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Plasma catalysis is gaining increasing interest for various gas conversion applications, such as CO2 conversion into value-added chemicals and fuels, N2 fixation for the synthesis of NH3 or NOx, methane conversion into higher hydrocarbons or oxygenates. It is also widely used for air pollution control (e.g., VOC remediation). Plasma catalysis allows thermodynamically difficult reactions to proceed at ambient pressure and temperature, due to activation of the gas molecules by energetic electrons created in the plasma. However, plasma is very reactive but not selective, and thus a catalyst is needed to improve the selectivity. In spite of the growing interest in plasma catalysis, the underlying mechanisms of the (possible) synergy between plasma and catalyst are not yet fully understood. Indeed, plasma catalysis is quite complicated, as the plasma will affect the catalyst and vice versa. Moreover, due to the reactive plasma environment, the most suitable catalysts will probably be different from thermal catalysts. More research is needed to better understand the plasma–catalyst interactions, in order to further improve the applications.

This manual is a comprehensive compilation of "methods that work" for deriving, characterizing, and differentiating hPSCs, written by the researchers who developed and tested the methods and use them every day in their laboratories. The manual is much more than a collection of recipes; it is intended to spark the interest of scientists in areas of stem cell biology that they may not have considered to be important to their work. The second edition of the Human Stem Cell Manual is an extraordinary laboratory guide for both experienced stem cell researchers and those just beginning to use stem cells in their work. Offers a comprehensive guide for medical and biology researchers who want to use stem cells for basic research, disease modeling, drug development, and cell therapy applications. Provides a cohesive global view of the current state of stem cell research, with chapters written by pioneering stem cell researchers in Asia, Europe, and North America. Includes new chapters devoted to recently developed methods, such as iPSC technology, written by the scientists who made these breakthroughs.

Ultrasonic irradiation and the associated sonochemical and sonophysical effects are complementary techniques for driving more efficient chemical reactions and yields. Sonochemistry—the chemical effects and applications of ultrasonic waves—and sustainable (green) chemistry both aim to use less hazardous chemicals and solvents, reduce energy consumption, and increase product selectivity. A comprehensive collection of knowledge, Handbook on Applications of Ultrasound covers the most relevant aspects linked to and linking green chemistry practices to environmental sustainability through the uses and applications of ultrasound-mediated and ultrasound-assisted biological, biochemical, chemical, and physical processes. Chapters are presented in the areas of: Medical applications Drug and gene delivery Nanotechnology Food technology Synthetic applications and organic chemistry Anaerobic digestion Environmental contaminants degradation Polymer chemistry Industrial syntheses and processes Reactor design Electrochemical systems Combined ultrasound?microwave technologies While the concepts of sonochemistry have been known for more than 80 years, in-depth understanding of this phenomenon continues to evolve. Through a review of the current status of chemical and physical science and engineering in developing more environmentally friendly and less toxic synthetic processes, this book highlights many existing applications and the enormous potential of ultrasound technology to upgrade present industrial, agricultural, and environmental processes.

G protein-coupled receptors (GPCRs) are the largest family of cell-surface receptors, with more than 800 members identified thus far in the

human genome. They regulate the function of most cells in the body, and represent approximately 3% of the genes in the human genome. These receptors respond to a wide variety of structurally diverse ligands, ranging from small molecules, such as biogenic amines, nucleotides and ions, to lipids, peptides, proteins, and even light. Ligands (agonists and antagonists) acting on GPCRs are important in the treatment of numerous diseases, including cardiovascular and mental disorders, retinal degeneration, cancer, and AIDS. It is estimated that these receptors represent about one third of the actual identified targets of clinically used drugs. The determination of rhodopsin crystal structure and, more recently, of opsin, 1 and 2 adrenergic and A2A adenosine receptors provides both academia and industry with extremely valuable data for a better understanding of the molecular determinants of receptor function and a more reliable rationale for drug design. GPCR structure and function constitutes a hot topic. The book, which lies between the fields of chemical biology, molecular pharmacology and medicinal chemistry, is divided into three parts. The first part considers what receptor structures tell us about the mechanism of receptor activation. Part II focuses on receptor function. It discusses what the data from biophysical and mutational studies, and the analysis of the interactions of the receptor with ligands and regulator proteins, tell us about the process of signal transduction. The final part, on modelling and simulation, details new insights on the link between structure and mechanism and their implications in drug design.

