

J. D. Blom, University of Groningen, Netherlands;  
I. E. Sommer, University Medical Centre Utrecht,  
Netherlands (Eds)

## Hallucinations

### Research and Practice

#### Contents

Foreword- Anthony David.- 1. General introduction- Iris Sommer & Jan Dirk Blom.- I. CONCEPTUAL ISSUES.- 2. The construction of visual reality- Donald Hoffman.- 3. Consciousness, memory, and hallucinations- Ralf-Peter Behrendt.- 4. A network model of hallucinations- Rutger Goekoop & Jasper Looijestijn.- 5. The construction of hallucination: History and epistemology- German Berrios & Ivana Marková.- II. HALLUCINATORY PHENOMENA.- 6. Visual hallucinations- Daniel Collerton, Rob Dudley, & Urs Peter Mosimann.- 7. Synaesthesias- Devin Blair Terhune & Roi Cohen Kadosh.- 8. Auditory verbal hallucinations, first-person accounts- Steven Scholtus & Christine Blanke.- 9. Auditory verbal hallucinations- Kelly Diederer & Iris Sommer.- 10. Auditory verbal hallucinations in patients with borderline personality disorder- Christina Slotema & David Kingdon.- 11. Musical hallucinations- Oliver Sacks & Jan Dirk Blom.- 12. Olfactory and gustatory hallucinations- Dick Stevenson & Robyn Langdon.- 13. Hallucinations of bodily sensation- Jan Dirk Blom & Iris Sommer.- 14. Hallucinatory pain: central pain- Sergio Canavero.- 15. Autosopic phenomena: clinical and experimental perspectives- Anna Sforza & Olaf Blanke.- 16. Phantom limb, phantom body, phantom self. A phenomenology of 'body hallucinations'- Peter Brugger.- 17. Sensed presences- James Allan Cheyne.- 18. Djinns- Jan Dirk Blom & Cor Hoffer.- III. RESEARCH.- 19. Structural neuroimaging in psychotic patients with auditory verbal hallucinations- Paul Allen & Gemma Modinos. [...]

#### Fields of interest

Neurosciences; Neurobiology

#### Target groups

Graduate

#### Product category

Contributed volume

#### Available

2012. XVII, 424 p. 72 illus., 60 in color. Hardcover  
▶ \*€ (D) 160,45 | € (A) 164,94 | sFr 200,00  
▶ € 149,95 | £135.00  
ISBN 978-1-4614-0958-8



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## Current Topics in Microbiology and Immunology

R. W. Compans, M. D. Cooper, F. Melchers,  
Series editors: M. B. Oldstone, P. K. Vogt, T. Honjo,  
Y. Y. Gleba, B. Malissen, Y. Kawaoka, K. Aktories,  
R. Rappuoli, J. E. Galan

### Volume 362

M. Falasca, Queen Mary University of London, UK  
(Ed)

## Phosphoinositides and Disease

#### Contents

Table of contents.- An introduction to Phosphoinositides, Tania Maffucci.- Phosphoinositides and Cardiovascular Diseases, Emilio Hirsch.- Phosphoinositides in Insulin Action and Diabetes, Alan Saltiel.- Phosphoinositides in neuroexocytosis and neuronal diseases, Frederic Meunier.- Effects of Phosphoinositides and their derivatives on Membrane Morphology and function, Banafshe Larijani.- Molecular analysis of protein-phosphoinositide interactions, Tatiana Kutateladze.- PIKfyve and its lipid products in health and in sickness, Assia Shisheva.- Class I phosphoinositide 3-kinases in normal and pathologic haematopoietic cells, Bernard Payrastra.- The diverse functions of Phosphatidylinositol Transfer proteins, Shams-had Cockcroft.- Myotubularin phosphoinositide phosphatases in human diseases, Jocelyn Laporte.- Nuclear PI-PLC  $\beta$ 1 and Myelodysplastic Syndromes: from bench to clinics, Lucio Cocco.- Inositol polyphosphate phosphatases in human disease, Christina Mitchell.- Index.

