The study of forces that make the motion is the subject of mechanics; combining these two subjects leads to dynamics of machinery. When we include the machinery aspects such as links, kinematic chains, and mechanisms to form a given machine.[

Contents
1. Beginnings of Theory of Machines
   1.1 Beginnings of the Wheel
   1.2 Archimedes (287-212 BC)
   1.3 Water Wheels
   1.4 Wind Mills
   1.5 Renaissance Engineers
   1.6 Industrial Revolution
   1.7 How is this book organized?
2. Planar Mechanisms
   2.1 Basic Kinematic Concepts
   2.2 Elementary Mechanisms
   2.3 Grübler’s Criterion for Planar Mechanisms
   2.4 Four Link Chains
3. Kinematic Analysis of Mechanisms
   3.1 Velocities by Centro Method
   3.2 Relative Velocity
   3.3 Acceleration
   3.4 Velocities by Centro Method
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   8.1 Basic Concepts
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   8.4 Spatial Kinematics of Spatial Mechanisms
9. Kinematic Analysis of Spatial Mechanisms
   9.1 Basic Concepts
   9.2 Spatial Kinematics
   9.3 Spatial Kinematics of Planar Mechanisms
   9.4 Spatial Kinematics of Spatial Mechanisms
10. Kinematic Analysis of Spatial Mechanisms
    10.1 Basic Concepts
    10.2 Spatial Kinematics
    10.3 Spatial Kinematics of Planar Mechanisms
    10.4 Spatial Kinematics of Spatial Mechanisms

Lattice Boltzmann Method

Lattice Boltzmann Method introduces the lattice Boltzmann method (LBM) for solving transport phenomena – flow, heat and mass transfer – in a systematic way. Providing explanatory computer codes throughout the book, the author guides readers through many practical examples, such as:flow in isothermal and non-isothermal lid driven cavities;flow over obstacles;forced flow through a heated channel;conjugate forced convection; and natural convection. Diffusion and advection-diffusion equations are discussed with applications and examples, and complete computer codes accompany the coverage of single and multi-relaxation-time methods. Although the codes are written in FORTRAN, they can be easily translated to other languages, such as C++. The codes can also be extended with little effort to multi-phase and multi-physics, if the reader knows the physics of the problem. Readers with some experience of advanced mathematics and physics will find Lattice Boltzmann Method a useful and easy-to-follow text. It has...

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Contents
1 Introduction and Kinetic of Particles
2 The Boltzmann Equation
3 The Diffusion Equation
4 Advection-Diffusion Problems
5 Isothermal Incompressible Fluid Flow
6 Non-isothermal Incompressible Fluid Flow
7 Multi-relaxation Schemes
8 Complex Flows

Fields of interest
Engineering Thermodynamics, Heat and Mass Transfer; Classical Continuum Physics; Engineering Fluid Dynamics; Numerical and Computational Physics

Target groups
Research

Type of publication
Monograph

Available
2011. XVII, 238 p. 65 illus. Hardcover
99,95 €
ISBN 978-3-642-19726-0
Look-Ahead Based Sigma-Delta Modulation

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

Features

High resolution analog-to-digital conversion and digital-to-analog conversion is often realized with the use of a Sigma-Delta Modulator (SDM). The sigma-delta modulation process, although very non-linear when a 1-bit quantizer is used, is nowadays well understood and can be made to deliver a very high signal conversion quality. An example system that pushes the traditional sigma-delta modulation algorithm to [...]
Modelling, Simulation and Software Concepts for Scientific-Technological Problems

The book includes different contributions that cover interdisciplinary research in the areas of... Error controlled numerical methods, efficient algorithms and software development - Elastic and in elastic deformation processes - Models with multiscales and multi-physics "High Performance" adaptive numerical methods using finite elements (FEM) and boundary elements (BEM) are described as well as efficient solvers for linear systems and corresponding software components for non-linear, coupled field equations of various branches of mechanics, electromagnetics, and geosciences.

Features
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Contents

Fields of interest
Continuum Mechanics and Mechanics of Materials; Simulation and Modeling; Appl. Mathematics / Computational Methods of Engineering

Target groups
Research

Type of publication
Monograph

Available

99,95 €
ISBN 978-3-642-20489-0

Multimedia Analysis, Processing and Communications

This book has brought 24 groups of experts and active researchers around the world together in image processing and analysis, video processing and analysis, and communications related processing, to present their newest research results, exchange latest experiences and insights, and explore future directions in these important and rapidly evolving areas. It aims at increasing the synergy between academic and industry professionals working in the related field. It focuses on the state-of-the-art research in various essential areas related to emerging technologies, standards and applications on analysis, processing, computing, and communication of multimedia information. The target audience of this book is researchers and engineers as well as graduate students working in various disciplines linked to multimedia analysis, processing and communications, e.g., computer vision, pattern recognition, information technology, image processing, and artificial intelligence. The book is also meant to a broader... [-]

Features
This book has brought 24 groups of experts and active researchers around the world together in image processing and analysis, video processing and analysis, and communications related processing, to present their newest research results, exchange latest experiences and insights, and explore future directions in these important and rapidly evolving areas. It aims at increasing the synergy between academic... [-]

Contents
Part I: Image Processing and Analysis - Part II: Video Processing and Analysis - Communications Related Processing - Part II: Video Processing and Analysis - Communications Related Processing.

Fields of interest
Appl. Mathematics / Computational Methods of Engineering; Artificial Intelligence (incl. Robotics); Communications Engineering; Networks; Information Systems and Communication Service

Target groups
Research

Type of publication
Monograph

Available
2011. XI, 764 p. 315 illus., 183 in color. (Studies in Computational Intelligence; Vol. 366) Hardcover

199,95 €
ISBN 978-3-642-19550-1

Nanotechnology in Civil Infrastructure

A Paradigm Shift

Nanotechnology in Civil Infrastructure is a state-of-the art reference source describing the latest developments in nano-engineering and nano-modification of construction materials to improve the bulk properties, development of sustainable, intelligent, and smart concrete materials through the integration of nanotechnology based self-sensing and self-powered materials and cyber infrastructure... [-]

Contents

Fields of interest
Civil Engineering; Nanotechnology; Sustainable Development; Renewable and Green Energy; Computational Intelligence; Landscape, Regional and Urban Planning

Target groups
Research

Type of publication
Monograph

Available
2011. VIII, 276 p. 144 illus., 58 in color. Hardcover

99,95 €
ISBN 978-3-642-16656-3
Near-Field Characterization of Micro/Nano-Scaled Fluid Flows

The near-field region within an order of 100 nm from the solid interface is an exciting and crucial arena where many important multiscale transport phenomena are physically characterized, such as flow mixing and drag, heat and mass transfer, near-wall behavior of nanoparticles, binding of bio-molecules, crystallization, surface deposition processes, just naming a few. This monograph presents a number of label-free experimental techniques developed and tested for near-field fluid flow characterization. Namely, these include Total Internal Reflection Microscopy (TIRM), Optical Serial Sectioning Microscopy (OSSM), Surface Plasmon Resonance Microscopy (SPRM), Interference Reflection Contrast Microscopy (IRCM), Thermal Near-Field Anemometry, Scanning Thermal Microscopy (STM), and Micro-Cantilever Near-Field Thermometry. Presentation on each of these is laid out for the working principle, how to implement the system, and its example applications, to promote the readers understanding and knowledge of the...

Features
The near-field – the region within 100 nm from a solid interface – is an exciting arena in which several important multi-scale transport phenomena are physically characterized, such as flow mixing and drag, heat and mass transfer, near-wall behavior of nanoparticles, the binding of bio-molecules, crystallization, and surface deposition processes, just to name a few. This book presents a number of...

Contents
Introduction. - Definitions of near-field. - Evanescent wave penetration depth. - Surface. - Photon penetration skin depth into metal. - Penetration depth of no-slip boundary conditions. - Equilibrium height (hm) for small particles under near-field forces. - Total Internal Reflection Microscopy (TIRM). - Ratiometric TIRM imaging analysis. - Near-field applications of TIRM. - Near-wall hindered Brownian motion of nanoparticles. - Slip flows in the near-field. - Cytoplastic viscosity and intracellular vesicle sizes. - Optical Serial Sectioning Microscopy (OSSM). - Point spread functions (PSFs) under...

Fields of interest
Engineering Fluid Dynamics; Fluid- and Aerodynamics

Target groups
Research

Type of publication
Monograph

Available
2011. VIII, 148 p. 79 illus., 17 in color. (Experimental Fluid Mechanics) Hardcover
99,95 €
ISBN 978-3-642-20425-8

Networked and Distributed Predictive Control

Networked and Distributed Predictive Control presents rigorous, yet practical, methods for the design of networked and distributed predictive control systems – the first book to do so. The design of model predictive control systems using Lyapunov-based techniques accounting for the influence of asynchronous and delayed measurements is followed by a treatment of networked control architecture development. This shows how networked control can augment dedicated control systems in a natural way and take advantage of additional, potentially asynchronous and delayed measurements to maintain closed loop stability and significantly improve closed-loop performance. The text then shifts focus to the design of distributed predictive control systems that cooperate efficiently in computing optimal manipulated input trajectories that achieve desired stability, performance and robustness specifications but spend a fraction of the time required by centralized control systems. Key features of this book include:

Features
Networked and Distributed Predictive Control presents rigorous, yet practical, methods for the design of networked and distributed predictive control systems using Lyapunov-based techniques to account for the influence of asynchronous and delayed measurements. The design of model predictive control systems using Lyapunov-based techniques accounting for the influence of asynchronous and delayed measurements is followed by a treatment of networked control architecture development.

Contents

Fields of interest
Control; Industrial Chemistry / Chemical Engineering; Renewable and Green Energy; Systems Theory; Control; Computer Communication Networks

Target groups
Research

Type of publication
Monograph

Available
2011. XXVII, 230 p. 86 illus., 65 in color. (Advances in Industrial Control) Hardcover
99,95 €

Next Generation Data Technologies for Collective Computational Intelligence

This book focuses on next generation data technologies in support of collective and computational intelligence. The book brings various next generation data technologies together to capture, integrate, analyze, mine, annotate and visualize distributed data – made available from various community users – in a meaningful and collaborative for the organization manner. A unique perspective on collective computational intelligence is offered by embracing both theory and strategies fundamentals such as data clustering, graph partitioning, collaborative decision making, self-adaptive agent colony, swarm and evolutionary agents. It also covers emerging and next generation technologies in support of collective computational intelligence such as Web 2.0 social networks, semantic web for data annotation, knowledge representation and inference, data privacy and security, and enabling distributed and collaborative paradigms such as P2P, Grid and Cloud Computing due to the geographically dispersed and distributed...

Features
This book focuses on next generation data technologies in support of collective and computational intelligence. The book brings various next generation data technologies together to capture, integrate, analyze, mine, annotate and visualize distributed data – made available from various community users – in a meaningful and collaborative for the organization manner. A unique perspective on collective...

Contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics); Information Systems Applications (incl.Internet)

Target groups
Research

Type of publication
Monograph

Available
2011. XVII, 638 p. 211 illus. (Studies in Computational Intelligence, Vol. 352) Hardcover
169,95 €
ISBN 978-3-642-20343-5
Nonlinear Model Predictive Control

Theory and Algorithms

Nonlinear Model Predictive Control is a thorough and rigorous introduction to nonlinear model predictive control (NMPC) for discrete-time and sampled-data systems. NMPC is interpreted as an approximation of infinite-horizon optimal control so that important properties like closed-loop stability, inverse optimality and suboptimality can be derived in a uniform manner. These results are complemented by discussions of feasibility and robustness. NMPC schemes with and without stabilizing terminal constraints are detailed and intuitive examples illustrate the performance of different NMPC variants. An introduction to nonlinear optimal control algorithms gives insight into how the nonlinear optimisation routine – the core of any NMPC controller – works. An appendix covering NMPC software and accompanying software in MATLAB® and C++ (downloadable from www.springer.com/ISBN) enables readers to perform computer experiments exploring the possibilities and limitations of NMPC.

Features

Nonlinear model predictive control (NMPC) is widely used in the process and chemical industries and increasingly for applications, such as those in the automotive industry, which use higher data sampling rates. Nonlinear Model Predictive Control is a thorough and rigorous introduction to NMPC for discrete-time and sampled-data systems. NMPC is interpreted as an approximation of infinite-horizon optimal control.

Contents


Fields of interest

Control; Systems Theory; Control; Industrial Chemistry / Chemical Engineering; Automotive Engineering

Target groups

Professional/practitioner

Type of publication

Monograph

Available

Operational Amplifiers

Theory and Design

Operational Amplifiers – Theory and Design, Second Edition presents a systematic circuit design of operational amplifiers. Containing state-of-the-art material as well as the essentials, the book is written to appeal to both the circuit designer and the system designer. It is shown that the topology of all operational amplifiers can be divided into nine main overall configurations. These configurations range from one gain stage up to four or more stages. Many famous designs are evaluated in depth. Additional chapters included are on systematic design of µV-offset operational amplifiers and precision instrumentation amplifiers by applying chopping, auto-zeroing, and dynamic element-matching techniques. Also, techniques for frequency compensation of amplifiers with high capacitive loads have been added. Operational Amplifiers – Theory and Design, Second Edition presents high frequency compensation techniques to HF-stabilize all nine configurations. Special emphasis is placed on low-power low-voltage.[...]

Features

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Contents


Fields of interest

Circuits and Systems; Electronic Circuits and Devices; Processor Architectures

Target groups

Research

Type of publication

Graduate/advanced undergraduate textbook

Available


99.95 €

ISBN 978-94-007-0595-1

Optimal Time-Domain Noise Reduction Filters

A Theoretical Study

Additive noise is ubiquitous in acoustics environments and can affect the intelligibility and quality of speech signals. Therefore, a so-called noise reduction algorithm is required to mitigate the effect of the noise that is picked up by the microphones. This work proposes a general framework in the time domain for the single and multiple microphone cases, from which it is very convenient to derive, study, and analyze all kind of optimal noise reduction filters. Not only that all known algorithms can be deduced from this approach, shedding more light on how they function, but new ones can be discovered as well.

Features

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Contents


Fields of interest

Signal, Image and Speech Processing; Coding and Information Theory; Communications Engineering, Networks

Target groups

Research

Type of publication

Brief

Available


39.95 €

ISBN 978-3-642-19600-3

Operational Amplifiers

Theory and Design

Operational Amplifiers – Theory and Design, Second Edition presents a systematic circuit design of operational amplifiers. Containing state-of-the-art material as well as the essentials, the book is written to appeal to both the circuit designer and the system designer. It is shown that the topology of all operational amplifiers can be divided into nine main overall configurations. These configurations range from one gain stage up to four or more stages. Many famous designs are evaluated in depth. Additional chapters included are on systematic design of μV-offset operational amplifiers and precision instrumentation amplifiers by applying chopping, auto-zeroing, and dynamic element-matching techniques. Also, techniques for frequency compensation of amplifiers with high capacitive loads have been added. Operational Amplifiers – Theory and Design, Second Edition presents high frequency compensation techniques to HF-stabilize all nine configurations. Special emphasis is placed on low-power low-voltage.[...]