It is well known that several climatic, environmental and socio-demographic changes that have occurred in the last years are some of the most important causes for the emergence/resurgence of vector-borne diseases worldwide. Global change can be defined as the impact of human activity on the fundamental mechanisms of biosphere functioning. Therefore, global change includes not only climate change, but also habitat transformation, water cycle modification, biodiversity loss, synanthropic incursion of alien species into new territories, or introduction of new chemicals in nature. On this respect, some of the effects of global change on vector-borne diseases can be currently evaluated. Globalization has enabled the movement of parasites, viruses and vectors among different countries, or even at intercontinental level. On this regard, it is important to note that the increase of imported malaria cases in different Southern European countries has led to the re-appearance of autochthonous cases of disease transmission. Moreover, the used tire trade, together with global warming, have facilitated the introduction, spread and establishment of potential Dengue tropical vectors, such as Aedes aegypti or Aedes albopictus in temperate areas. Consequently, recently the first Dengue indigenous cases in the last decades have been reported in different Southern areas of North America and Europe. Furthermore, habitat modification, mainly deforestation and transformation of aquatic environments, together with the changes in thermal and rainfall patterns, are two of the key factors to explain the increasing incidence of Leishmaniasis and several tick-borne diseases. The aim of this Research Topic is to cover all related fields with the binomial vector-borne diseases / global change, including basic and applied research, approaches to control measures, explanations of new theories, opinion articles, reviews, etc. To discuss these issues, a holistic and integrative point of view is necessary, which only would be achieved by the close and active participation of specialists on entomology, parasitology, virology and epidemiology. Our objective is to use a systems approach to the problem of global change and vector-borne diseases. To achieve this ambitious goal and to comply with a demand of first-rate scientific and medical interest, we are very keen on asking for the participation of multiple contributors.

Illustrated throughout in full colour, this pioneering text is the only book you need for an introduction to network science.

This, the second and final volume of Reactions of Coordinated Ligands, describes the chemistry of ligands bound through non-carbon atoms, and of coordinated carbon dioxide. As before, emphasis is on the underlying mechanisms, which provide a unity of understanding for superficially disparate processes. The wide range of topics covered illustrates well both the versatility and the usefulness of coordination

chemistry in the controlled activation of ligands. Looking to the future, carbon dioxide is the feedstock of last resort. The homogeneous reduction of dinitrogen to ammonia now seems unlikely to replace the Haber process, but solution reactions also lead to more complex, varied, and valuable products. Nitrogen monoxide, a "non innocent" ligand, impinges as pollutant and reagent. Its rich chemistry stems from its linked roles as three-electron donor, and as extremely powerful -acceptor. In the hydrolysis and condensation of complexed amides, esters etc. , metals act both as templates and as tunable and poly functional Lewis acids. Here the control of hydrophobic and steric interactions begins to model the subtle mechanisms of biological specificity. Finally, phosphorus and sulfur are imporant both as ligand atoms in themselves, and as anchors for other functionalities. I would like to thank all those who have been involved in the writing and production of this work, and also my colleagues old and new, at Glasgow and the University of North Texas, for their support. Paul S. Braterman v CONTENTS 1. Reactions of Coordinated Carbon Dioxide 1 J. D. Miller 1.

This book is a printed edition of the Special Issue "Sustainable Smart Cities and Smart Villages Research" that was published in Sustainability

This is the first volume of a comprehensive two-volume treatise on superconductivity that represents the first such publication since the earlier work by R. Parks. It systematically reviews the basic physics and recent advances in the field. Leading researchers describe the state of the art in conventional phonon-induced superconductivity, high-Tc superconductivity, and novel superconductivity. After an introduction and historical overview, the leaders in the special fields of research give a comprehensive survey of the basics and the state of the art in chapters covering the entire field of superconductivity, including conventional and unconventional superconductors. Important new results are reported in a manner intended to stimulate further research. Numerous illustrations, diagrams and tables make this book especially useful as a reference work for students, teachers, and researchers. The second volume treats novel superconductors.

Adherence to Long-term TherapiesEvidence for ActionWorld Health Organization

The world is living dangerously - either because it has little choice or because it is making the wrong choices -- Dr Gro Harlem Brundtland WHO Director-General

This book constitutes the refereed proceedings of the 6th International Conference on Cryptology and Network Security, CANS 2007, held in Singapore, in December 2007. The 17 revised full papers presented were carefully reviewed and selected. The papers are organized in topical sections on signatures, network security, secure keyword search and private information retrieval, public key encryption, intrusion detection, email security, denial of service attacks, and authentication.