#### Field of interest

Biomedicine general

#### Target groups

Research

#### Product category

Contributed volume

#### Available

2012. VI, 318 p. 28 illus., 13 in color. Hardcover  
▶ \*€ (D) 149,75 | € (A) 153,94 | sFr 186,50  
▶ € 139,95 | £126.00  
ISBN 978-94-007-5024-1



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D. A. Dougan, La Trobe University, Melbourne, VIC,  
Australia (Ed)

## Regulated Proteolysis in Microorganisms

This book contains an extensive collection of critical reviews, from leading researchers in the field of regulated protein degradation. It covers the role of regulated proteolysis in a range of microorganisms (from Gram positive, Gram negative and pathogenic bacteria to Archaea and the Baker's yeast *Saccharomyces cerevisiae*).

#### Features

▶ An up-to-date summary of protein degradation in microorganisms (bacteria, archaea and yeast) ▶ Individual chapters by the world's leading experts in the field of regulated proteolysis ▶ Detailed mechanistic analysis of the different proteolytic machines

#### Contents

Machines of destruction - AAA+ proteases and the adaptors that control them.- The AAA+ protease Lon.- FtsH protease-mediated regulation of various cellular functions.- Regulated proteolysis in *Bacillus subtilis*.- Regulation of stress response pathways in *Escherichia coli* by proteolysis.- Regulation of the SigmaE stress response.- Pathogenic bacteria: protein degradation and virulence.- Roles of Cdc48 in regulated protein degradation in yeast.- The role of AAA+ proteases in mitochondrial protein biogenesis, homeostasis & activity control.- PUPylation and Mycobacteria.- Archea proteasomes and SAMPylation.

#### Fields of interest

Biomedicine general; Microbiology; Protein Structure

#### Target groups

Research

#### Product category

Contributed volume

#### Due February 2013

2013. X, 338 p. 65 illus., 62 in color. (Subcellular Biochemistry, Volume 66) Hardcover  
▶ \*€ (D) 149,75 | € (A) 153,94 | sFr 186,50  
▶ € 139,95 | £126.00  
ISBN 978-94-007-5939-8



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H. Duifhuis, University of Groningen,  
The Netherlands

## Cochlear Mechanics

### Introduction to a Time Domain Analysis of the Nonlinear Cochlea

The field of cochlear mechanics has received an increasing interest over the last few decades. In the majority of these studies the researchers use linear systems analysis or linear approximations of the nonlinear (NL) systems. Even though it has been clear that the intact cochlea operates nonlinearly, lack of tools for proper nonlinear analysis, and widely available tools for linear analysis still lead to inefficient and possibly incorrect interpretation of the biophysics of the cochlea. An example is the presumption that a change in cochlear stiffness at hair cell level must account for the observed change in tuning (or frequency mapping) due to prestin application.

#### Features

► Addresses and explains basic differences between linear and nonlinear cochleae ► Provides a well-justified mathematical approach, with lucid examples ► Useful to both researchers in auditory neuroscience and students of biophysics and biomedical engineering

#### Contents

Part I Anatomy and Function of the Linear Cochlea.- 1 Historical Introduction.- 2 Developments from 1950 to 1980.- 3 Emerging Cochlear Mechanics.- Part II Anatomy and Function of the Nonlinear Cochlea.- 4 Nonlinear Auditory Phenomena (I) knowledge around 1980.- 5 Modeling the Nonlinear Cochlea.- Part III Results and Open Issues.- 6 Results.- 7 Applications and perspective.- Part IV Appendices.- Index

#### Fields of interest

Neurosciences; Otorhinolaryngology; Biophysics and Biological Physics

#### Target groups

Research

#### Product category

Monograph

#### Available

2012. XIV, 261 p. 66 illus. Hardcover  
► \*€ (D) 149,75 | € (A) 153,94 | sFr 186,50  
► € 139,95 | £126.00  
ISBN 978-1-4419-6116-7



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W. S. El-Deiry, Penn State Hershey Cancer Institute,  
PA, USA (Ed)