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Contents


Fields of interest

Circuits and Systems; Electronic Circuits and Devices; Processor Architectures

Target groups

Research

Type of publication

Graduate/advanced undergraduate textbook

Available


99.95 €

ISBN 978-94-007-0595-1
Power Conversion of Renewable Energy Systems

Power Conversion of Renewable Energy Systems presents an introduction to conventional energy conversion components and systems, as well as those related to renewable energy. This volume introduces systems first, and then in subsequent chapters describes the components of energy systems in detail. Readers will find examples of renewable and conventional energy and power systems, including energy conversion, variable-speed drives and power electronics, in addition to magnetic devices such as transformers and rotating machines. Applications of PSpice, MATLAB, and Mathematica are also included, along with solutions to over 100 application examples. Power Conversion of Renewable Energy Systems aims to instruct readers how to actively apply the theories discussed within. It would be an ideal volume for researchers, students and engineers working with energy systems and renewable energy.

Features
- Power Conversion of Renewable Energy Systems introduces conventional energy conversion components and systems, as well as those related to renewable energy which are important for a smart grid design. This volume covers systems first, and then in subsequent chapters describes the components of energy systems in detail. Readers will find examples of renewable and conventional energy and power systems.

Contents
- Introduction
- Block Diagrams of Electromechanical Systems
- Electric Energy Sources
- Electronic Controllers for Feedback Systems
- Power Electronic Converters
- Magnetic Circuits: Inductors and Permanent Magnets
- Two-Winding Single-Phase Transformers Including Autotransformers
- Three-Phase Systems and Three-Phase Transformers
- Force and Torque Production in Electromagnetic Circuits
- Rotating and Linear Motion Electric Machines
- Mechanical Loads
- Designs for Electromechanical and Renewable Power Systems

Fields of interest
- Renewable and Green Energy
- Power Electronics
- Electrical Machines and Networks
- Energy Efficiency

Type of publication
- Graduate/advanced undergraduate textbook

Available
2011, XIII, 692 p. 120 illus. Hardcover
69,95 €
ISBN 978-1-4419-7978-0

Replacement Models with Minimal Repair

Replacement Models with Minimal Repair is a collection of works by several well-known specialists on the subject of minimal repair in replacement policies. It gives an exhaustive list of minimal repair models for the effective planning of minimal repair and maintenance actions. Written in an engaging style, Replacement Models with Minimal Repair balances complex mathematical models with practical applications. It is divided into six parts that cover mathematical modeling of minimal repair, preventive maintenance models and optimal scheduling of imperfect preventive maintenance activities, new warranty servicing strategy with imperfect repair, mathematical models combining burn-in procedure and general maintenance policies, methods for parameters’ estimation of minimal repair models, and product support. Replacement Models with Minimal Repair is for anyone with interest in minimal repair and its impact on maintenance policies and strategies. It is a particularly useful resource for researchers.

Features
- Replacement Models with Minimal Repair is a collection of works by several well-known specialists on the subject of minimal repair in replacement policies. It gives an exhaustive list of minimal repair models for the effective planning of minimal repair and maintenance actions. Written in an engaging style, Replacement Models with Minimal Repair balances complex mathematical models with practical applications.

Contents
1. A Survey of Replacement Models with Minimal Repair
2. Information-based Minimal Repair Models
3. Minimal Repair Models with Two Categories of Competing Failure Modes
4. Preventive Maintenance Models: A Review
5. Optimal Schedules of Two Periodic Imperfect Preventive Maintenance Policies and Their Comparisons
6. Warranty Servicing with Imperfect Repair for Products Sold with a Two-Dimensional Warranty
7. A Survey of Burn-in and Maintenance Models for Repairable Systems
8. Filtering and M-ary Detection in a Minimal Repair Maintenance Model
9. Efficient Product Support

Fields of interest
- Quality Control
- Reliability
- Safety
- Risk
- Mathematical Modeling
- Industrial Mathematics
- Industrial Organization

Type of publication
- Contributed volume

Available
2011, XVII, 270 p. 23 illus., 12 in color. (Springer Series in Reliability Engineering) Hardcover
99,95 €

Robotic Welding, Intelligence and Automation

This book shows contributions presented in the 2010 International Conference on Robotic Welding, Intelligence and Automation (RWIA 2010), Oct. 14-16, 2010, Shanghai, China. Welding hand-icraft is one of the most primordial and traditional techniques, mainly by manpower and human experiences. Weld quality and efficiency are, therefore, strictly limited by the welder’s skill. In the modern manufacturing, automatic and robotic welding is becoming an inevitable trend. In recent years, the intelligence techniques for robotic welding have a great development. The current teaching play-back welding robot is not with real-time functions for sensing and adaptive control of weld process. Generally, the key technologies on Intelligentized welding robot and robotic welding process include computer visual and other information sensing, monitoring and real-time feedback control of weld penetration and pool shape and welding quality. Seam tracking is another key technology for welding robot system. Some...

Features
- This book shows contributions presented in the 2010 International Conference on Robotic Welding, Intelligence and Automation (RWIA 2010), Oct. 14-16, 2010, Shanghai, China. Welding hand-icraft is one of the most primordial and traditional techniques, mainly by manpower and human experiences. Weld quality and efficiency are, therefore, strictly limited by the welder’s skill. In the modern...

Contents
- Part I: Intelligent Technologies for Robotic Welding
- Part II: Sensing of Arc Welding Processing
- Part III: Modeling and Intelligent Control of Welding Processing
- Part IV: Welding Techniques and Automation
- Part V: Special Robot Technology and Systems
- Part VI: Intelligent Control and its Applications in Engineering

Fields of interest
- Electronics
- Microelectronics
- Instrumentation
- Robotics
- Automation
- Computational Intelligence
- Artificial Intelligence

Type of publication
- Proceedings

Available
2011, XII, 558 p. 369 illus., 203 in color. (Lecture Notes in Electrical Engineering, Vol. 88) Hardcover
169,95 €
ISBN 978-3-642-19958-5
Sensor Networks with IEEE 802.15.4 Systems

Distributed Processing, MAC, and Connectivity

This book presents a simple, yet complete, approach to the design and performance analysis of distributed processing algorithms and techniques suitable for IEEE 802.15.4 networks. In particular, the book focuses on the bottom two layers of the ISO/OSI stack (Physical and Medium Access Control), discussing also a few issues related to routing. The book is the synergistic combination of signal processing aspects on the one hand and MAC and connectivity issues on the other hand. The goal of the book is to clearly link physical layer aspects with medium access and topology aspects, in order to provide the reader with a clear understanding of how to approach the design of proper distributed signal processing and medium access algorithms in this context.

Features
This book presents a simple, yet complete, approach to the design and performance analysis of distributed processing algorithms and techniques suitable for IEEE 802.15.4 networks. In particular, the book focuses on the bottom two layers of the ISO/OSI stack (Physical and Medium Access Control), discussing also a few issues related to routing. The book is the synergistic combination of signal processing aspects on the one hand and MAC and connectivity issues on the other hand. The goal of the book is to clearly link physical layer aspects with medium access and topology aspects, in order to provide the reader with a clear understanding of how to approach the design of proper distributed signal processing and medium access algorithms in this context.

Contents

Fields of interest
Communications Engineering, Networks; Computer Communication Networks

Target groups
Research

Type of publication
Monograph

Available
189,95 €
ISBN 978-3-642-20504-0

Soft Computing in Industrial Applications

The 15th Online World Conference on Soft Computing in Industrial Applications, held on the Internet, constitutes a distinctive opportunity to present and discuss high quality papers, making use of sophisticated Internet tools and without incurring in high cost and, thus, facilitating the participation of people from the entire world. The book contains a collection of papers covering outstanding research and developments in the field of Soft Computing including, evolutionary computation, fuzzy control and neuro-fuzzy systems, bio-inspired systems, optimization techniques and application of Soft Computing techniques in modeling, control, optimization, data mining, pattern recognition and traffic and transportation systems.

Features
The 15th Online World Conference on Soft Computing in Industrial Applications, held on the Internet, constitutes a distinctive opportunity to present and discuss high quality papers, making use of sophisticated Internet tools and without incurring in high cost and, thus, facilitating the participation of people from the entire world. The book contains a collection of papers covering outstanding results...

Contents

Fields of interest
Computational Intelligence; Artificial Intelligence (incl. Robotics); Communications Engineering, Networks; Image Processing and Computer Vision

Target groups
Research

Type of publication
Proceedings

Available
189,95 €
ISBN 978-3-642-20504-0

Solutions on Embedded Systems

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

Features
Embedded systems have an increasing importance in our everyday lives. The growing complexity of embedded systems and the emerging trend to interconnections between them lead to new challenges. Intelligent solutions are necessary to overcome these challenges and to provide reliable and secure systems to the customer under a strict time and financial budget. Solutions on Embedded Systems...
Stability and Stabilization of Nonlinear Systems

Recently, the subject of nonlinear control systems analysis has grown rapidly and this book provides a simple and self-contained presentation of their stability and feedback stabilization which enables the reader to learn and understand major techniques used in mathematical control theory. In particular: the important techniques of proving global stability properties are presented closely linked with corresponding methods of nonlinear feedback stabilization; a general framework of methods for proving stability is given, thus allowing the study of a wide class of nonlinear systems, including finite-dimensional systems described by ordinary differential equations, discrete-time systems, systems with delays and sampled-data systems; approaches to the proof of classical global stability properties are extended to non-classical global stability properties such as non-uniform-in-time stability and input-to-output stability; and new tools for stability analysis and control design of a wide class of [...]}

Contents

Fields of interest
Control; Systems Theory; Control; Game Theory / Mathematical Methods; Nonlinear Dynamics

Target groups
Research

Type of publication
Monograph

Available
2011, XIX, 386 p. 7 illus., 5 in color. (Communications and Control Engineering) Hardcover

119,95 €

Sustainable Automotive Technologies 2011

These proceedings capture papers presented at the third International Conferences on Sustainable Automotive Technologies (ICSAT), held at the Clemson University International Center for Automotive Research (CU-ICAR), Greenville, South Carolina, USA, during 5-6 April 2011. ICSAT is the state-of-the-art conference in the field of new technologies for transportation. This book summarizes all important trends in sustainability of automotive development today with a special focus on materials, propulsion technologies as well as manufacturing issues. It provides a brief selection of papers and key-note speakers of the conference. Papers from the US, Australia, Europe and Asia are showing the light-house character of the conference, in a field which is gaining more and more importance as far as emissions and the lack of fossil fuels in the future are concerned. The book provides a very good overview of R&D activities at OEMs as well as in leading universities and laboratories; the special focus is on new ideas.[...]

Features
These proceedings capture papers presented at the third International Conferences on Sustainable Automotive Technologies (ICSAT), held at the Clemson University International Center for Automotive Research (CU-ICAR), Greenville, South Carolina, USA, during 5-6 April 2011. ICSAT is the state-of-the-art conference in the field of new technologies for transportation. The book summarizes all important trends in [...]}

Contents

Fields of interest
Automotive Engineering; Industrial and Production Engineering; Structural Materials; Sustainable Development

Target groups
Research

Type of publication
Proceedings

Available
2011, IX, 150 p. 80 illus. Hardcover

139,95 €
ISBN 978-3-642-19052-0

System Engineering and Automation

An Interactive Educational Approach

This book provides insight and enhanced appreciation of analysis, modeling and control of dynamic systems. The reader is assumed to be familiar with calculus, physics and some programming skills. It might develop the reader’s ability to interpret physical significance of mathematical results in system analysis. The book also prepares the reader for more advanced treatment of subsequent knowledge in the automatic control field. Learning objectives are performance-oriented, using for this purpose interactive MATLAB and SIMULINK software tools. It presents realistic problems in order to analyze, design and develop automatic control systems. Learning with computing tools can aid theory and help students to think, analyze and reason in meaningful ways. The book is also complemented with classroom slides and MATLAB and SIMULINK exercise files to aid students to focus on fundamental concepts treated.

Features
This book provides insight and enhanced appreciation of analysis, modeling and control of dynamic systems. The reader is assumed to be familiar with calculus, physics and some programming skills. It might develop the reader’s ability to interpret physical significance of mathematical results in system analysis. The book also prepares the reader for more advanced treatment of subsequent knowledge in the [...]}

Contents

Fields of interest
Control; Systems Theory; Control; Control Systems; Robotics; Mechatronics

Target groups
Graduate

Type of publication
Monograph

Available
2011, XI, 236 p. 243 illus., 70 in color. Hardcover

99,95 €
ISBN 978-3-642-20229-2
The Future of Design Methodology

The Future of Design Methodology gives a holistic overview of perspectives for design methodology, addresses trends for developing a powerful methodical support for design practice and provides a starting point for future design research. The chapters are written by leading scientists from around the world, who have great expertise in design methodology, as well as the far sightedness needed to develop design methodology further. The Future of Design Methodology is a detailed contribution to consolidated design methodology and design research. Instead of articulating the views of one scientist, it provides a comprehensive collection of perspectives and visions. The editor highlights the substantial deficiencies and problems of the current design methodology and summarizes the authors’ findings to draw future-oriented conclusions. The comprehensive overview of the status of design methodology given in The Future of Design Methodology will help enhance the individual scientific development of junior[...]

Features

The Future of Design Methodology gives a holistic overview of perspectives for design methodology, addresses trends for developing a powerful methodical support for design practice and provides a starting point for future design research. The chapters are written by leading scientists from around the world, who have great expertise in design methodology, as well as the far sightedness needed to [...]

Contents

Introduction.- General Law of Thermal Conduction.- Heat Diffusion in a Plate of Infinite Thickness.- Plate immersed in Fluid.- Plate Heated or Cooled on one Side.- Tube Heated or Cooled on Outside Surface.- Plate Radiated on Both Sides.- Plate Radiated on One Side.- Transient Heat Transfer through a Plane Wall.- Transient Heat Transfer through a Curved Wall (tube).

Fields of interest

Engineering Thermodynamics, Heat and Mass Transfer; Engineering Fluid Dynamics

Research

Unified Signal Theory

Unified Signal Theory is an indispensable textbook dealing with the theory of deterministic signals; a topic of fundamental interest to graduates and senior undergraduates in the areas of information engineering (telecommunications, control, systems theory and electronics), astronomy, oceanography, earth science, biology and medicine. The unified theory follows an innovative approach – that of combining all signal classes into just one. The fundamental signal operations (convolution, Fourier transform, linear systems, sampling and interpolation) are established simultaneously for all the signal classes. This unified approach avoids the repetition of similar concepts consequent on other approaches' separate treatment of definitions and properties for each signal class. Modern wavelet ideas are developed in harmony with the rest of the text. Unified Signal Theory provides: • exercises and examples, to give the student practice; • solutions which are available for download and save the tutor time; and[...]