Demonstrates the advantages of catalytic cascade reactions for synthesizing natural products and pharmaceuticals Riding the wave of green chemistry, catalytic cascade reactions have become one of the most active research areas in organic synthesis. During a cascade reaction, just one reaction solvent, one workup procedure, and one purification step are needed, thus significantly increasing synthetic efficiency. Featuring contributions from an international team of pioneers in the field, Catalytic Cascade Reactions demonstrates the versatility and application of these reactions for synthesizing valuable compounds. The book examines both organocatalysis and transition-metal catalysis reactions, bringing readers up to date with the latest discoveries and

activities in all major areas of catalytic cascade reaction research. Catalytic Cascade Reactions begins with three chapters dedicated to organocatalytic cascade reactions, exploring amines, Brønsted acids, and the application of organocatalytic cascade reactions in natural product synthesis and drug discovery. Next, the book covers: Gold-catalyzed cascade reactions Cascade reactions catalyzed by ruthenium, iron, iridium, rhodium, and copper Palladium-catalyzed cascade reactions of alkenes, alkynes, and allenes Application of transition-metal catalyzed cascade reactions in natural product synthesis and drug discovery Engineering mono- and multifunctional nanocatalysts for cascade reactions Multiple-catalyst-promoted cascade reactions All chapters are thoroughly referenced, providing quick access to important original research findings and reviews so that readers can explore individual topics in greater depth. Drawing together and analyzing published findings scattered across the literature, this book provides a single source that encapsulates our current understanding of catalytic cascade processes. Moreover, it sets the stage for the development of new catalytic cascade reactions and their applications.

"This toxicological profile for perfluoroalkyls was prepared consistent with guidelines developed by the Agency for Toxic Substances and Disease Registry (ATSDR) and the Environmental Protection Agency (EPA) for the preparation of toxicological profiles. The original guidelines were published in the Federal Register on April 17, 1987. While Perfluoroalkyls are not found on the ATSDR list of Priority Hazardous Substances, ATSDR has determined that a profile for these substances was necessary because data indicate that some perfluoroalkyls are found in the blood of the U.S. general population and in the environment. The agency also determined that it was important to characterize the current available information regarding the health effects from exposure in order to support and inform public health responses and activities by ATSDR and other." -- p. v

The objective of this book is to provide up-to-date coverage of some of the emerging developments in the field of integrated DNA biochips. It will prove a useful source of information for researchers in the field and for those who are just entering the field of biochip research.

The evolution of knowledge management theory and the special emphasis on human and social capital sets new challenges for knowledge-driven and technology-enabled innovation. Emerging technologies including big data and analytics have significant implications for sustainability, policy making, and competitiveness. This edited volume promotes scientific research into the potential contributions knowledge management can make to the new era of innovation and social inclusive economic growth. We are grateful to all the contributors of this edition for their intellectual work. The organization of the relevant debate is aligned around three pillars: SECTION A. DATA, KNOWLEDGE, HUMAN AND SOCIAL CAPITAL FOR INNOVATION We elaborate on the new era of knowledge types and the emerging forms of social capital and their impact on technology-driven innovation. Topics include: · Social Networks · Smart Education · Social Capital · Corporate Innovation · Disruptive Innovation · Knowledge integration · Enhanced Decision-Making. SECTION B. KNOWLEDGE MANAGEMENT & BIG DATA ENABLED INNOVATION In this section, knowledge

management and big data applications and systems are presented. Selective topic include: · Crowdsourcing Analysis · Natural Language Processing · Data Governance · Knowledge Extraction · Ontology Design Semantic Modeling SECTION C. SUSTAINABLE DEVELOPMENT In the section, the debate on the impact of knowledge management and big data research to sustainability is promoted with integrative discussion of complementary social and technological factors including: · Big Social Networks on Sustainable Economic Development · Business Intelligence

Theory of Superconductivity is primarily intended to serve as a background for reading the literature in which detailed applications of the microscopic theory of superconductivity are made to specific problems.

