Eml Series E100

Using a multidisciplinary approach, this book describes the biochemical mechanisms associated with dysregulation of proteases and the resulting pathophysiological consequences. It highlights the role and regulation of different types of proteases as well as their synthetic and endogenous inhibitors. The role of proteases was initially thought to be limited to general metabolic digestion. However, we now know that the role of protein breakdown is much more complex, and proteases have multiple functions: they are coupled to turnover and can affect protein composition, function and synthesis. In addition to eliminating abnormal proteins, breakdown has many modulatory functions, including activating and inactivating enzymes, modulating membrane function, altering receptor channel properties, affecting transcription and cell cycles and forming active peptides. The ubiquity of proteases in nature makes them an important target for drug development. This in-depth, comprehensive is a valuable resource for researchers involved in identifying new targets for drug development. With its multidisciplinary scope, it bridges the gap between fundamental and translational research in the biomedical and pharmaceutical industries, making it thought-provoking reading for scientists in the field.

Debra M. Amidon, a worldwide pioneer in knowledge strategy, once again leads you into the future by charting the intersection of knowledge management and innovation into a new frontier called 'Knowledge Innovation.' Groundbreaking and well researched, 'The Innovation SuperHighway' provides global insights into how you can use knowledge processes and tools to sustain high levels of innovation among all stakeholders to gain a competitive positioning. 'The Innovation SuperHighway' awakens the realization that information, economic infrastructures, computer and communications technology - and even knowledge management and ICT's, has been a journey toward profitable and prosperous innovation. Providing the sound rationale for knowledge strategy, Amidon defines the global vision on all levels of economy—the enterprise, the national economy and societal transformation. 'The Innovation SuperHighway' turns knowledge vision into innovation practice.

Abiotic stress cause changes in soil-plant-atmosphere continuum and is responsible for reduced yield in several major crops. Therefore, the subject of abiotic stress response in plants - metabolism, productivity and sustainability - is gaining considerable significance in the contemporary world. Abiotic stress is an integral part of “climate change,” a complex phenomenon with a wide range of unpredictable impacts on the environment. Prolonged exposure to these abiotic stresses results in altered metabolism and damage to biomolecules. Plants evolve defense mechanisms to tolerate these stresses by upregulation of osmolytes, osmoprotectants, and enzymatic and non-enzymatic antioxidants, etc. This volume deals with abiotic stress-induced morphological and anatomical changes, abberations in metabolism, strategies and approaches to increase salt tolerance, managing the drought stress, sustainable fruit production and postharvest stress treatments, role of glutathione reductase, flavonoids as antioxidants in plants, the role of salicylic acid and trehalose in plants, stress-induced flowering. The role of soil organic matter in mineral nutrition and fatty acid profile in response to heavy metal stress are also dealt with. Proteomic markers for oxidative stress as a new tools for reactive oxygen species and photosynthesis research, abscisic acid signaling in plants are covered with chosen examples. Stress responsive genes and gene products including expressed proteins that are implicated in conferring tolerance to the plant are presented. Thus, this volume would provides the reader with a wide spectrum of information including key references and with a large number of illustrations and tables. Dr. Parvaiz is Assistant Professor in Botany at A.S. College, Srinagar, Jammu and Kashmir, India. He has completed his post-graduation in Botany in 2000 from Jamia Hamdard New Delhi India. After his Ph.D from the Indian Institute of Technology (IIT) Delhi, India in 2007 he joined the International Centre for Genetic Engineering and Biotechnology, New Delhi. He has published more than 20 research papers in peer reviewed journals and 4 book chapters. He has also edited a volume which is in press with Studium Press Pvt. India Ltd., New Delhi, India. Dr. Parvaiz is actively engaged in studying the molecular and physio-biochemical responses of different plants (mulberry, pea, Indian mustard) under environmental stress. Prof. M.N.V. Prasad is a Professor in the Department of Plant Sciences at the University of Hyderabad, India. He received B.Sc. (1973) and M.Sc. (1975) degrees from Andhra University, India, and the Ph.D. degree (1979) in botany from the University of Lucknow, India. Prasad has published 216 articles in peer reviewed journals and 82 book chapters and conference proceedings in the broad area of environmental botany and heavy metal stress in plants. He is the author, co-author, editor, or co-editor for eight books. He is the recipient of Pitamber Pant National Environment Fellowship of 2007 awarded by the Ministry of Environment and Forests, Government of India.