Contents


Fields of interest

Signal, Image and Speech Processing; Fourier Analysis; Image Processing and Computer Vision; Communications Engineering, Networks; Control

Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Available

2011. XIX, 927 p. 495 illus., 30 in color. With online files/update. Hardcover

99,95 €

ISBN 978-0-85729-463-0

Unified Signal Theory

Unified Signal Theory is an indispensable textbook dealing with the theory of deterministic signals; a topic of fundamental interest to graduates and senior undergraduates in the areas of information engineering (telecommunications, control, systems theory and electronics), astronomy, oceanography, earth science, biology and medicine. The unified theory follows an innovative approach – that of combining all signal classes into just one. The fundamental signal operations (convolution, Fourier transform, linear systems, sampling and interpolation) are established simultaneously for all the signal classes. This unified approach avoids the repetition of similar concepts consequent on other approaches' separate treatment of definitions and properties for each signal class. Modern wavelet ideas are developed in harmony with the rest of the text. Unified Signal Theory provides: • exercises and examples, to give the student practice; • solutions which are available for download and save the tutor time; and[...]

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Target groups

Graduate

Type of publication

Graduate/advanced undergraduate textbook

Available

2011. XIX, 927 p. 495 illus., 30 in color. With online files/update. Hardcover

99,95 €

ISBN 978-0-85729-463-0
Vapor-Liquid Interfaces, Bubbles and Droplets

Fundamentals and Applications

Physically correct boundary conditions on vapor-liquid interfaces are essential in order to make an analysis of flows of a liquid including bubbles or of a gas including droplets. Suitable boundary conditions do not exist at the present time. This book is concerned with the kinetic boundary condition for both the plane and curved vapor-liquid interfaces, and the fluid dynamics boundary condition for Navier-Stokes (fluid dynamics) equations. The kinetic boundary condition is formulated on the basis of molecular dynamics simulations and the fluid dynamics boundary condition is derived by a perturbation analysis of Gaussian-BGK Boltzmann equation applicable to polyatomic gases. The fluid dynamics boundary condition is applied to actual flow problems of bubbles in a liquid and droplets in a gas.

Features
- Physically correct boundary conditions on vapor-liquid interfaces are essential in order to make an analysis of flows of a liquid including bubbles or of a gas including droplets. Suitable boundary conditions do not exist at the present time. This book is concerned with the kinetic boundary condition for both the plane and curved vapor-liquid interfaces, and the fluid dynamics boundary condition for ...

Contents
- Historical Review on Vapor-Liquid Interfaces
- Molecular Dynamics of Vapor-Liquid Interfaces with Evaporation and Condensation
- Boundary Conditions for Fluid Dynamics
- Type Set of Equations Based on Molecular Gas Dynamics
- Measurement of Evaporation and Condensation Coefficients by Shock Wave and Sound Resonance Methods
- Applications to Bubbles and Droplets
- Appendices

Fields of interest
- Engineering Fluid Dynamics
- Fluid- and Aerodynamics

Target groups
- Research

Type of publication
- Monograph

Available
  - 99.95 €
  - ISBN 978-3-642-18037-8

Advances in Wind Energy Conversion Technology

With an annual growth rate of over 35%, wind is the fastest growing energy source in the world today. As a result of intensive research and developmental efforts, the technology of generating energy from wind has significantly changed during the past five years. The book brings together all the latest aspects of wind energy conversion technology - right from the wind resource analysis to grid integration of the wind generated electricity. The chapters are contributed by academic and industrial experts having vast experience in these areas. Each chapter begins with an introduction explaining the current status of the technology and proceeds further to the advanced lever to cater for the needs of readers from different subject backgrounds. Extensive bibliography/references appended to each chapter give further guidance to the interested readers.

Features
- The proposed book provides in-depth discussion on all the major aspects of wind energy conversion technology. Academic and industrial experts share their expertise and experiences in wind energy conversion systems through various chapters grouped into eight sections. In contrast with other publications in this area, a detailed section on offshore wind farms is included in this volume. Economic and ...

Contents
- Nature Conservation; Environmental Management; Atmospheric Protection / Air Quality Control / Air Pollution; Climate Change

Available
  - 99.95 €

Asbestos Disaster

Lessons from Japan’s Experience

Japan’s asbestos disasters, encompassing both occupational disease and environmental pollution, have been caused principally by the asbestos textile, asbestos cement water pipe, and construction industries. This book is unique in its interdisciplinary approach to those disasters as it incorporates medical science, economics, political science, law, architecture, environmental engineering, sociology, and journalism. Written by authorities in their fields, the chapters reflect the integration of these disciplines in topics that include a historical review of asbestos issues in Japan, asbestos-related diseases, international aspects of the asbestos industry, public policy, divisions of responsibility, relief activities in emergencies, and countermeasures enacted by local governments. The lessons of asbestos problems and policies in Japan are particularly important for developing countries to prevent the proliferation of asbestos disasters. This volume serves as a textbook on asbestos issues for all.

Features
- Japan’s asbestos disasters, encompassing both occupational disease and environmental pollution, have been caused principally by the asbestos textile, asbestos cement water pipe, and construction industries. This book is unique in its interdisciplinary approach to those disasters as it incorporates medical science, economics, political science, law, architecture, environmental engineering, sociology, and ...

Contents
- A Political Economy of Asbestos Disasters
- An Exploration of Measures Against Industrial Asbestos Accidents
- Why did the Asbestos Disaster Spread?
- Asbestos Pollution and Its Health Effects
- Asbestos-Related Diseases in Japan
- Mesothe-
lioma Due to Neighborhood Asbestos Exposure: A Large-Scale, Ongoing Disaster Among Residents Living Near a Former Kubota Plant in Amagasaki, Japan
- References
- Asbestos Disasters and Public Policy: From the Prewar Era Through the Postwar Economic Boom

Available
- 2011. XVIII, 316 p. 36 illus. Hardcover
  - 139.95 €
  - ISBN 978-4-431-53914-8
Brominated Flame Retardants

Brominated flame retardants are one of the last classes of halogenated compounds that are still being produced worldwide and used in large quantities in many applications. They are used in plastics, textiles, electronic circuitry, and other materials to prevent fires. This volume covers the state-of-the-art of the analysis, fate and behaviour of brominated flame retardants. Experts in the field provide an overview of the compounds’ physico-chemical properties and uses, their occurrence in the environment and biota, advanced chemical analytical methods, degradation studies, toxicological effects and human exposure. This book is a valuable and comprehensive source of information for environmental scientists interested in brominated flame retardant issues, and for authorities and producers.

Features
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**Survival and Sustainability**

Environmental concerns in the 21st Century

The International Conference on Environment: Survival and Sustainability, held at the Near East University, Nicosia, Northern Cyprus 19-24 February 2007, dealt with environmental threats and proposed solutions at all scales. The 21 themes addressed by the conference fell into four broad categories: Threats to Survival and Sustainability; Technological Advances towards Survival and Sustainability; Activities and Tools for Social Change; Defining Goals for Sustainable Societies. Activities and tools that move the society towards greater sustainability were emphasized at the conference. These included environmental law and ethics, environmental knowledge, technology and information systems, media, environmental awareness, education and lifelong learning, the use of literature for environmental awareness, the green factor in politics, international relations and environmental organizations. The breadth of the issues addressed at the conference made clear the need for greatly increased interdisciplinary[...]

**Features**

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**Fields of interest**

Sustainable Development; Applied Earth Sciences; Landscape, Regional and Urban Planning

**Target groups**

Research

**Type of publication**

Monograph

**Available**

2011. XLI, 1514 p. 110 illus., 60 in color. (Environmental Earth Sciences) Hardcover

279,00 €

ISBN 978-3-540-95990-8

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**Corporate Criminal Liability**

Emergence, Convergence, and Risk

With industrialization and globalization, corporations acquired the capacity to influence social life for good or for ill. Yet, corporations are not traditional objects of criminal law. Justified by notions of personal moral guilt, criminal norms have been judged inapplicable to fictional persons, who ‘think’ and ‘act’ through human beings. The expansion of new corporate criminal liability (CCL) laws since the mid-1990s challenges this assumption. Our volume surveys current practice on CCL in 15 civil and common law jurisdictions, exploring the legal conditions for liability, the principles and options for sanctioning, and the procedures for investigating, charging and trying corporate offenders. It considers whether municipal CCL laws are converging around the notion of ‘corporate culture’, and, in any case, the implications of CCL for those charged with keeping corporations, and other legal entities, out of trouble.

**Features**

With industrialization and globalization, corporations acquired the capacity to influence societies for better or worse. Yet, corporations are not traditional objects of criminal law. Justified by notions of personal moral guilt, criminal norms have been judged inapplicable to fictional persons who “think” and “act” through human beings. The expansion of new corporate criminal liability (CCL) laws since the [...]

**Contents**


**Fields of interest**

Criminal Law; Law and Economics; International & Foreign Law; Law Theory / Law Philosophy

**Target groups**

Research

**Type of publication**

Contributed volume

**Available**


99,95 €

ISBN 978-94-007-0673-6

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**Developments in Services of General Interest**

This is the third book in the series Legal Issues of Services of General Interest. The book focuses upon a set of research questions on the recent developments in the emergence of services of general interest (SGIs) as a distinct EU concept. This includes, inter alia, the emergence of universal service obligations and the way they are regulated in the EU in primary and secondary law, the range of soft law communications adopted by the Commission to create a distinctive EU concept of SGIs, the residual role of hard law in the Treaty on the Functioning of the European Union (TFEU), the special problems created by Social Services of General Economic Interest and the interaction of procurement and state aid law with SGIs. A new perspective is offered in this book: some of the issues faced by the EU in accommodating SGIs into a regulatory framework are found also in the policy of the WTO and in least developed countries (LDCs).

**Features**

No back cover text

**Contents**

Introduction: Why do public services challenge the European Union? Part I: Background Issues - From Rome to Lisbon: SGIs in primary law? The Commission’s soft law in the area of Services of General Economic Interest Article 106 TFEU is dead – Long live Article 106 TFEU? The definition of a ‘contract’ under Article 106 TFEU? Part II: New Legal Developments in Services of General Interest. The book focuses upon a set of research questions on the recent developments in the emergence of services of general interest (SGIs) as a distinct EU concept. This includes, inter alia, the emergence of universal service obligations and the way they are regulated in the EU in primary and secondary law, the range of soft law communications adopted by the Commission to create a distinctive EU concept of SGIs, the residual role of hard law in the Treaty on the Functioning of the European Union (TFEU), the special problems created by Social Services of General Economic Interest and the interaction of procurement and state aid law with SGIs. A new perspective is offered in this book: some of the issues faced by the EU in accommodating SGIs into a regulatory framework are found also in the policy of the WTO and in least developed countries (LDCs).

**Fields of interest**

European Law / Public International Law; Development Economics

**Target groups**

Professional/practitioner

**Type of publication**

Contributed volume

**Available**

2011. XVIII, 266 p. (Legal Issues of Services of General Interest) Hardcover

79,95 €

Health Care and EU Law

The aim of the present volume is to explore the consequences of the impact of the EU rules for the internal market (including the proposed Directive on patients’ rights) and competition on national health care systems. It will also address how related areas, such as EU public procurement law and WTO law, influence national healthcare organisation and Member State autonomy.

Features
The EU has only limited competence to regulate national health-care systems but recent developments have shown that health care is not immune from the effects of EU law. As Member States have increasingly experimented with new forms of funding and the delivery of health-care and social welfare services, health-care issues have not escaped scrutiny from the EU internal market and from competition and [...]

Contents

Target groups Professional/practitioner

Type of publication Contributed volume

Available
2011, XII, 505 p. (Legal Issues of Services of General Interest) Hardcover
109.95 €

Indigenousness in Africa

A Contexted Legal Framework for Empowerment of ‘Marginalized’ Communities

Following the internationalisation of the indigenous rights movement, a growing number of African hunter-gatherers, pastoralists and other communities have adopted indigenousness in claiming special legal protection. Their legal claims as the indigenous peoples of Africa are backed by many international actors such as indigenous rights activists, donors and scholars. However, indigenous identification is resisted by many African governments, some community members and some anthropologists. Felix Mukwisa Ndahinda explores the sources of indigenous identification in Africa and its legal and political implications. Noting the limitations of systemic and discursive, as opposed to activist, studies, it questions the appropriateness of this framework in efforts aimed at empowering claimant communities in inherently multiethnic African countries and adopts an interdisciplinary approach in order to capture the indigenous rights phenomenon in Africa.

Features
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Contents

Target groups Research

Type of publication Monograph

Available
2011, XII, 393 p. Hardcover
99.95 €

Innovating Government

Normative, Policy and Technological Dimensions of Modern Government

The aim of this book is to analyze four dimensions of innovating government and the use of new technologies: legal, ethical, policy and technological dimensions. By joining authors from a diversity of backgrounds (law, ethics, public administration, political science, sociology, communications science, information science, and computer science) in one book, readers (academics, policy makers, legislators and others) are confronted with a variety of disciplinary perspectives on persistent themes, like privacy, biometrics, surveillance, e-democracy, electronic government, and identity management, that are central to today’s evolution of new modes of modern government.

Features
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Fields of interest
Law (general), Computer Science (general)

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011, XVIII, 466 p. 11 illus. (Information Technology and Law Series, Vol. 20) Hardcover
109.95 €
Bacteria in Agrobiology: Crop Ecosystems

The future of agriculture strongly depends on our ability to enhance productivity without sacrificing long-term production potential. An ecologically and economically sustainable strategy is the application of microorganisms, such as the diverse bacterial species of plant growth promoting bacteria (PGPB). The use of these bio-resources for the enhancement of crop productivity is gaining worldwide importance. Bacteria in Agrobiology: Crop Ecosystems describes the beneficial role of plant growth promoting bacteria with special emphasis on oil yielding crops, cereals, fruits and vegetables. Chapters present studies on various aspects of bacteria-plant interactions, soil-borne and seed-borne diseases associated with food crops such as rice, sesame, peanuts, and horticultural crops. Further reviews describe technologies to produce inoculants, the biocontrol of post harvest pathogens as a suitable alternative to agrochemicals, and the restoration of degraded soils.

Features

The future of agriculture strongly depends on our ability to enhance productivity without sacrificing long-term production potential. An ecologically and economically sustainable strategy is the application of microorganisms, such as the diverse bacterial species of plant growth promoting bacteria (PGPB). The use of these bio-resources for the enhancement of crop productivity is gaining worldwide importance. 