This volume presents the proceedings of the Fifth International Conference on the Development of Biomedical Engineering in Vietnam which was held from June 16-18, 2014 in Ho Chi Minh City. The volume reflects the progress of Biomedical Engineering and discusses problems and solutions. I aims identifying new challenges, and shaping future directions for research in biomedical engineering fields including medical instrumentation, bioinformatics, biomechanics, medical imaging, drug delivery therapy, regenerative medicine and entrepreneurship in medical devices.

This proceedings volume provides a snapshot of the latest issues encountered in technical convergence and convergences of security technology. It explores how information science is core to most current research, industrial and commercial activities and consists of contributions covering topics including Ubiquitous Computing, Networks and Information Systems, Multimedia and Visualization, Middleware and Operating Systems, Security and Privacy, Data Mining and Artificial Intelligence, Software Engineering, and Web Technology. The proceedings introduce the most recent information technology and ideas, applications and problems related to technology convergence, illustrated through case studies, and reviews converging existing security techniques. Through this volume, readers will gain an understanding of the current state-of-the-art in information strategies and technologies of convergence security. The intended readership are researchers in academia, industry, and other research institutes focusing on information science and technology.

Porphyrins play a vital role in many biological functions including oxygen transport, electron transfer and catalyzing the incorporation of oxygen into other molecules. This current survey discusses the use of modern physical techniques to probe porphyrin structure and function. The authors review the data available through a particular technique and show what can be learned therefrom about the (electronic) structure and function of biologically important porphyrins. The techniques include magnetic circular dichroism, X-ray absorption fine structure (EXAFS) and Mössbauer spectroscopies. All contributors are well known in their respective fields, enjoying world-wide reputation.

These are the proceedings of the Summer Research Conference on 4-manifolds held at Durham, New Hampshire, July

1982, under the auspices of the American Mathematical Society and National Science Foundation. The conference was highlighted by the breakthroughs of Michael Freedman and S. K. Donaldson and by Frank Quinn's completion at the conference of the proof of the annulus conjecture. (We commend the AMS committee, particularly Julius Shaneson, who had the foresight in Spring 1981 to choose the subject, 4-manifolds, in which such remarkable activity was imminent.) Freedman and several others spoke on his work; some of their talks are represented by papers in this volume. Donaldson and Clifford H. Taubes gave surveys of their work on gauge theory and 4-manifolds and their papers are also included herein. There were a variety of other lectures, including Quinn's surprise, and a couple of problem sessions which led to the problem list. A background of basic differential topology is adequate for potential readers.

New Dimensions in Photo Processes invites artists in all visual media to discover contemporary approaches to historical techniques. Painters, printmakers, and photographers alike will find value in this practical book, as these processes require little to no knowledge of photography, digital means, or chemistry. Easy to use in a studio or lab, this edition highlights innovative work by internationally respected artists, such as Robert Rauschenberg, Chuck Close, Mike and Doug Starn, and Emmet Gowin. In addition to including new sun-printing techniques, such as salted paper and lumen printing, this book has been updated throughout, from pinhole camera and digital methods of making color separations and contact negatives to making water color pigments photo-sensitive and more. With step-by-step instructions and clear safety precautions, New Dimensions in Photo Processes will teach you how to: Reproduce original photographic art, collages, and drawings on paper, fabric, metal, and other unusual surfaces. Safely mix chemicals and apply antique light-sensitive emulsions by hand. Create imagery in and out of the traditional darkroom and digital studio. Relocate photo imagery and make prints from real objects, photocopies, and pictures from magazines and newspapers, as well as from your digitial files and black and white negatives. Alter black and white photographs, smart phone images, and digital prints.

Annotation New edition of a reference that presents the values of properties typical for the most common alloy processing conditions, thus providing a starting point in the search for a suitable material that will allow, with proper use, all the necessary design limitations to be met (strength, toughness, corrosion resistance and electronic properties, etc.) The data is arranged alphabetically and contains information on the manufacturer, the properties of the alloy, and in some cases its use. The volume includes 32 tables that present such information as densities, chemical elements and symbols, physical constants, conversion factors, specification requirements, and compositions of various alloys and metals. Also contains a section on manufacturer listings with contact information. Edited by Frick, a professional engineering consultant. Annotation c. Book News, Inc., Portland, OR (booknews.com).