Robotic Systems and Autonomous Platforms: Advances in Materials and Manufacturing showcases new materials and manufacturing methodologies for the enhancement of robotic and autonomous systems. Initial chapters explore how autonomous systems can enable new uses for materials, including innovations on different length scales, from nano, to macro and large systems. The means by which autonomous systems can enable new uses for manufacturing are also addressed, highlighting innovations in 3D additive manufacturing, printing of materials, novel synthesis of multifunctional materials, and robotic cooperation. Concluding themes deliver highly novel applications from the international academic, industrial and government sectors. This book will provide readers with a complete review of the cutting-edge advances in materials and manufacturing methodologies that could enhance the capabilities of robotic and autonomous systems. Presents comprehensive coverage of materials and manufacturing technologies, as well as sections on related technology, such as sensing, communications, autonomy/control and actuation Explores potential applications demonstrated by a selection of case-studies Contains contributions from leading experts in the field

Clinical Challenges in Therapeutic Drug Monitoring: Special Populations, Physiological Conditions and Pharmacogenomics focuses on critical issues in therapeutic drug monitoring including special requirements of therapeutic drug monitoring important to special populations (infants and children, pregnant women, elderly patients, and obese patients). The book also covers issues of free drug monitoring and common interferences in using immunoassays for therapeutic drug monitoring. This book is essential reading for any clinician, fellow, or trainee who wants to gain greater insight into the process of therapeutic drug monitoring for individual dosage adjustment and avoiding drug toxicity for certain drugs within a narrow therapeutic window. The book is written specifically for busy clinicians, fellows, and trainees who order therapeutic drug monitoring and need to get more familiar with testing methodologies, issues of interferences, and interpretation of results in certain patient populations. Offers busy clinicians, pathologists, and trainees a concise resource on the key aspects and critical issues in therapeutic drug monitoring Focuses on patient populations such as infants and children, pregnant women, elderly patients, and obese patients, who have special requirements in therapeutic drug monitoring Explores special topics in therapeutic drug monitoring including free drug monitoring and common immunoassay interference Explains how individual dosage adjustments can prevent drug toxicity for certain drugs within a narrow therapeutic window

Hybrid organic-inorganic perovskites (HOIPs) have attracted substantial interest due to their chemical variability, structural diversity and favorable physical properties the past decade. This materials class encompasses other important families such as formates, azides, dicyanamides, cyanides and dicyanometallates. The book summarizes the

chemical variability and structural diversity of all known hybrid organic-inorganic perovskites subclasses including halides, azides, formates, dicyanamides, cyanides and dicyanometallates. It also presents a comprehensive account of their intriguing physical properties, including photovoltaic, optoelectronic, dielectric, magnetic, ferroelectric, ferroelastic and multiferroic properties. Moreover, the current challenges and future opportunities in this exciting field are also been discussed. This timely book shows the readers a complete landscape of hybrid organic-inorganic pervoskites and associated multifuctionalities.

The first contemporary comprehensive treatment of optimization without derivatives. This text explains how sampling and model techniques are used in derivative-free methods and how they are designed to solve optimization problems. It is designed to be readily accessible to both researchers and those with a modest background in computational mathematics.

Over the last decade, Africa has taken a central position in the search for the timing and mechanisms leading to modern human origins, and the rich archaeological and human paleontological record of North Africa is critical to this search. In this volume, we bring together new research into the archaeology, human paleontology, chronology, and environmental context of modern human origins in North Africa. The result is a volume that better integrates the North African record into the modern human origins debate and at the same time highlights the research questions that are currently the focus of continued work in the area.?