Contents


Fields of interest

Bacteriology; Agriculture; Plant Breeding / Biotechnology; Applied Microbiology

Target groups

Research

Type of publication

Contributed volume

Available

2011, XII, 434 p. Hardcover

149.95 €
ISBN 978-3-642-18356-0

Extracellular Matrix Degradation

Regulated turnover of extracellular matrix (ECM) is an important component of tissue homeostasis. In recent years, the enzymes that participate in, and control ECM turnover have been the focus of research that touches on development, tissue remodeling, inflammation and disease. This volume in the Biology of Extracellular Matrix series provides a review of the known classes of proteases that degrade ECM both outside and inside the cell. The specific ECM proteases that are discussed include cathepsins, bacterial collagenases, matrix metalloproteinases, meprins, serine proteases, and elastases. The volume also discusses the domains responsible for specific biochemical characteristics of the proteases and the physical interactions that occur when the protease interacts with substrate. The topics covered in this volume provide an important context for understanding the role that matrix-degrading proteases play in normal tissue remodeling and in diseases such as cancer and lung disease.

Features

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Contents

Matrix Metalloproteinases and Their Inhibitors in Turnover and Degradation of Extracellular Matrix.- Role of Cysteine Cathepsins in Extracellular Proteolysis.- Cooperation between proteolysis and endocytosis in collagen turnover.- Pericellular Proteolysis.- Triple Helicate Activity and the Structural Basis of Collagenolysis.- Structural Basis of Extracellular Matrix Interactions with Matrix Metalloproteinases.- The Role of Matrix Metalloproteinases in Cellular Invasion and Metastasis.- Degradation of bone and the role of osteoclasts, bone lining cells and osteocytes.- Consequences of [...] 

Fields of interest

Cell Biology; Biochemistry; Protein Science; Molecular Medicine

Target groups

Research

Type of publication

Contributed volume

Available

2011, X, 255 p. (Biology of Extracellular Matrix) Hardcover

139.95 €
ISBN 978-3-642-16860-4
Glycans in Diseases and Therapeutics

Initially believed to be inactive molecules, glycans are now considered essential for life, both under normal and pathological conditions. This volume of the series "Biology of Extracellular Matrix" reviews the most recent findings on the role of glycans in the development of diseases and the possible therapeutic use of this class of molecules. It shows how the interaction of glycans with growth factors, growth factor binding proteins, extracellular proteases, protease inhibitors, chemokines, morphogenes, and adhesive proteins regulates inflammation, infection, cancer, atherosclerosis, thrombosis and embryonic stem cell biology. Furthermore, an extensive survey about the structure and pharmacological effects of unique marine glycosaminoglycans is discussed as well as the possibility of using these glycans as therapeutic agents.

Features
Initially believed to be inactive molecules, glycans are now considered essential for life, both under normal and pathological conditions. This volume of the series "Biology of Extracellular Matrix" reviews the most recent findings on the role of glycans in the development of diseases and the possible therapeutic use of this class of molecules. It shows how the interaction of glycans with growth factors, [...] Contents


Fields of interest
Cell Biology; Animal Biochemistry; Molecular Medicine; Human Physiology

Target groups
Research

Type of publication
Contributed volume

Available

139,95 €
ISBN 978-3-642-16832-1

Late Cainozoic Floras of Iceland

15 Million Years of Vegetation and Climate History in the Northern North Atlantic

Being the only place in the northern North Atlantic yielding late Cainozoic terrestrial sediments rich in plant fossils, Iceland provides a unique archive for vegetation and climate development in this region. This book includes the complete plant fossil record from Iceland spanning the past 15 million years. Eleven sedimentary rock formations containing over 320 plant taxa are described. For each flora, palaeoecology and floristic affinities within the Northern Hemisphere are established. The exceptional fossil record allows a deeper understanding of the role of the "North Atlantic Land Bridge" for intercontinental plant migration and of the Gulf Stream-North Atlantic Current system for regional climatic evolution. Iceland sits as a "fossil trap" on one of the most interesting biogeographic exchange routes on the planet - the North Atlantic. The fossil floras of Iceland document both local vegetational response to global climate change, and more importantly, help to document the nature of biotic [...] Features

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Evolutionary Biology; Palaeontology; Geology; Climate Change; Geography (general); Arts

Target groups
Research

Type of publication
Monograph

Available

149,95 €
ISBN 978-94-007-0371-1

Mammalian Cell Viability

Methods and Protocols

Whether the question is one of basic cell survival, or whether it is being used to correlate cell number to some other factor such as matrix synthesis, an estimate of cell viability is universally required. In Mammalian Cell Viability: Methods and Protocols, experts in the field describe methods from the most basic which can be performed in any laboratory, to some which require specific pieces of equipment. Initially focusing on methods for monolayer and suspension cells, later chapters describe methods for determining viability within tissue sections and 3 dimensional culture systems. Finally, methods requiring highly specialized equipment are described in order to explain what is possible. 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 vital tips on troubleshooting and avoiding known [...] Features

Whether the question is one of basic cell survival, or whether it is being used to correlate cell number to some other factor such as matrix synthesis, an estimate of cell viability is universally required. In Mammalian Cell Viability: Methods and Protocols, experts in the field describe methods from the most basic which can be performed in any laboratory, to some which require specific pieces of [...] Contents

Cell Biology; Cell Culture

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available

94,95 €
STROMATOLITES: Interaction of Microbes with Sediments

Following an introduction to biogenic metal nanoparticles, this book presents how they can be biosynthesized using bacteria, fungi and yeast, as well as their potential applications in biomedicine. It is shown that the synthesis of nanoparticles using microbes is eco-friendly and results in reproducible metal nanoparticles of well-defined sizes, shapes and structures. This biotechnological approach based on the process of biomineralization exploits the effectiveness and flexibility of biological systems. Chapters include practical protocols for microbial synthesis of nanoparticles and microbial screening methods for isolating a specific nanoparticle producer as well as reviews on process optimization, industrial scale production, biomolecule–nanoparticle interactions, magnetosomes, silver nanoparticles and their numerous applications in medicine, and the application of gold nanoparticles in developing sensitive biosensors.

Features
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Contents
Mahendra Rai, Aniket Gade, Alka Yadav and Gordon Southam: Biogenic Nanoparticles. An introduction to what they are, how they are synthesized and their applications; Venkataraman Deepak, Kalimuthu Kalishwaralai, Sureshbabu Ram Pandian, Sangiliyandi Gurunathan: An insight into the bacterial biogenesis of silver nanoparticles, industrial production and scale-up; Maggy Lengke and Gordon Southam: Biosynthesis of Gold Nanoparticles: A review; Christopher T. Lefèvre, Fernanda Abreu, Ulysses Lima, and Dennis A. Bazylnski: A Bacterial Backbone: Magnetosomes in Magnetotactic Bacteria; Chris[...]

Fields of interest
Microbiology; Biotechnology; Applied Microbiology; Nanotechnology; Biochemistry; Pharmacology / Toxicology

Target groups
Research

Type of publication
Contributed volume

Available
2011, XI, 303 p. Hardcover
149,95 € ISBN 978-3-642-18311-9

STROMATOLITES: Interaction of Microbes with Sediments

STROMATOLITES: Interaction of Microbes with Sediments provides an overview and latest information about the formation of Stromatolites as a result of interaction of microbes with sediments. Eighty-three expert scientists from twenty-seven countries present the chapters in this volume which have been reviewed by thirty four referees. The volume deals with ancient to modern examples of stromatolites and microorganisms which are observed in various diverse environments, such as: marine, nonmarine, lacustrine and extreme geographical areas covering almost the whole earth. The reviews are original articles written by leading experienced experts, some chapters deal with latest instrumental techniques used for the study of microbes and Stromatolites. Other chapters have been contributed by young researchers who revealed updated data on Stromatolites. The astrobiological implications of early microorganisms, sulfur isotopic ratios, microbialites in extreme conditions on earth has opened up new vistas in the[...]

Features
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Contents

Fields of interest
Microbiology; Paleontology; Sedimentology; Biogeosciences; Geochemistry

Target groups
Graduate

Type of publication
Contributed volume

Available
149,95 € ISBN 978-3-642-00739-4

Blood science has become a cornerstone of multiple disciplines, including clinical chemistry, disease diagnosis, and therapeutic monitoring. Over the past decade, we have witnessed the advent of increasingly powerful proteomics technologies that allow greater fundamental insights into the blood proteome. These technological improvements have, in part, fuelled the quest for the discovery of novel blood-based biomarkers of disease. Serum/Plasma Proteomics: Methods and Protocols is a comprehensive resource of protocols for areas, pre-analytical through to analytical, of plasma and serum proteomics. Divided into five convenient sections, this detailed volume covers fractionation strategies for in-depth blood proteome analysis, defined procedures for blood collection, handling and storage, detailed protocols for performing both antibody-based and non-antibody based quantitative assays, proteome analysis of blood cell compartments, circulating nanomembrane vesicles and blood-related fluids, and[...]

Features
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Contents
Fractionation Strategies for In-depth Blood Proteome Analysis. Plasma Biomarker Discovery using 3-D Protein Profiling Coupled with Label-free Quantitation. Intact Protein Separation by 1D and 2D-dimension Liquid Chromatography for Comparative Proteomic Separation of Partitioned Serum or Plasma. In-depth Analysis of a Plasma or Serum Proteome using a 4-D Protein Profiling Method. Intact-protein Analysis System (IPAS) for Discovery of Serum-based Disease Biomarkers. Model-based Discovery of Circulating Biomarkers. Low-molecular Weight Plasma Proteome Analysis using Centrifug[...]

Fields of interest
Protein Science; Proteomics

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011, XIV, 397 p. 69 illus., 3 in color. (Methods in Molecular Biology, Vol. 728) Hardcover
109,95 € ISBN 978-1-61779-067-6
Studies on Experimental Models

There is a widespread consensus that use of antioxidant therapies as a therapeutic approach may counteract free radical mediated pathologies. However, the role of antioxidants in normal physiology and redox signaling is still in its infancy. Since oxidative stress is related to various diseases and pathologies, scientists are eager to study the disease in humans, but it is not always ethical to study all the aspects of the disease in humans. Thus, it becomes mandatory to study the disease process and the mechanisms behind it through experimental models which generally involve animals, in vitro/cell culture studies, primary and even humans to a certain extent. Studies on Experimental Models contains data on the experimental models or review of such models of oxidative stress in various diseases. It is structured into six sections, which are as follows: diabetes, cardiovascular, neurology, ocular diseases, toxicology/environmental and in vitro/tissue culture. Each section presents a sketch of models in...-

Features
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Contents
Introduction to Telomeres and Telomerase.- Analy-

Fields of interest
Biochemistry

Telomeres and Telomerase: Methods and Protocols

New and rapid advances in technology have equipped us with a variety of tools and platforms to ask fundamental questions of telomere regulation and have allowed investigators to carry out experiments using diverse model systems. For example, proteomic, genomic, and molecular approaches have afforded us unprecedented insight into the complex protein interaction networks at work on the telomere chromatin and the detailed information regarding telomere dynamics in response to stress or stimuli. Telomeres and Telomerase: Methods and Protocols, Second Edition builds upon the telomerase assays featured in the popular first edition to encompass many different assays that allow investigators to query the function of telomere proteins and the responses of the telomere DNA, including detailed examinations of biochemical, molecular, and proteomic approaches. Written in the highly successful Methods in Molecular Biology® series format, chapters include introductions to their respective topics, lists of the...-

Features
New and rapid advances in technology have equipped us with a variety of tools and platforms to ask fundamental questions of telomere regulation and have allowed investigators to carry out experiments using diverse model systems. For example, proteomic, genomic, and molecular approaches have afforded us unprecedented insight into the complex protein interaction networks at work on the telomere chromatin and...-

Contents

Fields of interest
Biochemistry

The Downy Mildews - Biology, Mechanisms of Resistance and Population Ecology

The book is focused on the most recent and significant advances in research on downy mildews and related oomycete pathogens. The emphasis is on the biology of downy mildews, mechanisms of resistance in host- and non-host parasitic interactions, population ecology and epidemiology, chemical control and fungicide resistance. The chapters are written by leading international experts on various aspects of downy mildews. All contributions are either comprehensive critical reviews or original research papers, and cover the most relevant and recent topics related to these biotrophic plant pathogens. The recent Special Issue is a continuation of previous one published by Springer in 2008.

Features
Knowledge of downy mildew pathogens and diseases has increased significantly in the areas of taxonomy, biology and molecular biology, mechanisms of resistance, population biology and ecology, epidemiology and chemical control. The opportunity to update comprehensively the major advances in these areas arose from the International Congress of Plant Pathology (ICPP) held in August 2008 at Torino (Italy)....

Contents
Foreword.- Biology and Evolution.- Phylogenet-
ic investigations in the genus Pseudoperonospora reveal overlooked species and cryptic diversity in the P. cubensis species cluster.- Host matrix has major impact on the morphology of Pseudoperonospora cubensis.- Cucurbit downy mildew (Pseudoperonospora cubensis) - biology, ecology, epidemiology, host-pathogen interaction and control.- Spinach better management of downy mildew and white rust through genomics.- Advances in sunflower downy mildew research.- Resistance mechanisms and host-parasite interactions.- Histological responses of host...-

Fields of interest
Plant Pathology; Life Sciences (general); Microbial Genetics and Genomics; Community & Population Ecology; Biochemistry; Agriculture

Target groups
Research

Type of publication
Contributed volume

Available
2011. VI, 230 p. 40 illus. in color. Hardcover

139,95 €
Yeast Genetic Networks

Methods and Protocols

Regulation of gene expression, a major determinant of gene activity, occupies a central place in molecular biology. Yeast Genetic Networks: Methods and Protocols covers approaches to the systems biological analysis of small-scale gene networks in yeast. Divided into four convenient sections, this detailed volume discusses the methods used to analyze gene expression quantitatively, presents a collection of mathematical and computational tools to analyze stochasticity, adaptation, sensitivity in signal transmission, and oscillations in gene expression, provides instructional methods on how to utilize the tools of quantitative genetics to identify genes that regulate stochasticity and oscillations in gene expression, and concludes with a section devoted to the analysis of conserved gene expression systems and networks in different fungal species. Written in the highly successful Methods in Molecular Biology series format, chapters contain introductions to their respective topics, lists of the[...]

Features
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Contents
Experimental Analysis of Signalling in Gene Regulatory Networks. Global Estimation of mRNA Stability in Yeast. Genomic-wide Methods to Evaluate Transcription Rates in Yeast. Construction of cis-regulatory Input Functions of Yeast Promoters. Luminescence as a Continuous Real-Time Reporter of Promoter Activity in Yeast Undergoing Respiratory Oscillations or Cell Division Rhythms. Regulation of gene expression, a major determinant of gene activity, occupies a central place in molecular biology. Yeast Genetic Networks: Methods and Protocols covers approaches to the systems biological analysis of small-scale gene networks in yeast. Divided into four convenient sections, this detailed volume discusses the methods used to analyze gene expression quantitatively, presents a[...]