## Impact of Genetic Targets on Cancer Therapy

#### Contents

Novel antineoplastics targeting genetic changes in colorectal cancer.- Update on Clinical Trials: Genetic Targets in Breast Cancer.- Impact of Genetic Targets on Cancer Therapy in Esophagogastric Cancer.- Impact of Genetic Targets on Cancer Therapy: Liver Cancer.- Targeting the molecular phenotype of pancreatic cancer toward the goal of patient-tailored therapy.- Impact of genetic markers on treatment of Non-small cell lung cancer.- Impact of Genetic Targets on Therapy in Head and Neck Squamous Cell Carcinoma.- Tyrosine Kinase Targeted Treatment of Chronic Myelogenous Leukemia and Other Myeloproliferative Neoplasms.- Targeted Therapy of Multiple Myeloma.- Current and Future Trials of Targeted Therapies in Cutaneous Melanoma.- Current Approaches to Epigenetic therapy for the treatment of Mantle Cell Lymphoma.- Impact of Genetic Targets on Primary Brain Tumor Therapy: What's Ready for Prime Time?.- Rational therapy for renal cell carcinoma based on its genetic targets.- Molecular and Genetic Markers of Follicular-Cell Thyroid Cancer: Etiology and Diagnostic and Therapeutic Opportunities.- Genetic Targets in Pediatric Acute Lymphoblastic Leukemia.- Emerging molecular therapies for the treatment of Acute Lymphoblastic Leukemia.- Impact of Genetic Targets on Prostate Cancer Therapy.- Small-Cell Lung Cancer: An Update on Targeted Therapies.- Impact of Genetic Targets on Cancer Therapy in Acute Myelogenous Leukemia.- Index.

#### Fields of interest

Cancer Research; Human Genetics; Medical Microbiology

#### Target groups

Research

#### Product category

Contributed volume

#### Due December 2012

2013. XVI, 476 p. 22 illus., 21 in color. (Advances in Experimental Medicine and Biology, Volume 779) Hardcover  
► \*€ (D) 160,45 | € (A) 164,94 | sFr 200,00  
► € 149,95 | £135.00  
ISBN 978-1-4614-6175-3

L. Luzi, Università degli Studi di Milano, Italia (Ed)

## Cellular Physiology and Metabolism of Physical Exercise

The book covers areas of cellular physiology and metabolism that are of interest to scientists involved in research in diabetes and metabolic diseases. Some chapters of the book are specifically research-oriented, as all the authors are actively practicing either bench or clinical research in the area.

#### Features

► This work is comprehensive of the full discipline ► It discusses both classical aspects of cellular physiology and metabolism of physical exercise ► Recommended book in courses of Biology, Physiology, Sport Science

#### Contents

1 Human evolution and physical exercise: the concept of being "born to run" – L. Luzi 2 Cell morphology and function: the specificities of muscle cells – A. Maestroni 3 Cell membrane of the contractile unit – G. Zerbini 4 Gene polymorphisms and athletic I. Teruzzi 5 Nutrients and whole-body energy metabolism – S. Benedini 6 Mitochondrial and non-mitochondrial study for ATP synthesis – R. Codella 7 Excessive nutrients and regional energy metabolism – G. Perseghin 8 Muscle biopsy to assess mitochondrial turnover – R. Barazzoni 9 Use of tracer-based study of metabolism in vivo – A. Caumo 10 Physical activity and inflammation – P. Fiorina 11 The HPA axis and the regulation of energy balance – F. Frigerio 12 Physical exercise in obesity and mental anorexia – A. Battezzati 13 Physical exercise and transplantation – V. Lauriola, C. Ricordi 14 The baboon as a primate model to study physiology and metabolic effects of exercise – F. Folli, F. Casiraghi

#### Fields of interest

Human Physiology; Molecular Medicine; Diabetes

#### Target groups

Professional/practitioner

#### Product category

Monograph

#### Available

2012. XX, 180 p. 50 illus. in color. Hardcover  
► \*€ (D) 149,75 | € (A) 153,94 | sFr 186,50  
► € 139,95 | £126.00  
ISBN 978-88-470-2417-5



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I. Malyshev, Moscow State University of Medicine and Dentistry, Moscow, Russia

## Immunity, Tumors and Aging: The Role of HSP70

The book is dedicated to the topical area of biology and medicine and the role of stress proteins HSP70 in the regulation of intracellular protein homeostasis, signaling transduction and cell protection. The book is divided into chapters, which describe the discovery of HSP70 and its molecular structure, the mechanism of the synthesis and function in normal and damaged cells, examine the role of HSP70 in immunity, cancerogenesis, aging, Alzheimer's disease and cardiac surgery. In this book, the author looks at HSP70 as a factor which prevents the transformation of homeostasis mechanisms of intracellular proteins into a link in the pathogenesis of a disease.