In the last fifty years dramatic progress has been made in the under standing of skin and skin diseases. Although we are still someway off understanding the ultimate causes of such disorders as psoriasis, atopic dermatitis and the congenital disorder of keratinization, we now have considerable information on the physiological disturbances in various diseases. This has permitted and encouraged a rational approach to treatment. The successful use of antimitotic agents, immunomodulators and retinoids may be cited as examples. A major reason for this im provement may be the fact that researchers accept models for the in vestigation of skin diseases. Increasing numbers of them have become available in the past years. So many have been described that it is doubtful whether anyone researcher is aware of all the other models described - even in his own field of interest. This book is a challenge for those involved in the study of skin and its disorders to use the sundry models of skin that have proven helpful. It would be impossible for this work to be all-embracing but it is hoped that the choice of models offered in this publication will be stimulating and helpful in the solution of knotty skin questions. April,1986 Ronald Marks, Cardiff Gerd Plewig, DUsseldorf Table of Contents In Vivo Models Human Model for Acne . . . . . 2 L. C Brummitt, W. J. Cunliffe, G. Gowland Models to Study Follicular Diseases l3 G. Plewig Models for Wound Healing. . . . . 24 R. Marks, D. Williams, A. D.

Authoritative survey of the natural, modified, and synthetic water-soluble resins and gums now available commercially.

This report is based on an exhaustive review of the published literature on the definitions, measurements, epidemiology, economics and interventions applied to nine chronic conditions and risk factors.

This book constitutes the refereed proceedings of the 5th International Conference on Web-Age Information Management, WAIM 2004, held in Dalian, China in July 2004. The 57 revised full papers and 23 revised short and industrial papers presented together with 3 invited contributions were carefully reviewed and selected from 291 submissions. The papers are organized in topical sections on data stream processing, time series data processing, security, mobile computing, cache management, query evaluation, Web search engines, XML, Web services, classification, and data mining.

Over the past seventy years, a staggering array of new pigments and binders has been developed and used in the production of paint, and twentieth-century artists readily applied these materials to their canvases. Paints intended for houses, boats, cars, and other industrial applications frequently turn up in modern art collections, posing new challenges for paintings conservators. This volume presents the papers and posters from "Modern Paints Uncovered," a symposium organized by the Getty Conservation Institute, Tate, and the National Gallery of Art and held at Tate Modern, London, in May 2006. Professionals from around the world shared the results of research on paints that have been available to

artists since 1930--the date that synthetic materials began to significantly impact the paint industry. Modern Paints Uncovered showcases the varied strands of cutting-edge research into the conservation of contemporary painted surfaces. These include paint properties and surface characteristics, analysis and identification, aging behavior, and safe and effective conservation techniques.

This book serves as a timely and comprehensive overview of the latest science for perfluoroalkyl and polyfluoroalkyl substances (PFASs), covering the development of methods for assessing PFASs in biological fluids and tissues as well as the current knowledge regarding their toxicity to vertebrate organisms. This book includes chapters on human and wildlife exposure/body burdens, reviews of metabolism and toxicological effects by organ system/developmental stage and aspects of PFAS toxicity that are driving PFAS research and regulatory oversight. Toxicological Effects of Perfluoroalkyl and Polyfluoroalkyl Substances provide critical assessments of the most controversial topics surrounding toxicological evaluation of PFASs to give readers an expert perspective on the issues. Emphasis is placed on the integration of modes and mechanisms of action with functional endpoints that are relevant to human and wildlife health. This book will be a useful resource for toxicologists, environmental chemists, risk assessors and researchers with an interest in the class of compounds known as perfluoroalkyl and polyfluoroalkyl substances.

Noise from wind turbines is a major constraining factor in the location of turbines. A recent survey in the Netherlands showed that sound was the aspect of wind turbines which led to most complaints, generally greater compared with other sound sources of equal level. Investigation, understanding and reduction of noise from wind turbines is a necessary progression in the development of this sector of renewable energy.The book, authored by an international group of experts, reviews current knowledge, providing an objective and accurate assessment of all aspects of wind turbine noise.

The Eco-Design Handbook is the first book to present the best-designed objects for every aspect of the home and office, including the most environmentally sound materials and building products. The book contains three essential components. An introduction puts forward the history and latest thinking in green design strategies. Its core comprises two sections devoted to detailed illustrated descriptions of objects for domestic living and products for the office or work-related activities. The third element is a vast reference source, defining available materials, from organic to specially developed eco-sensitive composites and then providing detailed information on manufacturers, design studios, green organizations, online information, as well as further reading and a glossary of useful terms and concepts. Lastly, a comprehensive index makes it possible for the reader to find any product, designer or manufacturer instantly.

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