Fields of interest
Microbiology; Gene Expression

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available

2011. XI. 344 p. 52 illus., 1 in color. (Methods in Molecular Biology, Vol. 734) Hardcover

109,95 €
ISBN 978-1-61779-085-0

Materials Science

Advanced Steels

The Recent Scenario in Steel Science and Technology

"Advanced Steels: The Recent Scenario in Steel Science and Technology" contains more than 50 articles selected from the proceedings of the International Conference on Advanced Steels (ICAS) held during 9-11, Nov, 2010 in Guilin, China. This book covers almost all important aspects of steels from physical metallurgy, steel grades, processing and fabrication, simulation, to properties and applications. The book is intended for researchers and postgraduate students in the field of steels, metallurgy and materials science. Prof. Yuqing Weng is an academician of Chinese Academy of Engineering and the president of The Chinese Society for Metals. Prof. Han Dong is the vice president of Central Iron & Steel Research Institute and the director of National Engineering Research Center of Advanced Steel Technology, China. Prof. Yong Gan is an academician of Chinese Academy of Engineering, the vice president of Chinese Academy of Engineering and the president of Central Iron & Steel Research Institute, China.

Features
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Contents

Fields of interest
Metallic Materials; Nanotechnology; Operating Procedures, Materials Treatment

Target groups
Research

Type of publication
Proceedings

Available

2011. X. 511 p. 150 illus. Hardcover

299,00 €
ISBN 978-3-642-17664-7

Wetlands

Integrating Multidisciplinary Concepts

The science of wetlands and our understanding of these complex ecosystems have improved considerably. The emergence of multidisciplinary strategies is providing new opportunities and innovative approaches to address issues such as climate change and coastal protection. This book, with contributions from 19 specialists from academia, government, and industry, provides a trans-disciplinary approach to the understanding wetlands science, drawing together a wide range of expertise. Topics covered include the physical aspects that shape different wetlands around the world, as well as wetlands ecology, regulation, policy, and related social and economic issues. Featuring contributions from some of the world’s leading wetlands researchers and practitioners, this book provides an invaluable resource for undergraduate and post-graduate training in all aspects of wetlands management, conservation, and construction. It is also a useful auxiliary text for researchers working across disciplines in fields such[,...]

Features
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Contents
Atomic Scale Characterization and First-Principles Studies of Si#N# Interfaces

This thesis presents results from a combined atomic-resolution Z-contrast and annular bright-field imaging and electron energy loss spectroscopy in the Scanning Transmission Electron Microscopy, as well as first principles studies of the interfaces between crystalline #Si3N4 and amorphous (i) CeO2-x as well as (ii) SiO2 intergranular film (IGF). These interfaces are of a great fundamental and technological interest because they play an important role in the microstructural evolution and mechanical properties of Si3N4 ceramics used in many high temperature and pressure applications. The main contribution of this work is its detailed description of the bonding characteristics of light atoms, in particular oxygen and nitrogen, at these interfaces, which has not been achieved before. The atomic-scale information on the arrangement of both light and heavy atoms is critical for realistic modeling of interface properties, such as interface strength and ion transport, and will facilitate increased.[...]

Features
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Fields of interest
Ceramics, Glass, Composites, Natural Materials; Spectroscopy and Microscopy; Physical Chemistry; Structural Materials; Atomic/Molecular Structure and Spectra; Microengineering

Target groups
Research

Type of publication
Monograph

Available
2011, XIII, 108 p. 41 illus., 24 in color. (Springer Theses) Hardcover
99,95 €

Carbon Nanomaterials in Clean Energy Hydrogen Systems - II

This book presents selected contributions to the NATO Advanced Research Workshop "Carbon Nanomaterials in Clean Energy Hydrogen Systems" held in June 2010. These original papers reflect recent progress in response to the modern-day requirements in chemistry of carbon nanomaterials and metal-hydrogen systems. Successor to the 2008 proceedings, this second volume focuses on research and application studies of materials capable of interacting actively with hydrogen, also addressing questions of hydrogen accumulation and storage. As a whole, it provides a review of the most relevant areas of hydrogen materials interactions and carbon nanomaterials science, making it invaluable for all researchers, physicists, chemists, post-graduates and young scientists interested in the structure, properties and applications of different nanocarbon materials.

Features
This book presents selected contributions to the NATO Advanced Research Workshop "Carbon Nanomaterials in Clean Energy Hydrogen Systems" held in June 2010. These original papers reflect recent progress in response to the modern-day requirements in chemistry of carbon nanomaterials and metal-hydrogen systems. Successor to the 2008 proceedings, this second volume focuses on research and application studies of [...] Contents

Fields of interest
Nanotechnology; Renewable and Green Energy; Power Electronics, Electrical Machines and Networks; Environment (general); Physics (general)

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2011, XI, 376 p. 368 illus., 100 in color. Hardcover
89,95 €
ISBN 978-94-007-0692-7

Materials Chemistry

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

Features
This book presents selected contributions to the NATO Advanced Research Workshop "Carbon Nanomaterials in Clean Energy Hydrogen Systems" held in June 2010. These original papers reflect recent progress in response to the modern-day requirements in chemistry of carbon nanomaterials and metal-hydrogen systems. Successor to the 2008 proceedings, this second volume focuses on research and application studies of materials capable of interacting actively with hydrogen, also addressing questions of hydrogen accumulation and storage. As a whole, it provides a review of the most relevant areas of hydrogen materials interactions and carbon nanomaterials science, making it invaluable for all researchers, physicists, chemists, post-graduates and young scientists interested in the structure, properties and applications of different nanocarbon materials.

Contents

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

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
169,95 €
ISBN 978-94-007-0898-3
Mechanics of Generalized Continua

This collection on „Mechanics of Generalized Continua - from Micromechanical Basics to Engineering Applications“ brings together leading scientists in this field from France, Russian Federation, and Germany. The attention in this publication is be focussed on the most recent research items, i.e., - new models, - application of well-known models to new problems, - micro-macro aspects, - computational effort, - possibilities to identify the constitutive equations, and - old problems with incorrect or non-satisfying solutions based on the classical continua assumptions.

Features
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Contents
The book contains 15 chapters.

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

Target groups
Research

Type of publication
Monograph

Available
99,95 €
ISBN 978-3-642-19218-0

Nanocosmetics and Nanomedicines

New Approaches for Skin Care

The book "Nanocosmetics and nanomedicines: new approaches for skin care" contains a summary of the most important nanocarriers for skin delivery. Although "nanocosmetics" is a subject widely commented in the academy and the beauty industry, a book covering the skin care treatments using nanotechnological approaches with cosmetics and nanomedicines is still missing, therefore the need for this publication. This book is divided in three parts: The first one (Part A) is devoted to a brief review on the main topics related to the skin delivery and to the introduction of the subject "nanocosmetics". The second part (Part B) presents different types of nanocarriers applied as skin delivery systems for cosmetics or drugs. The last part (Part C) shows a wide range of applications of nanotechnology on the skin care area as well as on dermatocosmetic and dermatological fields.

Features
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Contents

Fields of interest
Nanotechnology; Pharmacy; Dermatology; Biomaterials; Nanotechnology and Microengineering; Pharmaceutical Sciences / Technology

Target groups
Research

Type of publication
Monograph

Available
2011. X, 370 p. 78 illus. 29 in color. Hardcover
129,95 €
ISBN 978-3-642-19791-8

Novel Colloidal Forming of Ceramics

"Novel Colloidal Forming of Ceramics" discusses several new near-net-shape techniques for fabricating highly reliable, high-performance ceramic parts. These techniques combine injection molding and the colloidal forming process. The book not only introduces the basic theoretical development and applications of the colloidal injection molding of ceramics, but also covers tape casting technology, the reliability of the product, and the colloidal injection molding of Si3N4 and SiC, as well as the low-toxicity system. The book is intended for researchers and graduates in materials science and engineering. Mr. Yong Huang and Dr. Jinlong Yang are both professors at the Department of Materials Science and Engineering, Tsinghua University, China.

Features
"Novel Colloidal Forming of Ceramics" discusses several new near-net-shape techniques for fabricating highly reliable, high-performance ceramic parts. These techniques combine injection molding and the colloidal forming process. The book not only introduces the basic theoretical development and applications of the colloidal injection molding of ceramics, but also covers tape casting technology, the reliability [...] 

Contents

Fields of interest
Ceramics, Glass, Composites, Natural Materials; Physical Chemistry; Manufacturing, Machines, Tools

Target groups
Research

Type of publication
Monograph

Available
2011. 400 p. 315 illus. Hardcover
159,95 €
ISBN 978-3-642-12280-4
Mathematics

H.P. Langtangen, Simula Research Laboratory, Lysaker, Norway

A Primer on Scientific Programming with Python

The book serves as a first introduction to computer programming of scientific applications, using the high-level Python language. The exposition is example- and problem-oriented, where the applications are taken from mathematics, numerical calculus, statistics, physics, biology, and finance. The book teaches "Matlab-style" and procedural programming as well as object-oriented programming. By blending programming, mathematics and scientific applications, the book lays a solid foundation for practicing computational science.

Features
The book serves as a first introduction to computer programming of scientific applications, using the high-level Python language. The exposition is example- and problem-oriented, where the applications are taken from mathematics, numerical calculus, statistics, physics, biology, and finance. The book teaches "Matlab-style" and procedural programming as well as object-oriented programming. High school students will find that the book is approachable and accessible.

Contents

Fields of interest
Computational Science and Engineering; Programming Techniques; Software Engineering / Programming and Operating Systems; Mathematics of Computing; Numerical and Computational Physics

Target groups
Upper undergraduate

Type of publication
Undergraduate textbook

Available

2011. 706 p. 72 illus., 28 in color. (Texts in Computational Science and Engineering, Vol. 6) Hardcover

49,95 €
ISBN 978-3-642-18365-2

Mathematics

R. Leach, National Physical Laboratory, Teddington, UK (Ed.)

Optical Measurement of Surface Topography

The measurement and characterisation of surface topography is crucial to modern manufacturing industry. The control of areal surface structure allows a manufacturer to radically alter the functionality of a part. Examples include structuring to effect fluidics, optics, tribology, aerodynamics and biology.

Contents
Introduction to surface texture measurement.- Some common terms and definitions.- Limitations of optical 3D sensors.- Calibration of optical surface topography measuring instruments.- Chromatic confocal microscopy.- Point autofocus instruments.- Focus variation instruments.- Phase shifting interferometry.- Coherence scanning interferometry.- Digital holographic microscopy.- Imaging confocal microscopy.- Light scattering methods.

Fields of interest
Characterisation and Evaluation of Materials; Microwaves, RF and Optical Engineering; Measurement Science, Instrumentation; Surfaces and Interfaces, Thin Films

Target groups
Research

Type of publication
Monograph

Available

2011. XIV, 326 p. 231 illus., 42 in color. Hardcover

129,95 €
ISBN 978-3-642-12011-4

Almost Periodic Stochastic Processes

This book lays the foundations for a theory on almost periodic stochastic processes and their applications to various stochastic differential equations, functional differential equations with delay, partial differential equations, and difference equations. It is in part a sequel of authors recent work on almost periodic stochastic difference and differential equations and has the particularity to be the first book that is entirely devoted to almost periodic random processes and their applications. The topics treated in it range from existence, uniqueness, and stability of solutions for abstract stochastic difference and differential equations.

Features
Almost Periodic Stochastic Processes is among the few published books that is entirely devoted to almost periodic stochastic processes and their applications. The topics treated range from existence, uniqueness, boundedness, and stability of solutions, to stochastic difference and differential equations. Motivated by the studies of the natural fluctuations in nature, this work aims to lay the [...]
### Convex Analysis and Monotone Operator Theory in Hilbert Spaces

This book provides a largely self-contained account of the main results of convex analysis and optimization in Hilbert Space. A concise exposition of related constructive fixed point theory is presented, that allows for a wide range of algorithms to construct solutions to problems in optimization, equilibrium theory, monotone inclusions, variational inequalities, best approximation theory, and convex feasibility. The book is accessible to a broad audience, and reaches out in particular to applied scientists and engineers, to whom these tools have become indispensable.

**Features**
This book presents a largely self-contained account of the main results of convex analysis, monotone operator theory, and the theory of nonexpansive operators in the context of Hilbert spaces. Unlike existing literature, the novelty of this book, and indeed its central theme, is the tight interplay among the key notions of convexity, monotonicity, and nonexpansiveness. The presentation is accessible to a...[

**Contents**

**Fields of interest**
Calculus of Variations and Optimal Control; Optimization; Algorithms; Visualization

**Target groups**
Research

**Type of publication**
Monograph

**Available**
2011. XVI, 468 p. 30 illus. (CMS Books in Mathematics) Hardcover
89,95 €
ISBN 978-1-4419-9466-0

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### Geometry of Algebraic Curves

The second volume of the Geometry of Algebraic Curves is devoted to the foundations of the theory of moduli of algebraic curves. Its authors are research mathematicians who have actively participated in the development of the Geometry of Algebraic Curves. The subject is an extremely fertile and active one, both within the mathematical community and at the interface with the theoretical physics community. The approach is unique in its blending of algebro-geometric, complex analytic and topological/combinatorial methods. It treats important topics such as Teichmüller theory, the cellular decomposition of moduli and its consequences and the Witten conjecture. The careful and comprehensive presentation of the material is of value to students who wish to learn the subject and to experts as a reference source. The first volume appeared 1985 as vol. 267 of the same series.

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**Contents**
Preface.- Guide to the Reader.- Chapter IX. The Hilbert Scheme.- Chapter X. Nodal Curves.- Chapter XI. Elementary deformation theory and some applications.- Chapter XII. The moduli space of curves.- Chapter XIII. Line bundles on moduli.- Chapter XIV. The projective embedding of the moduli space of stable curves.- Chapter XV. The Teichmüller point of view.- Chapter XVI. Smooth Galois covers of moduli spaces.- Chapter XVII. Cycles on the moduli spaces of curves.- Chapter...[

**Fields of interest**
Algebraic Geometry; Topological Groups, Lie Groups

**Target groups**
Graduate

**Type of publication**
Graduate/advanced undergraduate textbook

**Available**
89,95 €
ISBN 978-3-642-18398-0

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### Homogeneous Spaces and Equivariant Embeddings

Homogeneous spaces of linear algebraic groups lie at the crossroads of algebraic geometry, theory of algebraic groups, classical projective and enumerative geometry, harmonic analysis, and representation theory. By standard reasons of algebraic geometry, in order to solve various problems on a homogeneous space, it is natural and helpful to compactify it while keeping track of the group action, i.e., to consider equivariant completions or, more generally, open embeddings of a given homogeneous space. Such equivariant embeddings are the subject of this book. We focus on the classification of equivariant embeddings in terms of certain data of “combinatorial” nature (the Luna-Vust theory) and description of various geometric and representation-theoretic properties of these varieties based on these data. The class of spherical varieties, intensively studied during the last three decades, is of special interest in the scope of this book. Spherical varieties include many classical examples, such as...[

**Contents**

**Fields of interest**
Algebraic Geometry; Topological Groups, Lie Groups

**Target groups**
Research

**Type of publication**
Monograph

**Available**
89,95 €
ISBN 978-3-642-18398-0

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Nonlinear Conservation Laws and Applications

This volume contains the proceedings of the Summer Program on Nonlinear Conservation Laws and Applications held at the IMA on July 13–31, 2009. Hyperbolic conservation laws is a classical subject, which has experienced vigorous growth in recent years. The present collection provides a timely survey of the state of the art in this exciting field, and a comprehensive overview on open problems. Contributions of more theoretical nature cover the following topics: global existence and uniqueness theory of one-dimensional systems, multidimensional conservation laws in several space variables and approximations of their solutions, mathematical analysis of fluid motion, stability and dynamics of viscous shock waves, singular limits for viscous systems, basic principles in the modeling of turbulent mixing, transonic flows past an obstacle and a fluid dynamic approach for isometric embedding in geometry, models of nonlinear elasticity, the Monge problem, and transport equations with rough coefficients.

