Claudio Luchinat Unifi

BRONSON BROOKLYN

In-cell NMR Spectroscopy Academic Press
This Handbook on Metalloproteins focuses on the available structural information of proteins and their metal ion coordination spheres. It centers on the metal ions indispensable for life but also considers metal ions used as substitution probes in studies of metalloproteins. Emphasizing the structure-function relationship, the book covers the common and distinct characterstics of metallo-enzymes, proteins, and amino acids bonded to copper, zinc, iron, and more.
Journal Elsevier
Fragment-based drug discovery is a rapidly evolving area of research, which has recently seen new applications in areas such as epigenetics, GPCRs and the identification of novel allosteric binding pockets. The first fragment-derived drug was recently approved for the treatment of melanoma. It is hoped that this approval is just the beginning of the many drugs yet to be discovered using this fascinating technique. This book is written from a Chemist's perspective and comprehensively assesses the impact of fragment-based drug discovery on a wide variety of areas of medicinal chemistry. It will prove to be an invaluable resource for medicinal chemists working in academia and industry, as well as anyone interested in novel drug discovery techniques.
Solution Structure and Solution Dynamics in Chiral Ytterbium (III) Complexes Elsevier
Paramagnetic NMR is a growing technique that represents an increasingly important tool for the investigation of biomolecules. This book presents an update and overview of the paramagnetic NMR phenomena and effects as well as guidelines for practical implementation of state-of-the-art experiments. All experiments are supported by a solid theoretical foundation. Areas mentioned are the development of solid state NMR, the use of paramagnetic tags providing information on the structure and mobility of the investigated systems, and dynamic nuclear polarization to increase sensitivity. Compiled by experts in the field, this book has international appeal for researchers as well as students interested in magnetic resonance and structural biology who require experimental support and accessible information.
Necrotizing Soft Tissue Infections Elsevier
This book deals with spin relaxation by underlying the similarities between nuclear and electron spins, and provides a clear and unified picture of the behavior of spins in magnetic resonance. It is especially tailored for scientists dealing with chemical applications of relaxation phenomena. It reviews the basic theory together with the mathematical approach and shows how the theory elucidates the structure and dynamic behavior of transition metal complexes, metal clusters and metalloproteins. The complete theory of contrast agents in magnetic resonance imaging is also presented. The book is a unique and valuable guide for anyone working with paramagnetic systems, from physical and inorganic chemists to biophysicists.
Inverse Problems CRC Press
The Porphyrin Handbook, Volume 15: Phthalocyanines: Synthesis provides information pertinent to every aspect of the chemistry, synthesis, spectroscopy, and structure of phthalocyanines. This book examines the biology and medical implications of porphyrin systems. Organized into five chapters, this volume begins with an overview of the importance of compounds such as heme and

chlorophyll that play vital roles in the biological systems responsible for the transportation of oxygen to cells in the body. This text then explores the different methods used for the preparation of phthalocyanine and its metallated derivatives. Other chapters consider the detailed survey of phthalocyanine formation, characterization, and purification. This book discusses as well the synthesis of low-symmetry phthalocyanines and related compounds. The final chapter deals with a survey of the structure, synthesis, and physiochemical properties of porphyrazines with annulated heterocycles. This book is a valuable resource for research scientists, engineers, and clinicians.
Paramagnetism in Experimental Biomolecular NMR Elsevier
NMR is one of the most powerful methods for imaging of biomolecules. This book is the ultimate NMR guide for researchers in the biomedical community and gives not only background and practical tips but also a forward looking view on the future of NMR in systems biology.
The Porphyrin Handbook: Applications of phthalocyanines Elsevier
Scientists in such fields as mathematics, physics, chemistry, biochemistry, biology, and medicine are currently involved in investigations of porphyrins and their numerous analogues and derivatives. Porphyrins are being used as platforms for the study of theoretical principles, as catalysts, as drugs, as electronic devices, and as spectroscopic probes in biology and medicine. The need for an up-to-date and authoritative treatise on the porphyrin system has met with universal acclaim amongst scientists and investigators.
Matrix Metalloproteinase Biology Elsevier
The Porphyrin Handbook, Volume 11: Bioinorganic and Bioorganic Chemistry presents the fundamental aspects of the synthesis, structure, chemistry, and spectroscopy of phthalocyanines. This book discusses the biology and medical implications of porphyrin systems. Organized into seven chapters, this volume begins with an overview of the design, synthesis, and study of the structural and functional models of heme/copper terminal oxidases. This text then examines the proteins containing iron-protoporphyrin IX (heme), which play key roles in photosynthesis and respiration. Other chapters consider the syntheses of chiral porphyrin derivatives and summarize the uses of such compounds in enantioselective control. This book discusses as well the reactivity and synthesis of synthetic carbine metalloporphyrins. The final chapter deals with the B12-coenzymes, which is the most complex and physiologically important organometallic enzymatic reactions that directly depend on the reactivity of metal coordinated organic ligands. This book is a valuable resource for research scientists, clinicians, and engineers.