Herbert Cooper was headed down a very different road, living a reckless lifestyle that would have destroyed him in the end, but God had a different plan. He heard the gospel at a Fellowship of Christian Athletes meeting, at which he wasn't even supposed to be, and he gave his life to Christ. Two words changed Cooper's life: But God. These two words can change every single person's life— But God. Each word is only three letters long. The phrase is short, but the implications are huge. The path may look bleak, dim, and hopeless...but GOD changes everything... We've all sinned - whether it is sex outside of marriage, a bitter heart, alcohol or drug abuse, cheating, or lying. Maybe you're at a place in your life where it just feels like things are falling apart. Perhaps you're portraying one thing on the outside and living something else on the inside. Maybe you are simply going through the motions of a life that's not quite what you hoped it would be. These moments drag us down - leaving us feeling hopeless and lost. You need something to happen in your life to change. You need a But God... moment. The But God moments are when God comes in and offers a new path and hope for our lives. These moments occur when we are at are lowest, and turn our down-trodden worlds around for the better. It is up to us to recognize and seize these moments when they occur and follow the renewed path God offers.

Often considered the workhorse of the cellular machinery, proteins are responsible for functions ranging from molecular motors to signaling. The broad recognition of their involvement in all cellular processes has led to focused efforts to predict their functions from sequences, and if available, from their structures. An overview of current research directions, Computational Protein-Protein Interactions examines topics in the prediction of protein-protein interactions, including interference with protein-protein interactions and their design. Explores Computational Approaches to Understanding Protein-Protein Interactions Outlining fundamental and applied aspects of the usefulness of computations when approaching protein-protein interactions, this book incorporates different views of the same biochemical problem from sequence to structure to energetics. It covers protein-protein interaction prediction and dynamics, design, drug design for inhibition, and uses for the prediction of function. The text provides general chapters that overview the topic and also includes advanced material. The chapters detail the complexity of protein interaction studies and discuss potential caveats. Addresses the Next Big Problem in Molecular Biology While it is important to predict protein associations, this is a daunting task. Edited by two experts in the field and containing contributions from those at the forefront of research, the book provides a basic outline of major directions in computational protein-protein interactions research at the heart of functional genomics and crucial for drug discovery. It addresses the next big problem in molecular biology: how to create links between all the pieces of the cell jigsaw puzzle.

This comprehensive and up-to-date book covers the common emergencies in neurology, neurosurgery, and psychiatry. Chapters examine a variety of neurological emergencies, and offer pragmatic approaches to treatment and management. High-quality tables, figures, and algorithms supplement expertly written text, and provide readers with clear, rapid answers in an easily accessible format. Additionally, the book includes discussions on less common conditions, and incorporates specific methods for treating specific populations, such as pregnant women and transplant patients. Neurological Emergencies: A Practical Approach is a go-to reference for all medical professions working in emergency treatment settings, and will increase their ability to better care for patients with acute neurological diseases.

This study provides a comprehensive analysis of credit rating economics and draws conclusions on the nature of regulation. It starts with an overview of the credit rating industry and introduces a framework that structures multiple rating agency functions. At the heart of the credit rating business model lies the reputation mechanism, which is analyzed in detail. After analyzing the reputation mechanism, the study takes a wider look at the industry and identifies the forces behind credit rating supply and demand. From an industrial organization perspective competition in the credit rating industry is limited. A comprehensive review of potential reasons for regulating the credit rating industry, however, reveals that there are only few compelling arguments. The regulatory approaches of the EU under the Capital Requirements Directive of 2005 and the USA under the Credit Rating Agency Reform Act of 2006 are contrasted against an optimal regulatory regime.

The MRS Symposium Proceeding series is an internationally recognised reference suitable for researchers and practitioners.