Features
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Contents
Foreword. Preface. Open questions in the theory of one dimensional hyperbolic conservation laws. Multidimensional conservation laws: Overview, problems, and perspective. Mathematical analysis of fluids in motion. Selected topics in approximate solutions of nonlinear conservation laws. High-resolution central schemes. Stability and dynamics of viscous shock waves. Mathematical aspects of a model for granular flow. The flow associated to the calculus of residues in several variables and R. Thom’s isotopy theorems. Frédéric Pham’s foundational study of the singularities of integrals lies at the interface between analysis and algebraic geometry, culminating in the Picard-Lefschetz formulae. These mathematical structures, enriched by the work of Nilsson, are then approached using methods from the theory of differential equations and generalized from the point of view of hyperfunction theory and microlocal analysis. Providing a ‘must-have’ introduction to the singularities of integrals, a number of supplementary references also offer a convenient guide to the subjects covered. This book will appeal to both mathematicians and physicists with an interest in the area of singularities of [...] Features
Bringing together two fundamental texts from Frédéric Pham’s research on singular integrals, the first part of this book focuses on topological and geometrical aspects while the second explains the analytic approach. Using notions developed by J. Leray in the calculus of residues in several variables and R. Thom’s isotopy theorems, Frédéric Pham’s foundational study of the singularities of integrals lies at [...] Contents
Several Complex Variables and Analytic Spaces; Algebraic Geometry; Approximations and Expansions

Target groups
Graduate

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XI, 217 p. 62 illus. (Universitext) Softcover
49.95 €
ISBN 978-3-540-68398-1

Symplectic Invariants and Hamiltonian Dynamics

The discoveries of the last decades have opened new perspectives for the old field of Hamiltonian systems and led to the creation of a new field: symplectic topology. Surprising rigidity phenomena demonstrate that the nature of symplectic mappings is very different from that of volume preserving mappings. This raises new questions, many of them still unanswered. On the other hand, analysis of an old variational principle in classical mechanics has established global periodic phenomena in Hamiltonian systems. As it turns out, these seemingly different phenomena are mysteriously related. One of the links is a class of symplectic invariants, called symplectic capacities. These invariants are the main theme of this book, which includes such topics as basic symplectic geometry, symplectic capacities and rigidity, periodic orbits for Hamiltonian systems and the action principle, a bi-invariant metric on the symplectic diffeomorphism group and its geometry, symplectic fixed point theory, the Arnold[...]

Features
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Contents
1 Introduction. 2 Symplectic capacities. 3 Existence of a capacity. 4 Existence of closed characteristics. 5 Compactly supported symplectic mappings in R2n. 6 The Arnol’d conjecture, Floer homology and symplectic homology. Appendix. Index. Bibliography.

Fields of interest
Differential Geometry; Manifolds and Cell Complexes (incl. Diff. Topology); Analysis

Target groups
Research

Type of publication
Monograph

Available
2011. XV, 341 p. 49 illus. (Modern Birkhäuser Classics) Softcover
59.95 €
ISBN 978-3-0348-0103-4
The Colorado Mathematical Olympiad and Further Explorations
From the Mountains of Colorado to the Peaks of Mathematics

Over the past two decades, the once small local Colorado Springs Mathematics Olympiad, founded by the author himself, has now become an annual state-wide competition, hosting over one-thousand high school contenders each year. This updated printing of the first edition of Colorado Mathematical Olympiad: the First Twenty Years and Further Explorations offers an interesting history of the competition as well as an outline of all the problems and solutions that have been a part of the contest over the years. Many of the essay problems were inspired by Russian mathematical folklore and written to suit the young audience; for example, the 1989 Sugar problem was written as a pleasant Lewis Carroll-like story. Some other entertaining problems involve old Victorian map colorings, King Arthur and the knights of the round table, rooks in space, Santa Claus and his elves painting planes, football for 23, and even the Colorado Springs subway system. The book is more than just problems, their solutions, and events...[

Features
This book presents the 20-year account of the Colorado Mathematical Olympiad — its dreams and rewards, hard work and conflict. It features more than just original wonderful problems and their ingenious solutions; it tells a compelling story involving the lives of those who have been part of the Olympiad. The reader will meet Olympians and follow their paths as professionals. In the vast field of mathematics, their competition...[

Vector-valued Laplace Transforms and Cauchy Problems
Second Edition

This monograph gives a systematic account of the theory of vector-valued Laplace transforms, ranging from representation theory to Tauberian theorems. In parallel, the theory of linear Cauchy problems and semigroups of operators is developed completely in the spirit of Laplace transforms. Existence and uniqueness, regularity, approximation and above all asymptotic behaviour of solutions are studied. Diverse applications to partial differential equations are given. The book contains an introduction to the Bochner integral and several appendices on background material. It is addressed to students and researchers interested in evolution equations, Laplace and Fourier transforms, and functional analysis. The second edition contains detailed notes on the developments in the last decade. They include, for instance, a new characterization of well-posedness of abstract wave equations in Hilbert space due to M. Crouzeix. Moreover new quantitative results on asymptotic behaviour of Laplace transforms have...[

Features
This monograph gives a systematic account of the theory of vector-valued Laplace transforms, ranging from representation theory to Tauberian theorems. In parallel, the theory of linear Cauchy problems and semigroups of operators is developed completely in the spirit of Laplace transforms. Existence and uniqueness, regularity, approximation and above all asymptotic behaviour of solutions are studied. Diverse...[

Available

99,95 €
ISBN 978-3-0348-0086-0

Weights, Extrapolation and the Theory of Rubio de Francia

This book provides a systematic development of the Rubio de Francia theory of extrapolation, its many generalizations and its applications to one and two-weight norm inequalities. The book is based upon a new and elementary proof of the classical extrapolation theorem that fully develops the power of the Rubio de Francia iteration algorithm. This technique allows us to give a unified presentation of the theory and to give important generalizations to Banach function spaces and to two-weight inequalities. We provide many applications to the classical operators of harmonic analysis to illustrate our approach, giving new and simpler proofs of known results and proving new theorems. The book is intended for advanced graduate students and researchers in the area of weighted norm inequalities, as well as for mathematicians who want to apply extrapolation to other areas such as partial differential equations.

Features
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Contents

Fields of interest
Analysis

Target groups
Research

Type of publication
Monograph

Available

79,95 €
ISBN 978-3-0348-0071-6
The reader will find in this book a new approach to improving health. The author has called this approach “sanomechanics,” combining the Latin sanus (healthy, sound) and mechanicus (science of the motion of bodies subjected to forces). The focus of sanomechanics is on exercising with an understanding of the biomechanical consequences of the actions. This understanding is based on the author’s theory of the floating skeleton, which postulates a hydraulic connection of synovial joints. The theory explains the greater or lesser success of any exercise utilizing the ability of the human skeleton to absorb and transform forces and moments from the body segments and the environment. This ability vanishes with age and illnesses, and the deeper our understanding of the nature of skeletal functioning is, the better we shall be able to improve, protect, and prolong the skeleton’s health.

**Features**
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**Contents**
Floating skeleton concept.- Sanomechanics.- Biomechanics for life.- Sanomechanical exercises.- About forces and moments in locomotion.- Sanomechanics of respiration.

**Fields of interest**
Orthopedics; Rehabilitation; Medicine (general)

**Target groups**
Professional/practitioner

**Type of publication**
Monograph

**Available**

2011. XV, 132 p. 74 illus., 65 in color. Hardcover


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**Cancer and Sexual Health**

The average physician and even cancer care-givers are not knowledgeable about the effects of cancer treatment on sex and reproductive life. They are even less aware of the options available for treatment of such patients. Cancer and Sexual Health fills a great need for a reference work devoted to the link between cancer and human sexuality. The volume is designed to give a comprehensive and state-of-the-art review of the sexual and reproductive consequences of cancer diagnosis and treatment. It will prove an invaluable resource for those clinicians caring for cancer patients as well as acting as a reference text for the sexual medicine clinician who may not see a large number of cancer patients.

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**Contents**

**Fields of interest**
Urology / Andrology; Oncology; Surgical Oncology; Radiotherapy; Reproductive Medicine; Gynecology

**Target groups**
Professional/practitioner

**Type of publication**
Contributed volume

**Available**

2011. XVIII, 783 p. 113 illus., 69 in color. (Current Clinical Urology) Hardcover

199,95 € ISBN 978-1-60761-915-4

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**Changing Landscape of Academic Women’s Health Care in the United States**

Since 2005 a dozen states and more than 15 specialties have reported a physician shortage or anticipate one in the next few years. This anticipated shortage and a worsening of physician distribution are compounded by a projected increased demand for women’s healthcare services. Women’s healthcare is particularly vulnerable, because the obstetrician-gynecologist workforce is aging and is among the least satisfied medical specialists. Furthermore, fellowship training in women’s healthcare in internal medicine and in maternal and child health in family and community medicine involves only a small portion of general internists and family physicians. In response to this challenge, the Association of American Medical Colleges called for an expansion of medical schools and graduate medical education enrollments. As we cope with significant and rapid changes in organizations and reimbursement, academic departments of obstetrics and gynecology, family and community medicine, and internal medicine have[…]

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**Contents**
Foreword.- Preface.- Chapter 1: Medical Education 100 years after the Flexner Report.- Chapter 2: Preparing for Medical School and Residency Training Expansion.- Chapter 3: Changing Demographics of Women’s Healthcare Faculty.- Chapter 4: Clinician Educators and Their Expanding Roles.- Chapter 5: Physician Investigators and Their Future.- Chapter 6: Part-time Faculty and Their Hidden Value.- Chapter 7: Trends in Faculty Salaries.- Chapter 8: Tenure and Its Many Meanings.- Chapter 9: Faculty Satisfaction and Retention.- Chapter 10: Developing Academic Leaders.

**Fields of interest**
Public Health; Gynecology; Administration, Organization and Leadership; Theory of Medicine / Bioethics; Professional and Vocational Education

**Target groups**
Professional/practitioner

**Type of publication**
Contributed volume

**Available**


99,95 € ISBN 978-94-007-0930-0
Clinical Aspects of Electroporation

Electroporation is the forefront in tumor ablation. This book presents the basic principles and clinical applications of electroporation, including the latest research results and patient data. A comprehensive approach to the basic science behind the development of this ground-breaking technique and its introduction into clinical practice, the book discusses the entire spectrum of currently available reversible treatments, the emerging irreversible applications, and their impact on patient care. Clinical Aspects of Electroporation is the first book intended for clinicians on this extremely important and rapidly developing field.

Features
Electroporation is the forefront in tumor ablation. This book presents the basic principles and clinical applications of electroporation, including the latest research results and patient data. A comprehensive approach to the basic science behind the development of this ground-breaking technique and its introduction into clinical practice, the book discusses the entire spectrum of currently available [...]
Intraoperative Irradiation

Techniques and Results

The rationale for using intraoperative irradiation (IORT) is based on the realization that tolerable doses of external beam radiation are often insufficient to achieve control of locally advanced malignancies. In these instances, the IORT component of treatment becomes the optimal conformal technique of irradiation, since dose-limiting organs or structures can either be surgically displaced or protected by placement of lead shielding. This fully revised and expanded second edition is of interest to those with intraoperative electron (IOERT) capabilities, high-dose-rate brachytherapy (HDR-IORT) capabilities, or both. Techniques, indications, and results are discussed by disease site. Each chapter is dual authored by a radiation oncologist and a surgeon, giving a balanced presentation of clinical scenarios. Issues of basic science and physics are also covered, and a notable chapter on normal tissue tolerance is included. Intraoperative Irradiation: Techniques and Results, Second Edition is a superb[...]

Features

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Contents


Fields of interest

Oncology

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available

2011. XI, 193 p. 140 illus., 40 in color. (Recent Results in Cancer Research, Vol. 189) Hardcover

159,95 €

ISBN 978-3-642-10861-7

Management of Pediatric Obesity and Diabetes

The twin epidemics of obesity and type 2 diabetes mellitus (T2DM) continue to affect an ever increasing number of children, adolescents, and young adults. Management of Pediatric Obesity and Diabetes provides healthcare trainees and professionals with practical, comprehensive, and contemporary approaches to the pediatric patient at risk for obesity, T2DM, and related conditions. A unique guide on the subject, this volume provides clinical paradigms for diagnosis and management of pediatric T2DM and related conditions, while succinctly describing state-of-the-art basic and clinical sciences underlying these problems. The chapters in this volume are independent and concise. Each chapter focuses on a key clinical issue or mechanism of disease. Providing practical, data-driven resources based upon the totality of the evidence, this important text helps the reader understand the basics of pediatric obesity and T2DM and implement strategies to prevent and treat obesity and diabetes in children and[...]

Features

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Contents


Fields of interest

Clinical Nutrition; Nutrition; Pediatrics; Diabetes; Endocrinology

Target groups

Professional/practitioner

Type of publication

Contributed volume

Available

2011. XXV, 416 p. 35 illus. (Nutrition and Health) Hardcover

159,95 €

Multiple Myeloma

Multiple myeloma is currently still an incurable disease, but during the past decade knowledge of its molecular pathogenesis has increased rapidly. This has led to remarkable progress in both diagnosis and therapy, including the approval of novel and first-in-class drugs such as thalidomide, bortezomib, and lenalidomide. This book, written by internationally acknowledged experts, covers a wide range of topics relating to multiple myeloma, including history, epidemiology, pathophysiology, clinical features, staging, and prognostic systems. The principal focus, however, is on therapy, with detailed information on the various promising treatment options which give hope that this cancer will be transformed into a chronic disease or even become curable. Individualized therapy and the variety of supportive treatment options, as described in this volume, will help in achieving this goal, as well as in reducing adverse events and improving quality of life.

Features
Multiple myeloma is currently still an incurable disease, but during the past decade knowledge of its molecular pathogenesis has increased rapidly. This has led to remarkable progress in both diagnosis and therapy. In particular, the approval of novel and first-in-class drugs such as thalidomide, bortezomib, and lenalidomide means that multiple myeloma now stands at the forefront of advances in oncology drug reduction.