Novel Biomarkers in the Continuum of Breast Cancer Academic Press
This volume and its companion, Volume 338, supplement Volumes 176, 177, 239, and 261. Chapters are written with a "hands-on" perspective. That is, practical applications with critical evaluations of methodologies and experimental considerations needed to design, execute, and interpret NMR experiments pertinent to biological molecules.
The Porphyrin Handbook: Multiporphyrins, multiphthalocyanines, and arrays Yale University Press
An international journal of inverse problems, inverse methods and computerised inversion of data.
The Porphyrin Handbook, Volume 8 Frontiers Media SA
Magnetic Resonance has become an established technique to improve the understanding of food systems. Capturing contributions from a whole range of applications in food and representing the latest technical innovations, this will be a contemporary book on the topic. Based on a conference which has established an international reputation as the forum for advances in applications of magnetic resonance to food, the coverage will be dedicated to multiscale definition of food, quantitative NMR (qNMR), foodomics, on-line non-invasive NMR (dedicated to Brian P. Hills), quality and safety and new developments in the area. It is aimed at academics and industrialists who are committed to the utilisation of MR tools to improve our understanding of food.
Magnetic Resonance in Food Science Wiley-VCH
NMR of Paramagnetic Molecules: Applications to Metallobiomolecules and Models, Second Edition is a self-contained, comprehensive reference for chemists, physicists, and life scientists whose research involves analyzing paramagnetic compounds. Since the previous edition of this book was published, there have been many advancements in the field of paramagnetic NMR spectroscopy. This completely updated and expanded edition contains the latest fundamental theory and methods for mastery of this analytical technique. Users will learn how to interpret the NMR spectra of paramagnetic molecules, improve experimental techniques, and strengthen their understanding of the underlying theory and applications. Reflects all advances in the field in a completely updated new edition Presents new material on self-orientation residual dipolar couplings, solid state NMR, dynamic nuclear polarization, and paramagnetic restraints for structure calculations Includes information relevant to paramagnetic molecules, metallobiomolecules, paramagnetic compounds, and paramagnetic NMR spectroscopy Presents specific examples of paramagnetic inorganic species and experimental techniques for structure characterization
Biological Inorganic Chemistry Academic Press
Discussing recent advances in the field of matrix metalloproteinase (MMP) research from a multidisciplinary perspective, Matrix Metalloproteinase Biologyis a collection of chapters written by leaders in the field of MMPs. The book focuses on the challenges of understanding the mechanisms substrate degradation by MMPs, as well as how these enzymes are able to degrade large, highly ordered substrates such as collagen. All topics addressed are considered in relation to disease progression including roles in cancer metastasis, rheumatoid arthritis and other inflammatory diseases. The text first provides an overview of MMPs, focusing on the history, the development and failures of small molecule inhibitors in clinical trials, and work with TIMPS, the endogenous inhibitors of MMPs. These introductory chapters establish the foundation for later discussion of the recent progress on the design of different types of inhibitors, including novel antibody based therapeutics. The following section emphasizes research using novel methods to further the study of the MMPs. The third and final section focuses on in vivo research, particularly with respect to cancer models, degradation of the extracellular matrix, and MMP involvement in other disease states. Written and edited by leaders in the field, Matrix Metalloproteinase Biology addresses the rapidly growth in MMP research, and will be an invaluable resource to advanced students and researchers studying cell and molecular biology.
NMR-based Metabolomics Springer Science & Business Media
Scientists in such fields as mathematics, physics, chemistry, biochemistry, biology, and medicine are currently involved in investigations of porphyrins and their numerous analogues and derivatives. Porphyrins are being used as platforms for the study of theoretical principles, as catalysts, as drugs, as electronic devices, and as spectroscopic probes in biology and medicine. The need for an up-to-date and authoritative treatise on the porphyrin system has met with universal acclaim amongst scientists and investigators.
The Porphyrin Handbook Academic Press
This book describes the state of the art in the application of NMR spectroscopy to metabolomics and will be a key title for researchers and practitioners.