### Contents

Forward.- Introduction.- 1 A General Description of HSPs, The Molecular Structure of HSP70, The HSP70 Cycle.- 2 HSP70 Functions In Normal Cells.- 3 HSP70 IN A Damaged Cells.- 4 Mechanisms Of Activation And Inactivation Of HSP70 Synthesis.- 5 HSP70 In The Immune Responses.- 6 HSP70 in Carcinogenesis.- 7 HSP70 In Aging.- 8 The Role Of HSP70 in Protection of (a) The Brain In Alzheimer's Disease, and (b) The Heart.- Index.

### Fields of interest

Biomedicine general; Immunology; Protein Science

### Target groups

Research

### Product category

Brief

N. Maurits, University Medical Center Groningen, The Netherlands

## From Neurology to Methodology and Back

### An Introduction to Clinical Neuroengineering

In today's hospitals, the gap between technology and medicine constantly needs to be bridged, both by physicians and engineers. By taking a unique clinical neuroengineering approach, From Neurology to Methodology and Back offers a translational study of neurology and technology from both sides. The fundamental topics covered range from basic concepts such as sampling and simple statistical measures via Fourier analysis to source localization.

### Features

► Neuroengineering from a translational perspective ► Each chapter is based on a unique case study ► Diseases presented range from epilepsy, brain tumors and cerebrovascular diseases to tremor, MS and neuromuscular diseases

### Contents

Introduction.- Carpal Tunnel Syndrome, Electro-neurography, Electromyography and Statistics.- Tremor, Polymyography and Spectral Analysis.- Epilepsia, Electroencephalography, Filtering and Feature Extraction.- Multiple Sclerosis, Evoked Potentials and Enhancing Signal-to-Noise Ratio.- Cortical Myoclonus, EEG-EMG, Back-Averaging and Coherence Analysis.- Psychogenic Movement Disorders, Bereitschaftspotential and Event-Related Potentials.- Brain Tumor, Pre-Operative Function Localization and Source Localization.- Neuromuscular Diseases, Ultrasound and Image Analysis.- Cerebrovascular Disease, Ultrasound and Hemodynamical Flow Parameters.- Spinal Dysfunction, Transcranial Magnetic Stimulation and Motor Evoked Potentials

### Fields of interest

Biomedicine general; Neurology; Neurosciences

### Target groups

Upper undergraduate

### Product category

Graduate/Advanced undergraduate textbook

A. Melkikh, M. Sutormina, Ural Federal University, Yekaterinburg, Russia

## Developing Synthetic Transport Systems

Understanding the general laws of an effective system for the transport of substances in cells is an important goal of systems and synthetic biology and will help us to answer why the transport subsystem of a cell is arranged as it is. In addition, the construction of models for optimizing transport systems is of considerable importance in the early stages in the development of a functioning protocell. The aim of this book is to describe the latest techniques for the calculation of the optimal parameters of the transport subsystem of a cell at its maximum efficiency. The book will describe linear and nonlinear programming, dynamic programming, game theory for models of ion transport in different types of cells (e.g. mammalian cells, bacteria, plants and fungi).

### Features

► Furthers the reader's understanding of the problems associated with developing artificial cells ► Optimizing systems for minimal cells ► Developing synthetic transport systems

### Contents

Introduction. Biological Cybernetics and the optimization problem of transport of substances in the cells.- Models of ion transport in mammalian cells.- Models of ion transport and regulation in plant cells and unicellular organisms.- Optimization of the transport of substances in cells. Index.