Contents

Fields of interest
Oncology; Hematology; Cancer Research

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XXII, 339 p. 34 illus., 23 in color. (Recent Results in Cancer Research, Vol. 181) Hardcover
159.95 €
ISBN 978-3-540-85771-6

Nitrite and Nitrate in Human Health and Disease

Nitrite and Nitrate in Human Health and Disease delivers a comprehensive review of nitrite and nitrate biology, from basic biochemistry to the complex physiology and metabolism of these two naturally occurring molecules in the human body. Well-organized and well referenced chapters cover the rich history of nitrite and nitrate, sources of exposure, and the physiological effects when consumed through foods containing nitrite and nitrate. The chapters are written by leading experts, all of whom share their research and perspectives in order to help define the context for benefits vs. any potential risks associated with nitrite and nitrate use, either through dietary ingestion or therapeutic dosing. This diverse collection of authors includes vascular biologists, physiologists, physicians, epidemiologists, cancer biologists, registered dieticians, chemists, and public health experts from five countries in both academia and government. Nitrite and Nitrate in Human Health and Disease provides a...

Features
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Contents

Fields of interest
Clinical Nutrition; Nutrition; Public Health; Food Science

Target groups
Professional/practitioner

Type of publication
Contributed volume

Available
2011. XXII, 306 p. 29 illus. (Nutrition and Health) Hardcover
159.95 €

Pediatric Informatics

Computer Applications in Child Health

Now is a critical time in pediatric informatics. As information technologies—electronic health records (EHRs), personal health records (PHRs), computerized physician order entry (CPOE)—and standards (HL7) are developed to improve the quality of health care, it is imperative for policy makers and pediatricians to be aware of their impact on pediatric care and child health. Informed child advocates must be at the planning table as national and regional health information networks are developed to insure the unique health care needs of children are being met. Pediatric Informatics: Computer Applications in Child Health is a current digest of the important trends in pediatric informatics, written by leading experts in the field. This book explores how the management of biomedical data, information, and knowledge can optimize and advance child health. The contributors investigate the specific importance of pediatric informatics is derived from the biological, psychological, social and cultural needs that...

Features
Now is a critical time in pediatric informatics. As information technologies—electronic health records (EHRs), personal health records (PHRs), computerized physician order entry (CPOE)—and standards (HL7) are developed to improve the quality of health care, it is imperative for policy makers and pediatricians to be aware of their impact on pediatric care and child health. Informed child advocates must be at...

Contents

Fields of interest
Health Informatics

Target groups
Professional/practitioner

Type of publication
Professional book

Available
2011. XXIV, 484 p. 44 illus., 40 in color. (Health Informatics) Soft cover
49.95 €
Robotics in Genitourinary Surgery

Robotics in Genitourinary Surgery fills the void of information on robotic urological surgery; a topic that is currently highly in demand and continuously increasing. This book provides detailed information on the utility of robotic urological surgery and how to use it most effectively. Robotics in Genitourinary Surgery comprehensively covers specialist areas such as female urology, pelvic floor reconstructions and holds a strong focus on pediatric urology. It also presents the main operative techniques through the use of high quality images and drawings. Compiled by expert authors from the USA, Europe and Asia, this book provides an international perspective on the basic knowledge and clinical management required for the optimal care of patients.

Features

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Contents

Section I History, Basics and Development of Program.- Section II Training and Research.- Section III The Prostate.- Section IV Adrenal, Kidney and Ureter.- Section V Bladder.- Section VI Pediatric Urology.- Section VII Female Urology & Infertility.- Section VIII Patient’s Perspective.- Section IX Future Perspectives.

Fields of interest

Urology / Andrology; Minimally Invasive Surgery; Surgery

Type of publication

Contributed volume

Available

2011. XIX, 685 p. 401 illus., 369 in color. Hardcover

Destiny, the Inward Quest, Temporality and Life

“There is no greater gift to man than to understand nothing of his fate”, declares poet-philosopher Paul Valery. And yet the searching human being seeks ceaselessly to disentangle the networks of experiences, desires, inward promptings, personal ambitions, and elevated strivings which directed his/her life-course within changing circumstances in order to discover his sense of life. Literature seeks in numerous channels of insight the dominant threads of “the sense of life”, “the inward quest”, “the frames of experience” in reaching the inward sources of what we call ‘destiny’ inspired by experience and temporality which carry it on. This unusual collection reveals the deeper generative elements which form sense of life stretching between destiny and doom. They escape attention in their metamorphic transformations of the inexorable, irreversibility of time which undergoes different interpretations in the phases examining our life. Our key to life has to be ever discovered anew.

Features

“There is no greater gift to man than to understand nothing of his fate”, declares poet-philosopher Paul Valery. And yet the searching human being seeks ceaselessly to disentangle the networks of experiences, desires, inward promptings, personal ambitions, and elevated strivings which directed his/her life-course within changing circumstances in order to discover his sense of life. Literature seeks in...

Contents

INAUGURAL ADDRESS: Anna-Teresa Tymieniecka


Fields of interest

Metaphysics; Aesthetics; Philosophy (general); Philosophy of Man; Philosophy of Mind; Humanities

Type of publication

Contributed volume

Available

Law and Democracy in Neil MacCormick’s Legal and Political Theory

The Post-Sovereign Constellation

This volume offers a collection of articles by leading legal and political theorists. Originally intended as a celebration of MacCormick’s work on the occasion of the completion of the four-volume series on Law, State and Practical Reason, it has turned into a homage and salute after MacCormick’s passing. Cast in MacCormick’s reflexive spirit, the book presents a critical reconstruction of the [...] Contents

Acknowledgements. - List of Contributors. - Introduction; Agustin Jose Menendez and John Erik Fossum. - Part I: A Life in Law and Politics. - Chapter 1: The Cosmopolitan Local. Neil Walker. - Part II: The Seven Big Themes in Maccormick’s Legal and Political Theory. - Chapter 2 Maccormick on MacCormick; D. Neil MacCormick. - Part III: The Limits of Law. - Chapter 3 Juridification From Below: The Dynamics of Maccormick’s Institutional Theory of Law; Lars Christian Blicher. - Chapter 4 Reform And Tradition: Changes And Continuities in Neil Maccormick’s Concept Of Law; Massimo La Torre. - Chapter 5 [...] Fields of interest

Philosophy of Law; European Law / Public International Law; European Integration; Political Philosophy

Target groups

Research

Type of publication

Contributed volume

Available


139,95 €


Leadership, Gender, and Organization

This text provides perspectives on the way in which gender plays a role in leadership dynamics and ethics within organizations. It seeks to offer new theoretical models for thinking about leadership and organizational influence. Most studies of women’s leadership draw on an ethics of care as characteristic of the way women lead, but as such, it tends towards essentialist gender stereotypes and does little to explain the complex systemic variables that influence the functioning of women within organizations. This book moves beyond the canon in exploring alternative paradigms for thinking about leadership and gender in organizations. The authors draw on the literature available in systems thinking, systemic leadership, and gender theory to offer alternative perspectives for thinking about the ways women lead. The book offers invaluable theoretical perspectives and insightful narratives for graduate students and researchers who are interested in women’s leadership, gender and organization. It will be of[...] Contents

Introduction. - An Historical Perspective. - It is Not Your Mother’s Feminist Movement; Mary Hartman. - Transformational Leadership and Systems Thinking. - Ways Women Lead; Judy B. Rosener. - Women Leaders in a Globalized World; Patricia H. Werhane. - Systemic Leadership: Ethical and Effective; Jane Collier and Rafael Esteban. - Relational Leadership, Gender, and Complexity Leadership Theory. - Relational Leadership and Gender: From Hierarchy to Relationality; Mary Uhl-Bien. - Relational Leadership Theory; Mary Uhl-Bien. - Complexity Leadership Theory: Shifting Leadership from the Industrial Age[...] Fields of interest

Ethics; Gender Studies; Business & Management Science; Interdisciplinary Studies; Labour Law / Social Law

Target groups

Research

Type of publication

Contributed volume

Available


99,95 €


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Philosophy of Law; European Law / Public International Law; European Integration; Political Philosophy

Target groups

Research

Type of publication

Contributed volume

Available


99,95 €


Games, Norms and Reasons

Logic at the Crossroads

Games, Norms, and Reasons: Logic at the Crossroads provides an overview of modern logic focusing on its relationships with other disciplines, including new interfaces with rational choice theory, epistemology, game theory and informatics. This book continues a series called “Logic at the Crossroads” whose title reflects a view that the deep insights from the classical phase of mathematical logic can form a harmonious mixture with a new, more ambitious research agenda of understanding and enhancing human reasoning and intelligent interaction. The editors have gathered together articles from active authors in this new area that explore dynamic logical aspects of norms, reasons, preferences and beliefs in human agency, human interaction and groups. The book pays a special tribute to Professor Rohit Parikh, a pioneer in this movement.

Features

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Contents


Fields of interest

Logic; Mathematical Logic and Foundations; Game Theory / Mathematical Methods; Game Theory, Economics, Social and Behav. Sciences

Target groups

Research

Type of publication

Contributed volume

Available


99,95 €


Law and Democracy in Neil MacCormick’s Legal and Political Theory

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Target groups

Research

Type of publication

Contributed volume

Available


139,95 €


Leadership, Gender, and Organization

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Ethics; Gender Studies; Business & Management Science; Interdisciplinary Studies; Labour Law / Social Law

Target groups

Research

Type of publication

Contributed volume

Available


99,95 €

Proof, Computation and Agency
Logic at the Crossroads

Proof, Computation and Agency: Logic at the Crossroads provides an overview of modern logic and its relationship with other disciplines. As a highlight, several articles pursue an inspiring paradigm called ‘social software’, which studies patterns of social interaction using techniques from logic and computer science. The book also demonstrates how logic can join forces with game theory and social choice theory. A second main line is the logic-language-connection connection, where the articles collected here bring several fresh perspectives. Finally, the book takes up Indian logic and its connections with epistemology and the philosophy of science, showing how these topics run naturally into each other.

Contents
Logic; Mathematical Logic and Foundations; Mathematical Logic and Formal Languages; Non-Western Philosophy

Target groups
Research

Type of publication
Contributed volume

Available

2011. XX, 400 p. (Synthese Library, Vol. 352) Hardcover
139.95 €
ISBN 978-94-007-0079-6

The Passivity of Law
Competence and Constitution in the European Court of Justice

At the heart of this book, a question: what to make of the creeping competences of the EU and of the role the European Court of Justice plays in this respect? Taking the implied powers doctrine as its starting point, the hypothesis is that it shows what is ultimately at stake in the concept of legal competence: the problem of creation in law, or the relationship between constituent and constituted power. By rethinking this relationship, a new conceptual framework to make sense of creeping competences is designed. For this, the work of Maurice Merleau-Ponty is used. Tracing back the philosophical roots of creation, legal constitution is understood as constitution in passivity. This leads to a whole new interpretation of the relationship between law and politics, rule following, authority, competences and European integration. From this perspective specific chapters in the case law of the European Court of Justice are reread and the logic behind the competence creep is unmasked, new back cover[…]

Features
Europe’s constitutional journey has not been a smooth one, and a better division and definition of competence in the European Union is a key issue that needs to be addressed. How can the division of competence be made more transparent? Should there be a reorganization of competence? How can it be ensured that the redefined division of competence will not lead to a creeping expansion of the competence of the […]

Contents

Fields of interest
Philosophy of Law; European Law / Public International Law; Political Science; Law Theory / Law Philosophy; Phenomenology

Target groups
Research

Type of publication
Monograph

Available

2011. XV, 171 p. Hardcover
99.95 €
ISBN 978-94-007-1033-7

Transcendentalism Overturned
From Absolute Power of Consciousness Until the Forces of Cosmic Architectonics

This collection offers a critical assessment of transcendentalism, the understanding of consciousness, absolutized as a system of a priori laws of the mind, that was advanced by Kant and Husserl. As these studies show, transcendentalism critically informed 20th Century phenomenological investigation into such issues as temporality, historicity, imagination, objectivity and subjectivity, freedom, ethical judgment, work, praxis. Advances in science have now provoked a questioning of the absolute prerogatives of consciousness. Transcendentalism is challenged by empirical reductionism. And recognition of the role the celestial sphere plays in life on planet earth suggests that a radical shift of philosophy’s center of gravity be made away from absolute consciousness and toward the transcendental forces at play in the architectonics of the cosmos.

Features
This collection offers a critical assessment of transcendentalism, the understanding of consciousness, absolutized as a system of a priori laws of the mind, that was advanced by Kant and Husserl. As these studies show, transcendentalism critically informed 20th Century phenomenological investigation into such issues as temporality, historicity, imagination, objectivity and subjectivity, freedom, ethical […]

Contents

Fields of interest
Phenomenology; History of Philosophy; Philosophy of Mind; Metaphysics; Philosophy of Science

Target groups
Research

Type of publication
Contributed volume

Available

199.95 €
ISBN 978-94-007-0623-1
Virtue Ethics for Women 1250-1500

This book locates Christine de Pizan’s argument that women are virtuous members of the political community within the context of earlier discussions of the relative virtues of men and women. It is the first to explore how women were represented and addressed within medieval discussions of the virtues. It introduces readers to the little studied Speculum D ominarum (Mirror of Ladies), a mirror for a princess, compiled for Jeanne of Navarre, which circulated in the courtly milieu that nurtured Christine. Throwing new light on the way in which Medieval women understood the virtues, and were represented by others as virtuous subjects, it positions the ethical ideas of Anne of France, Laura Cereta, Marguerite of Navarre and the Dames de la Roche within an evolving discourse on the virtues that is marked by the transition from Medieval to Renaissance thought. Virtue Ethics for Women 1250-1500 will be of interest to those studying virtue ethics, the history of women’s ideas and Medieval and Renaissance [...] Features This book locates Christine de Pizan’s argument that women are virtuous members of the political community within the context of earlier discussions of the relative virtues of men and women. It is the first to explore how women were represented and addressed within medieval discussions of the virtues. It introduces readers to the little studied Speculum Dominarum (Mirror of Ladies), a mirror for a [...] Contents List of Illustrations.- Acknowledgements.- Notes on contributors.- Abbreviations. Introduction.- 1. Does Virtue Recognise Gender? Christine de Pizan’s City of Ladies in the Light of Scholastic Debate; Istvan P. Bejczy.- 2. The Speculum dominarum (Mir- or de dames) and Transformations of the Literature of Instruction for Women in the Early Fourteenth Century; Constant J. Mews.- 3. A Mirror of Queenship: The Speculum dominarum and the Demands of Justice; Rina Lahav.- 4. A Lady’s Guide to Salvation: the Miroir des dames Compilation; Janice Pinder.- 5. Charles V’s Visual Definition of the [...] Fields of interest Medieval Philosophy; Political Science; Religious Studies; Ethics; History of Philosophy Target groups Research Type of publication Contributed volume Available 2011. XXX, 223 p. 7 illus. (The New Synthese Historical Library, Vol. 69) Hardcover 99,95 € ISBN 978-94-007-0528-9 1000 Solved Problems in Classical Physics: An Exercise Book