Part I: Process design -- Introduction to design -- Process flowsheet development -- Utilities and energy efficient design -- Process simulation -- Instrumentation and process control -- Materials of construction -- Capital cost estimating -- Estimating revenues and production costs -- Economic evaluation of projects -- Safety and loss prevention -- General site considerations -- Optimization in design -- Part II: Plant design -- Equipment selection, specification and design -- Design of pressure vessels -- Design of reactors and mixers -- Separation of fluids -- Separation columns (distillation, absorption and extraction) -- Specification and design of solids-handling equipment -- Heat transfer equipment -- Transport and storage of fluids.

In a rapidly changing world, there is an ever-increasing need to monitor the Earth’s resources and manage it sustainably for future generations. Earth observation from satellites is critical to provide information required for informed and timely decision making in this regard. Satellite-based earth observation has advanced rapidly over the last 50 years, and there is a plethora of satellite sensors imaging the Earth at finer spatial and spectral resolutions as well as high temporal resolutions. The amount of data available for any single location on the Earth is now at the petabyte-scale. An ever-increasing capacity and computing power is needed to handle such large datasets. The Google Earth Engine (GEE) is a cloud-based computing platform that was established by Google to support such data processing. This facility allows for the storage, processing and analysis of spatial data using centralized high-power computing resources, allowing scientists, researchers, hobbyists and anyone else interested in such fields to mine this data and understand the changes occurring on the Earth’s surface. This book presents research that applies the Google Earth Engine in mining, storing, retrieving and processing spatial data for a variety of applications that include vegetation monitoring, cropland mapping, ecosystem assessment, and gross primary productivity, among others. Datasets used range from coarse spatial resolution data, such as MODIS, to medium resolution datasets (Worldview -2), and the studies cover the entire globe at varying spatial and temporal scales.

A research project entitled Biomechanics of Structure and Function of Living Cells, Tissues, and Organs was launched in Japan in 1992. This data book presents the original, up-to-date information resulting from the research project, supplemented by some of the important basic data published previously. The aim of collecting the information is to offer accurate and useful data on the mechanical properties of living materials to biomechanical scientists, biomedical engineers, medical scientists, and clinicians. The data are presented in graphs and tables (one type of data per page) arranged in an easily accessible manner, along with details of the origin of the material and the experimental method. Together with its two companion volumes, Biomechanics: Functional Adaptation and Remodeling and Computational Biomechanics, the Data Book on Mechanical Properties of Living Cells, Tissues, and Organs is a timely and valuable contribution to the rapidly growing field of biomechanics.

Several client-side storage options are available to web applications, but one area that's been lacking until now is file I/O—the ability to organize binary data into a true hierarchy of folders. That has changed with the advent of HTML5. With this book, you'll learn how to provide your applications with a file system that enables them to create, read, and write files and folders in a sandboxed section of the user's local filesystem. Author Eric Bidelman, a Senior Developer Programs Engineer on the Google Chrome team, provides several techniques and complete code examples for working with the HTML5 Filesystem API. Learn common operations for working with files and directories Become familiar with HTML5's storage use cases and security considerations Understand the storage options available, including temporary, persistent, and unlimited Write text or append data to an existing user file Import files into your application by accessing a user's hard drive Get techniques for using a file with filesystem, blob, or data URLs Use the synchronous version of the HTML5 Filesystem API within a Web Worker context

This volume is intended to provide the reader with a breadth of understanding regarding the many challenges faced with the formulation of poorly water-soluble drugs as well as in-depth knowledge in the critical areas of development with these compounds. Further, this book is designed to provide practical guidance for overcoming formulation challenges toward the end goal of improving drug therapies with poorly water-soluble drugs. Enhancing solubility via formulation intervention is a unique opportunity in which formulation scientists can enable drug therapies by creating viable medicines from seemingly undeliverable molecules. With the ever increasing number of poorly water-soluble compounds entering development, the role of the formulation scientist is growing in importance. Also, knowledge of the advanced analytical, formulation, and process technologies as well as specific regulatory considerations related to the formulation of these compounds is increasing in value. Ideally, this book will serve as a useful tool in the education of current and future generations of scientists, and in this context contribute toward providing patients with new and better medicines.

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