### Fields of interest

Biomedicine general; Systems Biology; Cell Biology

### Target groups

Research

### Product category

Brief

Due February 2013

2013. Approx. 125 p. 47 illus. (SpringerBriefs in Biochemistry and Molecular Biology, Volume 6) Softcover

► \*€ (D) 53,45 | € (A) 54,95 | sFr 66,50  
► € 49,95 | £44.99

ISBN 978-94-007-5942-8



9 789400 759428

Available

2012. XV, 285 p. 131 illus., 86 in color. Hardcover

► \*€ (D) 64,15 | € (A) 65,95 | sFr 86,00  
► € 59,95 | £53.99

ISBN 978-1-4614-1131-4



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Due February 2013

2013. VI, 294 p. 68 illus., 49 in color. (SpringerBriefs in Biochemistry and Molecular Biology, Volume) Softcover

► \*€ (D) 53,45 | € (A) 54,95 | sFr 66,50  
► € 49,95 | £44.99

ISBN 978-94-007-5892-6

Y. Okada, National Institute for Physiological Sciences, Okazaki, Japan (Ed)

## Patch Clamp Techniques

From Beginning to Advanced Protocols

### Contents

Ch. 1 Prologue: The Ion Channel Ch. 2 Patch-Clamp Techniques: General Remarks Ch. 3 Whole-Cell Patch Method Ch. 4 Perforated Whole-Cell Patch Technique: A User's Guide Ch. 5 Methods for Processing and Analyzing Single-Channel Data Ch. 6 Channel Noise Ch. 7 Slice Patch Clamp Ch. 8 Patch-Clamp Recording Method in Slices for Studying Presynaptic Mechanisms Ch. 9 Analysis of Synaptic Plasticity with the Slice Patch-Clamp Recording Technique Ch. 10 Patch-Clamp Recordings from Neuronal Dendrites Ch. 11 In Vivo Blind Patch-Clamp Recording Technique Ch. 12 Two-Photon Targeted Patch-Clamp Recordings in Vivo Ch. 13 Transporter Current Measurements Ch. 14 Giant Patch and Macro Patch Ch. 15 Pipette Perfusion Technique Ch. 16 Planar Lipid Bilayer Method for Studying Channel Molecules Ch. 17 Patch-Clamp Capacitance Measurements Ch. 18 Brief Guide to Patch-Clamp Current Measurements in Organelle Membranes Ch. 19 Role of Ion Channels in Plants Ch. 20 Automated Patch Clamping Ch. 21 Patch-Clamp Biosensor Method Ch. 22 Temperature-Evoked Channel Activation: Simultaneous Detection of Ionic Currents and Temperature Ch. 23 Heterologous Expression Systems and Analyses of Ion Channels Ch. 24 Patch-Clamp and Single-Cell Reverse Transcription-Polymerase Chain Reaction/Microarray Analysis Ch. 25 Smart-Patch Technique Ch. 26 Ion Channel Pore Sizing in Patch-Clamp Experiments Ch. 27 Digital Recordings of Patch-Clamp Data Ch. 28 Solutions for Patch-Clamp Experiments

### Fields of interest

Neurosciences; Human Physiology; Cell Biology

### Target groups

Graduate

### Product category

Graduate/Advanced undergraduate textbook

T. Palomo, Hospital Universitario 12 de Octubre, Madrid, Spain; R. M. Kostrzewa, East Tennessee State University, Johnson City, TN, USA; R. J. Beninger, Queen's University, Kingston, ON, Canada (Eds)

## Staging Neuropsychiatric Disorders

Implications for Etiopathogenesis and Treatment

Book chapters are authored by participants in the International Meeting on Staging Neuropsychiatric Disorders: Implications for Etiopathogenesis and Treatment, held in Mojácar (Almería) Spain from 14-18 October 2009. Chapters are organized into four sections on themes encompassed by Staging Neuropsychiatric Disorders: 1) Clinical Staging in the Pathophysiology of Psychotic and Affective Disorders, 2) Staging Perspectives in Neurodevelopmental Aspects of Neuropsychiatry, 3) Epigenetics and Biomarkers in the Staging of Neuropsychiatric Disorders, and 4) Staging Neurodegenerative Disorders. This volume should serve as a resource for physicians and neuroscientists alike, highlighting the importance of staging neuropsychiatric disorders and the underlying mechanistic dysfunction, for prevention and treatment strategies at different stages of disease progression.