NMR of Biomolecules Springer
This volume aims to enhance the current understanding of clinical features, treatment and pathogenic aspects in necrotizing soft tissue infections. Various representative case studies are discussed to enhance the readers' understanding of these complex diseases. Necrotizing soft tissue infections are rapidly spreading infections that may cause extensive soft tissue or limb loss, multiorgan failure and are associated with a considerable fatality rate. It is undisputed that rapid diagnosis and prompt intervention is directly related to survival. The initial presentation may be limited to unspecific symptoms such as tenderness, swelling, erythema and pain. Thus, diagnosis and management are challenging due to heterogeneity in clinical presentation, in co-morbidities, in microbiological aetiology, as well as in the pathogenic mechanisms. An international and multidisciplinary consortium, INFECT, has for the last 6 years been pursuing research aimed to advance the understanding of the clinical and pathogenic aspects of these infections. A central part has been to create a comprehensive clinical registry and associated biobank which have also formed the basis for the experimental studies. Using the INFECT patient cohort, as well as an integrated systems biology approach in patients and clinically relevant experimental models, an advanced insight of diagnostic features, causative microbial agents, treatment strategies, and pathogenic mechanisms (host and bacterial disease traits and their underlying interaction network) has been obtained.
Nuclear Magnetic Resonance of Biological Macromolecules Springer
Scientists in such fields as mathematics, physics, chemistry, biochemistry, biology, and medicine are currently involved in investigations of porphyrins and their numerous analogues and derivatives. Porphyrins are being used as platforms for the study of theoretical principles, as catalysts, as drugs, as electronic devices, and as spectroscopic probes in biology and medicine. The need for an up-to-date and authoritative treatise on the porphyrin system has met with universal acclaim amongst scientists and investigators.
Fragment-Based Drug Discovery Elsevier
This book introduces some methods for the determination of the three-dimensional geometry of molecules in solution and the occurrence of dynamical processes (interaction with the solvent, rearrangements in the molecular geometry, interactions with other molecules) in several ytterbium complexes. An especial attention has been deserved to the study of some important catalysts that were recently developed in the scientific research. The determination of molecular geometry and dynamics in solution, even if it is generally a hard task, is often a crucial step to understand and rationalize the catalytic mechanism, as well to design new catalysts. The proposed methods are applied here to several systems, even chiral, and are founded on a detailed analysis of the paramagnetic and optical properties of the ytterbium ion, and combining several instrumental techniques (mainly Nuclear Magnetic Resonance and Circular Dichroism).
The Porphyrin Handbook: Chlorophylls and bilins : biosynthesis, synthesis, and degradation John Wiley & Sons
This volume of the Handbook of Experimental Pharmacology, which celebrated its 100th anniversary in 2019, addresses the rapidly growing and evolving field of metabolomics. It has been compiled and designed to broaden and enrich your understanding as well as simplify a complicated picture of the diverse field of metabolomics. This is accomplished by chapters from experts in the field on basic principles as well as reviews and updates of analytical techniques. The variety and different perspectives of the NMR approaches are described in the chapters By David Wishart, Daniel Raftery and Ryan McKay, while mass spectrometry advances are covered by Charles R. Evans and Stefan Kempa. This book also reflects the state of the art in the application of metabolomics to cell biology (Marta Cascante and Ulrich Guenther) and chapters that share insights into the application of metabolomics in various diseases (Paola Turano and Claudio Luchinat, Rachel S. Kelly and Jessica Lasky-Su, Paige Lacy, and Angela Rogers. Relationships of metabolomics with drugs are highlighted by Robert Verpoorte (natural products drug discovery), by Oscar Millet and by Turano and Luchinat (perspectives in precision medicine) and by Daniel L. Hertz (drug-induced peripheral neuropathy). From the above list of diverse topics, we believe this book has interdisciplinary appeal and scholars with an interest in the role of metabolomics in achieving precision medicine will find it of particular or special interest.
Painting in Stone Springer Nature
A sweeping history of premodern architecture told through the material of stone Spanning almost five millennia, Painting in Stone tells a new history of premodern architecture through the material of precious stone. Lavishly illustrated examples include the synthetic gems used to simulate Sumerian and Egyptian heavens; the marble temples and mansions of Greece and Rome; the painted palaces and polychrome marble chapels of early modern Italy; and the multimedia revival in 19th-century England. Poetry, the lens for understanding costly marbles as an artistic medium, summoned a spectrum of imaginative associations and responses, from princes and patriarchs to the populace. Three salient themes sustained this "lithic imagination": marbles as images of their own elemental substance according to premodern concepts of matter and geology; the perceived indwelling of astral light in earthly stones; and the enduring belief that colored marbles exhibited a form of natural—or divine—painting, thanks to their vivacious veining, rainbow palette, and chance images.