This book basically caters to the needs of undergraduate and graduate physics students in the area of classical physics, specially Classical Mechanics and Electricity and Electromagnetism. Lecturers/Tutors may use it as a resource book. The contents of the book are based on the syllabi currently used in the undergraduate courses in USA, U.K., and other countries. The book is divided into 15 chapters, each chapter beginning with a brief but adequate summary and necessary formulas and Line diagrams followed by a variety of typical problems useful for assignments and exams. Detailed solutions are provided at the end of each chapter. Features This book basically caters to the needs of undergraduate and graduate physics students in classical physics, especially Classical Mechanics and Electricity and Electromagnetism. Lecturers/Tutors may use it as a resource book. The contents of the book are based on the syllabi currently used in the undergraduate courses in USA, U.K., and other countries. The book consists of 15 chapters, each one beginning [...] Contents 1D and 2D Kinematics.- Statics and Particle Dynamics.- Rotational Kinematics.- Rotational Dynamics.- Gravitation.- Oscillations.- Lagrange and Hamilton Dynamics.- Waves.- Fluid Dynamics.- Phases of Matter.- Thermal Physics.- Electrostatics.- Electric Circuits.- Electromagnetism.- Optics Fields of interest Atomic, Molecular, Optical and Plasma Physics; Mechanics; Thermodynamics; Classical Electrodynamics; Classical Fluids; Thermal Physics; Optical Physics Target groups Lower undergraduate Type of publication Monograph Available 2011. XV, 802 p. 250 illus. Hardcover 139,95 € ISBN 978-3-642-11942-2 A Search for Muon Neutrino to Electron Neutrino Oscillations in the MINOS Experiment

The centerpiece of the thesis is the search for muon neutrino to electron neutrino oscillations which would indicate a non-zero mixing angle between the first and third neutrino generations (#13), currently the “holy grail” of neutrino physics. The optimal extraction of the electron neutrino oscillation signal is based on the novel “library event matching” (LEM) method which Ochoa developed and implemented together with colleagues at Caltech and at Cambridge, which improves MINOS’ (Main Injector Neutrino Oscillator Search) reach for establishing an oscillation signal over any other method. LEM will now be the basis for MINOS’ final results, and will likely keep MINOS at the forefront of this field until it completes its data taking in 2011. Ochoa and his colleagues also developed the successful plan to run MINOS with a beam tuned for antineutrinos, to make a sensitive test of CPT symmetry by comparing the inter-generational mass splitting for neutrinos and antineutrinos. Ochoa’s in-depth, creative [...] Features A Search for Muon Neutrino to Electron Neutrino Oscillations in the MINOS Experiment is a tour de force that summarizes, clearly and in some depth, much of Ochoa’s vast body of work which has had a major impact on MINOS. The centerpiece of the thesis is the search for muon neutrino to electron neutrino oscillations, which would indicate a non-zero mixing angle between the first and third [...] Contents Introduction.- Neutrino Physics.- The MINOS Experiment.- Measuring q13 in MINOS.- A Novel Approach for Selecting ne CC Events.- Measuring the Backgrounds in the Near Detector.- Predicting the Far Detector Rates.- Systematic Errors and q13 Sensitivity.- Far Detector Data Analysis and Appearance Results.- Pushing the Neutrino Frontier.- Appendices. Fields of interest Elementary Particles, Quantum Field Theory; Particle Acceleration and Detection, Beam Physics; Numerical and Computational Physics Target groups Research Type of publication Monograph Available 2011. XI, 294 p. 200 illus. (Springer Theses) Hardcover 139,95 € ISBN 978-1-4419-7948-3
Astronomical Photometry
Past, Present, and Future

This book will bring together experts in the field of astronomical photometry to discuss how their subfields provide the precision and accuracy in astronomical energy flux measurements that are needed to permit tests of astrophysical theories. Differential photometers and photometry, improvements in infrared precision, the improvements in precision and accuracy of CCD photometry, the absolute calibration of flux, the development of the Johnson UBVRI photometric system and other passband systems to measure and precisely classify specific types of stars and astrophysical quantities, and the current capabilities of spectrophotometry, and polarimetry to provide precise and accurate data, will all be discussed in this volume. The discussion of ‘differential’ or ‘two-star’ photometers will include those developed for planetary as well as stellar photometry and will range from the Princeton polarizing photometer through the pioneering work of Walraven to the differential photometers designed to measure the...

Features
This book brings together experts in the field of astronomical photometry to discuss how their subfields provide the precision and accuracy in astronomical energy flux measurements that are needed to permit tests of astrophysical theories. Differential photometers and photometry, improvements in infrared precision, the improvements in precision and accuracy of CCD photometry, the absolute calibration of ...

Contents

Fields of interest
Astrophysics and Astronautics; Signal, Image and Speech Processing; Measurement Science, Instrumentation

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 217 p. 94 illus., 47 in color. (Astrophysics and Space Science Library, Vol. 373) Hardcover

149,95 €
ISBN 978-1-4419-8049-6

Interstellar Molecules
Their Laboratory and Interstellar Habitat

This book deals with the astrophysics and spectroscopy of the interstellar molecules. In the introduction, overview and history of interstellar observations are described in order to help understanding how the modern astrophysics and molecular spectroscopy have been developed interactively. The recent progress in the study of this field is briefly summarized. Furthermore, the basic knowledge of molecular spectroscopy, which is essential to correctly comprehend the astrophysical observations, is presented in a compact form.

Features
This book deals with the astrophysics and spectroscopy of the interstellar molecules. In the introduction, overview and history of interstellar observations are described in order to help understanding how the modern astrophysics and molecular spectroscopy have been developed interactively. The recent progress in the study of this field, after the 4th Cologne-Bonn-Zermatt symposium 2003 is ...

Contents

Fields of interest
Astronomy, Astrophysics and Cosmology

Target groups
Research

Type of publication
Monograph

Available

149,95 €
ISBN 978-3-642-16267-1

Jacobi Dynamics
A Unified Theory with Applications to Geophysics, Celestial Mechanics, Astrophysics and Cosmology

In their approach to Earth dynamics the authors consider the fundamentals of Jacobi Dynamics (1987, Reidel) for two reasons. First, because satellite observations have proved that the Earth does not stay in hydrostatic equilibrium, which is the physical basis of today’s treatment of geodynamics. And secondly, because satellite data have revealed a relationship between gravitational moments and the potential of the Earth’s outer force field (potential energy), which is the basis of Jacobi Dynamics. This has also enabled the authors to come back to the derivation of the classical virial theorem and, after introducing the volumetric forces and moments, to obtain a generalized virial theorem in the form of Jacobi’s equation. Thus a physical explanation and rigorous solution was found for the famous Jacobi’s equation, where the measure of the matter interaction is the energy. The main dynamical effects which become understandable by that solution can be summarized as follows: • the kinetic energy of...

Features
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Contents

Fields of interest
Astronomy, Astrophysics and Cosmology: Geophysics / Geodesy; Remote Sensing / Photogrammetry

Target groups
Research

Type of publication
Monograph

Available

119,95 €
ISBN 978-94-007-0497-8
Mindful Universe
Quantum Mechanics and the Participating Observer

The classical mechanistic idea of nature that prevailed in science during the eighteenth and nineteenth centuries was an essentially mindless conception: the physically described aspects of nature were asserted to be completely determined by prior physically described aspects alone, with our conscious experiences entering only passively. During the twentieth century the classical concepts were found to be inadequate. In the new theory, quantum mechanics, our conscious experiences enter into the dynamics in specified ways not fixed by the physically described aspects alone. Consequences of this radical change in our understanding of the connection between mind and brain are described. This second edition contains two new chapters investigating the role of quantum phenomena in the problem of free will and in the placebo effect.

Features
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Contents

Fields of interest
Quantum Physics; Philosophy (general); Popular Science

Available
2011. XII, 213 p. 9 illus. (The Frontiers Collection) Hardcover
29.95 €
ISBN 978-3-642-18075-0

Nanotechnological Basis for Advanced Sensors

Bringing together experts from 15 countries, this book is based on the lectures and contributions of the NATO Advanced Study Institute on “Nanotechnological Basis for Advanced Sensors” held in Sozopol, Bulgaria, 30 May - 11 June, 2010. It gives a broad overview on this topic, and includes articles on: techniques for preparation and characterization of sensor materials; different types of nanoscaled materials for sensor applications; addressing both their structure (nanoparticles, nanocomposites, nanostructured films, etc.) and chemical nature (carbon-based, oxides, glasses, etc.); and on advanced sensors that exploit nanoscience and nanotechnology. In addition, the volume represents an interdisciplinary approach with authors coming from diverse fields such as physics, chemistry, engineering, materials science and biology. A particular strength of the book is its combination of longer papers, introducing the basic knowledge on a certain topic, and brief contributions highlighting special types of [...]
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Selected Papers of the 7th International Conference on Tunable Diode Laser Spectroscopy, (TDLS 2009), Zermatt, Switzerland, 13-17 July 2009

Special issue of the 7th International Conference on Tunable Diode Laser Spectroscopy, held July 13-17, 2009 in Zermatt, Switzerland. The purpose of these meetings was to report and discuss the progress that has been made in the technical development of diode lasers and their applications in areas of fundamental research as well as real world applications of the technology. This was accomplished in a format encouraging strong interaction between researchers, device developers and semiconductor laser manufacturers. The relevant technologies include the original lead salt lasers, near-infrared diode lasers and the latest developments in mid-infrared quantum and interband cascade lasers, as well as nonlinear optical schemes.

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Contents
Comparative Archaeologies

A Sociological View of the Science of the Past

Archaeology, as with all of the social sciences, has always been characterized by competing theoretical propositions based on diverse bodies of locally acquired data. In order to fulfill local, regional expectations, different goals have been assigned to the practitioners of Archaeology in different regions. These goals might be entrenched in local politics, or social expectations behind cultural heritage research. This comprehensive book explores regional archaeologies from a sociological perspective—to identify and explain regional differences in archaeological practice, as well as their existing similarities. This book covers not only the currently-dominant Anglo-American archaeological paradigm, but also Latin America, Western and Eastern Europe, Asia, and Africa, all of which have developed their own unique archaeological traditions. The contributions in this book cover these "alternative archaeologies," in the context of their own geographical, political, and socio-economic settings, as well...

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The area claimed by the British Empire as Western Australia was primarily colonized through two major thrusts: the development of the Swan River Colony to the southwest in 1829, and the 1863 movement of Australian born settlers to colonize the northwest region. The Western Australian story is overwhelm-
ingly the story of the spread of market capitalism, a narrative which is at the foundation of modern western world economy and culture. Due to the timing of settlement in Western Australia there was a lack of older infrastructure patterns based on industrial capitalism to evoke geographical inertia to modify and deform the newer system in many ways making the systemic patterns which grew out of market capitalist forces clearer and easier to delineate than in older settlement areas. However, the struggle between the forces of market capitalism, settlers and indigenous Australians over space, labor, physical and economic resources and power relationships are both unique to place and time and universal in[...]

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Contents
CHAPTER 1 Introduction.- CHAPTER 2 The Swan River Colony: Settlement of the Southwest.- CHAPTER 3.- CHAPTER 4 The North District: Settlement of the Northwest.- CHAPTER 5.- CHAPTER 6.- CHAPTER 7 The Excavation of the Knight & Shenton Store Site.- CHAPTER 8 Household Analysis: Site Layout and Building Design.- CHAPTER 9 Household Analysis: Assemblage Analysis.

Fields of interest
Archaeology; History; Anthropology

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 280 p. 70 illus. (Contributions To Global Historical Archaeology) Hardcover
89,95 €
ISBN 978-1-4419-8317-6

The Archaeology of Market Capitalism
A Western Australian Perspective

The Cultural Landscapes of Port au Choix
Precontact Hunter-Gatherers of Northwestern Newfoundland

Newfoundland lies at the intersection of arctic and more temperate regions and, commensurate with this geography, populations of two Amerindian and two Paleo-Eskimo cultural traditions occupied Port au Choix, in northern Newfoundland, Canada, for centuries and millennia. Over the past two decades the Port au Choix Archaeology Project has sought a comparative understanding of how these different cultures, each with their particular origin and historical trajectory, adapted to the changing physical and social environments, impacted their physical surroundings, and created cultural landscapes. This volume brings together the research of Renouf, her colleagues and her students who together employ multiple perspectives and methods to provide a detailed reconstruction and understanding of the long-term history of Port au Choix. Although geographically focussed on a northern coastal area, this volume has wider implications for understanding archaeological landscapes, human-environment interactions and[...]

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Fields of interest
Archaeology; Anthropology; Human Geography; Geology

Target groups
Research

Type of publication
Monograph

Available
2011. XII, 321 p. 50 illus. (Interdisciplinary Contributions to Archaeology) Hardcover
119,95 €
ISBN 978-1-4419-8323-7

An Introduction to Applied Multivariate Analysis with R

The majority of data sets collected by researchers in all disciplines are multivariate, meaning that several measurements, observations, or recordings are taken on each of the units in the data set. These units might be human subjects, archaeological artifacts, countries, or a vast variety of other things. In a few cases, it may be sensible to isolate each variable and study it separately, but in most instances all the variables need to be examined simultaneously in order to fully grasp the structure and key features of the data. For this purpose, one or another method of multivariate analysis might be helpful, and it is with such methods that this book is largely concerned. Multivariate analysis includes methods both for describing and exploring such data and for making formal inferences about them. The aim of all the techniques is, in general sense, to display or extract the signal in the data in the presence of noise and to find out what the data show us in the midst of their apparent chaos.[...]

Features
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Contents
Multivariate data and multivariate analysis.- Looking at multivariate data: visualization.- Principal components analysis.- Multidimensional scaling.- Exploratory factor analysis.- Cluster analysis.- Confirmatory factor analysis and structural equation models.- The analysis of repeated measures data.

Fields of interest
Statistical Theory and Methods

Target groups
Professional/practitioner

Type of publication
Graduate/advanced undergraduate textbook

Available
2011. XIV, 274 p. 92 illus. (Use R) Softcover
49,95 €
ISBN 978-1-4419-9649-7
Projection Matrices, Generalized Inverse Matrices, and Singular Value Decomposition

Aside from distribution theory, projections and the singular value decomposition (SVD) are the two most important concepts for understanding the basic mechanism of multivariate analysis. The former underlies the least squares estimation in regression analysis, which is essentially a projection of one subspace onto another, and the latter underlies principal component analysis, which seeks to find a subspace that captures the largest variability in the original space. This book is about projections and SVD. A thorough discussion of generalized inverse (g-inverse) matrices is also given because it is closely related to the former. The book provides systematic and in-depth accounts of these concepts from a unified viewpoint of linear transformations finite dimensional vector spaces. More specially, it shows that projection matrices (projectors) and g-inverse matrices can be defined in various ways so that a vector space is decomposed into a direct-sum of (disjoint) subspaces. Projection Matrices...
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