### Features

► Contributors are all participants at a prestigious conference on neuropsychiatric disorders ► This book is a resource for physicians and neuroscientists alike ► Highlights different prevention and treatment strategies at different stages of disease progression

### Fields of interest

Neurosciences; Human Physiology; Neurobiology

### Target groups

Professional/practitioner

### Product category

Contributed volume

U. Pfeffer, National Cancer Research Institute, Genova, Italy (Ed)

## Cancer Genomics

Molecular classification, prognosis and response prediction

### Features

► Comprehensive review of the field, none yet published ► Critical reviews written by outstanding investigators with no personal interest in the applications ► Easy to understand for clinicians and researchers who wish to obtain an overview over the rapidly evolving field

### Contents

Preface.- Genomic Pathology of Lung Cancer.- Understanding Melanoma Progression by Gene Expression Signatures.- Prognostic testing in uveal melanoma.- Capturing and Deciphering the Molecular Signatures of Head and Neck Cancer.- Predictive and Prognostic Biomarkers for Colorectal Cancer.- Expression Profiling of Hepatocellular Carcinoma.- Kidney Cancer Genomics: Paving the Road to a New Paradigm of Personalized Medicine.- 8 Pancreatic cancer genomics.- Breast Cancer Genomics: From Portraits to Landscapes.- Genomic landscape of ovarian cancer.- Genetics of Endometrial Carcinoma.- Usefulness of molecular biology in follicular-derived thyroid tumors - From translationnal research to clinical practice.- Sarcomas Genetics: From point mutation to complex karyotype, from diagnosis to therapies.- Novel molecular acquisitions in leukemias.- Where do we stand in the genomics of lymphomas?- The Genomics of Multiple Myeloma and Its Relevance in the Molecular Classification and Risk Stratification of the Disease.- Index.

### Fields of interest

Cancer Research; Gene Expression; Microarrays

### Target groups

Research

### Product category

Contributed volume

### Available

2012. XI, 439 p. 157 illus. (Springer Protocols Handbooks) Hardcover  
► \*€ (D) 117,65 | € (A) 120,95 | sFr 158,00  
► € 109,95 | £99.00  
ISBN 978-4-431-53992-6



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### Available

2012. XI, 375 p. 49 illus., 18 in color. Hardcover  
► \*€ (D) 160,45 | € (A) 164,94 | sFr 215,00  
► € 149,95 | £135.00  
ISBN 978-1-4614-0784-3



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### Due February 2013

2013. VIII, 622 p. 65 illus., 60 in color. Hardcover  
► \*€ (D) 160,45 | € (A) 164,94 | sFr 200,00  
► € 149,95 | £135.00  
ISBN 978-94-007-5841-4



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J. M. Sanches, Technical University of Lisbon, Portugal; A. F. Laine, Columbia University, NY, USA; J. S. Suri, Idaho State University, Pocatello, ID, USA (Eds)

## Ultrasound Imaging

### Advances and Applications

#### Contents

Section 1: Image Formation and Preprocessing.- RF ultrasound estimation from B-mode images.- A Rayleigh Mixture Model for IVUS Imaging.- Ultrasound Speckle / Despeckle Image Decomposition for Tissue Analysis.- Section 2: Ultrasound Plaque Imaging.- Media and Intima Thickness and Texture Analysis of the Common Carotid Artery.- CAUDLES-EF: Carotid Automated Ultrasound Double Line Extraction System using Edge Flow.- Activity Index: a tool to identify active carotid plaques.- Coronary Atherosclerotic Plaque Characterization by Intravascular Ultrasound.- Three-Dimensional Ultrasound Plaque Characterization.- Comparison Between Manual And Automated Analysis For The Quantification Of Carotid Wall By Using Sonography. A validation study with CT.- Section 3: Ultrasound Advanced Applications.- Real Time 4D Cardiac Segmentation by Active Geometric Functions.- Classification and Staging of Chronic Liver Disease based on Ultrasound, Laboratorial and Clinical Data.- Assessment of Bone Healing Using Ultrasound.- Image-Guided Cryoablation of the Prostate.- Applications of Multiscale Overcomplete Wavelet-Based Representations in Intravascular Ultrasound (IVUS) Images

#### Fields of interest

Biomedicine general; Ultrasound

#### Target groups

Professional/practitioner

#### Product category

Contributed volume

#### Available

2012. XI, 360 p. 133 illus., 74 in color. Hardcover  
▶ \*€ (D) 160,45 | € (A) 164,94 | sFr 215,00  
▶ € 149,95 | £135.00  
ISBN 978-1-4614-1179-6



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T. Satyanarayana, University of Delhi South Campus, New Delhi, India; J. Littlechild, Exeter University, UK; Y. Kawarabayasi, Kyushu University, Fukuoka, Japan (Eds)

## Thermophilic Microbes in Environmental and Industrial Biotechnology

### Biotechnology of Thermophiles

#### Contents

Preface.- Part I Thermophiles in the environment.- Diversity of hot environments and thermophilic microbes.- Exploring the ecology of thermophiles from Australia's Great Artesian Basin during the genomic era.- Hot environments from Antarctica.- Bacterial and biochemical properties of newly invented aerobic, high-temperature compost.- Role of thermophilic microflora in composting.- Metal remediation by thermophilic microorganisms.- CO-oxidizing anaerobic thermophilic prokaryotes.- Biomineralization in thermal environments.- Phylogeny and biological features of thermophiles.- Biology, biodiversity and application of thermophilic viruses.- Part II Genomics, Metagenomics and Biotechnology.- Genomics of thermophilic bacteria and archaea.- Comparative genomics of thermophilic bacteria and archaea.- Host-vector system in thermophiles.- Molecular chaperones in thermophilic eubacteria and archaea.- Heterologous Production of thermostable proteins and enzymes.- Discovery of thermostable enzymes from hot environmental samples by metagenomic approaches.- DNA polymerases and DNA ligases.- Molecular diversity of biotechnological relevance of thermophilic actinobacteria.- Mechanisms of thermostability adopted by thermophilic proteins and their use in white biotechnology.- Starch-hydrolyzing enzymes from thermophiles. [...]

#### Fields of interest

Biomedicine general; Applied Microbiology; Entomology

#### Target groups

Research

#### Product category

Contributed volume

#### Due February 2013

2nd ed. 2013. XV, 973 p. 106 illus., 44 in color. Hardcover  
▶ \*€ (D) 160,45 | € (A) 164,94 | sFr 200,00  
▶ € 149,95 | £135.00  
ISBN 978-94-007-5898-8



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N. W. Schultheiss, Boston University, Boston, MA, USA; A. A. Prinz, Emory University, Atlanta, GA, USA; R. J. Butera, Georgia Institute of Technology, Atlanta, GA, USA (Eds)

## Phase Response Curves in Neuroscience

### Theory, Experiment, and Analysis

#### Contents

Preface.- Part 1; Foundations of Phase Response Analysis.- Introduction to Part 1.- Chapter 1. The theory of weakly coupled oscillators.- Chapter 2. Phase resetting neural oscillators: Topological theory versus the real world.- Chapter 3. A theoretical framework for the dynamics of multiple intrinsic oscillators in single neurons.- Chapter 4. History of the application of the phase resetting curve to neurons coupled in a pulsatile manner.- Part 2; Estimation of Phase Response Curves.- Introduction to Part 2.- Chapter 5. Experimentally estimating phase response curves of neurons: Theoretical and practical issues.- Chapter 6. A geometric approach to phase resetting estimation based on mapping temporal to geometric phase.- Chapter 7. PRC estimation with varying width intervals.- Chapter 8. Bayesian approach to estimating phase response curves.- Part 3; Cellular Mechanisms of Neuronal Phase Response Properties.- Introduction to Part 3.- Chapter 9. Phase response curves to measure ion channel effects on neurons.- Chapter 10. Cellular mechanisms underlying spike-time reliability and stochastic synchronization: Insights and predictions from the phase-response curve.- Chapter 11. Recovery of stimuli encoded with a Hodgkin-Huxley neuron using conditional PRCs.- Chapter 12. Cholinergic neuromodulation controls PRC type in cortical pyramidal neurons. [...]

#### Fields of interest

Neurosciences; Neurology

#### Target groups

Graduate

#### Product category

Contributed volume

#### Available

2012. XIII, 518 p. 170 illus., 32 in color. (Springer Series in Computational Neuroscience, Volume 6) Hardcover  
▶ \*€ (D) 181,85 | € (A) 186,94 | sFr 226,50  
▶ € 169,95 | £153.00  
ISBN 978-1-4614-0738-6



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